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Gap Analysis on Sustainable Supply Chain Model Derived from EU RED II and Ispo 2015

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Abstract

Palm oil today is consumed not only for health, cooking, and other daily product but also converted into biodiesel. The EU has included the use of biodiesel as part of their clean energy for transportation and one of its sources is palm oil. However, with the release of the EU RED II, the food and feedstock used for biodiesel are selected more stringent today. The EU requires the food and feedstock sourced for biodiesel to be categorized as low indirect land-use change (ILUC) risk and those categorized as high ILUC-risk shall be gradually phased out to 0% by 2030. This provision applies to Indonesia's palm oil making the two countries come to file a dispute to the World Trade Organization (WTO). This paper aims to analyze the lacking of Indonesia's palm oil sustainable cultivation measures that make Indonesia's palm oil usage in the EU threatened to be phased out to 0% by 2030. With an extensive literature review and analysis of the two law products, this paper is analyzing the gap between the EU regulation and the ISPO certification system. It is found that there are 16 main points of difference highly concentrated on carbon emission calculation mismatch. In the end, this paper is proposing a new SCOR to be implemented in Indonesia palm oil cultivation while adjusting to its condition to ensure the low ILUC-risk and pursue the trade with the EU as the second biggest market for palm oil in the world.

Key words:
Palm Oil; ILUC risk; RED; SCOR Model; Gap Analysis

1. Introduction

The demand for palm oil is projected to keep increasing in a foreseeable future along with the increase of population. This happened since palm oil derivate products are massively used in various sectors for daily consumption. The demand is projected to keep increasing even more alongside the trend of renewable, clean, and eco-friendly energy (Tullis, 2019). Palm oil today is available to be converted into biodiesel such as biomass, bioliquids, and biofuels. To fulfill the demand, countries around the world exercise the activity of export and import. India is ranked as the top palm oil importer in 2017 with approximately 10 million tonnes of imports, followed by the EU with 7 million tonnes and China with 5 million tonnes (Syah, 2019). On the other hand, Indonesia and Malaysia are listed as the two top palm oil exporters with Indonesia leading to

meet approximately 51% of global demand for palm oil (Rainforest Foundation Norway, 2019). At the same time, palm oil is among one of the most exported commodities from Indonesia (GAPKI 2017).

The palm oil industry has contributed to the growth of Indonesia's economy. With export in 2018 reaches the number of 34.71 billion tonnes, the palm oil industry contributed 300 trillion foreign exchange stock to Indonesia. Indonesia's palm oil is also contributing to higher GDP growth and poverty reduction (Schoneveld et al., 2019). The high growth of palm oil contributing to the GDP is supported by the EU that acts as the second biggest palm oil importer with a total of 74% of its oil palm is sourced from Indonesia, Malaysia, and Thailand (Sunaryati, 2018). However, in a recent development, the EU has passed the Renewable Energy Directive 2018/2001 or referred to as the EU RED II that might threaten the smooth process of Indonesia-EU palm oil trade (Dewi, 2013).

Indonesia oil palm plantations are recorded for high historical land deforestation and indirect conversion of land, thus palm oil from Indonesia is currently subject to be phased out of the usage of renewable energy in the EU RED II objective to 0% by 2030 (Malins, 2018). In 1990, oil palm plantations in Kalimantan were only about 903km2, growing in 2000 to 8360km2, and reached 31.640km2 in 2010 (Glenday et.al, 2015). This significant expansion has raised concerns on the expansion to land with high carbon stock thus causing a probable higher emission compared to the usage of fossil fuels, the type of energy that aimed to be replaced with the use of renewable energy (Gallagher, 2008).

The EU RED II sets out that the food and feedstock sourced for biofuels, bioliquids and biomass fuels shall be sourced from a low indirect land-use change (ILUC) risk where there is no significant expansion on land with high carbon stock is observed and also fulfill the criteria of sustainability and greenhouse gas emission saving. The provision for low ILUC risk is manifested further in the Delegated Act of the EU while the sustainability and greenhouse gas emission saving provisions are set out in the EU RED Article 29 and 31 (Eur-Lex, 2018). This provision is the answer to be exempted as the product that will be gradually phased out to 0% by 2030 due to high ILUC-risk. The plan is pursued in the voting for the energy proposal titled "Report on the Proposal for a Directive of the European Parliament and the Council on the Promotion of the Use of Energy from Renewable Sources" in the European Parliament office, Strasbourg (Eur-Lex, 2016).

This paper aims to analyze the gap of the sustainable supply chain means in two different law products between the EU RED II and the existing Indonesia sustainable palm oil provisions sets out in the Ministry of Agricultural Regulation Number 11 the year 2015 about Indonesia Sustainable Palm Oil (ISPO) certification system. The EU RED II is set as the reference considering that in terms of trade between Indonesia and the EU, Indonesia is considered as the producer while the EU is considered as the consumer who demands a certain specification to their product. Moreover, some of the EU member states such as Sweden, Finland, and the Netherlands are the leading countries in terms of sustainability. Thus, benchmarking and following the provisions of the EU will give Indonesia the chance to apply the best practice and adjust its national law to be more respectful to the environment, society, and economy.

Research Question

Based on the background of the research, the main research question in this paper is "what are the gaps between EU RED II and ISPO Certification System?"

Research Objective
Based on the background and the research questions, the following are the objective of this research is to understand the gap between EU RED II and ISPO Certification System.

The originality of the paper
There has been no previous research analyzing the gap between sustainable conduct of palm oil plantations in the EU RED II and ISPO Certification System specifically focusing on the supply chain process.

2. Literature Review

Sustainable Concept in Supply Chain
The terminology Sustainable Supply Chain Management (SSCM) started to emerge when the issue of sustainability starts to gain concern from the people in the world (Van der Vorst, 2004). The term sustainability started to gain popularity in 1987 under the Brundtland report from the World Commission on Environment and Development (WCED) convention. (Liu et al., 2017). In a simple sense, SSCM is the management of supply chain activity in a way to achieve sustainability objectives and requirements defined by the firm, suppliers, customers, and external stakeholders (Fritz, 2019). To date, there is no universally accepted definition of a sustainable supply chain. Several scholars gave several definitions upon the SSCM itself yet there's still no consensus exist (Ahi and Searcy, 2013).

A commonly used SSCM definition by most scholars is one by Seuring and Muller (2008, p. 1700) as: "The management of material, information, and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements". According to this definition, a sustainable supply chain covers a wide range of spectrum inside the supply chain as well as involving many actors to pursue the value of sustainability. Inside the definition is also mentioned the three dimensions of sustainable development, i.e., economic, environmental, and social. These three dimensions are also well known as the three pillars of sustainability defined in the Brundtland report or the three-bottom line (TBL) (Carter, 2008). According to Basiron (2007), sustainable plantation practices concept in any agricultural crop should meet the universally accepted criteria of benefiting profit, people and planet (3Ps).

The EU Renewable Energy Directive (RED)
The EU Renewable Energy Directive (RED) is a binding target of renewable energy usage in the EU member states. The RED is revised to RED II also known as Directive (EU) 2018/2001 or "Directive" and was entered into force on December 24th, 2018 (Eur-Lex, 2018). A directive is an instruction whereupon the entry into force, the EU member countries are required to achieve a certain result but they are free to choose the way to achieve so. In the directive, there are sets of definitions, mechanisms, methods, and all related to achieving the EU that fully utilize renewable energy as a source for their energy daily by 2030. Through the directive, the EU is promoting the development of renewable energy in the next decade through the wide use of renewable energy by the whole EU member with a binding target of at least 32%. In the directive as well, the EU introduces a new approach in addressing emissions from indirect land-use change (ILUC) associated with the production of biofuels, bio-liquids, and biomass fuels. In the directive,

the EU sets national limits that will gradually phase out to 0% by 2030 at the latest for the usage of high ILUC-risk biofuels, bio-liquids, and biomass fuels produced from food and feed crops. The criteria are set for certification of either high or low ILUC-risk is set out in the delegated act. (Eur-Lex, 2016)

Indonesia Sustainable Palm Oil (ISPO) Certification System

Indonesia Sustainable Palm Oil (ISPO) Certification System is an effort by the Indonesian Government to ensure sustainability in oil palm plantations (Habibie, 2018). The ISPO also emerged from the concern the global widely used standard of Roundtable Sustainable Palm Oil (RSPO) is no longer agreed by Indonesia due to too high involvement of the Non-Governmental Organization (NGO) and thus Indonesia retracts itself as a party to RSPO (Harsono, 2012). The ISPO certification system is laid down in the Ministry of Agricultural of Republic of Indonesia Regulation Number 11 the Year 2015 specifically on Principle and Criteria for Certification in the Annex II which is the inseparable part of the regulation (Hutabarat, 2017).

3. Methodology of Research

This research utilizes an extensive literature method to identify the gap between the EU RED II and ISPO certification system. Start with identifying the dispute between Indonesia and the EU upon the regulation, this research builds the research background. Seeing that there is a conflicting situation from what is demanded from the EU as the "consumer" and what is executed by Indonesia as the "producer", it could be analyzed that there is a gap exist. However, before analyzing the gap, a significant amount of literature review to understand comprehensively the EU RED II and ISPO Certification System was conducted to avoid the mistranslation of the law product into the supply chain model. The researcher read 7 documents related to the manifestation of EU RED II, 3 documents related to the manifestation of ISPO Certification System, and 35 research papers to give a comprehensive view on Indonesia's current practices of sustainable palm oil cultivations. The data gathered are information and data related with the object of the research from books, the scientific journal from various sources such as but not limited to Elsevier, Google Scholar, Proquest, Cambridge University Press, and Harvard Business Review with APA citation writing standard as the source of literature data, and also reliable data on the internet. The research also highly emphasizing the literature review about European Law from the official document of the European Union to ensure the right understanding to every single clause stated in the law as the basis of the framework building. After an extensive literature review, the researcher identified the sustainable palm oil supply chain conduct from the two law products and then comparing with The EU RED II as the reference since the researcher aims to give Indonesia a possibility to braid a smoother trade relation with the EU in the renewable energy sector. After the gap is analyzed, strategic action is proposed to be taken based on the interview with palm oil expert from NGO XYZ.

4. Result and Discussion

In the EU Directive 2018/2001 followed by the Delegated Act to manifest further the provision of low ILUC-risk biofuels, bioliquids and biomass fuels, the standard for sustainable biofuels feedstock from palm oil plantation shall follow 7 categories of sustainability and greenhouse gas emissions saving criteria laid down in Article 29 paragraph 2 to 7 and 10, also fulfill the criteria for low ILUC-risk certification (ECOFYS Final Report, 2016). The researcher identified that there are 5 main activities in the process of palm oil cultivation for the conversion of biofuels starting

with planning, sourcing, making, delivering, and auditing. Each activity is linked with one another for the goal of sustainable cultivation, reducing greenhouse gas emission, as well as ensuring the low ILUC-risk by one among the indicator is the yield increase within the same area of plantation with a reference set on previous years yield. The uncertified product will be rejected to ensure the greenhouse gas emission emitted from ILUC is not higher than the one by fossil fuels.

After comprehensive reading, there are 17 points in which Indonesia does not align with the EU RED II. The mismatch is highly concentrated on greenhouse gas emission calculation as Indonesia does not provide a strict measurement to calculate the greenhouse gas emissions. Instead, ISPO requires all types of emissions to be calculated but not specified what kind of emissions are possible to be considered. Without a clear calculation for greenhouse gas emission, it is hardly impossible for the EU to be willing to accept the oil palm plantations from Indonesia to be used for biodiesel materials considering that the greenhouse gas emissions calculation is one indicator to ensure that the use of oil palm plantations as biodiesel which is part of the renewable energy does not emit a higher greenhouse gas emission compared to the use of fossil fuels.

The first difference is the absence of the obligation to have or at least exercise a demand forecasting. The economic operator or the company shall carefully project the demand coming to their own company with the basis of previous years' demand and considering the growth of their target market. The demand for food and health, which are among two primer needs on a daily basis, shall be prioritized thus the production for biofuels, bioliquids and biomass-based palm oil should be coming from the yield increase (Khatiwada, 2018). Without a clear planning on-demand projection, the company might exaggerate production with a massive expansion on land with high carbon stock to fulfill the uncounted demand specifically for biofuels, bioliquids, and biomass fuels (Carter et.al, 2007).

The second difference is the absence of law or management plans for impacts on soil quality and soil carbon that adhere to the requirement of the EU RED II. Indonesia has the law for management plans on soil quality and soil carbon through the National Constitution number 18/2004 that regulates about plantations. However, the regulation about the use of fertilization in a sustainable manner, crop rotation method, or crop protection measures to ensure the stability of soil quality and soil carbon does not exist.
The third and fourth regulation lays in the land criteria.

ISPO based on the Ministry of Agricultural Regulation in 2015 allows the plantations on wetlands and peatlands as a contrast to the restriction in the EU RED II (GAPKI, 2017). Although President Instruction on Peatland and Wetlands moratorium has been enforced, in the exception part allow for the extension of the previously attained permit and no strict words are saying that the President Instruction replace the existing regulation. It is highly regretted considering that wetlands and peatlands are two types of land with high carbon stock on land (Murdiyarso et.al, 2002). Its conversion will automatically be categorized as ILUC risk. Moreover, the EU RED II set that the ILUC risk may occur also to land with high carbon stock whose conversion after 2008 causes the land to not having the same status as previously (Searie, 2018). The extension of the permit itself does not strictly regulate whether the permit was attained before 2008 or after 2008 (Presiden Republik Indonesia, 2020).

The fifth and sixth difference is in the yield increase measures which adhere to the absence of proper management plans on soil quality and soil carbon. As a means to avoid the need for land

expansion amidst fulfilling the projected increasing demand, Indonesia does not regulate the use of fertilization in a sustainable manner and crop rotation method (Craw, 2019). This may come from a single farmer initiative or the company, but the EU directive encourages that this is included as part of national effort to ensure that the yield gap in oil palm plantations are narrowed and the increasing yield attained from improved agricultural practices. ISPO regulates fertilization mechanism only suggesting it to be according to the soil and leaves analysis. On the other hand, in the EU RED II, the fertilization itself is regulated specifically in its amount to ensure that the method for agricultural improvement does not result in a higher carbon emission or cause damage to the soil quality. ISPO also does not obligates the crop rotation practice to take place (Paoli et.al, 2013). Meanwhile, oil palm plantations are among one of the plantations that absorbs a high amount of soil carbon and if this is exercised in a continuous manner may cause the soil quality to be decreasing. The crop rotation practice may help the soil quality and carbon to improve as the other plantations may enrich the minerals of the soil instead of absorbing it.

The seventh difference is in the harvesting process. ISPO does not obligate a forest regeneration to take place. The key activities of forest regeneration to ensure the sustainability of plantations as manifested from the Directives is by planting and seeding. In terms of sustainable plantations of oil palm, forest regeneration is needed to ensure that the carbon stock generated from the forest will remain at least the same as previously or that it could increases. The forest regeneration measures will also ensure that the soil quality and biodiversity is maintained. The Directive obligates the existence of forest regeneration regulation under the national law or a national management system at a minimum (Verstegen, 2019).

Eighth, there is also an absence of methods for soil quality maintenance. Maintaining the quality of soil and its biodiversity is deemed important by the EU since they found that soils are home to more than a quarter of all living species on earth. The diverse living organism inside the soil contributes to the soil quality itself as well as the enhancement of plantations quality planted on that land. A clear management plan and proven quality of soil and its biodiversity shall be made available in the audit process yet Indonesia does not rule to obligate the economic operator to have the management plan for soil quality maintenance.

Ninth to sixteenth difference is from the calculation of carbon emission. The methods for calculating greenhouse gas emissions from oil palm plantations in the Directive are set out in Annex V for biofuels and bioliquids and in Annex VI for biomass fuels. The calculation is important to ensure that the greenhouse gas emitted from the production of oil palm plantations as part of renewable energy is not higher than those emitted by the energy being replaced, fossil fuels. The greenhouse gas emissions are calculated from the production and use of palm oil for biofuels, bioliquids, or biomass fuels as transport fuels. The emissions from the manufacturing process or machinery equipment are not taken into account the calculation. The main method of calculation is formulated as the sum of eec, e1, ep, etd, eu minus esca, eccs, eccr and the total emissions from the use and production of the fuel is E. Meanwhile, ISPO does not clearly regulate the source of potential greenhouse gas emissions that should be calculated.

Last, the difference lay in the process of uncertified provision. ISPO gives chances for economic operators to re-apply for certification shall they fail one and those who disobey the regulation its certification will be revoked. However, records show that there are numbers of economic operators who are not certified and not punished under the law. The EU requires all products to be certified and those uncertified shall be revoked of its permit or the product shall be dismissed

from the national usage. On the other hand, Indonesia does not have a monitoring mechanism to ensure that all processes are conducted in a sustainable manner. Thus, even if the company is certified, since most of the process only requires a document submission without a clear audit process, the sustainability in practice might be questioned. There is also the absence of a monitoring mechanism to ensure that the uncertified company or those without permits to operate does not operate thus there is still a possibility for those operating uncertified.

According to the interview with palm oil negotiator and campaigner from NGO XYZ (the interviewee asked for his identity o not be disclosed), the first and foremost action from the gap that should be taken is demand forecasting. Without a clear projection of demand, the producer will not know how much the supply shall be made or whether or not the current existing capacity is enough. As for the other action, the resource says that all are equally important considering that it is a unity to comply with the EU RED II, that Indonesia cannot comply with only one action and dismiss another.

5. Conclusion

In several measures for sustainability, low ILUC risk, and greenhouse gas emission saving criteria set in the EU directive, Indonesia has followed and provided an existing regulation. However, the practice and the component set out in the ISPO are different and not particularly ensuring the sustainable practice in oil palm plantations. Indonesia still has the room for improvements and considering that these measures are important to avoid the higher emission from the use of oil palm as a means to replace the fossil fuels that emit high carbon emissions, and there is no structural limitation for Indonesia to change its law to be more strict, Indonesia can braid a smoother trade rather than filing the EU RED II as an unfair law trade to the WTO.

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