

UTILIZATION OF PEATLAND INDONESIA VS EUROPE

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RESUME

The area of Indonesian peatland according to Ritung et al. (2011) covering an area of 14.9 million hectares. The vast availability of peatland, Government of Indonesia issued regulations related to peatland ecosystem management in PP No. 57 of 2016. This regulation concerning the management of peat ecosystem is divided into two functions, namely the protection function and the cultivation function. One of the cultivation that carried out on peatland is the development of oil palm plantations. Oil palm cultivation in peatland also has supported through Permentan No. 14/2009 and guideline from PPKS about techniques for cultivating sustainable oil palm on peatland.

The area of oil palm plantations on peatland about 2.89 million hectares in 2018 or has increased along with the increase in the area of Indonesian oil palm plantations, but the proportion is smaller than the area of oil palm plantations on mineral land. However, the use of peatland for oil palm cultivation has received criticism from anti-palm NGOs, they has argument about oil palm cultivation has cause of degraded environment and increasing greenhouse gas emissions. RSPO also has approved the application of the latest principles and criteria for oil palm sustainability, one of which is a ban on opening peatland for cultivation of new oil palms since November 2018.

Whereas, the cultivation of palm oil on peatland not contradiction regulation in Indonesia. Empirically, Indonesia also has a success story related about utilization of peatland for oil palm cultivation in the Negeri Lama (North Sumatra) which has been operating for 4 generations of economic life of oil palm plants and proven not cause environmental damage. In fact, oil palm on peatland in Negeri Lama by implementing sustainable cultivation that are able to fulfill the needs of previous generations without threaten the ability (profit decreasing) of current and future generations.

In other hand, peatland utilization in Europe tends to be more expansive and can cause environmental damage compared to Indonesia with its oil palm cultivation. European communities burn peat to be used as a source of energy, so that area of peatland lost in Europe is very large reached about 10.73 million hectares.

When compared with Indonesia, oil palm plantations on peatland in Indonesia is lower than the loss of European peatlands. Even the development of sustainable oil palm plantations is more environmentally beneficial compared to peat burning activities in Europe which actually damage the environment. This showed that the allegations of anti-palm oil NGOs and the RSPO for banning the cultivation of oil palm plantations on peatlands because of concern that it could damage the environment, are false accusations. Peat burning activities in Europe should have received more attention from international NGOs, if the aim was purely to preserve the environment.

INTRODUCTION

The condition of Indonesia's agro-climate which is suitable with the characteristics of oil palm plants, makes the productivity of Indonesian oil palm better than its home country in Africa. Initially palm oil was only used as an ornamental plant in the Bogor Botanical Gardens in 1848, then it was cultivated commercially on Pulau Raja (Asahan) and Sungai Liput (Aceh) in 1911. The development of Indonesia's oil palm plantations was continued seriously by the Government of Indonesia through the Partnership program since 1980. The program has become a forerunner to the development of oil palm plantation which is fairly revolutionary that has been able to make Indonesia the country with the largest palm oil producer in the world as well as being the largest vegetable oil producer in the world.

Indonesia's achievements are not always interpreted positively, even a lot of negative campaigns that aim to stop the growth of palm oil in the world market. Environmental issues have been widely used by anti-palm oil NGOs to criticize the palm oil industry in the past decade. One of them is the use of peatland for oil palm cultivation in Indonesia. The NGO considers that developing oil palm on peatland will damage the environment and also increase greenhouse gas emissions, considering that peatland are high carbon stock (HCS) land.

The RSPO (Roundtable Sustainable Palm Oil) as a organization of sustainable certification for palm oil has also begun to ban the use of peatland for oil palm cultivation. The RSPO has approved the application of the latest principles and criteria for oil palm sustainability, one of which is a ban on opening peatland for cultivation of new oil palms since November 2018. With the adoption of this new RSPO standard, it is as if the RSPO considers that the use of peatland for oil palm cultivation is a mistake.

Whereas the management of Indonesia's peatland ecosystems for both the protection (forest) and cultivation functions has been regulated in Government Regulation No. 57 of 2016 concerning Protection and Management of Peat

Ecosystems (as a substitute for PP 71/2014). The Minister of Agriculture also issued Minister of Agriculture Regulation No. 14 of 2009 concerning Guidelines for the Utilization of Peatland for Oil Palm Cultivation. The regulation as a guideline for the governance of the development or cultivation of sustainable palm oil plantations on peatland. Empirically, Indonesia also has a success story related to the use of peatland for oil palm cultivation such as in plantations in the Negeri Lama (North Sumatra) which has been established since 1927.

Although the cultivation of oil palm plantations on peatland does not contradiction with Indonesian government regulations, but to deal with these dynamics the Indonesian Government responded by issuing two Presidential Instruction (Inpres). The two Presidential Inpress are Presidential Instruction 8/2018 concerning the Postponement and Evaluation of Oil Palm Plantation Licensing and Increased Productivity of Oil Palm Plantation and Presidential Instruction 5/2019 concerning the Cessation of Granting of New Permits and Improving Governance of Primary Natural Forests and Peatland.

This paper aims to discuss the use of peatland in Indonesia and its oil palm plantations, compared to the use of peatland in Europe. This needs to be done to prove which is more damaging to the environment based on empirical facts.

UTILIZATION OF INDONESIAN PEATLAND FOR OIL PALM PLANTATION

Based on data Wetland International tahun 2008, Indonesia has a largest peatland in the world after Russia and America (Joosten, 2009). Data on peatland area in Indonesia is quite varied with a range of 14.9-26.5 million hectares, but there is the most reliable data on peatland area, namely data from Ritung et al. (2011). Because the data is used to support the implementation of Presidential Instruction 10/2011 and Presidential Instruction 6/2013 (Wahyunto et al., 2016). The area of Indonesian peatland according to Ritung et al. (2011) covering an

area of 14.9 million hectares. Most are scattered on the island of Sumatera with an area of 6.4 million hectares, followed by Kalimantan (4.8 million hectares) and Papua (3.7 million hectares).

The vast availability of peatland in Indonesia has the potential to be utilized. Therefore, the Government of Indonesia issued regulations related to peatland ecosystem management in PP No. 57 of 2016 concerning Protection and Management of Peat Ecosystems, as a change to Government Regulation No. 71 of 2014. In the regulation, the management of peat ecosystem is divided into two functions, namely the protection function and the cultivation function.

One of the cultivation that carried out on peatland is the development of oil palm plantations. Policies and guidelines for the management of sustainable oil palm plantations on peatland have also been

owned by Indonesia through Permentan No. 14/2009 concerning Guidelines for the Utilization of Peatland for Coconut Cultivation. The Indonesian Oil Palm Research Institute (PPKS) also has standard of techniques for cultivating oil palm on peatland in the form of processing peatland to the amount and type of fertilizer that needed by oil palm plantations in peatland.

Agus and Gunarso (2019) revealed that the area of oil palm plantations on peatland is increasing along with the increase in the area of Indonesian oil palm plantations, but the proportion is smaller than the area of oil palm plantations on mineral land. The area of oil palm plantations on peatland in 2009 was 1.4 million hectares (16% of the total area of Indonesian oil palm plantations) and increased to 2.89 million hectares (20% of the total area of Indonesian oil palm plantations) in 2018 (Figure 1)

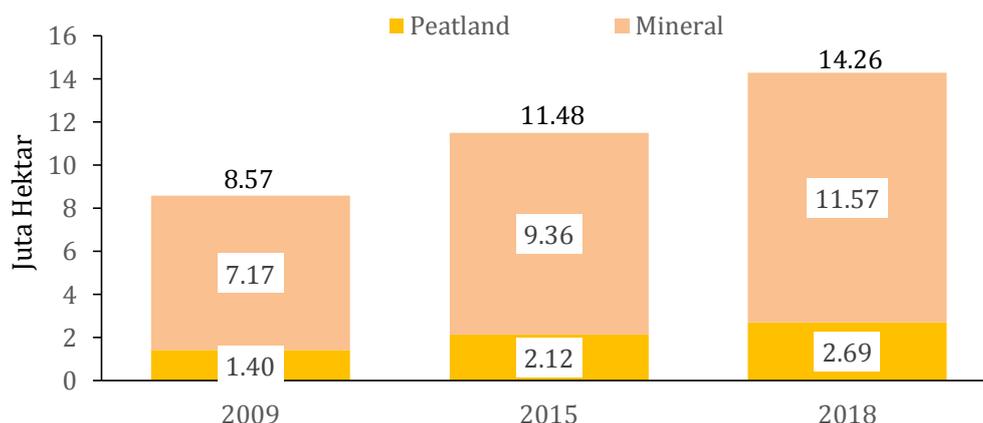


Figure 1. Indonesian Palm Oil Plantation on Mineral Land and Peatland (Source: Agus dan Gunarso, 2019)

Radjagukguk (2001) revealed that sustainable management of peatland is related to how they should use resources and not to not use these resources at all. This means that the use of peatland for oil palm cultivation cannot be regarded as environmental destruction, but it is only as an effort to increase the economic value of peatland in a sustainable manner.

THE SUCCESFULL STORY OF INDONESIAN OIL PALM PLANTATION ON PEATLAND

The development of oil palm plantations on peatland is not really new in Indonesia. Even some of the oldest oil palm plantations (75-100 years old) on the east coast of North Sumatra and Aceh are oil palm plantations on peatland. The management of oil palm plantations on peatland is well known and implemented by some oil palm plantations on peatland. Indeed, it must be admitted that newcomers to peatland oil palm plantations

often encounter governance practices that are not in line with expectations.

One of the efforts to cultivate plants on Indonesian peatland is their use for oil palm plantations in Negeri Lama, North Sumatra since 1927. The area of oil palm plantations in Negeri Lama at that time was 1,302 hectares. Oil palm plantations in Negeri Lama is initiator of the use of peatland for oil palm plantations in Indonesia. After that the use of peatland on a relatively large scale in Indonesia only began in the late 1970s for agricultural patterned transmigration settlements.

Oil palm plantations in Negeri Lama that utilize peatland can be said to be a successful story of utilizing peatland for a sustainable productive activity. This plantation has experienced three replanting processes, in 1968, 1989, and 2012. Productivity of oil palm plantations in Negeri Lama has also increased every generation, such as 17 tons of FFB/hectare/year in the first generation, 19.7 tons of FFB/hectare/year in generation II, and 23.9 tons of FFB/hectare/year in generation III. In 2017, the total area planted with oil palm in Negeri Lama reached 2,142 hectares, and it is estimated the productivity about 25 tons of FFB/hectare.

The success of the use of peatland in Negeri Lama is certainly inseparable from the management of land that is in accordance with standards and is sustainable. Land management begins with knowing the characteristics of peatland that will be used for agriculture. Peatland in Negeri Lama have peat depths with a depth of 70 cm - 150 cm. The level of peat maturity is saprik and is dominated by humus. Negeri Lama's peatland have a bulk density of 0.39 - 0.44 gr / cm³ (Sihombing, 2017).

Peatland management is then continued with the preparation of land for oil palm cultivation by doing drainage. The function of this drainage is to remove excess water from rain showers in a timely manner and efficient, and to control groundwater levels in order to achieve optimum conditions for the development of plant roots (Lim, 1992). Oil palm plantations in Negeri Lama also carry out drainage that is able to maintain a decline in the environmental function of peatland. The water level is maintained at 40

- 45 cm in the piezometer and 50 - 55 cm in the water channel. This drainage process will cause peatland to experience subsidence, which is the shrinking of the soil and decreasing the surface of the soil. In the initial stage, which is during the first 4-10 years, this process takes place relatively quickly, then subsidies slow down in the next phase and last for tens or even hundreds of years.

In addition, oil palm cultivation in Negeri Lama peatland can be successful with the mechanism of fertilization that have a right amount, right type, and on time. In a year, three times fertilizer application is applied with a total NPK fertilizer used of 7.25 kg/staple/year. This fertilization was first carried out in January-February with the amount of 2.5 kg/principal, then fertilized again in April-May with the same amount. And then the third fertilization is carried out in July-August with the amount of 2.25 kg/principal.

Evidence of the success of oil palm cultivation on Negeri Lama sustainable peatland showed that with good management that is by keeping the rate of subsidence and irreversible drying of peatland, then the use of peatland can be categorized as sustainable development. Negeri Lama oil palm plantation has been operating for 4 generations of economic life of oil palm plants, which means that the development of oil palm is able to fulfill the needs of previous generations without threaten the ability of current and future generations. Negeri Lama oil palm plantation is in accordance with the characteristics of sustainable development that is productive and profitable, preserving natural resources and protecting the environment, and improving human welfare.

PEATLAND IN EUROPE IS EXPLOITED FOR FUEL

The use of peatland for oil palm cultivation has been widely criticized by environmentalist NGOs especially anti palm oil NGOs because they are thought to damage the environment and increase greenhouse gas emissions. Anti-palm oil parties often use the issue of peatland

conversion as propaganda material in various national and international media to inhibit the development of oil palm plantations. Though the use of peatland for agriculture has been widely carried out throughout the world (PASPI, 2020).

The European Union often considers palm oil as damaging the environment including damaging the sustainability of peatland in Indonesia. In fact, according to the Fuel Peat Industry report in the EU (VTT, 2005), peatland in Europe have long been

damaged by mining peat (such as coal) or burning as fuel/energy. According to the World Energy Council (2013), Europe is the largest consumer and producer of peat fuel in the world. At present there are at least 117 power plants and 651 peat producing companies in Finland, Ireland, Sweden, Estonia, Latvia, Lithuania and other European countries that use peat to produce 1.65 million Ktoe of fuel that can fulfill the energy needs of 1.96 million people (Table 1).

Table 1. Peatland Utilization in Europe

	Finland	Ireland	Sweden	Estonia	Latvia	Lithuania	Total
<i>Fuel peat resources, ktoe</i>	1,100,000	47,500	370,000	59,000	57,000	22,000	1,655,500
<i>Annual peat use, ktoe</i>	2,280	987	290	72	2	4	3,635
<i>Annual horticultural peat production, million m³</i>	2.0	1.7	1.4	2.7	2.8	1.9	10.6
<i>Number of peat producer</i>	250	300	20	32	40	9	651
<i>Number of machine and boiler manufactures</i>	22	1	9	9	-	-	41
<i>Number of peat fired power plants</i>	55	3	30	221)	-	7	117
<i>Number of people getting heating energy from peat</i>	503,720	1,000,000	390,000	65,000	2,000	-	1,960,720
<i>Value of domestic trade, million euro</i>	232	153	34	4	-	3	426
<i>Value of international trade, million euro</i>	13	49	33	52	67		214
<i>Employment of fuel and horticultural peat production and fuel peat use, man years</i>	12,350	6,130	1,720	4,160	1,900	1,500	27,760

Source : RESEARCH REPORT VTT-R-045-48-0

1) the number of boilers is 35 in 22 power plants in Estonia

This activity has caused the loss of European peatland of around 10.73 million hectares (Wetland International, 2010; International Peat Society, 2002). The biggest loss of peatlands in Europe occurred in Russia about 4.36 million hectares, followed by Finland (1.65 million hectares) and Netherlands (1.15 million hectares). The data showed the extent of European peatlands lost due to highly exploitative and environmentally damaging activities. It means Europe does not really care about the preservation of peatland in the world, but on

the other hand through the affiliation of anti-palm oil NGOs is trying to hamper the palm oil industry by causing a negative stigma against Indonesian oil palm plantations.

CONCLUSION

The area of oil palm plantations on peatland about 2.89 million hectares in 2018 or has increased along with the increase in the area of Indonesian oil palm plantations, but the proportion is smaller than the area of

oil palm plantations on mineral land. However, the use of peatland for oil palm cultivation has received criticism from anti-palm NGOs, they has argument about oil palm cultivatation has cause of degraded environment and increasing greenhouse gas emissions. RSPO also has approved the application of the latest principles and criteria for oil palm sustainability, one of which is a ban on opening peatland for cultivation of new oil palms since November 2018.

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In other hand, peatland utilization in Europe tends to be more expansive and can cause environmental damage compared to Indonesia with its oil palm cultivation. European communitiries burn peat to be used as a source of energy, so that area of peatland lost in Europe is very large. Peat burning activities in Europe should have received more attention from international NGOs than development oil palm plantaion in peatland, if the aim was purely to preserve the environment.

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