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The Influence of "Renewable Energy Directive II" Policy for The Sustainability of Palm Oil Industry in Indonesia

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Abstract: *The purpose of this study is to see how the European Union's RED II policy affects the palm oil industry in Indonesia. One of the things the European Union is doing to achieve its sustainability goals is developing and enforcing a directive called the European Union Renewable Energy Directive (EU RED). The Renewable Energy Directive (RED) is a set of regulations that aim to increase the use of renewable energy sources within the European Union. The emergence of the RED policy had an impact on the Indonesian palm oil industry because it was assessed that the use of oil palm land in Indonesia had a significant impact on deforestation. The existence of this policy has caused the Indonesian government to bring up various kinds of regulations from year to year that regulate the palm oil industry. This research is qualitative and uses secondary data types; the data used comes from various kinds of national news and journals as well as document reports from the government.*
Keywords*: Renewable Energy Directive; Sustainable; Palm Oil.*

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Introduction

This study aims to look at the influence of the European Union's RED II policy on the Indonesian palm oil industry. It's no secret that Indonesia is one of the world's leading palm oil producers (Ismai, 2017). Indonesia is the largest palm oil producer in the world because it sees the increasing demand for palm oil as an opportunity for the country to increase market share and consumption of its products (Limaho et al., 2022). The export performance of palm oil, which is the main commodity originating from the plantation sub-sector, is influenced by market competition and changes in market share that occur both in the domestic market and foreign markets (Syahza, 2019). As a result of the palm oil industry, Indonesia is one of the largest exporters of palm oil in the world, alongside other countries such as Malaysia, Ecuador, Colombia, and Thailand (Tyson et al., 2018).

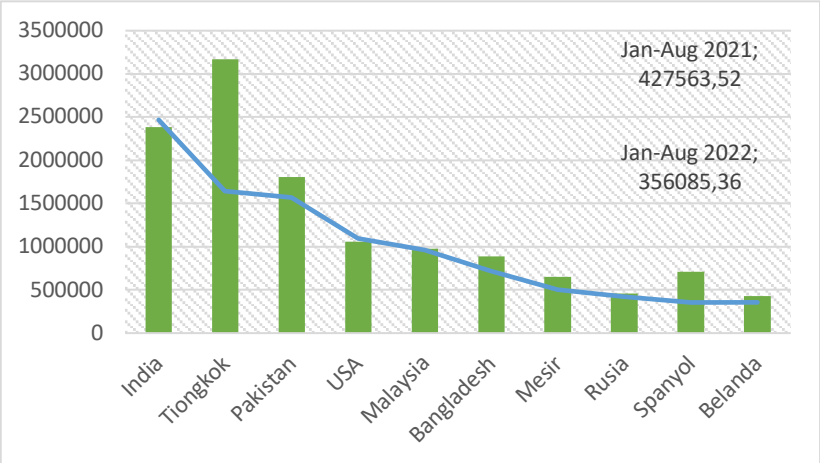
Palm oil in its crude form is a prospective product for export that makes a significant contribution to foreign exchange earnings (Hilmi Rahman Ibrahim, 2021). The amount of foreign exchange that Indonesia will gain from selling CPO in 2022 will reach IDR 34.5 trillion (Rahma, 2022). The European Union is one of the markets for palm-producing countries; they buy a lot of palm oil from countries in Southeast Asia such as Indonesia and Malaysia (Bustanul Arifin, 2019). Up to forty percent of palm oil is used as a feedstock for biofuel production, both in the form of biodiesel and for power generation; the remaining sixty percent is used to produce food, cosmetic ingredients, and toiletries in the European Union (Febryna Ramadhani, Fahriya, 2022).

Imports of palm oil increased along with the increasing demand for biofuels (Khatiwada et al., 2021). However, palm oil is a biofuel product that is widely associated with negative impacts on the environment (Mayr et al., 2021). To help achieve Sustainable Development, the European Union, in its biofuel production process, considers environmental issues (Israel Solorio, 2020). The Renewable Energy Directive is an actualization of the European Union's commitment to promoting a sustainable biofuel industry (Schoenefeld & Knodt, 2021). The European Union has adopted these measures to prepare for its possible dependence on biofuel sources such as palm oil.

To ensure that all biofuels produced or consumed in the European Union are made in a sustainable and environmentally sound manner, the Renewable Energy Directive emerged, which sets out the requirements for the sustainability of biofuels (Pradhana, 2020). To control the use of biofuels, the European Union created a policy called Renewable Directive Energy to regulate the production, distribution, and use of biofuels in the region (Stattman et al., 2018). This policy was first introduced by the European Union through The Directive on the Promotion of the Use of Biofuels or Other Renewable Fuels for Transport (2003/30/EC) (Chunyuan Li, Heerad Farkhoor, and Rosanne Liu, 2018). This policy was enacted to reduce the impact of burning fossil fuels on the environment (Searchinger et al., 2018).

After launching RED I, on March 13, 2019, the European Union issued a RED II policy to improve what had existed before (J. Taa et al., 2020). Through this policy, the European Union has designated palm oil as a high-risk and unsustainable renewable energy raw material through the Indirect Land Use Change (ILUC) scheme (Zainurrahmi et al., 2020). The Renewable Energy Directive II (RED II) policy and directive entered into force in January 2021, setting out the EU's renewable energy directive as a result of adjustments and improvements to the previous Renewable Energy Directive policy (Lowitzsch et al., 2020). Renewable Energy Directive II as a policy that has been legislated invites controversy in the country, especially in countries with large oil palm commodities, and one of them is Indonesia (Puspa, 2023). There is great potential for deforestation and indirect land-use change (ILUC) related to palm oil products; therefore, RED II labels it as an unsustainable biofuel commodity (Stiadi, 2020). Most of the land on the island of Kalimantan is utilized for oil palm plantations, making it one of the islands in Indonesia most at risk of deforestation (Astuti et al., 2022). Restrictions on fuel use are meant to protect against risks posed by shifting land use to produce biofuels, bioliquids, or biomass in areas with high levels of carbon stocks (Wahyudi, 2019). Therefore, palm oil-based biofuels, bioliquids, and biomass will be removed from the European market.

Figure 1. Main Destination Countries for Indonesian Palm Oil Exports for the Jan-Aug 2021-2022 Period



Source: (Kusnandar, 2022)

Figure 1 shows that in 2022, Indonesia's palm oil exports will fall. According to data from the Central Statistics Agency (BPS), Indonesia's palm oil exports fell by 20.8% from January to August 2022, for a total of 14.65 million metric tons (Kusnandar, 2022). Of the 10 main destination countries for Indonesia's CPO exports, only exports to India and the US experienced volume growth. For the

rest, the volume of palm oil exports to the other eight main countries decreased. There are several objections to palm oil as a raw material for biodiesel. The European Union believes that Indonesian palm oil contributes to environmental and energy insecurity because it is not produced sustainably.

As part of their RED II strategy, the European Union has made it clear that any biofuel produced on land with a high biodiversity value will not be acceptable for use in the EU (Mai-Moulin et al., 2021). Tropical deforestation and frequent forest fires are known to go hand in hand with the expansion of oil palm plantations in Indonesia (Meijaard et al., 2020). Due to these factors, European Union countries began to view Indonesian palm oil unfavorably (Meijaard et al., 2020). In the long and medium term, the unfavorable reputation of Indonesian palm oil has reduced world palm oil prices and reduced the profits of Indonesian palm oil exporters (Sihotang & Sihotang, 2022).

As part of the RED II policy, the European Union Parliament banned the use of palm oil, especially that sourced from Indonesia, on the grounds that it did not meet the requirements of the EU's renewable energy program (Sihotang & Sihotang, 2022). This means that it will not be counted towards member countries' renewable energy quotas if it is ever used (Rahayu & Sugianto, 2020). Also, since the requirements are solely related to the RED I standard, certifications such as ISCC are considered invalid in the European Union as a result of this policy (Widyatmoko, 2019).

The existence of the RED II policy regarding reducing the use of non-renewable sources of energy raw materials will then put pressure on Indonesia's GDP performance through exports and Indonesia's trade balance by putting pressure on the employment side, but on the other hand, in the long run, it will cause additional unemployment in Indonesia. The European Union is Indonesia's main export market for crude palm oil products and has been working with Indonesia on CPO imports since 2008. Exports of CPO products to Europe have become a benchmark for other countries, namely China and India. As a country in the palm oil industry, of course the EU's discriminatory policies are very detrimental to Indonesia. Palm oil is one of Indonesia's export products.

This could be disastrous for Indonesia if there is an oversupply of palm oil. Furthermore, Indonesia's balance sheet and export performance in sectors other than oil and gas are largely supported by trade interactions between palm oil and Europe, namely 1.66% per year. Not only is the decline in Indonesia's GDP, but the trade and export balances are also affected by pressure from the employment side, which weakens the Indonesian economy and can then result in increased job losses in Indonesia. Based on the background that has been described, this study aims to examine the impact of RED II on the viability of the palm oil industry in the long term, as well as the steps taken by the Indonesian government to protect it from future efforts.

Renewable Energy Directive

Policies are developed by state administration officials to carry out government functions, this is a form of broad government responsibility under state law to ensure the welfare of its

citizens (Eric & Anggraita, 2021). A policy allows state administrative bodies or officials to exercise government authority in the context of carrying out government tasks (Karyati, 2020). Policies are used to show the behavior of actors such as government officials, groups or organizations affiliated with the government, or several actors participating in certain activity sectors (Siregar, 2018).

Policies describe a series of organized goals that must then be fulfilled (Dewi, 2019). The future of an area is influenced by policies made in the present (Arbain, 2019). The term "policy" can also mean a set of procedures that develop due to the internal dynamics of an organization (Andhika, 2019). Profits can be made, and a country's economy can be stimulated by implementing certain policies (Henriksen, 2013). The Renewable Energy Directive (RED) is a policy that sets guidelines for the development and deployment of renewable energy throughout Europe (Gresnaidi et al., 2022). Starting in 2015, the European Union Trade Authority instituted new regulations for the import and export of crude palm oil in Europe to reduce greenhouse gas emissions (Ichlas El Qudsi et al., 2020).

The European Union has paid attention to the problem of climate change, which threatens a sustainable environmental future. To promote a process of sustainable growth in all industries, targets have been set in the regulatory framework (Widyatmoko, 2019). One of the things the EU does to achieve its sustainable goals is to compile and enforce a directive called the European Union Renewable Energy Directive (EU RED) (Azizah, 2015). The Renewable Energy Directive (RED) is a set of regulations aimed at increasing the use of renewable energy sources within the European Union (Potrč et al., 2021). The use of biofuels is one of the most important aspects of the EU RED regulation on renewable energy for transport, which is one of the most contentious issues (Di Gruttola & Borello, 2021). The EU RED mandates that biofuel production and tree planting meet the sustainable requirements outlined in the directive.

The main objective of this policy is to encourage the use of energy derived from renewable sources in all aspects, including transportation, power generation, and other fields (Karim et al., 2018). Energy consumption in the EU must not contribute to the release of greenhouse gases (GHG) to stop the development of environmental degradation (Tetyana Vasylieva, Oleksii Lyulyov, and Yuriy Bilan, 2019). This Renewable Energy Directive is a mandatory directive, which means that all member countries must set their own national renewable energy goals and report on their progress towards these goals (Tetyana Vasylieva, Oleksii Lyulyov, and Yuriy Bilan, 2019).

According to Ines (2020), the main point of the RED policy is to establish criteria for biofuel production that are environmentally responsible (Inês et al., 2020). All biofuels used or generated in the European Union must be produced in an environmentally responsible and sustainable manner (Darda et al., 2019). The European Union is one of the world's major energy consumers; however, due to its limited natural resources, it must continue to rely on imports to meet its energy needs (Pradhana, 2020). This

became the impetus for the European Union to formulate a regulation known as the Renewable Energy Directive. The European Union has taken steps to reduce its dependence on the consumption and import of fossil fuels by issuing a directive known as the Renewable Energy Directive (Febryna Ramadhani, Fahriya, 2022). Apart from reducing dependence on imported fossil fuels, the main objective of this policy is to reduce dependence on imported fossil fuels.

The Renewable Energy Directive has been implemented in most countries in the European Union, but the EU is dependent on imports; more specifically, the EU purchases raw materials for biofuels from Indonesia, which is the world's largest producer of palm oil (Natashya, 2020). This led to the European Union Commission submitting a proposal to the European Parliament in 2016 that recommended reducing the use of crude palm oil in Europe as part of an effort to update regulations as outlined in the Renewable Energy Directive (RED) I (Arief et al., 2020). This is done to modernize the Renewable Energy Directive (RED) I.

Renewable Energy in Indonesia

The European Parliament rejected a resolution on oil palm and deforestation during a plenary session in Strasbourg on April 4, 2017 (Santosa et al., 2022). This resolution definitively reflects discriminatory practices directed at palm oil-supplying countries, including Indonesia (Arief et al., 2020). This is because the proposed resolution has the potential to hamper Indonesia's palm oil exports to the European Union (EU) and is also expected to have a broad impact on the Indonesian economy as a whole, with a continuing effect on the realization of the 2030 Sustainable Development Goals (Suwarno, 2019).

There are significant opportunities for the development of new renewable energy in Indonesia; some of these forms of energy include geothermal, marine, wind, water, and solar (Maimunah et al., 2021). Energy policy in Indonesia currently follows the energy policy model that applies internationally (Fandini & Akhmaddhian, 2022). This includes reducing greenhouse gas emissions, transitioning to new renewable energy sources, and accelerating an economy built on green technology (Harris & Ramadhan, 2022). Boosting the use of new and renewable energy, limiting the use of fossil energy, and increasing the use of electricity in the housing, industry, and transportation sectors are part of Indonesia's commitment to support international energy policies (Faisal, 2021).

Renewable energy is part of the government's strategic program and must be utilized for the maximum benefit of the people (Erdiwansyah et al., 2019). Renewable energy has great potential to spur quality employment growth (Agbonifo, 2021). In addition, the development of renewable energy requires the use of reliable and cost-effective technology (Haiges et al., 2017). Therefore, to develop this sector adequately, some forms of cooperation with related parties are needed (Erdiwansyah et al., 2019).

The resulting policy factors are important to support the development and use of potential resources effectively through renewable energy (Lu et al., 2020). The legal umbrella is a form of

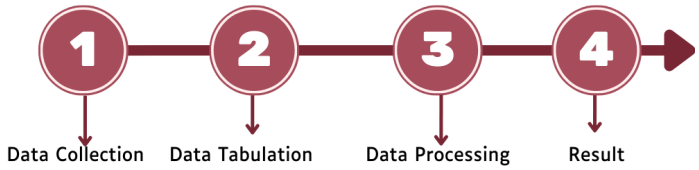
government commitment and a reference in the development of renewable energy, as well as a guarantee for the emergence of risk impacts (Zhang et al., 2017). The government is required to be able to formulate policies to seek breakthroughs to increase the renewable energy sector, including by providing convenience to investors in the sector, thus enabling the management of the renewable energy supply chain effectively and efficiently (Yudha & Tjahjono, 2019).

Palm oil waste has the potential to increase the use of biogas power plants, which are currently not fully utilized. Biogas can be made from palm oil waste, or POME, by utilizing anaerobic digester (AD) technology. Responding to the existing waste problem and the fact that the development of oil palm plantations will increase the production of palm oil waste, a strategic plan was born to exploit the huge potential of this waste as a renewable energy product with an export orientation (Purnomo et al., 2016). POME as a biomass base material will also be very important in supplying ecologically useful alternative energy, especially when linked to the region's and country's efforts to reduce global warming and climate change caused by fossil fuel emissions.

Method

The analytical method used in this study is qualitative, and the type of data collected is secondary data. Literature studies are used for secondary data collection. This research was conducted using an exploratory qualitative research approach, and its components consisted of mapping the problem, making observations, and collecting data from primary and secondary sources (Mudiyanto, 2019). The data used in this study came from documents found on the internet, such as journals and proceedings of national seminars, as data reference aids in this writing. Apart from going through previous research, the authors also use online news sources and official government websites to obtain specific data. This data is in the form of news and publications from related organizations or institutions; besides that, it can also be in the form of attachments from official institutions, such as study results, theses, and so on. In addition, other data were also obtained from interviews with several sources related to the research topic.

Figure 2. The Data Processing



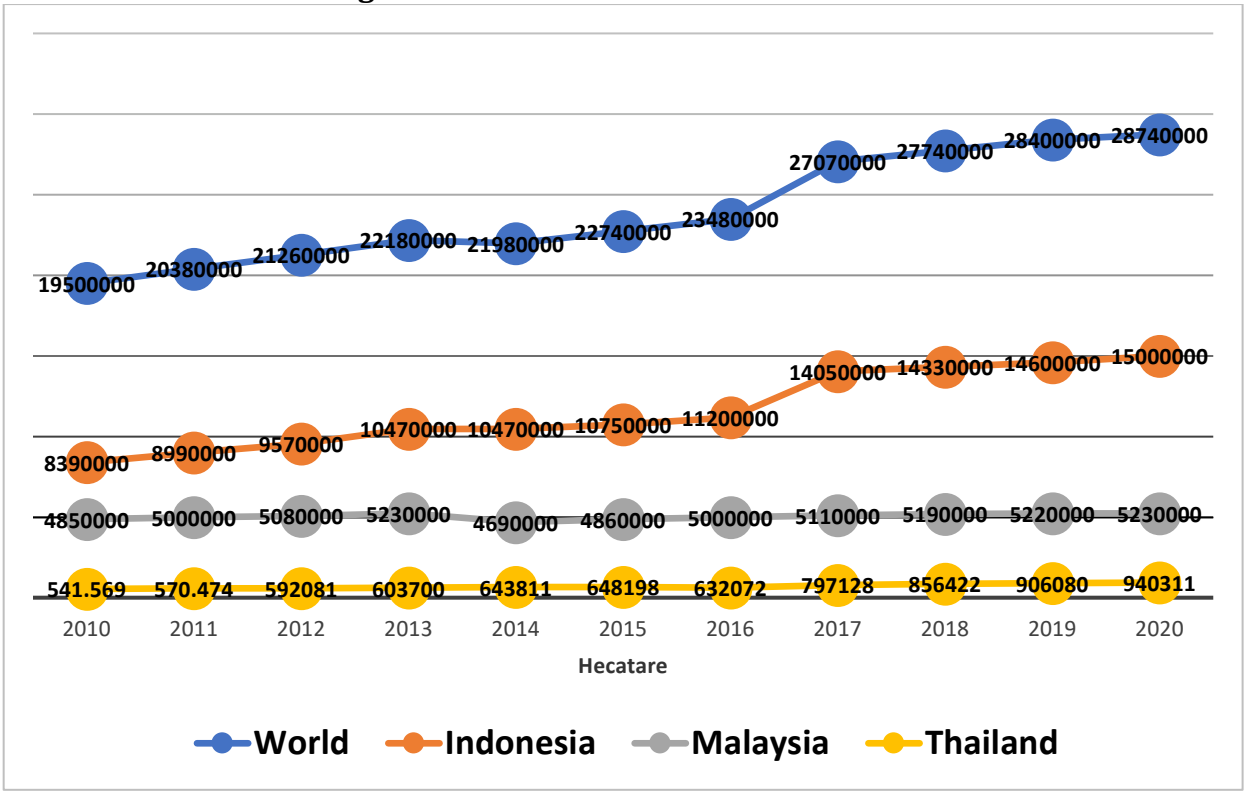
Result and Discussion

There are 17 global sources of vegetable oil used for food and energy. Palm oil, soybean oil, rapeseed oil, and sunflower oil are the four main vegetable oils. The four vegetable oils produce oil in different quantities. Oil palm produces 4.3 tons per hectare. Production of rapeseed oil is 0.7 tons, sunflower oil is 0.52 tons, and soybean oil is 0.45 tons per hectare.

Therefore, palm oil has an oil productivity per hectare eight to ten times higher than the other three vegetable oils combined. This shows that oil palm has the highest oil productivity.

Indonesia is one of the largest palm oil producers, and this high production causes the need for agricultural land to continue to increase every year. The increase in land demand is considered to have the potential to cause deforestation, and the effects of this deforestation are also considered to lead to increased carbon emissions, which ultimately affect climate change. The global palm oil market is dominated by two countries, namely Indonesia and Malaysia (Firdaus et al., 2022). 84% of world palm oil production comes from Indonesia and Malaysia (Kristianto, 2022).

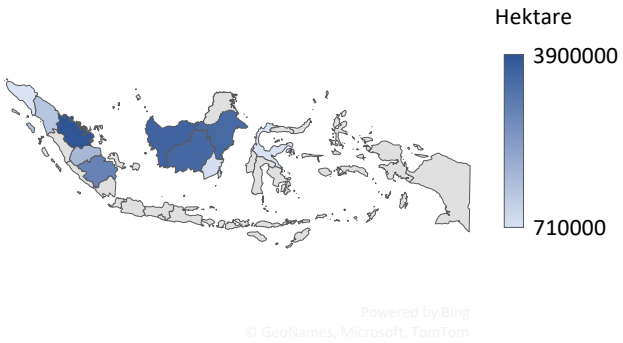
Figure 3. Land Use for Palm Oil Production



Source: Our World in Data (2022)

Indonesia is heavily dependent on exports of palm oil, a plantation crop that is a major international supplier of vegetable oil. As can be seen from Figure 3, it shows land use data for palm oil production in Indonesia, Malaysia, and Thailand compared to the total land use for palm oil worldwide (Data, 2022). The area of oil palm plantations in Indonesia is growing quite rapidly. Various types of soil in Indonesia, including mineral soils and peat soils, are used to cultivate oil palm. There is no doubt that this has both positive and negative effects.

Figure 4. Provinces in Indonesia with the Largest Forest Deforestation



Source: (Raras, 2022)

As shown in Figure 4, which shows areas with uncontrolled forest fires, illegal logging, and continuous clearing of plantation land, these are the main causes of deforestation in Indonesia. Historically, the use of palm oil has been associated with clearing significant amounts of forest. According to Global Forest Watch, Sumatra and Kalimantan have the highest rates of deforestation in Indonesia. Riau leads with 3.9 million hectares of deforestation, followed by the three provinces of Kalimantan with an average of 3.5 million hectares, then South Sumatra with 2.86 million hectares, Jambi with 1.67 million hectares, and North Sumatra with 1.38 million hectares. Then South Kalimantan has 815,000 hectares, Central Sulawesi has 723,000, and Aceh has 710,000 hectares.

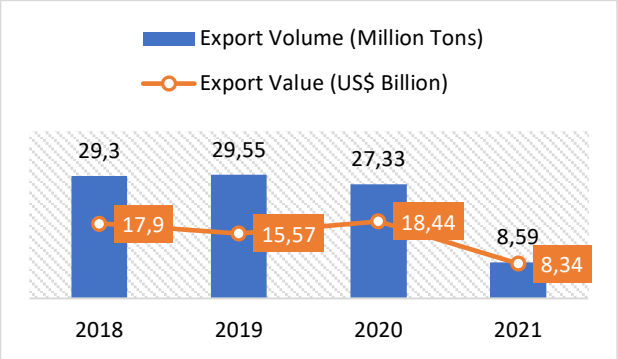
Expansion of land for oil palm plantations will eventually convert forest areas, which will cause land degradation (land damage) where land productivity decreases (Ramdani & Lounela, 2020). Deforestation that involves burning land produces more carbon emissions, which in turn increases the strength of the greenhouse gas effect in the atmosphere (Wahyuni & Suranto, 2021). This causes the sun's heat to be absorbed by the Earth, causing global warming. Climate change is possible if this continues.

The Renewable Energy Directive II (RED II) policy designed by the European Union based on efforts to fulfill obligations towards the Sustainable Development Goals (SDGs) regarding environmental policies apparently does not only refer to environmental issues. This is based on the actions of the European Union in regulating the management of biofuels by limiting trade intended to maintain economic and environmental stability. Deforestation is the main reason why palm oil is controversial. Increased production means that more land is needed for new plantations. This does not necessarily result in forest clearing, as oil palm can be planted on degraded land or land previously used for other crops. The European Union Commission believes that the CPO-based biodiesel production process produces high greenhouse gas emissions.

The level of emissions produced is caused by the conversion of forest land to oil palm plantations. In the process of transferring land, it is claimed to be able to release greenhouse gases three times

greater than the process of burning fossil energy. This makes the image of CPO biodiesel negative because it is considered to have the potential to damage the environment. So that regulatory changes to the European Union's biofuel policy to respond to environmental problems caused by CPO can be seen as a form of implementation of green protectionism, in line with the directives listed in RED II regarding sustainability criteria, the concept of green Protectionism is relevant in analyzing the reasons for the European Union establishing the RED II policy.

Figure 5. Indonesian Palm Oil Export Volume and Value (2018-2022)



In 2018, a policy draft made by the European Union Government referred to determining sustainability criteria for biofuel products and resulted in research showing that palm oil or CPO did not meet sustainability criteria. This then became the basis for the formulation of the Renewable Energy Directive II policy, which contains the establishment of specific criteria for determining raw materials with a high risk of greenhouse gas emissions. So, it can be seen in Figure 5 that there has been a decrease in the volume and value of Indonesian palm oil exports; this is in line with the emergence of RED II.

The economic value generated from oil palm is quite large, so that, among other things, its beneficial effects can boost the country's economy (Fadjar Geuvara Tanmaela, 2022). The presence of the palm oil industry improves people's lives, for example, by providing employment to improve people's welfare. The palm oil sector plays an important role in the Indonesian economy and in improving the living standards of the country's population, but it is also facing increasing challenges, particularly in environmental protection (Fadjar Geuvara Tanmaela, 2022). However, this was disrupted by the emergence of the Renewable Energy Directive II Policy.

The European Union has established a policy environment based on standards in various fields. One of them relates to the biofuel business and is implemented through the Renewable Energy Directive (RED II). The Renewable Energy Directive (RED II) ensures domestic energy supply in European Union member countries while reducing dependence on imported raw materials and biofuels. This is expected to be a catalyst for increasing biofuel production in European Union countries. The

worldwide call to curb carbon emissions in the face of climate change was another factor in the decision to implement this strategy.

The target of the EU's biofuels policy's sustainability is meeting the goals that member countries have set to achieve increased energy security, improved environmental performance, and increased economic value. The European Union's awareness of the need to protect the domestic biofuel industry and environmental issues through the RED II policy is an example of implementing the concept of "Green Protectionism". Such protectionism is not about environmental policies per se but about adding discriminatory non-environmental goals or unduly restrictive trade by intent or effect to environmental policies. The implementation of this policy benefits not only the economic sector but also non-economic sectors such as the environment.

Table 1. Derivatives of Regulations Concerning Palm Oil in Indonesia

Regulation of the Minister of Agriculture NUMBER 19 OF 2011	About sustainable oil palm plantations in Indonesia
Regulation of the Minister of Agriculture NUMBER 11 OF 2015	About the certification system for sustainable oil palm plantations in Indonesia
PRESIDENTIAL REGULATION NUMBER 44 OF 2020	About the certification system for sustainable oil palm plantations in Indonesia
Regulation of the Minister of Agriculture NUMBER 38 OF 2020	About the certification system for sustainable oil palm plantations in Indonesia

European accusations against the palm oil industry in Indonesia are of course denied by the Indonesian government; this is evidenced by the implementation of various steps such as sustainable CPO certification, starting with the Roundtable on Sustainable Palm Oil (RSPO), International Standards for

Carbon Certification (ISCC), and Sustainable Agriculture Networks (SANs). Table 1 shows a list of journeys regarding oil palm in Indonesia. In 2011, the government issued Minister of Agriculture Regulation number 19 concerning guidelines for sustainable oil palm plantations in Indonesia. In the context of implementing the Indonesian Sustainable Palm Oil (ISPO) certification system, the Government issued Minister of Agriculture Regulation No. 19/Permentan/OT.140/3/2011 concerning Guidelines for Indonesian Sustainable Palm Oil (ISPO). It regulates guidelines that form the basis for encouraging oil palm plantation businesses to fulfill their obligations in accordance with laws and regulations. This Ministerial Regulation was also issued to protect and promote sustainable oil palm plantation businesses in accordance with market demands. Furthermore, in 2015, regulations related to ISPO certification were updated through Minister of Agriculture Regulation Number 11 of 2015 concerning the Palm Oil Plantation Certification System. In 2020, ISPO has been perfected through Presidential Regulation Number 44 of 2020, where technically the implementation is regulated through Minister of Agriculture Regulation Number 38 of 2020 concerning the Implementation of Certification of Indonesian Sustainable Palm Oil Plantations.

The first and second versions of the Renewable Energy Directive caused the palm oil industry's players, from smallholders to plantation companies to palm oil mills, to experience a bit of disruption. So that the attention of many stakeholders in the palm oil industry is focused on discriminatory actions by the European Union (EU) that are detrimental to Indonesian crude palm oil (CPO). To increase the role of renewable energy, it is necessary to reflect on the national planning process and consider the implications of the policies that have already been implemented by the European Union on the sustainability of the Indonesian palm oil industry. This means the current state will be used as a benchmark when crafting a new policy to promote the growth of renewable energy sources. The palm oil industry's policy implementation pattern can serve as an indicator in the establishment of policies to better manage renewable energy sources, both in terms of their development and their use.

Conclusion

In response to RED II, the Indonesian government has stepped up a few initiatives. International cooperation forums, such as ASEAN-EU, have been used by state actors such as the Ministry of Foreign Affairs to have direct conversations and negotiations with the EU on upgrading CPO to the same status as other vegetable oils. Indonesia also sent a delegation to Brussels, Belgium, to meet EU leaders and voice their concerns about the RED II strategy directly. Many Indonesian ministers were assigned to lead formal meetings in various European Union countries, including Italy and Poland, to convince and introduce the benefits of sustainably produced CPO. Sustainable palm oil seminars and exhibitions helped the Indonesian team spread their message, attract public attention, and lead to various bilateral partnerships to support Indonesia's efforts. During the visit of the European

Union delegation to the palm oil industry, Group Business played an important role in assisting the government in conducting commercial diplomacy through the industrial facilities provided.

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