SENJOp
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Science and Environmental Journals for Postgraduate
Vol. 5 No. 2 (pp. 235-241) June 2023
p_ISSN 2655-5085
e_ISSN 2655-5239

The Impact of Palm Plantations on the Economy, Social and Environmental

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Received: 06 Apr. 2023, Revised: 23 Apr. 2023, Accepted: 01 Jun. 2023

ABSTRACT

This paper aims to describe the forms of impacts caused by oil palm plantation activities from economic, social, and environmental aspects. The method used by the author is a literature review related to the economic, social, and environmental impacts caused by oil palm plantation activities. A library study is a study whose research object is in the form of literature works in the form of scientific journals, books, articles in the mass media, as well as statistical data. After the resulting impacts are known, the author's hope of this paper is that the positive impacts generated by oil palm plantation activities can be maximized and the negative impacts on the environment can be minimized. The negative impact on the environment is not felt directly but in the long term. So that the community will be more prosperous without damaging the environment. In the end, sustainable development can be realized collectively.

KeyWords: Impact, Economy, Social, Environment, Oil Palm Plantation.

INTRODUCTION

National Development implemented by the Government aims to improve the welfare of society by establishing economic and agricultural development. The results of this development will be able to provide the people with justice and equality. Success in development will be able to expand the availability of population needs such as food and clothing without destroying nature or the environment.

Agricultural and plantation development will be able to provide an increase in national economic growth for the community's standard of living. The existence of the agriculture & plantation sector will be able to have a huge impact on agribusiness development from an ecological, social, and cultural perspective. One of the plantation sectors is oil palm, which is the prime agricultural industry and the largest source of income in Indonesia. Dimana Indonesia is an agricultural country and agriculture plays a very important role in national economic growth. One of them is plantation commodities that are reliable in occupying the highly developed export market (Nawiruddin, 2017). Palm oil is an important commodity in terms of local, regional, and global markets because the product can be used as cooking oil, raw material for cosmetics or industry, and can even be used for ice cream, salad, cheese, biodiesel, and others (Khatun et al., 2017). So, we find many private palm oil entrepreneurs who can meet market demand. According to Koh & Wilcove (2008) in 2008 Indonesia already had oil palm plantations of up to 4.1 million ha or 31% of the world's total. Over time, according to the Directorate General of Plantation (2014), the area of oil palm plantations in Indonesia has increased from 1.1 million ha in 1995 to 11.4 million ha in 2014. In 2019 the area of oil palm plantations in Indonesia was 14.7 million ha and in 2020 estimated at 14.9 million ha.

Along with the increase in population & increased development of oil palm plantations, this will result in a shift in land use in Indonesia which is not by the rules of spatial management or land capacity, which will result in the loss of fertile land and decreasing clean water in damaged environments (Eresti & Walid, 2020). Oil palm plantations are one of the largest sources of income in Sumatra and Kalimantan. It cannot be denied that people want to open oil palm land as a business method for or to increase economic results. The results of this oil palm plantation will provide benefits for the economic sector which will be able to change the structure of primary forests into plantations which need to be considered and will have an impact on water availability in the area.

Further, Syahza (2011) that oil palm plantation activities will have a positive influence on the region from an economic or social perspective, such as increasing community welfare, expanding employment opportunities or business places, as well as contributing to regional development. According to Afifuddin (2007) in (Siradjuddin, 2015) the oil palm subsector has huge employment opportunities and is a source of income for farmers which can generate gross domestic product income and people's welfare. The impact of oil palm plantations can increase farmers' income and contribute to local revenue. According to Taryono (2012), regional governments are expected to be able to increase regional original income through developing economic activities based on regional superior commodities, such as by developing oil palm plantations, both in an organized manner such as company owners and those owned by the community or oil palm farmers themselves. Based on the results of many studies, the existence of oil palm plantations has a significant impact on the growth and increase in income of the community's economy. The social sector also has an impact on the behavior and habits of local communities. However, the existence of oil palm plantations also has an impact on the environment, such as increasing hot temperatures, and lack of water, and can even have the impact of disrupting biodiversity and ecosystems. Based on this description, the author attempts to examine through a literature study the impacts resulting from oil palm plantations on the economy, society, or ecosystem. Not only that, this also provides an understanding of how important it is to know the impact of oil palm plantations.

METHODS

This type of research uses a descriptive analysis approach in the form of a method for analyzing research results and then providing conclusions. Meanwhile, the data collection technique is in the form of a literature study. Aryantie et al (2023); Putra et al (2023) explain that library studies are sources obtained from references to books, journals, or previous research that are on the theoretical basis of the problem.

RESULTS

Oil palm development has positive and negative impacts on environmental, economic, social, and cultural components, namely:

3.1 Influence on the economy

From an economic aspect, it has a relationship with the production, exchange, and consumption of goods and services. According to Corlay (2003), socio-economic impacts

will provide changes to employment, income, and others. The following economic aspects: 1) Opportunities to work and try; 2) Patterns of change in controlling natural resource land; 3) Income level; 4) Infrastructure Facilities and Infrastructure; and 5) Utilization of Natural Resources. Research conducted by (Hidayah et al., 2015) in the Tesso Nilo National Park conservation area, Riau stated that there was an increase in the economic value of the community with the existence of palm oil plantations. Palm oil has a high level of economic value for survival. This can be seen from the Tesso Nilo National Park area, which covered an area of 70,553.56 ha in 2005 until the remaining 18,043.71 ha in 2015. In the next 10 years, 52,509.65 ha will experience degradation due to the clearing of residential areas for oil palm plantations. Research carried out by (Khairunnisa, 2018) in Riau where the results explains that the community's economy is increasingly growing with oil palm plantations. Furthermore, research (Utami et al., 2017) regarding the economic and environmental impacts of oil palm plantations in Penyabungan Village, Merlung District, Kab. West Tanjung, Jambi. These results explain that farmers have experienced changes in income from rubber and oil palm which have increased greatly. The same research was conducted by (Utami et al, 2013) by comparing the distribution of family income of oil palm farmers and rice field farmers (A case study of Ujung Kubu Village, Tanjung Tiram District, Batubara District) and the results showed that oil palm farmers had a middle income. compared to the low-income of rice farmers.

3.2 Influence on social affairs

This aspect is to measure how human life contains the values of togetherness, solidarity, humanity, and others, namely: 1) Social institutions or institutions that grow among society such as customs; 2) Cooperation as a form of accumulated conflict in society; 3) Acculturation, assimilation, and integration within groups; 4) Organization or social group; 5) There is social change taking place; and 6) People's perceived attitudes towards business and work plans. Meanwhile, Bintarto revealed that social conditions are in the form of joint efforts by the community to overcome life's difficulties as measured by age, gender, level of education, occupation, and income. Oil palm plantations have an impact on the social conditions of the surrounding communities.

According to (Hidayah et al, 2020) in his research, the culture of local communities on oil palm plantations is beginning to fade, influenced by immigrants, one of whom serves as plantation administrator. According to (Hidayah et al, 2015) the condition of the people living in Tesso Nilo National Park has a traditional social perspective which refers to the spiritual system. However, this situation is starting to fade because several organizational systems are not included in the social organization even though they are indigenous people. According to (Risal, 2015) in his research in Borneo, East Kalimantan, it was said that a change in the natural landscape resulted in the opening of oil palm land whose production was so large for social and economic conditions as a form of competition that changed identity, community habits, cultural values and others. The existence of oil palm land will attract investors to acquire forest land as a source of livelihood. This opinion is in line with the opinion that the existence of the palm oil industry sector will influence the level of conflict that occurs in the community with companies. The results of this research explain the existence of conflict or jealousy between Ruhui Village and Salim Batu in receiving the PT Sanggam Comdev program. Kahuripan Indonesia, which led to attacks among the community. In fact, according to Nugroho et al (2016), the confiscation of oil palm land will end conflict problems such as the Riau area. Based on Scale UP data (2016), 39 conflicts were recorded that occurred in 2013, then increased to 163 conflicts in 2016 with an area of 601,680 ha.

3.3 Effects on the environment

The existence of oil palm plantations will have a positive impact on increasing household income and community resilience, but on the other hand, it will also cause environmental damage such as flooding. Most land clearing is still done by burning. The Ministry of Environment and Environment revealed that in June-October 2015, 2.6 million hectares were burned, where the largest number of fires were in oil palm plantations. This fact can damage the ecological system (Nugroho et al., 2016). The physical and biological environment has an impact on regional microclimate activities in established oil palm plantations. This will cause the climate component to change air humidity due to garden construction such as clearing land and building facilities. The author gathered the impact of oil palm plantations on the environment from various previous studies, namely:

- Damage to the forest ecosystem: When the function of forest land is converted into oil palm plantations, the existing flora and fauna will be disturbed. According to (Hidayah, et al, 2020), his research explains that the factor in accelerating ecological change is towards companies holding HPH in their activities. Making road access to the forest easier will cause forest damage. The impact is so big in the form of wood carried out by squatters and animal habitats will also feel the impact of being disturbed by the increasing population in settlements. Climate change degradation damage has two ways, namely by burning forests which then releases carbon dioxide into the atmosphere. According to (Risal, 2015), his research stated that forest destruction in East Kalimantan was caused by land being cleared for oil palm plantations by MNCs. This is done by clearing the forest and then using it as a medium for planting palm oil which can be detrimental to the environment. Research carried out by Hidayah (2015) focused on oil palm expansion which would provide socio-economic change in a village. The results explain that changes in the ecological landscape will have an impact on the livelihood system of the community in the Tesa Nillo National Park, which is a high conservation area. The Indonesian palm oil industry is considered to be progressing rapidly which is considered responsible for deforestation, carbon emissions, and loss of biodiversity (Pearce, 2017; Gaveau et al., 2016 Dharmawan et al., 2019).
- Damaged Soil Structure and Frequent Floods: At the level of land *clearing* has a function as a cover for lost forests in the form of its function as natural water storage to prevent rain erosion. After the forest is closed it will turn into oil palm plantation land, erosion will occur. This erosion occurs, however, if there is no leaf canopy as protection, the rain will flow to low ground. For this reason, oil palm plantations should be able to operate activities such as fertilizing, transporting produce, and processing. So it will experience a decrease in quality and be unable to absorb or store water. Chemicals that are used continuously will cause acidic groundwater pollution because palm oil consumes a lot of water. In the next research carried out (Oksana et al., 2012) this research focuses on the influence of the conversion of forests into oil palm plantations on chemicals, namely pH, organics, cation exchange capacity, total N, and organic materials which have their content. different in terms of planting age. Ankles (2002) has the same opinion (Dharmayanthi, 2018) that oil palm land will cause a decrease in land quality accompanied by erosion of pests and diseases in the environment. This land will have an impact on the damage to nutrients and water from monoculture plants which are capable of absorbing 12 liters of water which is stimulated by fertilizer substances such as pesticides.
- Reduced Water Reserves: Based on research by Harahap & Darmosarkoro (1999), it is explained that the water needed for oil palm is in the range of 1,500 – 1,700 mm, equivalent to annual rain for growth and production needs. This oil palm requires a lot of water but not as much as the need for food such as corn, rice, and soybeans which is

around 1,200 – 2,850. This oil palm plant is considered to be the cause of the lack of groundwater availability. Research conducted by (Pasaribu et al., 2012) at Kalianta Kabun Riau shows that the percentage of oil palm interception is 21.23% of rainfall. Evapotranspiration ranges from 68.23 – 125.63 mm/month or the equivalent of 1,104.5 mm/year. The water requirement for oil palm is smaller than that of rubber, teak, acacia, and others. This oil palm is known as a water-hungry plant, so it is feared that it will damage its water resources. Apart from that, surface water becomes polluted by insecticides, pesticides, and so on (Sabriyah & Kospa, 2016).

- Increased Air Temperature: Changes in forest land cover to oil palm plantations will increase the heat of the sun (Amalia et al., 2019). Research conducted by (Rusmayadi, 2011) revealed that the rubber and oil palm areas in Kasiau Village, Kambang Kuning Village, and Tulisai receive sunlight reaching 36 degrees Celsius with a humidity of 55.7%, which makes people feel uncomfortable. According to Murdiyarso (2003), the temperature of the earth's atmosphere is now 0.5ºC hotter than the temperature in the pre-industrial era. The Inter-governmental Panel on Climate Change (IPCC) published the results of observations by scientists from various countries during the 1990-2005 period, showing an increase in temperature in all parts of the earth, between 0.15 - 0.3 ºC. The IPCC also predicts that global average temperatures will increase by 1.4 - 5.8 ºC by 2100. According to Leonanda et al (2019) problems in the environment are used as a focus for world economic growth which makes countries developed but on the other hand, it will have an impact on damage to the environment itself and human survival by triggering global warming. which is increasing.
- Loss of Biodiversity and Biodiversity: Covering land that turns into oil palm plantations is monocultural so the habitat of animals, fruit, and vegetable plants will be disturbed and even biodiversity will be reduced. Based on the results of the ISPO agreement, every 10,000 ha of oil palm has a buffer of 300 ha or around 30%. Therefore, factories should be able to maintain forests even though they have been converted (Sabriyah & Kospa, 2016). In research conducted by Khairunnisa (2018) it is clear that the Riau region has had a positive impact on the presence of the oil palm plantation industry, including increasing income for the community, while on the other hand, it can also cause anxiety about increasingly hot weather, air, pollution, burning of waste and so on.

CONCLUSIONS

Oil palm plantations are one of the agricultural sectors that is very promising and excellent for people in Indonesia. Oil palm plantations have positive and negative impacts on every interest. In the economic aspect, there will be positive impacts such as increasing and increasing people's income. In the social aspect, job opportunities will be opened, but it will also be vulnerable to social conflict in society. However, this is different from palm oil plantations which impact all living creatures and the environment. Whether it starts from gardening in the sense of changing the function of production land to disrupting the balance of the ecosystem and endangering biodiversity. Palm oil is a plant that absorbs a lot of water so humans also feel what they do from the negative impacts of clearing oil palm land. In the end, the author hopes that managers, and owners of oil palm plantations, whether companies, farmers, or the community, can maximize their positive impacts and minimize negative impacts on the environment. The negative impact on the environment is not felt directly but in the long term. So that society will become more prosperous without destroying the environment. In the end, sustainable development can be realized together.

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