

INDONESIAN PALM OIL PLANTATION IS NOT A DEFORESTATION DRIVER, BUT REFORESTATION ECONOMIC, SOCIAL, AND ECOLOGY IN ABANDONED LAND

By
Research Team PASPI

RESUME

Deforestation is a normal phenomenon in every development process that has been carried out by all countries in the world. Deforestation also occurred in Indonesia, which had begun since the colonial period and was increasingly massive during the Orde Baru era. Although deforestation is normal in the development process, this issue has been used to discredit Indonesia's oil palm plantations which are considered as the main drivers of deforestation in Indonesia. The black campaign has an impact on the damage to the image of the Indonesian palm oil industry in global consumers until creates of various palm oil derivative's product boycott movements in various countries. Therefore, this paper will reveal the history of deforestation in Indonesia and the origin of Indonesia's oil palm plantations based on data and facts.

Indonesia's forests has decreased areas from 162.3 million hectares in 1950 to 85.8 million hectares in 2017. Otherwise, the area of deforestation has increased from 68.1 million hectares to 101.9 million hectares in same period. If compared with expansion of oil palm plantation, the proportion of the area of oil palm plantations is only 0.4-9.7 percent of the area of deforestation in Indonesia. This shows that oil palm plantations are not the main driver of deforestation in Indonesia.

Based on history of deforestation in the Orde Baru era, was caused by massive logging activities. Massive and intensive logging activities, especially on Sumatra, Kalimantan and Sulawesi during the Orde Baru era, have implication of degraded forest land and turned into abandoned shrubs. Therefore, Orde Baru's government provides programs to utilize ex-logging land, such as Transmigrasi and the development of oil palm plantations. This was confirmed by Fahmuddin dan Gunarso's study (2019) which showed that most of the oil palm plantation land came from agroforestry and shrub area, while the share of primary forest used for oil palm plantations was very small.

This study showed confirm the fact about the development of Indonesian oil palm plantations is not the main driver (driver) of deforestation, but is an reforestation. Oil palm plantations have even re-greened the ecological, economic and social aspects of communities damaged by logging in the past. In ecology side, oil palm plantations absorb carbon dioxide, produce oxygen, increase biomass and carbon stocks, conserve soil and water or increase water holding capacity and produce biofuel replacing fossil energy that is reduce carbon dioxide emissions. From an economic aspect, oil palm plantations increase farmers' incomes, increase regional economic development, increase government revenue, and generate foreign exchange. Whereas socially, oil palm plantations increase employment opportunities, reduce poverty, increase rural development and improve income inequality.

INTRODUCTION

Deforestation is a normal phenomenon in development process that has been carried out by all countries in the world. The conversion of forest land into non-forest land occurs to fulfill the needs of land both in the economic activity and residential sectors at the beginning of the development process. Deforestation in Europe occurred since the beginning of human civilization and it is estimated to end in the 18th century, while intensive deforestation in the United States occurred from the 16th century to the 19th century.

Similar to other countries, deforestation also occurred in Indonesia, which began in the colonial period and more massive deforestation has occurred during the Orde Baru era, in which the development period in all sectors took place more quickly. Although deforestation is normal in the development process, deforestation issue has recently been used to cornered Indonesian oil palm plantations. The expansion of oil palm plantation is considered to be a driver of deforestation and forest destruction in Indonesia.

The accusation is getting stronger along with the many of anti-palm oil NGO's that are currently aggressively conducting negative campaigns that the existing oil palm plantations are the result of direct conversion from natural forests and are the cause of the loss of Indonesia's forests. The black campaign has an impact on the damage to the image of the Indonesian palm oil industry in global consumers, until created boycott of various palm oil derivative's products in various countries.

This paradigm needs to be corrected so as not to damage the image of the Indonesian palm oil industry further. Therefore, this paper will reveal the history of deforestation in Indonesia and the origin of Indonesia's oil palm plantations based on data and facts.

THE HISTORY DEFORESTATION OF INDONESIA AND ITS RELATIONSHIP WITH OIL PALM PLANTATION

Deforestation that happen at this time is an accumulation since thousands years ago that occurred in all of the world. Prior deforestation occurred in sub tropical regions (such as Europe mainlad, North America) since 1700s, meanwhile deforestation in tropical countries intensively just begun since 1900s. Its showed this deforestation is a normal phenomenon development that happens in every country all over the world.

If traced to the past history in each country shows that cities, industrial areas, residential, agriculturals are the result of deforestation that aims to improve the welfare of a country. However, development that have bad impacts for forests and the environment that carried out by a country will also stop at a point. As explained in the Environmental Kuznets Curve (EKC) where the rate of deforestation due to the development process will decrease with increasing income (PASPI, 2020).

In European and North American countries, the point of deforestation stopping during its development period in the past did not exist. So that almost all virgin forests and biodiversity in Europe and North America have long been extinct (Soemarwoto, 1992). Unlike in Indonesia, the principle of preserving the environment, forest and biodiversity in it has been considered since the beginning of development through Law No. 41/1999 about Forestry. The law states that Indonesia's forest area is preserve at least 30 percent of the land area.

Just like what happened in other countries, deforestation also occurred in Indonesia (Figure 1). Indonesia's forests area was decreased from 162.3 million hectares in 1950 to 85.8 million hectares in 2017. Otherwise, the area of deforestation was increased from 68.1 million hectares in the 1950-1985 to 101.9 million hectares in the 2000-2017.

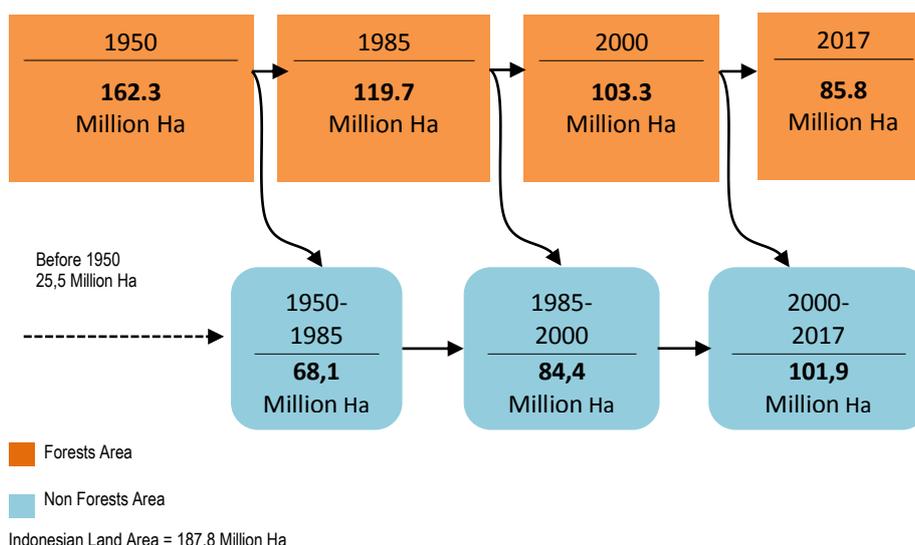


Figure 1. Forests Area and Deforestation in Indonesia (Source: Gunarso, et al. 2012; KLHK, various year and processed data)

The conversion of forests area to non-forests area in Indonesia has long been in line with the need for space for development both for economic activities (industry and agriculture) and residential areas. However, lately many anti-palm NGOs have blamed the

expansion of oil palm plantations in Indonesia as the main drivers of deforestation in Indonesia. Study of Koh and Wilcove (2008) also mentions 67 percent of oil palm plantations are from forest conversion. Are the accusations correct?

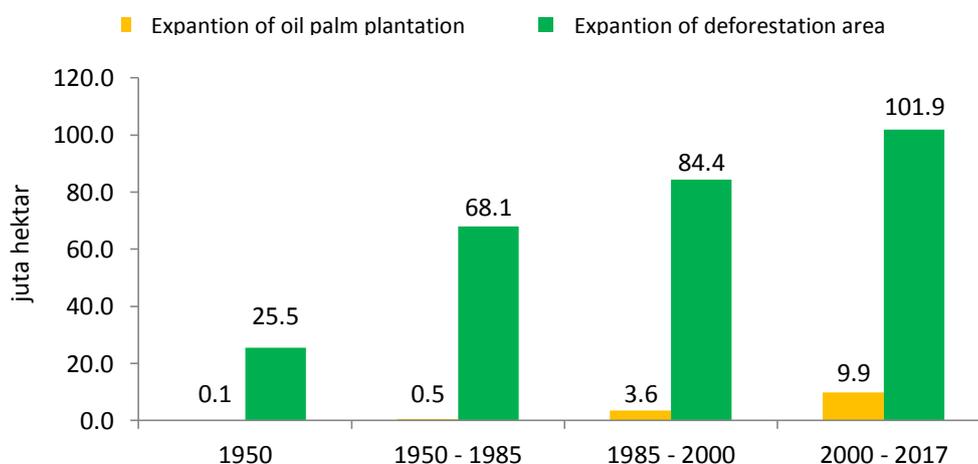


Figure 2. Comparison of Expantion of Oil Palm Plantation and Deforestation Area in Indonesia (Source: Gunarso, et al. 2012; Ditjenbun (2018) dan KLHK (various year))

Deforestation in Indonesia has occurred since before 1950 with an area of 25.5 million hectares and continues to increase until it reached 101.9 million hectares in 2000-2017 (Figure 2). On the other hand, the increase in the area of Indonesian oil palm plantations also increased from 105 thousand hectares to 9.89 in the same period. If it is compared, the proportion of the increase (expantion) of oil palm plantations is only 0.4-9.7 percent of the

area of deforestation in Indonesia. This means that oil palm plantations are not the main driver of deforestation in Indonesia. And if not oil palm plantations, who and what sector used 25 to 92 million hectares of deforestation land?

Anti-palm oil NGOs that have been often campaigned for oil palm plantations as the main cause of deforestation, in fact they don't have information on the history of deforestation in Indonesia. During the Orde

Baru (1969-2000), the Ministry of Forestry gave many massive logging permits without control which was reflected in the number and area of forest concessions (HPH) to logging companies (Kartodihardjo and Supriono, 2000). Forest concession areas in the era were recorded at 61.7 million in 1993 and 69.4 million hectares in 2000 (Ministry of Forestry, 2014). Whereas the estimated undocumented logging activities of around 95 million hectares of production forest (established by TGHK, 1984) had become logging areas during the Orde Baru (PASPI, 2016).

The massive of logging activities during the Orde Baru was also reflected in log production. According to BPS data, Indonesian log production only reached 8.1 million cubic meters in 1969, increasing to 22.3 million cubic meters in 1980 and 37 million cubic meters in 1990. Intensive logging activities in that era also made Indonesia the largest log producer in the world, but this also has implications for the extent of Indonesia's forests that lost due to degradation.

These historical facts showed that logging became one of the main causes of deforestation that occurred in Indonesia, long before the expansion of oil palm plantations took place. If not from forest conversion, then where does Indonesian oil palm plantations have a land?

ORIGINS OF INDONESIAN PALM OIL PLANTATIONS

The widespread issue addressed by anti-palm oil NGOs related to the expansion of oil palm plantations in Indonesia is the result of direct conversion from natural forests and is the cause of the loss of Indonesia's forests. The black campaign has an impact on the damage to the image of the Indonesian palm oil industry in global consumers until created of various palm oil derivative's product boycott movements in various countries. Whereas based on the history of deforestation in Indonesia, it happened long before the development of oil palm plantations was done.

The origins of oil palm development land in Indonesia during the 1990-2018 (Figure 3), mostly derived from agricultural land (agroforestry) with a share of 23 percent. The issue that corners the origin of all Indonesian oil palm plantations originating from forests is an improper issue, based on the study showed that the use of primary forest (undisturbed upland forest) for oil palm plantations is very small at only 0.4%. More oil palm plantations come from shrubs and grasslands both in the highlands (18 percent) and swamps (13 percent). Oil palm plantation also developed in secondary or disturbed upland forest (11 percent).

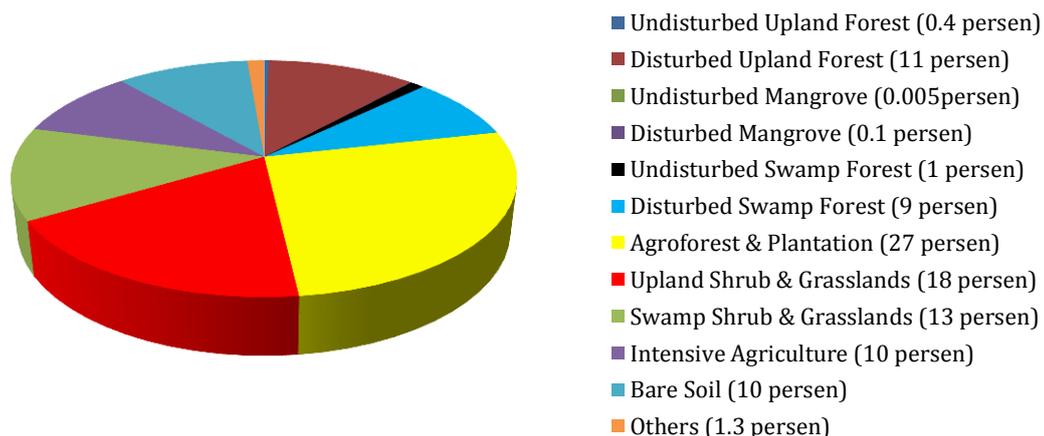


Figure 3. The Origins Of Indonesian Palm Oil Plantations in 1990-2018 (Source: Fahmuddin and Gunarso, 2019)

Gunarso *et al.*, (2013) also mentioned that largest single cause of historical forest loss in Indonesia is probably due to intensive logging and the impact of forest fires, which in

combination have led to the progressive degradation of large areas of forest landscapes into agroforestry or shrub land. Massive and intensive logging activities especially on

Sumatra, Kalimantan and Sulawesi during the Orde Baru, affect in degraded forest land and turned into abandoned shrubs and slum former barracks of logging workers. The income of the export and domestic sales of logs are also not re-invested in the logging areas, so that the economy of the logging area does not develop even into a ghost town.

Therefore, the ex-logging area was made a land reserve for development (land of bank) by the Orde Baru government and was reused which was mostly converted for the purpose of developing other sectors or cultivation areas. The transmigration programme which was one of the important programs during the Orde Baru, this programme also used the ex-logging land that was used both for new residential and for agricultural land including the development of oil palm plantations.

In contrast to logging which degrades the economy, social and ecology of the logging area, the presence of oil palm plantations has actually re-greened the ecological, economic and social community in the ex-logging area. In terms of ecology, oil palm plantations absorb carbon dioxide, produce oxygen (Henson, 1999), increase biomass and carbon stocks (Chan, 2002), conserve soil and water or increase water holding capacity (Harahap, 1999) and produce biofuel replacing fossil energy that is reduce carbon dioxide emissions (European Commission, 2012).

If logging activities reduces resources, create regional poverty, keep people away from economic resources and shut off local economies, otherwise oil palm plantations creates economic and social benefit. In an economic aspect, oil palm plantations increase farmers' incomes, increase regional economic development, increase government revenue, and generate foreign exchange. Whereas socially, oil palm plantations increase employment opportunities, reduce poverty, increase rural development and improve income inequality (Susila, 2004; Syahza, 2007; World Growth, 2011; Joni, 2013; European Economic, 2014).

CONCLUSION

Deforestation is a normal phenomenon in every development process that has been carried out by all countries in the world.

Deforestation also occurred in Indonesia, which had begun since the colonial period and was increasingly massive during the Orde Baru era. Although deforestation is normal in the development process, this issue has been used to discredit Indonesia's oil palm plantations which are considered as the main drivers of deforestation in Indonesia. The black campaign has an impact on the damage to the image of the Indonesian palm oil industry in global consumers until creates of various palm oil product boycott movements in various countries.

Although deforestation in Indonesia has increased from 68.1 million hectares in the 1950-1985 to 101.9 million hectares in the 2000-2017, the proportion of the increase in the area of oil palm plantations is only 0.4-9.7 percent of the area of deforestation in Indonesia. This showed that oil palm plantations are not the main driver of deforestation in Indonesia. Based on history, deforestation, especially in the Orde Baru, was caused by massive logging activities.

Massive and intensive logging activities, especially on Sumatra, Kalimantan and Sulawesi during the Orde Baru era, have implication of degraded forest land and turned into abandoned shrubs. The government also provides programs to utilize shrub land ex-logging including the development of oil palm plantations. This was confirmed by Fahmuddin and Gunarso's study (2019), showed that most of the oil palm plantation land came from agroforestry and shrub land while the share of primary forest use for oil palm plantations was very small. This showed that the development of Indonesian oil palm plantations is not the main driver (driver) of deforestation, but is an effort to reforestation. Oil palm plantations have even re-greened the ecological, economic and social aspects of communities damaged by logging in the past.

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