

MULTIFUNCTIONAL OIL PALM PLANTATIONS AS AN ANSWER TO THE ISSUE OF SUSTAINABILITY

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RESUME

Oil palm plantations are considered as an economic sector that needs to be questioned about its sustainability. Its due to the widespread issue of environmental damage to human rights violations associated with oil palm plantations. This point of view of oil palm plantations is very ironic and contradicts the nature/function of plantations and agriculture as a link between the physical natural environment and human life on planet Earth.

In concept of multifunction of agriculture, oil palm plantations as a part of agricultural sector also four main function, namely economy fuction (white function), socio-cultural function (yellow function/services), the function of water conservation (blue services), and the function of preserving natural resources (green function). In a shorter, oil palm plantation has economic, social and environmental functions, that are not owned by other sectors outside agriculture. During the process of cultivating oil palms reaching the age of 25 years, people across generations have enjoyed the benefits of the multifunctional oil palm plantations. Even the multifunctionality of oil palm plantations is not only enjoyed by the people of Indonesia, but also enjoyed by the world community both directly and indirectly involved in the palm oil industry.

Meanwhile, the principle of sustainable development with the principle of sustainability also has dimensions/main pillars namely economy (profit), social (people), and environment (planet). If examined, the pillars in the aspect of sustainability also reflect multifunctionality in agriculture. This shows that the agriculture/plantation sector, including oil palm plantations, is a sector that contributes to sustainable development and is proven to be more sustainable compared to other sectors. Therefore, the problem of sustainability in oil palm plantations (sustainability vs unsustainability) no more questions. However, things that need to be considered related to the issue of sustainability in oil palm plantations are the issue of degree of sustainability.

With RSPO and ISPO (as well as MSPO/Malaysian Sustainable Palm Oil), sustainability certification making palm oil the only vegetable oil product even the world's agricultural products have been tested to fulfill sustainability indicators. However, the sustainability certification also has several lacknes such as being partial, confusing indicators of sustainability with sustainability so that the principle of degree of sustainability is not accommodated and confusing the domain of government with the company. Therefore, to make the certificate of sustainability as a place to creates oil palm plantations more sustainable (not just a label) and more multifunction agriculture that can be enjoyed across generations, it is necessary to improve principles, indicators and measurement methods that integrates the principles of sustainability and multifunctionality of plantations/agriculture and by using a comprehensive and holistic approach.

INTRODUCTION

Economics and ecology have same syllable namely *oikos* in Greek which means household. However, in practice development of economic and ecological are not always easy. In fact, sometimes it creates trade-off between the development (developmentalism) and the of environmental sustainability (environmentalism) and this is also experienced by all countries in the world. The thought's of environmentalism that natural resources and the environment must be preserved/protected so that the source of life on Earth can be sustainable from generation to generation. Economic development will only damage/reduce the quality of the environment. On the contrary, the developmentism have thought that natural resources and the environment must be utilized in development to improve the welfare of society from generation to generation.

The meeting point between developmentalism and environmentalism began to formed when the World Commission on Environment and Development (WCED) published the annual report in 1987 known as Our Common Future. In the report began introducing sustainable development. In general, it was agreed that three pillars were considered to be able to meet sustainable development namely economically sustainable (profit), socially sustainable (pepeople) and environmentally sustainable (planet).

In this regard, oil palm plantations receive the attention of the global community and are considered as an economic sector that needs to be questioned about its sustainability. Oil palm plantations as part of the palm oil industry are considered not to meet sustainable standards due to the widespread issue of environmental damage to human rights violations associated with oil palm plantations. Doubts over the sustainability of oil palm plantations are reflected in the implementation of a palm oil plantation sustainability system testing known as certified sustainability palm oil such as Roundtable Sustainability Palm Oil (RSPO) and Indonesia Sustainability Palm Oil (ISPO).

This point of view of oil palm plantations is very ironic and contradicts the nature/function of plantations and agriculture in general in the global ecosystem. Plantations are a link between the physical natural environment and human life on planet Earth. Therefore agriculture including plantations should be seen and placed as part of the mechanism of ecosystem sustainability. And oil palm plantation as part of plantation subsector and agriculture sector, so its has the role. In addition, based on history also proven that oil palm plantations in Indonesia have existed since 1911 and are growing today. This shows that oil palm plantations have proven to be sustainable across generations.

Therefore, in this paper we will describe the nature and function of oil palm plantations in ecosystems known as multifunctional oil palm plantations. Then next continues with a description of how sustainability issues are placed in oil palm plantations.

EMPIRICAL EVIDENCE OF MULTIFUNCTIONAL OIL PALM PLANTATIONS

Like other plants, oil palm plantations are also "biological machines" that serve as a chain between the physical natural environment and human life. "Biological machines" in this term refers to the biological process of oil palm plants in a netto namely fotosintesis process with the absorption of carbon dioxide from the earth's atmosphere (stored in the shape of body and plant production) and produces oxygen into the earth's atmosphere.

Not only acts as a "biological machine", agricultural crops (including oil palm plantations) are also capable of producing multifunctional agriculture. The term began to be discussed at the international level at the Rio Earth Summit in 1992. In shorter, agriculture multifunctional means that in addition to the main function of economic functions (producing foodstuffs and fiber material), agriculture also has social functions and ecological functions. In a broader sense, multifunctionality of agriculture includes four functions (Figure

1): economic function (white function), socio-cultural function (yellow function/services), water conservation function (blue services), and preservation of natural resources function (green function) (Aldington, 1998; Dobbs & Petty, 2001;

Moyer & Josling, 2002; Huylenbroeck *et al.*, 2007). The four functions of agriculture/plantation internationally are often called 3-P, namely profit (white function), people (yellow function), and planet (green function and blue service).

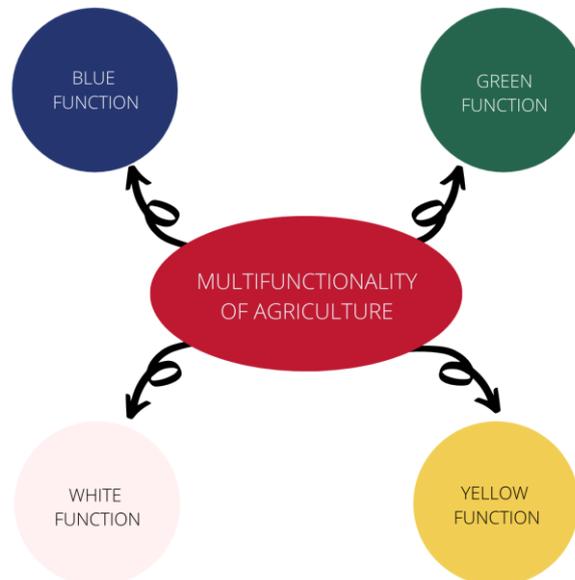


Figure 1. Multifunctionality of Agriculture

Multifunctional estates in Indonesia are also recognized in Law No. 39 of 2014, that plantations have three functions namely: (1) economic functions (increasing people's prosperity and welfare and strengthening regional and national economic structures); (2) ecological functions (enhancing conservation of land and water, carbon sequestration, oxygen supply and buffer of protected areas; and (3) socio-cultural functions (as the adhesive and unifier of the nation).

Thus oil palm plantations as one of the sub-sectors in agriculture also have built-in multifunctional agriculture that is not only harvested/enjoyed by the current generation but it is also enjoyed by future generations. Initially only four palm trees were planted in the Bogor Botanical Gardens in 1848, then cultivated into plantations in 1911 and until now continues to grow with an area of national oil palm plantations reaching more than 16 million hectares, this means that during the process of oil palm cultivation/preservation, communities across generations have enjoyed the benefits of the multifunctional oil palm plantations. The multifunctional sustainability of the

palm oil plantations is not only enjoyed by the Indonesia's community but also enjoyed by global community, both directly and indirectly involved in the palm oil industry. The following is empirical evidence that shows that oil palm plantations and the national palm oil industry have multifunctional agriculture described above.

Empirically the economic function of the palm oil industry has been proven by various researchers, including the source of foreign exchange and state's income, regional economic development and increased income of farmers (Tomic and Mawardi, 1995; Sato, 1997; Susila, 2004; Sumarto and Suryahadi, 2004 ; Joni, 2012; Rofiq, 2013; World Growth, 2009, 2011; PASPI, 2014). Even the economic benefits of palm oil are also enjoyed by the European Union community. CPO imports carried out provide great benefits both to GDP, government revenue and European Union employment opportunities (Europe Economics, 2014).

Likewise, the socio-cultural function of the palm oil industry has also been proven empirically including its role in rural development, improving the quality of life, and poverty reduction (Sumarto&Suryahadi,

2004; Susila, 2004; Gunadi, 2008; World Growth, 2009, 2011; Joni, 2012; Rofiq, 2013; PASPI, 2014). In addition, the human resources involved in oil palm plantations in each region are an alliance of ethnic diversity in Indonesia. Multiethnic involvement in economic activities also means that oil palm plantations are a means of preserving the diversity of social interactions between ethnic/cultures. The institutional cooperation of the Nucleus Estate Smallholders (NES) is a combination of local cultural values and modern management designed (institution engineering) so that small/local farmers can participating in oil palm plantations as part of the social function of coconut plantations palm oil.

Various studies have also proven that the ecological function of oil palm plantations includes the preservation of carbon dioxide and oxygen cycles (photosynthesis process), restoration of degraded land due to logging or mining, conservation of soil and water and increasing biomass and carbon stock of the land (Henson, 1999; Harahap et al, 2005 ; Fairhurst&Hardter, 2004; Chan, 2002), even also contributed to reducing greenhouse gas emissions and peatland restoration (Murayama and Baker, 1996; Melling et, al. 2005, 2007; Sabiham, 2013). In addition, the development of palm oil based biodiesel that implementing in Indonesia and developed countries such as Europe and the United States of America has contributed to the reduction of global carbon emissions as an mitigation and minimize the effects of global warming and climate change.

The multifunctionality of the agricultural sector (in a broad sense) has also been adopted in developed countries, especially the European Union, the United States of America, Japan, and others. In these countries (Aldington, 1998; Dobbs and Petty, 2001; OECD, 2001; Moyer and Josling, 2002; Huylenbroeck, et. Al, 2007; Moon, 2012). In addition, multifunctional of agriculture has been used as a basis/argument for public policy (subsidizing agriculture on a large scale) and international trade policy (protectionism).

Recognition of developed countries for the multifunctionality (economic, social, ecological) of the agricultural sector implicitly also recognizes that the

agricultural sector is a sustainable sector. These developed countries also did not carry out sustainability certification in order to prove that their agricultural products had met the sustainability indicators. So, why does palm oil, which is the result of agricultural cultivation from oil palm plantations, continue to be "shouted" as a not sustainable and needs to be questioned about its sustainability so they have to be prove through various sustainability certifications? Is this also a form of trade competition from vegetable oil producer countries against palm oil?

ISSUES AND CRITICISMS IN THE PALM OIL SUSTAINABILITY CERTIFICATION SYSTEM

If we look at the concept of sustainable development produced by the World Commission on Environment and Development (WCED) and the multifunctional of agriculture concept, there are common pillars or principles namely economic, social and environmental. This shows that multifunctionality of agriculture is a real form of the concept of sustainable development. This means that plantations/agriculture including oil palm plantations are built-in are sectors that contribute to sustainable development and prove to be more sustainable compared to other sectors.

Indonesia also have law platform about sustainable development namely Law No. 32 of 2009, which have define sustainable development namely: **"Sustainable development is a conscious and planned effort that integrates environmental, social and economic aspects into development strategies to ensure environmental integrity as well as the safety, capability, welfare and quality of life of present and future generations"**. This shows that Indonesian law also confirmed that the concept of sustainable development is the same as multifunction of the agriculture, because of the similarity of the pillars or principles.

The logic above also shows that it is no longer relevant to question whether oil palm plantations are unsustainable or sustainable,

because the answer is very clear that oil palm plantations as part of an agricultural sector that has multifunctional agriculture which have part of sustainable development. However, in order to fulfill the demand and question of global consumers, various sustainability certifications for Indonesian palm oil and plantations such as the

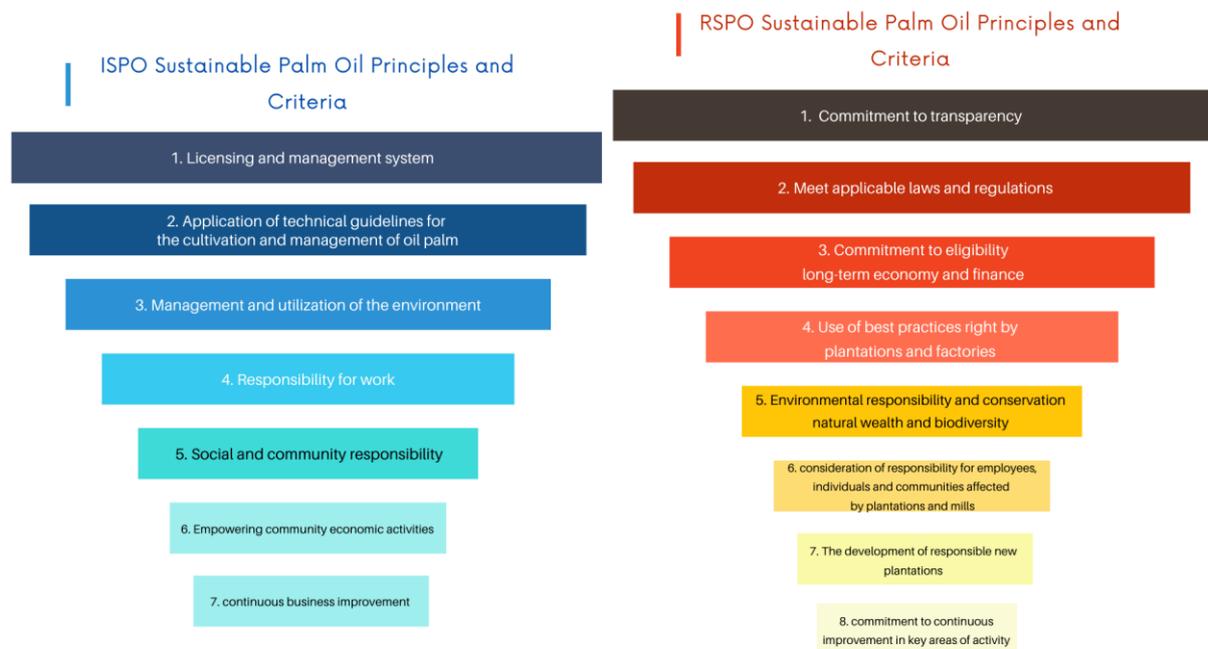


Figure 2. ISPO and RSPO's Principles and Criterias of Sustainable Oil Palm Plantation

The principle of sustainable oil palm plantations used by RSPO and ISPO shows that: **First**, the concept of sustainability used by ISPO and RSPO does not yet accommodate the multifunctionality of oil palm plantations.

Second, the principles and indicators used by both the RSPO and ISPO tend to assess unsustainability and not measure the degree/level of achievement of sustainability (degree of sustainability). Whereas the relevant principles and indicators used to measure the sustainability of oil palm plantations are the variables of degree of sustainability, which will indicate whether the oil palm plantation can continue to increase its level of sustainability from before. If the principle of degree of sustainability is accommodated in the principles of RSPO/ISPO, then oil palm plantations will continue to make improvements in various aspects so they will be more sustainable and will be able to increase the multifunctional capacity (economic, social, environmental) of oil palm

Roundtable Sustainable Palm Oil (RSPO) and Indonesian Sustainable Palm Oil (ISPO) were formed. Thus, palm oil as the only vegetable oil product even agricultural products in the world has a certification of sustainability. The RSPO has eight principles, while ISPO has six principles (Figure 2).

plantations can fulfilling the inneeds of future generations.

Third, there is confusion between sustainability indicators that are the domain of government policy and the domain of companies. This is because sustainability needs to be differentiated into the domain of government and companies, as stated by Feher and Beke (2013) that government policy (politics) is the 4th P after 3-P of sustainability. Government policies are needed (determining) to correct market failures that often occur in various aspects of sustainability Panayotou, 1993; Farkasne *et al.*, 2004). Even in many cases of market failure cause of policy failures. So the combination of market failure and policy failures actually causes unsustainability at the company level. Conversely, the right government policies in various level such as macro/national, sectoral, regional and at the industrial/commodity level, will produce sustainability at the company level.

Fourth, the current approach to sustainable oil palm plantations such as ISPO

and RSPO is still partial (PASPI, 2019). This is because the sustainability certification on ISPO/RSPO only assesses the sustainability of one plantation plot and does not fully assess one plantation ecosystem area, whereas biodiversity in the ecosystem of plantation also affects the sustainability of the plantation.

Thus the principles and indicators used by ISPO and RSPO to measure the sustainability of oil palm plantations require improvements in the future. ISPO and RSPO certification should be able to integrate the principles of sustainability and multifunction of oil palm plantations as part of continuous improvement for palm oil producers, both companies and farmers, in order to increase the degree of sustainability. In addition, governance is needed with a new approach that is more comprehensive, multidimensional and holistic, namely the ecosystem/area approach such as the KIMBUN concept (PASPI, 2019), to further make a more sustainable ecosystem of palm oil plantation.

CONCLUSION

Oil palm plantations have a multifunctionality of agriculture that is the economic function (white function), socio-cultural function (yellow function/services), the function of water conservation (blue services), and the function of preserving natural resources (green function). In a simply way, plantations oil palm has economic, social and environmental functions, which can be enjoyed by communities across generations, both Indonesian and global communities.

Meanwhile, the principle of sustainable development with the principle of sustainability also has dimensions/main pillars namely economy (profit), social (people), and environment (planet). If examined, the pillars in the aspect of sustainability also reflect multifunctionality in agriculture. This shows that the agriculture/plantation sector, including oil palm plantations, is a sector that contributes to sustainable development and is proven to be more sustainable compared to other sectors. Therefore, the problem of

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