

A Review of Oil Palm Industry Sustainability

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Abstract: Because of the increasing of oil palm manufacturing, it has become some debate, disagreements and has been discussed on different evidences. So, the accomplishment of the oil palm manufacturing sustainability which insert three main perspectives of sustainable evolution such as social, environmental and economic sustainability become significant. Sustainable manufacturing is established to become the base of the global economy in the next decades. There are some measure of the performance of sustainable oil palm manufacturing, product life cycle assessment, cleaner results, end-of-pipe technologies, infection preventive, etc. Applicable sustainability quality for oil palm industry and the key performance signals are provided in this paper.

1 INTRODUCTION

Palm oil produces two considerable positive socioeconomic like negative environmental and social effects, providing growth to significant queries at the next of sustainability matters. Although the palm oil field can be a profitable origin of salary, also for small company palm oil implant and output might have negative effects concerning environmental sustainability, involving lessen biodiversity and a great amount of greenhouse, particularly when green areas are replaced. The increasing global request for palm oil can thus challenge conservation defense and intimidate supportable development as a consumption to a large amount of different products involving many client stuffs such as biofuels (Schirmbeck et al., 2015).

According to sustainability topics, standard-setting and certification action have been done. Another product such as coffee or cocoa also been analyzed, but especially for sustainable palm is not easier. The RSPO as a deep discussion is a solution to that problem (Schirmbeck et al., 2015).

2 LITERATURE REVIEW

This paper inspects the believes marking the various methods in concepts of oil palm industry sustainability have been used in community research, by evaluating, by a systematic literature analysis and the key elements, trends and research spaces. The result from this study will supply researchers and law makers with an overview of research managed on the topic to turn supplies a object for expanding steady research programs for sustainable palm oil production.

The systematic review of research shows a way to integrate a appreciable total of information, with the recognition of the main feature of a specified topic. Hence, it help analyzing some results from various research and the identification of gaps (Macke & Genari, 2019).

Table 1 is a review of some papers about oil palm industry sustainability from 2015-2018.

Table 1: Reviews from Some Papers.

| Year | Author | Findings | Variables | Country |
|------|--------------------------------------|--|-----------------------|---------|
| 2015 | Abazue, Er, Ferdous Alam, and Begum, | <ul style="list-style-type: none">• Surveying case study in Malaysia based on environmental, social and economic view• Check the sustainability of small company outline in Malaysia. | Oil palm FELDA scheme | Italy |

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|------|--|---|---|-------------|
| 2015 | Schirmbeck et al. | <ul style="list-style-type: none"> The incorporation of small industry symbolized by small industry authentication under the RSPO Global environmental advantages | The tightness of technical necessities for production procedures | Germany |
| 2015 | Hansen et al. | <ul style="list-style-type: none"> Suggesting a holistic structure for palm oil sustainability study with the purpose of accomplishing various discipline researches and highlighting teamwork between industry and academia Admits requirement for industry evolution while positioning sustainability | Emissions & Impacts Biodiversity & Conservation Socio-Economic | Malaysia |
| 2015 | Kanadasan and Abdul Razak | <ul style="list-style-type: none"> Packaging of particles, which merges The amount of energy is lower | Materials Mix design development | Malaysia |
| 2015 | Lim, Biswas, Samyudia | <ul style="list-style-type: none"> How the industry set evaluation Using a spacious sustainability construction for the palm oil supply chain, especially directing upstream processes of crude palm oil production where most effects happen | Biodiversity Palm oil industries Plantations | Malaysia |
| 2015 | Martin, Rieple, Chang, Boniface, and Ahmed | <ul style="list-style-type: none"> The problems for researchers running with rural small company in merge region Palm oil small industry action in recognizing some obstacle in the academic stream regarding to the application of organic or sustainable food production ways | Individual interviews | Malaysia |
| 2016 | Bicalho, Bessou, Pacca | <ul style="list-style-type: none"> Due to the damage of biodiversity, it have to find the substitute one | Biofuel production Oil palm plantations, MSA | Brazil |
| 2016 | Hidayat, Offermans, and Glasbergen | <ul style="list-style-type: none"> Need to find the new ways of certification that profitable | Socio-economic characteristics Government support Education Experience Ownership of other oil palm plantations Productivity per area | Indonesia |
| 2017 | Burns et al. | <ul style="list-style-type: none"> Sustainability certification is the tool most applied to fulfil these specified laws Lessen deforestation corporate in original products produced mainly from certification that sloping toward farm with few enduring forests. | Problem about plantation Loosing area of forest Econometric Models | U.S. |
| 2017 | Burns et al. | <ul style="list-style-type: none"> Deforestation rates still shows low comparative to other tropical regions, emphasis are increasing from economic development and domestic consumption | Price index CPO sales Milling strategy | U.S. |
| 2017 | Saswattecha, Kroeze, Jawjit, and Hein | <ul style="list-style-type: none"> The cultivation of land-use prep rationing and forest care is needed to keep away negative result on ecosystem services | Oil palm plantations Palm oil mills | Netherlands |
| 2018 | Jusoh et al. | <ul style="list-style-type: none"> The performance of mill related with it's sustainability The goals is set to achieve sustainability performance | Performance orientation Transparency Data quality Data sustainability | Malaysia |
| 2018 | Morgans et al. | <ul style="list-style-type: none"> Comparing RSPO plantations RSPO management have to avoid the opposite social and biodiversity effects | Concession size Household density Population density Land under plantation Total land bank | Australia |

| | | | | | |
|------|-----------------------------|--------------|--|---|-----------|
| 2018 | Papilo, Hambali, Sitanggang | Marimin, and | <ul style="list-style-type: none"> • In Indonesia need more attention • Bioenergy aspect, should be prioritized. | Environmental Aspects Social Aspects Economic Aspects | Indonesia |
| 2018 | Papilo et al. | | <ul style="list-style-type: none"> • The establish of sustainability recommended by certified price tag projects such as the RSPO fetishes the commodity palm oil in order to ease serious consumer initiatives | Climate change Plantations | Germany |

3 METHODS

To get new information that used for future research on oil palm industry sustainability, some papers were studied. The steps are identifying, analyzing, and taking conclusion of the reference papers (Winter & Knemeyer, 2013) From Figure 1 we could see all of the step.

Step 1 – choosing period of paper publication

Several studies in the Period between 2012 and 2018 have been chosen as the main references. The selection of this period of time is considered to have sufficiently represented thinking that is a developing science.

Step 2 – choosing journal

In order to be easier, an analysis is done for theses journals from *Renewable Energy*, *Journal of Environment & Development*, *Economics and Sustainable Development*, *Cleaner Production*, and *Rural Studies* selected as references. These journals contain disciplines oil palm industry sustainability.

Step 3 – choosing article

The main criterion for selecting articles to be included in the analysis is the clear relationship of the content of the article to the framework of the previously defined text.

Step 4 – analysis

The next step is to study and examine selected articles to find out how research has developed over time. This analysis mean to identify new research area from literature because it relates to the field of oil palm industry and sustainability. This provides additional input and specifications.



Figure 1: Methodology of Research.

4 RESULTS AND DISCUSSION

The realization of sustainability will be used to analyze the productiveness of the suggested enhancement. A real system analyzed will used as a method for analyzed. The measures are recognized from study and discussion with the experts. (Jusoh et al., 2017).

In this case, there are two objects has to be accomplished. First, to specify the sustainability measures. Second, to maintain bioenergy expansion. The agenda could be seen in Figure 2.

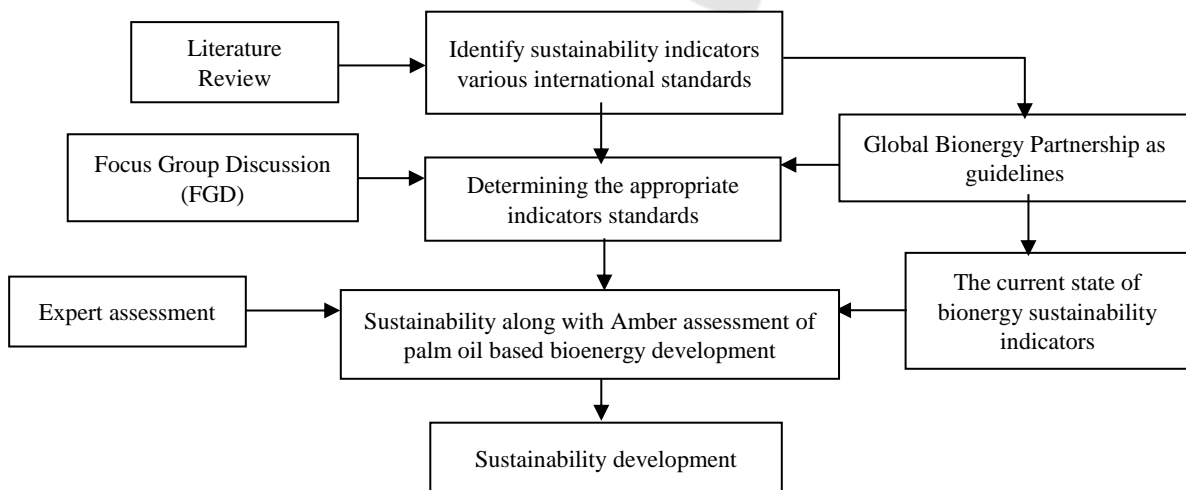


Figure 2: Study Diagram.

5 CONCLUSIONS

The standard that has connection to the bioenergy expansion is done by measuring bioenergy sustainability.

The study analysis represented about 15 articles which allied to this study. Study on this palm oil sustainability field has growing fast on the last decade. Bioenergy evolution growing fast. The economic features is important like the environmental and social features.

In future study, to have an effort increasing the ability of the results in clarifying the existent troubles, it needs to focus of studies of bioenergy development. Some features should be give attention are technological, political, and also institutional.

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