

What is Sustainable? Literature and Empirical Palm Oil Certification

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Abstract. In almost every cycle of upstream and downstream activities in the management and use of palm oil, there is certification for companies, farmers, providers, plantations, processing, distribution, etc. So, what is actually sought from certification, what is sustainability aimed at, which aspects of certification have a sustainability impact? As seen from empirical studies and literature, there were 265 research articles published in 2008 - 2023 with the search keyword Palm Oil Certification indexed by Scopus for analysis using VOSviewer 1.6.19 software. There are differences in the object of study in palm oil producing regions, especially on the Asian continent, which focuses on how the government carries out certification activities and how independent smallholders can meet existing certification standards, while the European and American continents focus on testing whether certification activities and implementation of certification have been done as they should be.

Keywords: Palm Oil Plantation Certification, Sustainability, Literature Review

1. Introduction

Commitment to sustainable certification has emerged as something that must be done, many economic activities currently require legality which can explain that the process and how a product is produced, all processes are carried out by paying attention to sustainability aspects, namely the economic, environmental and social aspects, all three of which cannot be separated from one and the other and also not dominated by one or the other. This means that sustainability, in this context, refers to the ability to maintain or sustain a condition or process over a long[1] period of time without damaging resources or the environment.

As one of the materials that is often used in daily life, it is also necessary to take care of whether the products produced also pay attention to aspects of sustainability [2], for example, how production and cultivation activities pay attention to aspects of environmental balance by not using excessive chemicals [3] that can damage the environment and how towards the efficient use of existing and available resources in the framework of carrying out economic activities that

can pay attention to social equality which leads to a concentration on fulfilling human rights in every production activity and results of oil palm cultivation [4].

The demand for sustainability of palm oil has become a debate where there is a desire and hope in practice not to use forest areas [5] that can affect the climate and how to use the distribution of land that has been used, no longer looking at the quantity of land but referring to the productivity of oil palm land in addition to demands for palm oil cultivation practices. who should also be able to implement the GAP (Good Agriculture Practice) [6,7] principles which can minimize the practice and use of hazardous substances.

Palm oil is a highly productive vegetable oil sector [8,9,10], producing the highest amount of oil per hectare of land and having a longer productivity period. The Food and Agriculture Organization (FAO) recognizes palm oil as an important agricultural commodity for the countries that produce it [11,12], but on the other, how can oil palm and its cultivation and processing fulfill sustainable criteria [13,14] from several perspectives, firstly the producer perspective and secondly the consumer perspective, this Aims at sustainable and environmentally sound principles, meaning conscious and planned efforts that combine environmental, social and economic elements into development strategies to ensure environmental integrity, welfare, safety, capabilities and quality of life for current and future generations [15,16,17,18,19].

2. Method

The method used in this research is descriptive bibliometric analysis through publication data applied to analyze the use of collections, determine research developments on certain topics [20,21,22]. topic of palm oil certification in the period 2008 - 2023 with limitations on economic aspects (Economics, Econometrics and Finance and Business, Management and Accounting), social and environmental, limitations in the form of the number of documents a total of 265 documents. This study collects article sources from publications indexed by Scopus. After searching, the files are saved in the RIS format, which will later be processed and analyzed using the Vos Viewer application. This application helps researchers, first, to see how the network between keywords is interrelated. Second, it enables researchers to observe publication trends over time and identify which keywords predominantly appear over time. Third, it allows researchers to examine the density of keywords on specific topics. This density can help researchers determine the extent to which a study has been discussed; the more yellow the color, the more the study has been discussed and has strong connections to other keywords. Conversely, darker colors indicate that the study has not been extensively discussed. Vos Viewer assists researchers in analyzing content accurately and adequately based on the previously inputted data [23,24,25,26]. The display allows analysis of existing data, for example the name of the researcher, the year the article was published and other information contained in the article. Apart from that, the Vos Viewer in this study helps researchers to see how studies related to palm oil plantation certification are understood and interpreted considering that there are different points of view for producing countries and countries that use palm oil production, this is what will later be seen in the existing literature studies. can detail and provide what is meant.

related factors drive standard adoption, and funding-related constraints hinder widespread adoption of the standard [31].

3.2. Overlay Visualization

The next step is to group the palm oil certification study topics by identification, and group them according to certain categories to see the trends that emerge in the study. These trends may include frequently researched topics, methods used, or results found. This trend analysis is based on previous publications as well as the year each publication was published, providing a historical perspective on how these studies have developed over time. In this context, metadata from Scopus is imported into Vosviewer for further analysis. This visualization shows recent developments or the latest state in palm oil certification research, highlighting important aspects and changes that have occurred over time.

Cluster 1 with purple nodes, study intensity in 2017 was dominated by studies of the keywords forest, use, Cluster 2 with dark green nodes, study intensity in 2018 was dominated by studies of standard keywords, oil palm, Cluster 3, with light green, study intensity in 2019 is dominated by studies of the keywords deforestation, expansion, government, Cluster 4, with yellow nodes, study intensity in 2020 to 2023 is dominated by studies of the keywords ISPO, Implementation, review, gap.

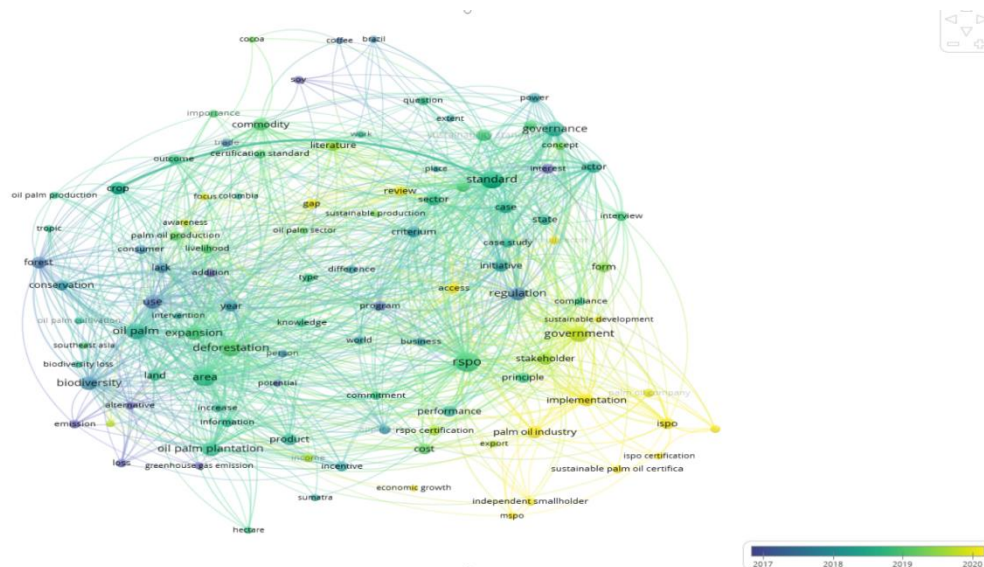


Figure 2. Overlay visualization on Occurrence

For example, the studies discussed include: that 70% of pesticides used are classified as hazardous pesticides, according to the World Health Organization (WHO). It is also necessary to pay attention to and highlight the company's commitment to the use of pesticides that are safer for the environment and public health [32], Other studies, found that palm oil production contributes to economic growth and provides jobs, but on the other hand there needs to be cooperation between the government, the private sector and farmers to ensure that oil palm plantations implement sustainable practices [33].

3.4. Study of Palm Oil Certification in Asia and Europe

Researchers are interested in bringing up what kind of studies exist on the two continents of Asia and Europe, America and Australia regarding palm oil certification. This will then provide an idea of what kind of study topics are discussed on two continents that have economic relations with each other on the one hand as producers and on the other hand are consumers, for the initial part the researcher took Scopus indexed articles with the keyword palm oil certification in the period 2010 to 2023 with a total of 146 articles on social economic and environmental aspects, as for studies that are often discussed on the Asian continent which is represented by the country Producers are Indonesia, Malaysia, Japan and Thailand.

In general, the discussion studied on the Asian continent focuses on how the government carries out certification activities and how independent farmers can meet existing certification standards. For example, a study about show that without government involvement and support from non-governmental organizations or the private sector, independent smallholder farmers will not be able to obtain sustainability certification voluntarily. To avoid excluding smallholder farmers from supply chains, systematic efforts are needed to address many of these structural weaknesses. New, multi-stakeholder approaches, in which the private sector and civil society organizations collaborate with local governments, can help address these challenges [36]. Indonesia as one of the palm oil producers should look at how palm oil farmers can fulfill certification ownership, then what obstacles they face and what things need to be done to increase certification achievement. The findings of this study state that in terms of financing for certification it tends to be expensive, besides that there are a lot of administrative documents that cannot be fulfilled by farmers, as well as a lack of knowledge of farmers about the benefits of certification, so it is necessary to provide assistance, simplify procedures and administration, as well as empower and know farmers and no less important is the need for cross-sectoral collaboration[37].

This is illustrated by the trend of research studies where in 2021 and above the keywords that frequently appear are Government, Challenges, implementation, ISPO, MSPO etc.

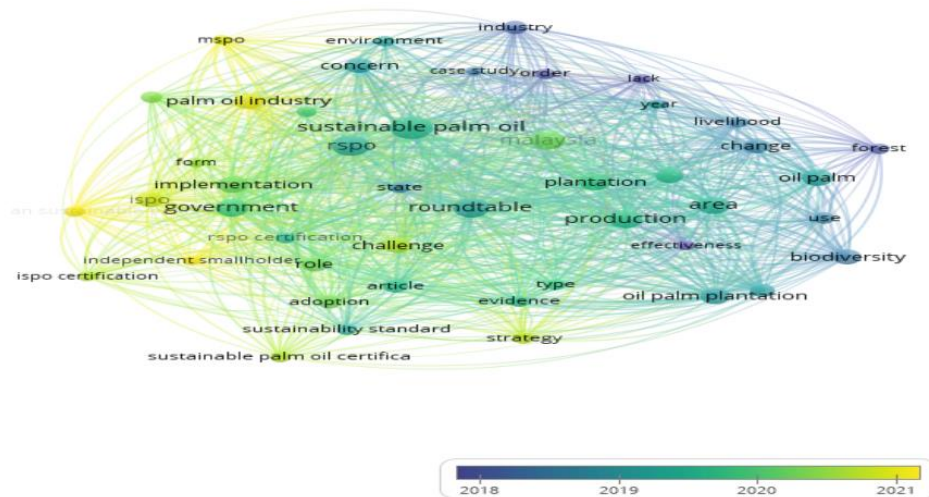


Figure 4. Overlay Visualization of Occurrence on the Asian Continent

Meanwhile, with the keyword palm oil certification in the period from 2008 to 2023 with a total of 162 articles on social economic and environmental aspects, there are studies that are often discussed on the European and American continents, represented by the United States, United Kingdom, Netherlands, Germany, Australia and France. In general, the discussions studied on the continents of Europe, America and Australia are related to the challenges faced by independent smallholders who will have to be able to meet the criteria for sustainability certification. It can be interpreted that the trend in the direction of the study is towards testing whether certification and certification activities and implementation of certification have been carried out as intended. This should be illustrated by keywords such as evidence, challenge, smallholder, etc.

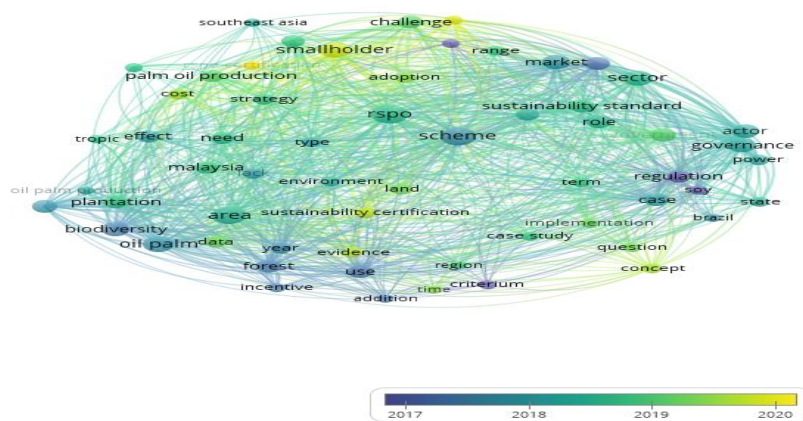


Figure 5. Overlay visualization of Occurrence Europe

For example, the study is related to the analysis of its effectiveness and implementation, there are difficulties between companies and farmers in fulfilling the requirements, ISPO faces significant challenges related to internal misalignment, changes in the scale of governance, and country transformation. Despite efforts to improve sustainable palm oil production practices, concrete steps are still needed to overcome existing ambiguities and strengthen the effectiveness of ISPO certification. A collaborative role between government, the private sector and civil society is very important to achieve the desired sustainability goals [38]. The discourse on palm oil sustainability in the European policy context is very complex and influenced by various actors and interests. Despite efforts to improve sustainability in palm oil production, significant challenges remain, particularly related to environmental and social impacts. The author emphasizes the importance of multi-stakeholder dialogue and a comprehensive policy approach to achieve true sustainability [39].

4. Conclusion

This study of palm oil certification can help us understand two different sides but have the same goal. The comparison found in looking at palm oil certification on the continents of Asia and Europe can certainly provide an illustration that there are strong interests between producers and consumers, for this reason synergy to create a climate for sustainable palm oil certification, it needs to be carried out in a neutral manner and also provide space for balanced discussion so that palm oil activities can be sustainable today, tomorrow and beyond.

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