Jurnal Ekonomi Pembangunan
Volume 19 (1): 111-124, June 2021
P-ISSN: 1829-5843; E-ISSN: 2685-0788

Research article

The Competitiveness of Indonesian Crude Palm Oil in International Market

Daeng Ahmad Fakhrian Zuhdi[1]*, Muhammad Faisyal Abdullah[2], M. Sri Wahyudi Suliswanto[2], and Setyo Tri Wahyudi[1]

[1] Department of Economics, Faculty of Economics and Business, University of Brawijaya, Malang, Indonesia
[2] Faculty of Economics and Business, University of Muhammadiyah Malang, Malang, Indonesia
* Correspondence author email: daengrian41@student.ub.ac.id

Article Info: Received: 10 December 2020; Accepted: 30 June 2021; Published: 02 July 2021

Abstract: The purpose of this study was to know the competitiveness of Indonesia's CPO exports in the world and strategies to increase Indonesia's CPO competitiveness. The required data is secondary data from the report of CPO export in Indonesia in 1993-2017. This research-based on the background by the issue of palm oil discrimination by the European Union, where Europe is one of Indonesia's main CPO export destinations. This research uses a qualitative-quantitative approach, analysis with a quantitative approach is used to analyze the comparative advantage of Indonesia's palm oil in the international market used RCA. Analysis with a qualitative approach is used to analyze which strategies will be used to improve the competitiveness of Indonesian palm oil. The results of the study show that in 2017 export performance of Indonesia's palm oil increased. It showed by the value of RCA>1 which is 55,47 and an average of 37,22, Indonesia has the competitiveness of palm oil because of the increased export volume of palm oil to the major importer countries, such as India, Pakistan, and Europe. Indonesia's still competitive in Europe and Asia's market based on the average value of the RCA index.

Keywords: Export, CPO, RCA, Competitiveness

JEL Classification: F1, F14, F23

Abstrak: Tujuan dari penelitian ini adalah untuk mengetahui daya saing ekspor CPO Indonesia di dunia dan strategi peningkatan daya saing CPO Indonesia. Data yang dibutuhkan adalah data sekunder dari laporan ekspor CPO di Indonesia tahun 1993-2017. Penelitian ini dilatarbelakangi oleh isu diskriminasi kelapa sawit oleh Uni Eropa, dimana Eropa merupakan salah satu tujuan utama ekspor CPO Indonesia. Penelitian ini menggunakan pendekatan kualitatif-kuantitatif, analisis dengan pendekatan kuantitatif digunakan untuk menganalisis keunggulan komparatif minyak sawit Indonesia di pasar internasional menggunakan RCA. Analisis dengan pendekatan kualitatif digunakan untuk menganalisis strategi mana yang akan digunakan untuk meningkatkan daya saing minyak sawit Indonesia. Hasil kajian menunjukkan bahwa pada tahun 2017 kinerja ekspor minyak sawit Indonesia meningkat. Hal ini ditunjukkan dengan nilai RCA>1 yaitu 55,47 dan rata-rata 37,22, Indonesia memiliki daya saing minyak sawit karena meningkatnya volume ekspor minyak sawit ke negara-negara importir utama, seperti India, Pakistan, dan Eropa. Indonesia masih kompetitif di pasar Eropa dan Asia berdasarkan nilai rata-rata indeks RCA.

Kata kunci: Ekspor, CPO, RCA, Daya Saing

How to Cite:
Zuhdi, D. A. F., Abdullah, M. F., Suliswanto, M. S. W., & Wahyudi, S. T. (2020). The Competitiveness of Indonesian Crude Palm Oil in International Market. *Jurnal Ekonomi Pembangunan, 19*(1), 111-124. DOI: 10.29259/jep.v19i1.13193.

1. INTRODUCTION

International trade is trading whose activities cross national borders. Trade activities are very important for developed countries like Britain, Germany, Japan, and other developed countries. International trade occurs because of differences in natural resources, climate, and geographical location between countries. Because of these differences, the factors of production vary by country, and not all countries can produce the same goods. These differences encourage countries to carry out international trade with the aim to benefit and fulfill the needs of the country. Activities in international trade in the form of export activities and import activities. Products sold in international trade are goods and services (Tambunan, 2000). Indonesia is an agrarian country with most of its economy supported by the agricultural sector. Where these sub-sectors are plantations that contribute greatly to the Indonesian economy. The plantation sub-sector has a large role in providing employment and economic growth. The growth of the plantation industry is very rapid when viewed from an increase in production and exports. These plantation commodities include rubber, soybean, palm oil, cocoa, tea, and coffee.

Palm oil is one of the largest plantations in Indonesia and makes Indonesia is the largest palm oil producer in the world, the extent of Indonesia's palm oil plantations affects the volume of palm production. This is supported by Indonesia's geographical location in accordance with the requirements of palm oil plants, compared to other plantation crops palm oil has its advantages as a raw material for biodiesel and food. With its ability, palm oil is needed by various types of industries in various countries (Widyaningtyas & Widodo, 2016; Ramadhani & Santoso (2019); and Arsyad et al., 2020). As a leading commodity palm oil has an important role in the Indonesian economy, because palm oil is a labor-intensive and high-value industry, and is a plantation commodity that has an important role in the Indonesian economy (Kementerian Pertanian, 2017). From year to year, Indonesia's palm oil exports are increasing despite having experienced a depression in 2016, besides that the results of the production of palm oil plantations also increased. Palm oil Indonesia has competitiveness, according to Porter competitiveness is the level of productivity which is defined as the output produced by a workforce (Mechael M. Porter, 1990). While according to Tambunan (2000) competitiveness is a distinguishing advantage from the others which consist of comparative advantage and competitive advantage factors (Hapsari & Yuniasih, 2020; and Tambunan, 2000). According to the Directorate General of Plantations, the destinations country for Indonesia's palm oil is India, China, Pakistan, and Europe, it can be said that Indonesia is competitive in the Asian market (Ditjenbun, 2018; Marwa et al., 2018; and Vanzza, Ishak, & Mukhlis, 2019).

Related studies such as that conducted by Nurkhoiry (2017) researching about export competitiveness of Indonesia's palm oil that's aims to measure the competitiveness of Indonesian palm oil by using analysis of Revealed Comparative Advantage (RCA) and Hirschman Herfindahl (HH) Index as indicators of export diversification or concentration. The results show that Indonesia has an increasing market share, but Malaysia has actually declined. With an increase in Indonesia's export share, it has succeeded in increasing market penetration and diversification in exports. During the 2013-2016 period, Indonesia's competitiveness was better when compared to Malaysia (Marwa et al., 2018; and Nurkhoiry, 2017). Then, the study was conducted by Rifin (2010) the analysis of the Export Competitiveness of Indonesia's Palm Oil Product aims to determine the competitiveness of Indonesian palm oil in the Asian, European and African markets, by using the Constant Market Share Analysis (CMSA) analysis tool, states that Indonesia has experienced an increase in exports and a significant market share significant during the 1999-2001 and 2005-2007 periods, the increase was due to increased demand and increased export competitiveness compared to Malaysia as well as a stable situation and trade liberalization implemented in the country thereby reducing barriers in the form of import duties (Rifin, 2010; Yahya & Gunawan, 2019; and Silitonga et al., 2016).

Study by Nayantakaningtyas & Daryanto (2012) researching about the competitiveness and development strategy of palm oil in Indonesia aims to determine the competitiveness of palm oil in Indonesia on the international market and formulate an appropriate strategy to improve

competitiveness, by using RCA analysis tools, Porter Diamond Theory and SWOT to obtain industrial results palm oil and its derivatives have competitive competitiveness derived from supporting factors such as adequate scientific and technological resources (Marwa et al., 2018). This can show that Indonesia has a comparative advantage, but Indonesia's palm oil downstream industry is still unable to compete with Malaysia (Nayantakaningtyas & Daryanto, 2012).

The International Trade Center in 2019 records that the volume of Indonesia's palm oil exports during the 2004-2017 period was always above Malaysia, which can be seen in 2017 Indonesia's palm oil exports amounted to 37,813 million tons while Malaysia amounted to 9,881 million tons. Netherland's total palm oil exports amounted to 1,376 million tons, Guatemala's total palm oil exports amounted to 713 million tons and Colombia's total palm oil exports amounted to 554 million tons. In 2016 Indonesia's palm oil exports had declined due to the decrease in domestic production. This has an effect on palm oil exports to India, considering that India is the largest importer of palm oil in the world, in the study of (Dewanta et al., 2016) Indonesia's palm oil exports to India amounted to 2.95 million tons and Indonesian palm oil has quite a strong competitiveness in the Indian market (Dewanta et al., 2016).

This research will focus on researching the competitiveness of Indonesia's palm oil exports in the international market, as it is known that Indonesia's palm oil exports have experienced considerable pressure several times, such as in 2012 the European government set a high import tax policy for palm oil commodities, especially for oil imports Indonesian palm oil, in early 2017 the European Parliament's passed a resolution on palm oil titled palm oil and rainforest deforestation and in 2018 Europe often launches negative campaigns against palm oil commodities (Suwarno, 2019; and Uli, 2019). Considering Europe as the second largest palm oil importer in the world and as Indonesia's largest palm export destination country and seeing this pressure Indonesia shifts the market share of palm oil in Europe to Asia (India, China, Pakistan) in the hope of maintaining or even increasing the competitiveness of palm oil Indonesia.

This Study is important to Indonesia needs to analyze the competitiveness of palm oil exports in the international market. The competitiveness analysis is useful to find out the strength of Indonesia's palm oil exports amid the pressure exerted by European countries to further determine what strategies and policies will be taken by the government and palm oil industry players to improve the performance and competitiveness of Indonesia palm oil in the future. In shorter, this study aims to: (1) to analyze the position of the competitiveness of Indonesian palm oil in the international market; (2) to know the difference between Indonesia's competitiveness and Malaysia as the world's largest exporter of palm oil; and (3) to find out what strategies will be used to improve the competitiveness of Indonesian palm oil.

2. RESEARCH METHODS

2.1. Data

This research was conducted in Indonesia by using descriptive methods that aim to make a systematic picture. This study uses secondary data that contains data on exports and imports of CPO commodities with the HS 1511 code from the International Trade Center and the total exports of a country. The type of data taken is time-series data, to determine the development of palm oil trends in 24 years (1993-2017), this research was conducted in Indonesia with 4 of the largest palm oil-exporting countries in the world, namely Malaysia, the Netherlands, Colombia, and Guatemala.

2.2. Revealed Comparative Advantage Method

There are several indicators to determine competitiveness, according to Porter (2007) competitiveness is identified with productivity where the level of output produced for each unit and input used. One approach that is often used to measure the competitiveness of a commodity is the comparative advantage method (Michael M. Porter, 1990). Competitiveness can be calculated using Revealed Comparative Advantage (RCA) and the index of trade specialization. This study uses the analysis Revealed Comparative Advantage (RCA) method to determine the competitiveness of

Indonesian palm oil in the international market. The RCA method is used to see the share of a country's commodity exports to the share of those commodity exports from around the world.

This index can also show the export market position of a commodity produced by a country in the world market (Tambunan, 2000). RCA index value between 0 and greater than 0. A value of 1 is considered to be a country that has competitiveness while values below 1 are considered to have competitiveness above the world average or have comparative advantages while values less than 1 are considered to have competitiveness which is bad or has no comparative advantage. The magnitude of the RCA Index can be calculated using the formula:

$$RCA = \frac{X_{ij}/X_{it}}{W_j/W_t} \quad (1)$$

Where: RCA is Revealed Comparative Advantage for palm oil commodity; X_{ij} is value of Indonesian palm oil export; X_{it} is total value of Indonesian export; W_j is value of global palm oil export; and W_t is total value of global export.

2.3. SWOT Analysis

SWOT analysis is used to determine the internal and external factors of the palm oil industry in Indonesia to develop a profitable palm oil business strategy (Rangkuti, 2006). Alternative strategies are generated through the SWOT matrix. The strategy that has been formulated based on the SWOT analysis, is then determined in a strategic architecture. Strategic architecture is beneficial for the Indonesian palm oil industry to formulate a strategy into plans to achieve the objectives of the Indonesian palm oil industry.

3. RESULTS AND DISCUSSION

3.1. Profile of the Indonesian Palm Oil Industry

The palm oil industry in general is an industry that has existed since the Dutch colonial era, the colonial government made palm oil a supplier of needs. Natural conditions in Indonesia that support the survival of palm oil plants, Indonesia itself has palm oil land which is spread almost on all islands. There are 4 largest provinces as centers for palm oil plantations in Indonesia, including North Sumatra, Riau, Central Kalimantan, and South Sumatra. Palm oil plantations are currently spread across 25 of 34 provinces in Indonesia. Kalimantan and Sumatra as centers of oil palm plantations in Indonesia with an area of 94.61 percent of the area of oil palm plantations and the two islands produce 96.43 CPO production in Indonesia. There are 4 largest provinces as the center of the oil palm plantation industry including North and South Sumatra, Riau, and Kalimantan. While oil palm plantations are spread in 25 provinces in Indonesia. Almost all of Indonesia's oil palm plantations are at an altitude of no more than 500 meters above sea level. According to the Central Statistics Agency in 2017 there is an area of Non-Producing Plants (TBM) and Non-Producing Plants (TTM) of oil palms of 22.67 percent and 1.39 percent, while for oil-producing Plants (TM) of oil palms there are 75.94 percent of the total area of oil palm plantations Indonesia. It can be said that Indonesian oil palm plantations have an area of land producing approximately 98.61 percent of all oil palm plantations in Indonesia.

The total area of palm oil plantations in Indonesia continues to increase until 2017 with an area of 14 million hectares, with a production yield of 37 million tons. The increase was caused by the large demand for palm oil both domestically and abroad. Based on data from the Directorate General of Plantations in 2018 the highest level of land productivity for palm oil in 2017 is in Sumatra province at 3,107 kg/ha followed by Maluku and Papua provinces at 3,047 kg/ha, Sulawesi province at 2,947 kg/ha, Kalimantan at 2,613 kg/ha, and Java with 1,744 kg/ha. To get quality palm oil processed products and good production performance, the process depends on the access of available roads and means of transportation. All fresh fruit bunches (FFB) that have been harvested from the garden are sent directly to the palm oil factory or PKS within 24 hours. Therefore, the crude

palm oil (CPO) produced from the company's PKS will have good quality. There are several types of transportation used in the transportation of FFB including land transportation which consists of tractors, trucks, dump trucks, train transportation, and water transportation. The factory must be close to palm oil plantations, so the shipping process does not take too long.

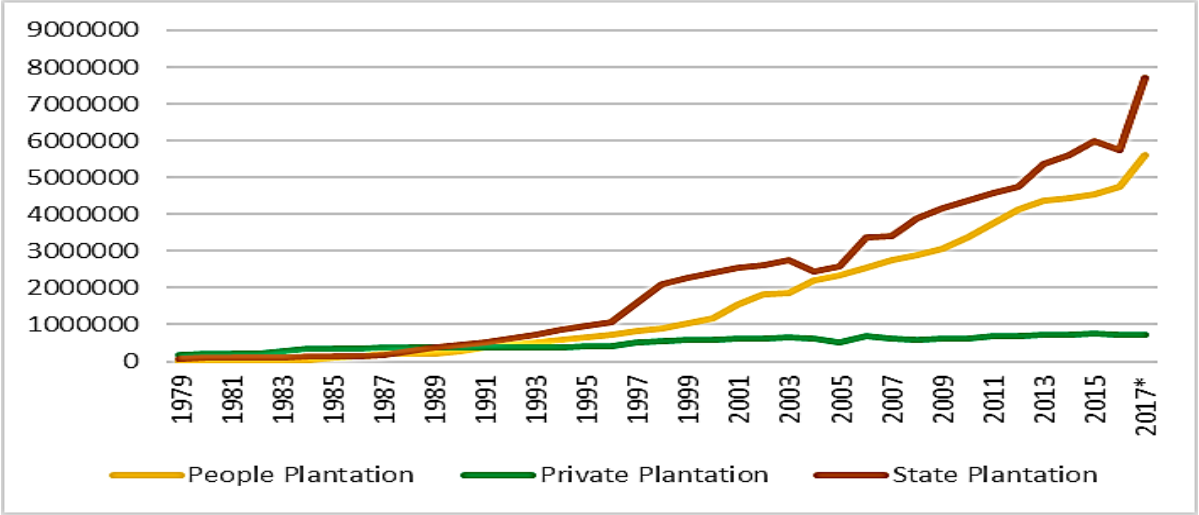

Figure 1. Development of Indonesian Palm Plantation Land
Source: Ditjenbun, (2018)

The Technology and Application of Technology Agency or BPPT have developed a mini-palm oil factory technology to help palm oil farmers to produce their CPO. Several organizations are supporting the success of palm oil in Indonesia such as MAKSI, GAPKI, APKASINDO, each of which has its vision and mission in helping the achievement of the Indonesian palm oil industry (DMSI, 2019).

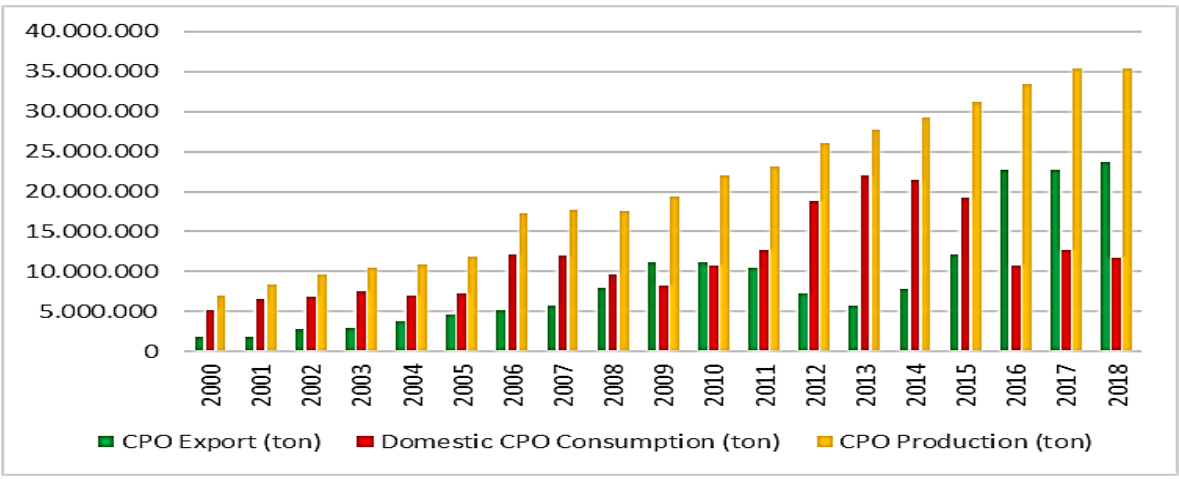

Figure 2. Development of Indonesia's CPO Production, Exports and Consumption
Source: Ditjenbun (2018)

According to (Susanto, 2011) the increase in domestic CPO consumption is due to the increasing need for palm oil in the community. This is because CPO is the main raw material for the cooking oil industry. Evidenced by the many brands of cooking oil that has to pop up in Indonesia. The increase in domestic CPO consumption is supported by the existence of the National Medium-Term Development Plan or RPJMN as set out in the National Industrial Development Policy stipulating that CPO-based industries as priorities for development can be carried out which development can be carried out by cluster approach (Indonesian Ministry of Industry, 2009).

Supporting industries and related industries that have a dependence on the CPO industry in Indonesia will affect the global competitiveness of the palm oil industry, such as the upstream

industry which has international competitiveness can supply raw materials for downstream industries with good quality and lower prices. Likewise, the presence of supporting industries will make CPO competitiveness better. Indonesia has a lot of palm oil business people on PBN, including PT. State Large Plantation (PT PN). While business people at PBS are Indofood Bakrie Sumatera Plantation, Agro Astra Lestari Negara, Sinarmas, Sampoerna agro, and many others.

The role of the government in providing credit assistance and the construction of mini PKS as well as the existence of mini research as a support for the downstream palm oil industry development program or IHKS. Not only providing assistance, the government also standardizes the quality of sustainable palm oil products in the form of RSPO or ISCC and there are incentives from the Government for CPO downstream industry players, this is done in an effort to increase the enthusiasm of industry players to increase downstream production. As well as through legislative policies the government also supports CPO and its derivatives industry.

The results of the development of science and technology resources and supporting industries have been able to fulfill the demand and support the development of CPO production and marketing strategies so that the demand for palm oil in the world is high and Indonesia is the largest producer and exporter of palm oil in the world since 2007 defeating Malaysia (International Trade Centre, 2019b). In 2009 Indonesia controlled 85 percent of world palm oil production (Nayantakaningtyas, 2012b). At present Indonesia and Malaysia are still the top two countries in the world palm oil industry, and the export share of the two countries can reach 85-90 percent of the world market (Yahya & Gunawan, 2019).

3.2. RCA Analysis

Revealed Comparative Advantage analysis (RCA), this analysis is used to determine the competitiveness of Indonesia's exports during the 1993-2017 period. Based on the results of the analysis is obtained in Figure 3. Based on Figureic 3 it can be seen that the competitiveness of Indonesian CPO in the world market during the period 1993-2017 quite fluctuating with an average of 37.22, which means that Indonesia's CPO exports have a comparative advantage above the world average. In more detail, it can be explained as follows.

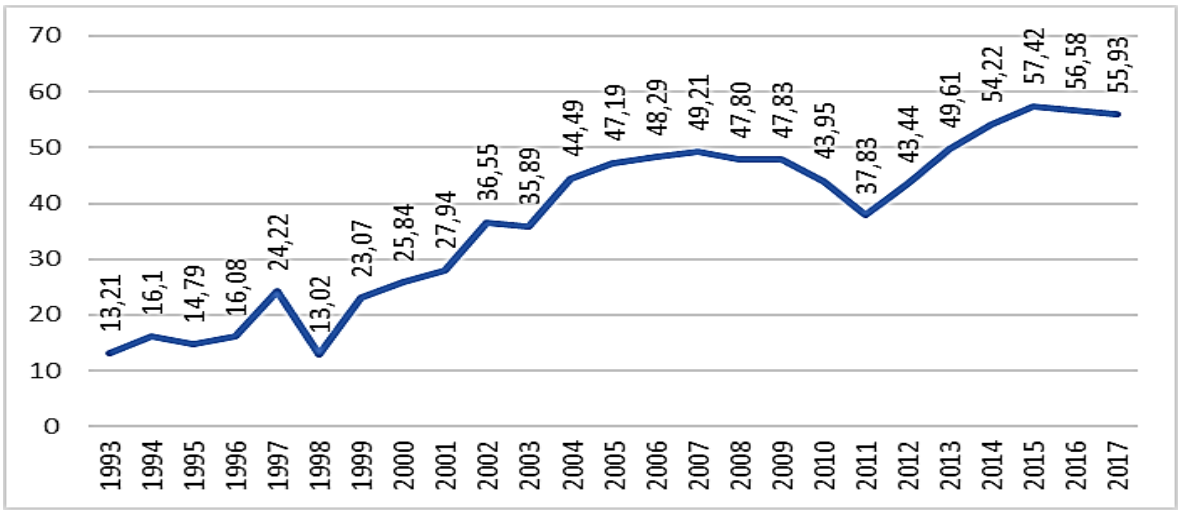

Figure 3. RCA Value of the 5 Largest Palm Oil Exporting Countries
Source: International Trade Centre (2019)

In the 1993-2005 period the average Indonesian CPO RCA of 26.03 was more than 1, it can be said that during this period Indonesia's CPO export competitiveness was above the world average. If we see that the development of Indonesian RCA from year to year has fluctuated and tends to increase, it is seen that in 1993 the initial value of RCA Indonesia was more than one. However, in 1998 Indonesia experienced an economic crisis where the value of RCA also decreased from 24.22 to 13.02 which caused the performance and competitiveness of Indonesian CPO to weaken in that year and also made the lowest RCA value among other years.

The decline in the RCA index caused by the economic crisis in 1998 led to a decline in exports of Indonesia's palm oil commodity, where the price of Indonesian CPO became more expensive and caused demand for palm oil exports to decline than usual. However, after the crisis in 1998, Indonesia succeeded in doubling the total value of CPO exports in 1999, which doubled to 3,298,986,259 kg with a value of US $ 111,424,2403. Indonesia's CPO export share has also increased so that the RCA value of Indonesia's CPO increased to 23.07 in 1999. In the period 2006-2017 the average RCA CPO value was 49.34 and the figure is more than one which indicates that the period has competitiveness CPO exports are above the world average. If we see that the development of Indonesian RCA from year to year has fluctuated and tends to increase, seen in this period in 2006 the Indonesian RCA index has been more than one. But in 2008 the Indonesian RCA index decreased to 47.80, the decline caused the performance and competitiveness of Indonesia's CPO exports to weaken. The decrease was caused by the global economic crisis that occurred in 2008.

Indonesia's RCA value had decreased again in 2011 to 37.83 and there was a significant increase in the following years. According to GAPKI (2015) the demand for vegetable oil from year to year, including palm oil, will continue to increase because along with the increase in population and the increasing awareness of the world community to use green energy by using biofuels. Unlike the competitiveness of Malaysian palm oil which can be seen in Figure 3, the RCA value of Malaysian palm oil tends to fluctuate and experiences the highest increase in 1998 with a value of 48.17 and the lowest RCA value is found in 2017 which is 22.76. The average Malaysian RCA value for the period 1993-2017 was 35.35, which means more than 1. The Malaysian trend line tends to decrease. This is because Malaysia is more focused on exporting palm oil derivative products rather than exporting crude palm oil. As a competitor of Indonesian palm oil, Malaysia still has strong competitiveness in the international market but is still inferior to Indonesia because the Malaysian RCA value is lower than Indonesia.

From the four countries that had become rivals of Indonesia's CPO export, Malaysia was currently in a trendline that tended to decline. This is because Malaysia is more focused on exports of palm oil derivative products rather than exporting crude palm oil, while Indonesia, although it focuses on exports of palm oil derivative products, also does not reduce exports of upstream products. Malaysia's competitiveness is also strong in the international market, but it is still superior to Indonesia's competitiveness, this can be seen from Indonesia's RCA index which is higher than Malaysia.

The RCA value of Indonesian palm oil tends to fluctuate and experiences the highest increase in 1997 but then drops to 13.02 in 1998. After that, the RCA value of Indonesian palm oil tends to increase to the highest level of 36.55 in 2002 and falls again to 35, 89 in 2003. Then the Indonesian palm oil RCA value increased and reached its highest level of 57.42 in 2015 but fell back in 2016 to 56.58 and fell again to 55.93 in 2017. Based on the Figure above the RCA index Indonesia has begun to outperform four countries since 2004, with an average index of 37.22. An RCA value of> 1 indicates that Indonesia's CPO has a comparative advantage above the world average.

Unlike the competitiveness of Malaysian palm oil which can be seen on Figure 4, the RCA value of Malaysian palm oil tends to fluctuate and has a downward trend. The highest increase was in 1998 with a value of 48.17 and the lowest RCA value was found in 2017 which was 22.76. The average Malaysian RCA value for the period 1993-2017 is 35.35 which means more than 1. Guatemala has the highest RCA value in 2017 that is equal to 20.68 and the lowest RCA value in 1993 was 0.14. Although Guatemala only had competitiveness in 1995, the average value of the Guatemala RCA was 8.78 during the 1993-2017 period. This shows that the Netherlands has an advantage above the world average. This shows that Guatemala has competitiveness although it is still below the RCA values of Indonesia and Malaysia. Then the average RCA value of Colombia is 2.91 during the 1993-2017 period which means more than 1. It can be said that the comparative advantage of Colombia's CPO is above the world average even though it only had competitiveness in 1995 Colombia had the highest RCA value in 2004 worth 5.45 and the lowest in 1993 worth 0.19. It can be said that Guatemala has competitiveness although it is still below the RCA values of Indonesia, Malaysia, and Guatemala.

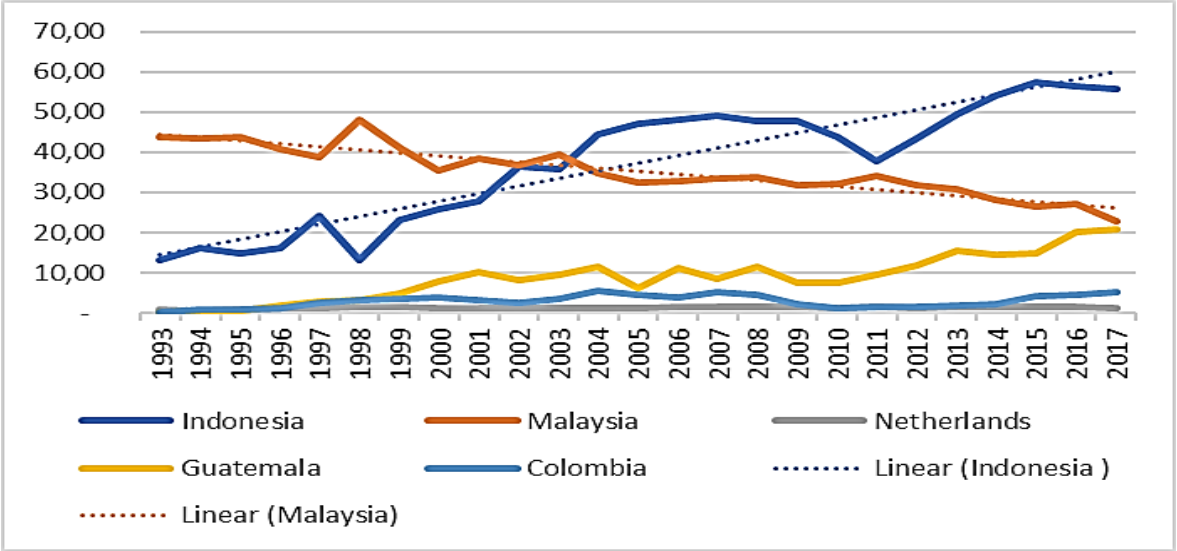

Figure 4. Comparison of Indonesian CPO RCA with 4 Largest Exporting CPO Countries
Source: International Trade Centre (2019)

The average RCA value of the Netherlands during the 1993-2017 period was 1.25, this figure was greater than 1. The largest RCA value in the Netherlands was in 2006 and 2008 which was 1.62 and the lowest in 1994 with a value of 0.62. Colombia has an advantage above the world average, but no bigger than Indonesia, Malaysia, Guatemala, and Colombia. The four countries that had been Indonesia's CPO export rivals, Malaysia was currently in a trend line that was declining. This is because Malaysia is more focused on exports of palm oil derivative products rather than exporting crude palm oil, while Indonesia, although it focuses on exports of palm oil derivative products, also does not reduce exports of upstream products. Malaysia's competitiveness is also strong in the international market, but it is still superior to Indonesia's competitiveness, this can be seen from Indonesia's RCA index which is higher than Malaysia. The difference in comparative advantage in palm oil products in the two countries is because Indonesia before 2005 could not yet rely on downstream products that have higher values than upstream products. At present, Indonesia is trying to develop and increase palm oil downstream through several policies, such as the Indonesian Sustainable Palm Oil (ISPO) policy, setting export BK, and developing the downstream palm oil industry.

Based on the results, it can be seen that Indonesia's CPO has very strong competitiveness in the international market. With an average RCA value of Indonesian palm oil of more than 1 which is equal to 37.22 so that it can be said that Indonesian CPO has a comparative advantage or high competitiveness in the international market. There are several supporting factors that make Indonesia the highest CPO export competitiveness country in the world, including Indonesia's exports have always been superior to the four countries since 1993, which has led to a high export value. In addition to these advantages, it is also caused by the world price of CPO which tends to increase, causing motivated palm oil producers to trade in international markets. The increasing volume of CPO exports also affects the amount of production and area of oil palm land in Indonesia.

The difference in comparative advantage in palm oil products in the two countries is because Indonesia before 2005 could not yet rely on downstream products that have higher values than upstream products. At present, Indonesia is trying to build and increase palm oil down streaming by implementing a number of policies and developing supporting infrastructures, such as the policy Indonesian Sustainable Palm Oil (ISPO), setting cheaper export duties, developing several infrastructures such as building roads for palm oil transportation, and the construction of ports for export activities, this is done to improve the performance of downstream industries. This research is also in line with research that has been done by several previous researchers, including the research of Samudera, Nayantakanintyas, & Daryanto (2012), Ashiqin & Widyatutik, (2011), Astrini, (2015), and M. Affendy Arip (2013) who states when viewed from the value of RCA Indonesia has a comparative advantage for palm oil commodities.

The RCA value of Indonesian and Malaysian palm oil tends to be volatile and Indonesia has increased while Malaysia has decreased. Indonesia's RCA value has started to outperform Malaysian RCA since 2004, with an average index of 37.22. An RCA value greater than 1 indicates that Indonesian CPO has a comparative advantage above the world average.

3.3. SWOT Analysis

SWOT analysis is a strategic analysis that is very important to find out internal weaknesses and strengths as well as external threats and opportunities to determine the formulation of strategies and policies that are appropriate in developing and improving the competitiveness of Indonesian CPO. The formulation of this strategy is obtained from several combinations of several SWOT factors. After finding the factors that can affect the competitiveness of Indonesia's palm oil exports, a matching process is then carried out to obtain a strategy that suits the conditions of the palm oil industry in Indonesia. Following are the results of the formulation of a SWOT matrix for the Indonesian palm oil industry.

3.3.1. SWOT Identification

Stage This stage identifies Strengths, Weakness, Opportunities and Threats, Strengths and Weakness factors in internal companies. Internal circumstances include all activities that occur within the company. While Opportunities and Threats factors can be obtained from activities outside the industry, including the global environment. From this research, a weighting analysis is presented in the Internal Strategic Factor Analysis Summary (IFAS) in Table 1.

Table 1. Identification of Strengths and Weaknesses

Strategy of Internal Factors	No	Information	Weight	Rating	Weight x Rating
Strength	1.	Nature conditions and the support land area.	0.15	3	0.45
	2.	CPO products international standard	0.15	4	0.60
	3.	Promotion through various media.	0.20	4	0.80
	4.	Has a high comparative advantage.	0.10	4	0.40
	5.	CPO has a high value added compared to other vegetable oils.	0.20	3	0.60
Subtotal			0.80		2.85
Weakness	1.	The least skilled labor.	0.05	1	0.05
	2.	Limitations of venture capital.	0.05	2	0.10
	3.	Not to inadequate infrastructure.	0.03	2	0.06
	4.	Lack of coordination between supporting institutions	0.02	1	0.02
	5.	Many entrepreneurs who have EIA document but still cannot apply it.	0.05	1	0.05
Subtotal			0.20		0.28
Subtotal (+)			1.00		3.13

Source: Authors calculation

After internal strategic factors such as strengths and weaknesses are identified in Table 1, we also need to place a weighting on an EFAS (External Strategic Factors Analysis Summary) table. The weighting in the EFAS table aims to formulate the external strategy in the framework of Threats and Opportunities as described in Table EFAS 2.

The next step is to formulate a strategy based on factors that have been analyzed previously strengths, weaknesses, opportunities and threats. The SWOT matrix is an analytical tool in formulating strategies for developing the Indonesian palm oil industry. By using a combination of several SWOT factors. The strategies generated using the SWOT matrix consist of SO strategies (use of strengths from the Indonesian palm oil industry to take advantage of existing opportunities, WO strategies (take advantage of opportunities to minimize the weaknesses of the Indonesian palm oil

industry), ST strategies (use of the strengths of the Indonesian palm oil industry to overcome threat), and WT strategy (minimizing weaknesses to avoid threats from the external environment) The following is the result of the formulation of a SWOT matrix for the Indonesian palm oil industry.

Table 2. Identification of Opportunities and Threats

Strategy of External Factors	No.	Information	Weight	Rating	Thickness x Rating
Opportunity	1.	There were contributions of institutions MAKSI, APKASINDO, PPKS and R&D	0.10	3	0.30
	2.	Providing incentives for downstream palm oil industry	0.10	2	0.20
	3	Oil refined products growing much in demand by consumers	0.25	4	1.00
	4.	Potential development of downstream palm oil industry is very large	0.10	2	0.20
	5.	Policies that support the downstream industry	0.10	3	0.30
Sub-total			0.65		2.00
Threats	1.	There is a negative issue regarding producers of CPO (global warming)	0.10	3	0.30
	2.	There is a strong competitor country	0.10	1	0.10
	3.	Intense competition with other vegetable oils	0.05	1	0,05
	4.	There is a threat of reducing Indonesia's CPO exports to Europe	0,05	2	0,10
	5.	Political, policy and national security stability	0.05	3	0.15
Subtotal			0.30		0.70
Subtotal (+)			1.00		2.70

Source: Authors calculation

3.3.2. SWOT Strategy

Based on the SWOT matrix in Table 2, a variety of strategies are obtained that refer to the strengths, opportunities, opportunities and threats that have been identified. Following is the explanation of the strategies obtained from the SWOT matrix:

1. S-O Strategy

This strategy was formulated with consideration to make the strength of the Indonesian palm oil industry turn it into an opportunity. The following strategies were obtained:

- Develop a marketing system for Indonesian palm oil industry products.
- Develop downstream industries and increase CPO added value.

2. S-T Strategy

- Paying attention to national and international issues by improving existing policies.
- Maintaining and expanding market share by increasing production and exports and CPO quality.

3. W-O Strategy

- Developing human resources by providing training and innovation
- Add and improve supporting infrastructure for the palm oil industry
- Increase exports of downstream products
- EIA guidance and supervision

4. W-T Strategy

- Utilization of exports to countries that need upstream products
- Improved coordination and cooperation with fellow palm-producing countries

Table 3. SWOT Matrix of Indonesian Palm Oil Industry

SWOT Analysis	Strengths (S)	Weaknesses-W
internal / External	1. Palm oil has technical advantages compared to other vegetable oils 2. CPO products have national and international standards 3. Having high comparative advantages 4. Conditions of land area that support	1. Exports in the form of upstream products that are of low value. 2. Limited expert labor. 3. Lack of infrastructure. 4. Many oil palm entrepreneurs have document AMDAL but still can't implement it.
Opportunities (*O*)	S-O Strategy	W-O Strategy
1. Incentives from the government for downstream palm oil entrepreneurs. 2. Development trends of palm oil-based products both food and non-food 3. Government Policies 4. Supporting Industry	1. Improves the marketing system of CPO 2. Downstream industry development and increasing value-added palm oil	1. for Human Resources Development 2. Addition and improvement of Infrastructure 3. Increase exports of downstream products 4. Guidance and supervision of AMDAL
Threats (T)	S-T Strategy	W-T Strategy
1. *Negative Campaign* for CPO Products 2. There are competing countries 3. Competition between vegetable oil producers 4. Weak coordination between stakeholder institutions 5. Political, security and policy stability 6. Reduction of Indonesian CPO exports to Europe	1. Against *Negative campaigns* by improving government policies 2. Maintaining and expanding market share	1. Utilizing exports to countries requiring upstream products, such as India. 2. Choir improvement palm oil producing countries

Source: Authors calculation

3.3.3. Strategy Formulation of Indonesia's CPO Competitiveness Development

1. Target development of Indonesian CPO:
   CPO Referring to the process of establishing Indonesia as a superior product and Roadmap an increase in industrial cluster priorities for 2010-2014, obtained the Indonesian palm oil industry development objectives are:
   - Medium-term 2010-2014
     (a) CPO processing industry cluster established in North Sumatra and Riau.
     (b) In the processed coconut becomes a processed coconut product that has high added value.
   - Long-term 2015-2025
     (a) Expansion of downstream products.
     (b) Market share expansion.
     (c) Improve industries that pay attention to EIA.
     (d) Integrated palm oil industry in eastern Indonesia.

2. Challenges in developing the palm oil industry:
   Based on the SWOT analysis above, it can be seen that there are several challenges that must be faced by the Indonesian palm oil industry including:
   - Lack of integration between industry players and downstream industries, which results in less efficient and less competitive values.
   - Negative issues such as the process of producing palm oil as a cause of deforestation (the process of removing natural forests for production land) were launched by the European Union in Parliament's plenary in April 2017.
   - Inadequate industrial supporting infrastructure such as access roads, rail transport ports, and electricity.

3. Plans for developing and enhancing the competitiveness of Indonesian CPO:
   The formation of strategies is poured into the Indonesian CPO competitiveness development program obtained from the SWOT analysis. The preparation of this program is based on consideration of the targets and challenges faced by the Indonesian palm oil industry. The following are a number of programs that need to be implemented to develop and improve Indonesia's CPO competitiveness:
   - Developing a marketing system for palm oil industry products with programs such as workshops, seminars that encourage the role of institutions related to marketing.
   - Developing downstream industries into national priority sectors to increase added value by collaborating R&D with research institutions, universities, and other supporting industries. This is done in order to increase innovation in the diversity of oleochemical products that have high selling points and build downstream industry clusters.
   - HR development through training and innovation activities such as providing education, training and apprenticeship programs.
   - Add and improve existing infrastructure to increase integration between the palm oil processing industry.
   - Increase exports of downstream products such as surfactants, lubricants and biodiesel.
   - Improve policies to address negative issues. This can be done by increasing coordination and synergy between relevant agencies (government, associations, PT and R & D) in determining policies.
   - Utilization of upstream products by exporting to countries that are more in need by utilizing product quality improvement in accordance with SNI.
   - Increase cooperation with other countries' producers through promotions such as participating in exhibitions and seminars on the Indonesian Palm Oil Conference (IPOC) and the International Conference & Palm Oil Exhibition.

In facing the competition of CPO in the world market of Indonesian industry, it should improve the quality of CPO by paying attention to the quality of national standards, Indonesia and ISPO develop the quality of the key and supporting industries and train human resources by providing innovation and training. Prioritizing the production of palm oil that is environmentally friendly, as well as government support through policies such as the RSPO, ISPO. As well as increasing cooperation between palm exporting countries in the world. The results of this study are also the same as the research conducted by Sari, (2008); Siregar, (2015), and also (Indonesian Ministry of Industry, 2019), which confirmed its commitment to make the CPO downstream industry a national priority sector.

4. CONCLUSIONS

The palm industry has high comparative advantages and competitive advantages. This can be shown from the results of the calculation of more than one RCA value, namely with an average of 37.22 during the 1993-2017 period, this figure shows Indonesia's palm oil has a comparative

advantage in the international market. It is said to have a competitive advantage because of the role of science and technology resources that support the improvement of palm oil competitiveness with research conducted by supporting research institutions and assistance from associations and related industries. In addition, palm oil has weaknesses or inhibiting factors to increase the competitiveness of Indonesian palm oil such as the unavailability of supporting facilities in several regions in Indonesia. From the description above, it can be said that Indonesia as the world's largest palm oil exporter has strong competitiveness and can compete well with other competing countries, especially Malaysia.

The results of the SWOT analysis can be concluded that to maintain and improve export competitiveness it is necessary to know and understand environmental factors that affect the performance of the palm oil industry. Indonesia has the opportunity to improve the competitiveness of its palm oil including; Optimizing palm oil plantation land and developing upstream and downstream industries, to meet national and international demand; Conduct research to improve the productivity and quality of palm oil to maintain and increase demand; Empowering the human resources of the palm industry with training and R&D activities to increase creativity and foster innovations; Development and supervision of EIA to reduce pollution and even environmental damage; reconstructing and adding infrastructure to reduce logistics costs in transporting export products; Utilization of upstream products by exporting to more countries; Improving policies to overcome negative issues by increasing coordination and synergy between relevant agencies and other world palm exporting countries. The Indonesian government can pay more attention to environmental issues in the palm oil industry so that it can create an environmentally-friendly palm oil industry. Because the challenge faced by the Indonesian palm oil industry today is to produce palm oil and its derivatives that are environmentally friendly. One of the actions taken by the government is strengthening environmental standards in Indonesia Sustainable Palm Oil (ISPO), which is the national standard for Indonesian palm oil.

REFERENCES

Arsyad, M., Amiruddin, A., Suharno, S., & Jahroh, S. (2020). Competitiveness of Palm Oil Products in International Trade: An Analysis between Indonesia and Malaysia. *Caraka Tani: Journal of Sustainable Agriculture, 35*(2), 157-167. http://dx.doi.org/10.20961/carakatani.v35i2.41091.

Bustaman, S. (2009). Strategi Pengembangan Industri Biodiesel Berbasis Kelapa di Maluku. *Jurnal Litbang Pertanian, 28*(2), 46-53.

Departemen Perindustrian. (2009). *Peta Panduan (Road Map) Pengembangan Klaster Industri Prioritas Tahun 2010-2014*. Jakarta: Departemen Perindustrian.

Dewanta, A. S., Arfani, R. N., & Erfita. (2016). Elasticity and Competitiveness of Indonesia's Palm Oil Export in India market. *Economic Journal of Emerging Markets, 8*(2) October 2016, 148-158. https://doi.org/10.20885/ejem.vol8.iss2.art7.

Direktorat Jenderal Perkebunan. (2018). *Statistik Perkebunan Kelapa Sawit Indonesia*. Jakarta: Direktorat Jenderal Perkebunan. www.ditjenbun.pertanian.go.id

Dewan Minyak Sawit Indonesia. (2019). *Tentang Dewan Minyak Sawit Indonesia*. Jakarta: Dewan Minyak Sawit Indonesia. http://dmsi.or.id/index.php/public/profil/detail/1.

Hapsari, T., & Yuniasih, A. (2020). The determinant factors of Indonesian competitiveness of cocoa exports to Germany. *Jurnal Ekonomi Pembangunan, 18*(1), 75-84. doi:https://doi.org/10.29259/jep.v18i1.9978.

International Trade Centre. (2019a). *Comtrade Explorer Palm Oil Sector*. Jenewa, Swiss: International Trade Centre.

International Trade Centre. (2019b). *United Nations Comtrade Database*. Jenewa, Swiss: International Trade Centre.

Kementerian Pertanian. (2017). *Outlook 2017 Kelapa Sawit*. Jakarta: Kementerian Pertanian.

Marwa, T., Abukosim., Mukhtaruddin., Bashir, A., & Thamrin, K.M.H. (2018). Market Integration of Palm Oil in South Sumatera. *Proceedings of the 4th Sriwijaya Economics, Accounting, and Business*, p. 432-438.

Nayantakaningtyas, J. S., & Daryanto, H. K. (2012). Daya Saing dan Strategi Pengembangan Minyak Sawit di Indonesia. *Jurnal Manajemen & Agribisnis, 9*(3), 194-201. https://doi.org/10.17358/jma.9.3.194-201

Nurkhoiry, R. (2017). EXport Competitiveness of Indonesia's Palm Oil. *Jurnal Penelitian Kelapa Sawit, 25*(2), 105-116. https://doi.org/10.22302/iopri.jur.jpks.v25i2.29

Porter, M. (1998). *The Competitve Advantage of Nation*. United State: Free Press

Prers Kemenperin. (2019). *Kemenperin dan Pelaku Industri Berupaya Dongkrak Harga CPO Internasional*. Jakarta: Kemenperin.

Ramadhani, T., & Santoso, R. (2019). Competitiveness Analyses of Indonesian and Malaysian palm Oil Exports. *Economic Journal of Emerging Markets, 11*(1), 46-58. https://doi.org/10.20885/ejem.vol11.iss1.art5.

Rangkuti, F. (2006). *Analisis SWOT Teknik Membedah Kasus Bisnis*. Jakarta: Gramedia Pustaka Utama.

Rifin, A. (2010). Export Competitiveness of Indonesia's Palm Oil Product. *Trends in Agricultural Economics*, *3*(1), 1–18. https://doi.org/10.3923/tae.2010.1.18

Sari, D. M. (2008). *Analisis Daya Saing dan Strategi Ekspor Kelapa Sawit Indonesia di Pasar Internasional*.

Silitonga, R. Y. H., Siswanto, J., Simatupang, T., & Bahagia, S. N. (2016). Modeling Policy Mix to Improve the Competitiveness of Indonesian Palm Oil Industry. *Journal of Industrial Engineering and Management, 9*(1): 231-253. http://dx.doi.org/10.3926/jiem.1582.

Siregar, F. (2005). Strategi Pengembangan Biodiesel Berbasis CPO di Indonesia. *Studi Manajemen Agribisnis*.

Susanto, R. (2011). *Analisis Penawaran dan Permintaan Minyak Sawit Indonesia : Dampaknya Terhadap Industri Minyak Goreng Indonesia*. Jakarta: Universitas Indonesia.

Suwarno, W. (2019). Kebijakan Sawit Uni Eropa dan Tantangan bagi Diplomasi Ekonomi Indonesia. *Jurnal Hubungan Internasional, 8*(1), 23-34. doi:https://doi.org/10.18196/hi.81150

Vanzza, A. R., Ishak, Z., & Mukhlis, M. (2019). Analisis Komparatif Daya Saing Ekspor Biji Kakao antara Indonesia, Pantai Gading dan Ghana: Pendekatan RCA dan CMS. *Jurnal Ekonomi Pembangunan, 15*(2), 69-84. doi:https://doi.org/10.29259/jep.v15i2.8832

Tambunan, T. (2000). *Perdagangan Internasional dan Neraca Pembayaran. Cetakan Pertama*. Jakarta: LP3ES.

Uli, U. (2019). Buntut Kampanye Hitam, Ekspor CPO RI ke Uni Eropa Anjlok. Jakarta: CNN Indonesia.

Widyaningtyas, D., & Widodo, T. (2016). Analisis Industry's Competitiveness pada Crude Palm Oil Indonesia. *Journal of Applied Business and Economics, 3*(1), 50-61. http://dx.doi.org/10.30998/jabe.v3i1.1757.

Yahya, G. Y., & Gunawan, D. (2019). Decreasing Demand of Indonesia Palm Oil by India and Strategy of Indonesia Government to Maintain Palm Oil Market in India. *Andalas Journal of International Studies, 8*(1), 75-87. https://doi.org/10.25077/ajis.8.1.75-87.2019.