

## **IMPACT OF ROUNDTABLE ON SUSTAINABLE PALM OIL (RSPO) CERTIFICATION ON THE INDONESIAN CPO EXPORTS TO THE DESTINATION COUNTRIES**

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### **ABSTRACT**

Palm oil is one of the plantation commodities that has an important role in economic contribution in Indonesia because of its ability to produce vegetable oil which is essential for industrial sector. The potential development of Indonesia's palm oil exports is high considering the benefits derived from these products. Therefore, there is a need to ensure that CPO products have a sustainable nature, one of which is that CPO products must be RSPO certified. This study analyzes how the influence of various factors that can affect Indonesia's CPO exports, one of which is RSPO certification using panel regression with the basic gravity model. The data which is used in this research is panel data in the form of time series for 20 years with cross sections from five major importing during 1999-2018. The analysis shows that the exchange rate and the RSPO significantly and positively affect Indonesia's CPO exports, while the population of the importing country has a significant and negative effect. This confirms that the presence of RSPO certified products will increase Indonesian CPO exports to major importing countries. Although the RSPO has an effect on Indonesia's CPO exports, there are still a number of indicators from it, in which, Indonesia has not been able to fulfill. That indicator can be used as a material for consideration to be adopted in national certifications such as ISPO so that Indonesian CPO products can be perceived to be sustainable so that they can reach wider export markets.

**Keywords:** CPO; Export; Gravity model; Panel data; RSPO

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### **INTRODUCTION**

The potential development of Indonesia's palm oil exports is very high considering the various benefits derived from these products. With the growth of the world's population (mostly middle class) and an increasing demand for energy from renewable sources, the demand for palm oil has increased (Khatun et al., 2017). Therefore, there is a need to ensure that CPO products have a sustainable nature. The Roundtable on Sustainable Palm Oil (RSPO) is an

organization that has a vision to make sustainable palm oil a norm (RSPO, 2018). The RSPO has principles and criteria (P&C) in evaluating a country's CPO products. The RSPO principles and criteria include the most significant environmental and social impacts originating from the production of palm oil and direct inputs to production such as seeds, chemicals and water, as well as social impacts related to the relationship between workers and the community in the plantation (RSPO, 2018).

Many problems were found after the organization was formed and after the process of implementing palm oil products that must be RSPO certified. According to research conducted by (Saptia & Ermawati, 2013), RSPO certification apparently did not acquire a response from several palm oil entrepreneurs in Indonesia who are the members of *Indonesian Palm Oil Business Association* (GAPKI). This is because the RSPO does not provide significant benefit for Indonesia's palm oil producer due to the bargaining position of the buyer which is stronger than that of the producer, so the buyer can determine the price easily. In Malaysia, RSPO certification is still voluntary and a debatable issue because large companies in the industry are forced to obtain the RSPO certification and thus, actively pursuing the certification standards (Mansor et al., 2016). In Colombia, The main problem found is that there is a large knowledge gap on several aspects of the certification that holds back stakeholders during the process of adopting the standards, especially with regards to the costs, documentation

requirements and adoption process (Seidel, 2017).

However, since it was implemented in May 2008 to August 2015 there have been more than 29 groups of companies with more than 123 palm oil mills in Indonesia that have successfully obtained RSPO sustainable palm oil production certificates. RSPO certified palm oil (CSPO) production capacity produced by Indonesia reached 5,447,814 tons. It placed Indonesia as the largest RSPO certified palm oil producing country in the world (Suharto et al., 2015).

#### **Literature Review**

Research to determine the factors affecting the export commodity by using the gravity model has previously been carried out by Arumta et al. (2019). The estimations imply the corroborate signs with GDP per capita of Indonesia, GDP per capita of partner countries and exchange rate (IDR/destination country currencies), while those variables with the opposite sign are distance and trade openness. Yulhar & Darwanto (2019), also conducted research using this model. The research aims to find out the determinant factors influencing the competitiveness of Indonesia's Crude Coconut Oil (CCO) in the major importing countries. Indonesia's CCO export volume showed a positive effect, while openness and the value of competitor exports (Philippines) negatively affected the competitiveness of Indonesia's CCO to major importing countries.

Sari et al. (2014) conducted a research on the determinants affecting the CPO export trade between Indonesia and its main destination country by using

a gravity model with panel data from 2003-2013. Importing country's GDP, economic distance, population of importing countries, and real exchange rates were factors that can increase Indonesia's CPO export trade flows to its main destination countries. Ridwannulloh & Sunaryati (2018), also conducted research on the factors that determine Indonesia's CPO exports with the gravity model approach. The results revealed that the GDP of Indonesia and its importing countries had a significant and positive influence on Indonesia's CPO exports, while distance showed a negative and significant effect.

Ruysschaert & Salles (2014) conducted research on other CPO product certifications namely the Roundtable on Sustainable Palm Oil (RSPO) certification. Researchers found that there were still some problems and obstacles why the application of RSPO in fact was not able to protect the habitat of orangutans that were increasingly reduced. These problems were: (1) Premiums paid by downstream companies to oil palm farmers for RSPO certified Palm Oil (CSPO) were far lower than the economic losses of farmers to implement existing principles and criteria (P&C); (2) there was too much space for interpretation in the P&C to cause inefficiencies; (3) RSPO was not integrated in the socio-political-legal context of Indonesia; (4) and violations when implementing P&C. Research on the certification of palm oil products had also been carried out by Tey et al. (2020). This study aims to find out whether there is a relationship between adoption of RSPO certification and company profitability in Malaysia. The variables

used in this study were the time of adoption, allocation of related resources, business efficiency and the price of crude palm oil. Based on panel data used in this study, from 2000-2016, these four factors affected company profitability, so the faster the RSPO principles and criteria were adopted, the better the company's performance will be.

Based on the descriptions above, the purpose of this study is to analyze how the impact of RSPO certification on Indonesia's CPO exports to major importing countries. The novelty of this research is using the start of enactment of an international multi-stakeholder organization's policy variable to determine whether the implementation of RSPO certification has a positive impact on Indonesia's CPO exports in major importing countries. According to the previous research (Arumta et al., 2019; Ruysschaert & Salles, 2014; Sari et al., 2014; Tey et al., 2020; Yulhar & Darwanto, 2019), no one has used this variable to see the impact of RSPO certification on Indonesia's CPO exports.

## **METHODS**

Based on the source, the data used in this study were secondary data obtained from information which was collected from existed sources, both from national and international agency publications. The Secondary data in this study included exports and imports data from UNcomtrade ([www.comtrade.un.org](http://www.comtrade.un.org)), GDP and population as a secondary data from *World Bank Development Indicators* ([www.worldbank.org](http://www.worldbank.org)), exchange rates as a secondary data from UNctad ([www.unctad.org](http://www.unctad.org)), economic distances

as a secondary data from *Centre d'Etudes Prospectives et d'Informationales* ([www.cepii.fr](http://www.cepii.fr)), and other supporting sources. The secondary data used in this research was panel data in the form of time series for 20 years (1999-2018) with cross sections from five major importing countries: India, Netherlands, Singapore, Malaysia and Italy. These countries were selected based on the value rank of Indonesia's CPO (Crude Palm Oil) imports and their continuity during 1999-2018.

The gravity model was introduced first by Tinbergen (1962), which is analogous to Newton's law of gravity. The gravity model explains that trade flows that occur between countries are proportional to their economic size, which is described by Gross Domestic Product (GDP) and population, and inverse to the distance between the two countries. However, there are some studies using geographical distance (Arita et al., 2017; Arumta et al., 2019; Shepotylo, 2016) and economic distance (Ridwannulloh & Sunaryati, 2018; Sari et al., 2014) in the gravity model. Economic distance is the geographical distance of Indonesia with each trading partner country multiplied by the ratio of the total GDP of trading partner countries with the GDP of each trading partner country (Sarwoko, 2009). Exchange rates had been firstly developed and involved to gravity model by Bergstrand (1989), meanwhile dummy variable about effect from institutional membership was firstly developed by Wei & Frankel (1995). These variables were added to the gravity model in order to strengthen the objectives of the research goals. Based on the descriptions above, the

equations formed for this study were as follows:

$$\begin{aligned} \text{Tradevalue}_{ij}^t = & \alpha_{ij} + \beta_1 \ln \text{GDP}_j^t \\ & + \beta_2 \ln \text{GDP}_i^t \\ & + \beta_3 \ln \text{Ecodist}_{ij}^t \\ & + \beta_4 \ln \text{Population}_j^t \\ & + \beta_5 \ln \text{Kurs}_{ij}^t + \text{RSPO} \\ & + e_{ij}^t \end{aligned}$$

Tradevalue<sub>ij</sub><sup>t</sup> is CPO's export value from country i to country j (US\$), α<sub>ij</sub> is intercept, β<sub>1</sub>-β<sub>5</sub> is coefficient, GDP<sub>j</sub><sup>t</sup> is country j's GDP in t year (US\$), GDP<sub>i</sub><sup>t</sup> is country i's GDP in t year (US\$), Ecodist<sub>ij</sub><sup>t</sup> is economic distance between capital city of country i to capital city of country j (km), Populasi<sub>j</sub><sup>t</sup> is country j's population (jiwa), Kurs<sub>ij</sub><sup>t</sup> is country i's exchange rate to country j (IDR/destination country currencies), RSPO is dummy variable where 0 is RSPO has not applied (1999-2007) and 1 RSPO has applied (2008-2018), and e<sub>ij</sub><sup>t</sup> is error term. I is the exporting country (Indonesia) and j is the main importer countries (India, Netherlands, Malaysia, Singapore and Italy).

## RESULTS AND DISCUSSION

Figure 1 shows that India had played significant role for Indonesia CPO's import. India has taken 60.8% of total world imports of Indonesian palm oil commodities in 2018. After that, it can also be seen that the biggest importer after India was the Netherlands taking 9.8%. What is unique about these results is that the Netherlands was the second largest importer in the last 20 years. In fact, the European Union severely limits imports of palm oil products with various certifications and even conducts super

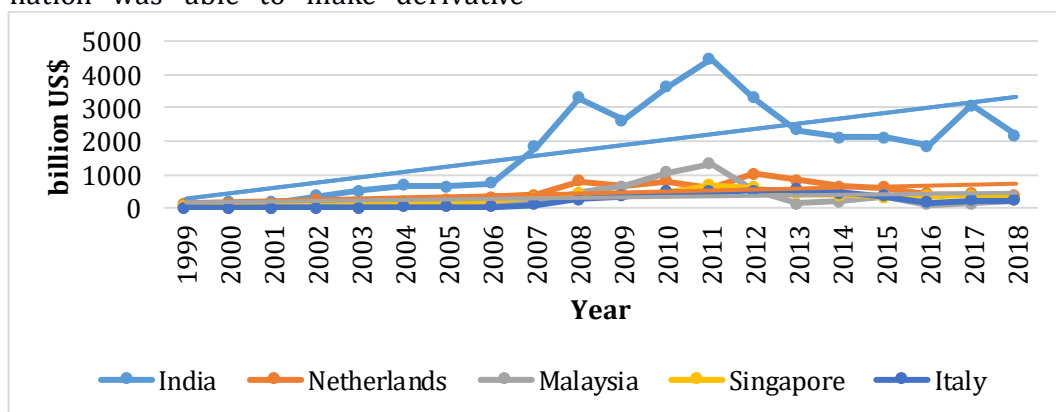
tax (GAPKI, 2017). According to GAPKI (2017) all that was done by the European Union to inhibit imports of palm oil while protecting European vegetable oils. This is one of the causes of the trade war between Indonesia and the European Union.

According to Saptia & Ermawati, (2013), Malaysia is a country that is also a major destination for Indonesia's CPO exports, although in fact Malaysia also plays a major competitor for palm oil producers in the world (the second largest after Indonesia). This is due to the limited land owned by Malaysia, so the expected results are not able to meet the demand for these commodities. Thus, Malaysia must take raw materials from other producing countries, including Indonesia. Singapore and Italy consistently became Indonesian CPO importers by taking 6.7% and 6.2% of total world imports of Indonesian CPO. This is because Singapore did not have land to produce CPO, but this country has quite high demand. By maximizing the resources needed by the state starting from the technology workforce, this nation was able to make derivative

products from palm oil so that they can add to the product value.

In this analysis, the selection of the best model in panel data regression analysis was also performed. A chow test was performed to determine whether the best model in the analysis is the Common Effect Model (CEM) or Fixed Effect Model (FEM) (Widarjono, 2013). The result shows (Table 1) that F value was 0.0000, which means the probability value of  $F < \alpha$  (0.05) and  $H_0$  is rejected so it can be said that the Fixed Effect Model is better than the Common Effect Model. The choice of regression model only reached the Chow test. The panel data analysis method using the Random Effect Model must meet the requirements of the number of cross sections, which should be greater than the number of independent variables (Iqbal, 2015).

The analysis (table 2) shows that the GDP of importer countries had a positive and significant value. As a proxy for economy size of the observed country, GDP denotes the consumption and demand levels of a country and is likely to have a positive relationship



**Figure 1.** Comparison of Indonesia CPO's Export in Five Importer Countries, 1999-2018

Source: (UNComtrade, 2020)

**Table 1.** The result of the analysis to determine the best model

Variable	Common Effect Model	Fixed Effect Model
C	469.4948 <sup>ns</sup>	12,506.12 <sup>***</sup>
GDP <sub>j</sub>	926.6971 <sup>***</sup>	1,703.555 <sup>***</sup>
GDP <sub>i</sub>	-146.8365 <sup>ns</sup>	-43.98652 <sup>ns</sup>
Population <sub>j</sub>	-672.7196 <sup>***</sup>	-5,060.287 <sup>***</sup>
Rate <sub>ij</sub>	968.0319 <sup>***</sup>	1,720.517 <sup>***</sup>
Ecodist <sub>ij</sub>	-15.46405 <sup>ns</sup>	-177.6106 <sup>ns</sup>
RSPO	611.3833 <sup>***</sup>	706.6954 <sup>***</sup>
R <sup>2</sup>	0.749049	0.814703
Adjusted R <sup>2</sup>	0.732858	0.793883
F-test (statistic)	46.26493	39.13106
Chow-Test		0.0000

Source : Secondary Data Analysis, 2020

\*\*\* : Significant at 1%

ns : Not significant

with trade flows (Yang & Martinez-Zarzoso, 2014). The higher the GDP in a country, the level of consumption of these products will also increase. This result is also in accordance with the increasing trend of demand for Indonesian CPO in the five major importing countries, with the highest country was India with 10.14% GDP increase and an average increase in export valuations US\$ 159 million every year (UNComtrade, 2020). The increasing amount from GDP of importer countries leads to higher absorption capacity (Ridwannulloh & Sunaryati, 2018).

The population of Indonesia's main CPO importing country will describe the number of consumers in the importing country. However, the analysis shows that the population of Indonesia's CPO importing country had a negative influence on Indonesia's CPO exports. The impact of population on bilateral trade was ambiguous, it means that population will tend to negatively correlate with trade flows, as larger populations imply larger domestic markets, richer resource endowment and more diversified outputs, as well as less

dependence on international specialization (Yang & Martinez-Zarzoso, 2014). This can happen because oil palm is not directly consumed by the people, but directly goes to the manufacturing sector, or in the importing country there are other vegetable oils from the domestic level that can replace CPO consumption. In the period 1999-2016, the consumption pattern of rapeseed oil in EU increased from 27% to 42%, followed by palm oil (CPO) between 27% and 31% (PASPI, 2018). This reduction in consumption was due to negative European issues towards palm oil. According to (Yonanda & Suhadak, 2017) which were actually based on the high import value of palm oil and low tax rates. It reflects the success of market pressures through the "Palm Oil Free" food policy and affects end consumers in EU (PASPI, 2018).

Exchange rate variable shows a positive and significant effect. These results were supported by the research conducted by Arumta et al. (2019), stating that exchange rate affected the export of a commodity. It can be due to the depreciation of rupiah currency in the



importing country, causing Indonesian products cheaper so that it also increased trade flows. The stability of the real exchange rate of the Indonesian currency against the currencies of other countries is an important condition for Indonesia's CPO trade. (Sari et al., 2014). Hence, a small decrease in foreign trade due to negative effect of nominal exchange rate risk may hinder economic growth (Hasanov et al., 2011). Economic distance variable shows a negative and not significant effect. According to Kabir et al. (2017) there are some items, especially high-end products that are not significantly affected by distance. In India and Singapore, Indonesia's main competitor for CPO is Malaysia (TradeMap, 2020). Although there was no difference in distance between the two countries, Malaysia is superior in diplomacy. With bilateral free trade cooperation between Malaysia and India, CPO and its derivative products from Malaysia where they have the opportunity to attain lower import duties compared to Indonesia (Ministry of

Trade Republic of Indonesia, 2019). In Netherlands and Italy, competing countries having a smaller economic distance from Indonesia are Guatemala and Colombia. That two Latin American countries have an economic distance that is 3 times smaller than Indonesia, so it has the potential to capture the Indonesian CPO market share.

The RSPO dummy variable shows a significant and positive value, meaning that there was no significant difference between CPO exports when the RSPO certification took effect before and after 2008. RSPO-certified palm oil (CSPO) will get a premium price, so the selling value of the certified palm oil will increase. WWF also facilitated the smallholders to join a company to receive technological help and they have sold their RSPO certificate via the Green Palm trading system, which is the channel to the market of sustainable palm oil, and the way to get a premium fee (Hidayat et al., 2015). According to Giannakas and Pulton (in Gassler & Spiller, 2018) if consumers are willing to

**Table 2** The results of the analysis of factors that affect the export of Indonesian Crude Palm Oil (CPO) commodity to importer countries in 1999-2018

Variable	Sign of Expectation	Coefficient	Std. Error	t-count	Prob.
C		12,506.12 ***	3,229.373	3.872614	0.0002
ln GDP <sub>j</sub>	+	1,703.555 ***	564.4572	3.018040	0.0033
ln GDP <sub>i</sub>	+	-43.98652 ns	355.5168	-0.123726	0.9018
ln Population <sub>j</sub>	+	-5,060.287 ***	1,539.951	-3.286005	0.0015
ln Rate	+	1,720.517 ***	385.0409	4.468400	0.0000
ln Ecodist <sub>ij</sub>	-	-177.6106 ns	682.5505	-0.260216	0.7953
RSPO	+	706.6954 ***	197.9834	3.569467	0.0006
R <sup>2</sup>		0.814703			
Adjusted R <sup>2</sup>		0.793883			
Prob (F-statistic)		0.000000			

Source : Secondary Data Analysis, 2020

\*\*\* : Significant at 1%

Ns : Not significant

pay premiums for credence qualities, producers will benefit from higher returns and will have an incentive to change to a more costly production system. RSPO offers an instrument to achieve more environmental sustainability in the oil palm sector, moreover certification can lead smallholders to improve their agronomic practices, thereby reducing small-scale negative environmental impacts, for example, through the correct application of agrochemicals (Brandi et al., 2015).

**Table 3** Fundamental differences in the requirements contained in the ISPO system and RSPO standard

Roundtable on Sustainable Palm Oil (RSPO)	Indonesia Sustainable Palm Oil (ISPO)
<p><b>High Concentration Value (HCV)</b></p> <p>In the RSPO certification system, HCV areas are determined based on the results of an HCV assessment process within a designated area using the 2008 HCV Toolkit issued by the HCV Network in their Revised HCV Toolkit (Indonesia Consortium - see: <a href="http://www.hcvnetwork.org">www.hcvnetwork.org</a>).</p>	<p><b>High Concentration Value (HCV)</b></p> <p>According to Indonesian regulations, up to 25% of an area can be tolerated as not used under a Rights to Use Land License (known as a Hak Guna Usaha). However, the rights holder needs to submit a revision of the land concession according to existing land regulations (Head of BPN Regulation Number 4 of Year 2010, article 20, paragraph 4).</p>
<p><b>Free Prior and Informed Consent</b></p> <p>FPIC has been adopted and modified from the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) into procedures by the RSPO and is used by RSPO member companies as a key part of new plantation development. The UNDRIP has been ratified by the Indonesian government, but Indonesia places emphasis on existing legal provisions that concern the importance of, and respect for, community participation. As part of the FPIC procedures that are used by RSPO member companies, if there is conflict, then the development will be postponed until agreement is obtained.</p>	<p><b>Free Prior and Informed Consent</b></p> <p>Indonesian regulations refer to the importance of a participatory approach and require participatory mapping be conducted with affected parties and with involvement of the local district land office. The local government is involved because land that is controlled by a plantation remains state land. If there is conflict within the area allocated for plantation development, regulations allow for this land to be enclaved and development may proceed whilst the landowner's complaint can be addressed and resolved through a process of consultation, mediation and discussion.</p>
<p><b>New Planting Procedures (NPP)</b></p> <p>In RSPO, NPPs must be carried out before land clearing commences for oil palm plantation development which includes HCV identification, a social impact assessment (SIA), primary forest identification, community and marginal soil land identification, and identification of land areas</p>	<p><b>New Planting Procedures (NPP)</b></p> <p>The ISPO Certification System does not use the NPP of the RSPO but requires companies to undertake an AMDAL (Environmental Impact Assessment - EIA) study in which the requirements concerning environmental protection and relevant community socio-economic</p>



<p>with high carbon stocks. NPP documents are to be placed on the RSPO website for 30 days to allow stakeholders to provide comments.</p>	<p>elements are accommodated and planned for as part of AMDAL.</p>
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Source: (Suharto et al., 2015)

However, in Indonesia itself there are still many problems such as land conflicts (Khor, 2013; Nesadurai, 2013) and environmental practices (Mahat, 2012; Martin et al., 2015; Ruyschaert & Salles, 2014), which is contrary to the principles and criteria in the RSPO. It often becomes an obstacle for some Indonesian CPO products to expand their market share, especially to the European Union market. RSPO in Europe, 11 countries recently have made national commitments from both the governments and industry to import only certified sustainable palm oil (CSPO) by 2020 at the latest (Tey et al., 2020). So, inevitably Indonesia has to adjust its CPO standards to what the EU wants in order to enter the EU market. Being sustainable is probably never about monetary value but more about the responsibility of managing sustainable oil palm plantation and the environment (Salman et al., 2017).

According to Moreno-Peñaranda et al. (2015), even though government are not official members of the RSPO, they play quite a significant role. It means that the closer cooperation between governments and the RSPO the more beneficial for enhancing palm oil sustainability. However, actually Indonesia has had a national standard CPO called Indonesia Sustainable Palm

Oil (ISPO). As a national certification, ISPO is not only provide certification, but also play a role to create some space between various stakeholders, the government, and parties other related. Until August 2017, there were 306 ISPO certificates submitted to 304 oil palm companies, 1 to plasma farmers associations, and 1 to farmer cooperatives independent, with a total of 16.7% of 11.9 million ha of CPO planting area (Erman, 2017). This number is still considered very small because there were several problems impeding the implementation process, such as land legality issues and audit fees (Ivander, 2019). However, ISPO certification is a mandatory standard for governance of oil palm plantations in Indonesia. In India, ISPO has begun to be promoted together with the signing of bilateral cooperation between various organizations from the two countries such as the Indonesian Palm Oil Board (IPOB), The Solvent Extractors Association of India (SEA) and Solidaridad (Bantolo, 2019). In addition, The European Union has given a positive response to ISPO certification, because of the sustainable principles contained in the certification, even the European Union will converge ISPO with the RSPO (Sari et al., 2014). Table 3 shows some fundamental differences in the

requirements contained in the ISPO system and RSPO standard.

Principles of sustainability and social impact found in the RSPO was also found in ISPO (Erman, 2017). According to Suharto et al. (2015) both schemes have their specific characteristics in their principles like in high concentration value area (HCVA), greenhouse gas (GHG) and land ownership. So, even though there are similarities in between the two but essentially not like comparing "apple to apple", the application of ISPO is mandatory for oil palm plantation companies in Indonesia, while the RSPO applies voluntary (Suharto et al. 2015). However, because the scheme is voluntary, its effect may simply be to divert certified palm oil towards consumers in countries with high sustainability standards, leaving the remaining production be sold elsewhere (Mukherjee & Sovacool, 2014). In addition, the some principles of the RSPO, which have not been able to be fulfilled by Indonesia, can be adopted by ISPO standards which are mandatory so that Indonesian palm products can be considered as sustainable and able to expand market share to Europe.

#### **CONCLUSION AND SUGGESTION**

The analysis shows that the variables having a positive and significant impact to Indonesia's CPO exports to the main importing countries were GDP importer countries, exchange rate and RSPO certification, while the importing country's population variable has a negative and significant effect. It confirms that the presence of RSPO certified CPO products will increase Indonesia's CPO exports to major

importing countries. Although the RSPO had an effect on Indonesia's CPO exports, there were still a number of indicators from the RSPO which Indonesia could not be fulfilled. These indicators can be used as a material for consideration to be adopted in national certifications such as ISPO, so that Indonesian CPO products can be sustainable, moreover they can reach wider export markets.

Even though RSPO is voluntary, the RSPO itself opens opportunities for Indonesian CPO products to be accepted in the international market. In addition, the diplomacy carried out by representatives of associations or organizations about aspects of CPO products ranging from price levels and future consumption with EU and roundtables can also be a guideline for the RSPO implementation process in Indonesia. CPO that has been certified by RSPO, can be entitled as sustainable palm oil, so producers can feel assured because of consumer confidence in CSPO products. Besides, although the Indonesian government has also issued ISPO certification, we must realize that both the RSPO and ISPO have the same goal in terms of making sustainable CPO production, so that the existence of these two certifications should further support Indonesian CPO to be able to compete in the global market. .

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