

OIL PALM IMPACT RAIN-FORESTS

BY NALONGSONE DANDDANK

DEC. 2020, ISSUE 10



There are so many benefits to our living and economy. The Oil, edible vegetable oil comes from the fruit of oil palm trees, the scientific name is *Elaeis guineensis*. Oil palm trees are native to Africa but were brought to South-East Asia over 100 years ago. Indonesia and Malaysia make up over 85% of the global supply. It's in close to 50% of the packaged products we find in supermarkets. It's also used in animal feed and as a bio-fuel in many parts of the world. In Asian and African countries, palm oil is used widely as a cooking oil. Palm oil is an incredibly efficient crop, it produces more oil per land area than any other vegetable oil crop. It supplies 35% of the world's vegetable oil demand on just 10% of the land. It is too difficult to find an alternative vegetable crop like soybean or coconut oil because it would need 4 and 10 times more land, which would get more problems and threaten other habitats and species. [2]

The Impacts of Oil Palm Plantations on the Environment :

Indonesia is potentially a key supplier of bio-fuels, especially oil palm-based bio-diesel, to world markets. In 2006, the country had 4.1 million ha of oil palm plantation, 31% of the world total (Koh and Wilcove 2008). By 2010, the plantation area increased to about 7.2 million ha of oil palm, which accounted for 46% of the world's crude palm oil (CPO; FAO 2008a, Bromokusumo 2009, Romokusumo and Slette 2010, Teoh 2010). Currently, Malaysia is the regional leader in biodiesel production with an output of 540 million liters per annum as of 2009 (Teoh 2010). Indonesia is second with the production of 400 million liters in 2010 (Slette and Wiyono 2011). By 2019, Indonesia and Malaysia are forecast to nearly double their production of biodiesel, respectively (FAO 2008a, Hoh 2009, FAPRI 2010). By 2025, it is forecast that biodiesel, mostly from CPO, and other biofuels will constitute 25% of Indonesia's national energy mix (Timnas BBN 2007). [3]

ENVIRONMENTAL JUSTICE FRAMEWORK:

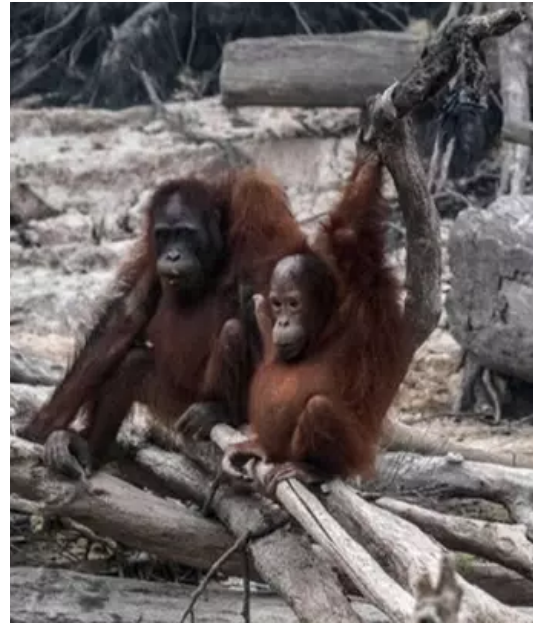
FRAMING NEW CHALLENGES

Climate change and sustainable materialism And yet, even with such a recognition of the broadening spatial scale of environmental justice, we are faced with key challenges and developments that continue to push conceptualization of environmental justice in engaging new directions. Here, I want to touch on two of those, the discussions of climate change and what some call 'sustainable materialism'. This extension of an environmental justice frame is crucial. One of the arguments against incorporating non-human nature into the environmental justice discourse is that this shift is not embodied in environmental movements or public discourse.¹² But considerations of climate justice – in particular concerning adaptation – and of sustainable materialist approaches to food and energy begin to address environmental conditions themselves as the basis for social justice. This is not only a spatial extension, but a conceptual shift – that a working environment is necessary for justice, and that justice entails creating human practices and material flows that do not undermine environmental processes and systems. [1]



The Oil Palm Plantations Destroy Tropical Biodiversity of Rain Forests:

Tropical rain forests are the planet's most species-rich bio-mes. In the past two decades, tropical rain forests in many parts of the world have been rapidly converted to mono-specific plantations. As a result, deforestation and human land use have irretrievably destroyed large areas of unique rain forests and enforced biodiversity loss. Loss of natural forest resources is particularly strong in Indonesia, which is currently the world's largest palm oil producer. In Sumatra(Indonesia). Oil palm is a perennial, evergreen tree adapted to cultivation in biodiversity-rich equatorial land areas. The growing demand for palm oil threatens the future of the rain forests and has a large negative impact on biodiversity. Plant science faces three major challenges to make oil palm the key element of building a future sustainable world. The global average yield of 3.5 tons of oil per hectare (t) should be raised to the full yield potential estimated at 11-18t. The tree architecture must be changed to lower labor intensity and improve the mechanization of the harvest. Oil composition should be tailored to the evolving needs of the food, oleo-chemical, and fuel industries. [4]



Reference:

- 1.Schlosberg, D. (2013). Theorising environmental justice: The expanding sphere of a discourse. *Environmental Politics*, 22(1), 37-55. doi:10.1080/09644016.2013.755387
- 2.Barcelos, E., Rios, S. D., Cunha, R. N., Lopes, R., Motoike, S. Y., Babiychuk, E., . . . Kushnir, S. (2015). Oil palm natural diversity and the potential for yield improvement. *Frontiers in Plant Science*, 6. doi:10.3389/fpls.2015.00190
- 3.Obidzinski, K., Andriani, R., Komarudin, H., & Andrianto, A. (2012). Environmental and Social Impacts of Oil Palm Plantations and their Implications for Biofuel Production in Indonesia. *Ecology and Society*, 17(1). Retrieved December 12, 2020, from <http://www.jstor.org/stable/26269006>
- 4.Koh, L. P., & Wilcove, D. S. (2008). Is oil palm agriculture really destroying tropical biodiversity? *Conservation Letters*, 1(2), 60-64. doi:10.1111/j.1755-263x.2008.00011.x
- 5.Carlson, K. M., Curran, L. M., Asner, G. P., Pittman, A. M., Trigg, S. N., & Adeney, J. M. (2012). Carbon emissions from forest conversion by Kalimantan oil palm plantations. *Nature Climate Change*, 3(3), 283-287. doi:10.1038/nclimate1702
- 6.Fitzherbert, E., Struebig, M., Morel, A., Danielsen, F., Bruhl, C., Donald, P., & Phalan, B. (2008). How will oil palm expansion affect biodiversity? *Trends in Ecology & Evolution*, 23(10), 538-545. doi:10.1016/j.tree.2008.06.012

Oil Palm Plantations Let Carbon Emissions From Forest Conversion:

Oil palm plantations in Sumatra and Kalimantan produce 50% of palm oil worldwide, and Indonesia plans to double national palm oil production primarily by expanding landholdings in Kalimantan and Papua⁷. In 2010, Indonesian palm oil and palm kernel oil production generated US\$11.1 billion (ref. 1). Yet, Indonesia ranks among the top national greenhouse gas (GHG) emitters, largely from land-based carbon emissions including deforestation and forest degradation⁸. Although fires are the dominant cause of Indonesia's emissions during droughts⁹, oil palm's contribution to deforestation and emissions is uncertain. Over 50% of oil palm was planted from 2000 to 2010 (ref. 10), yet automated analysis of remote-sensing products has proved insufficient to detect young (<10 yr) or small-scale (<200 ha) oil palm agriculture^{11,12}. Recently developed plantations remain undocumented across mineral soils¹³, which comprise 88% of Kalimantan's land area. Accounting for past and potential near term emissions from plantation expansion is essential to estimate the contribution of oil palm to global carbon emissions, as well as to assess the potential market value of Indonesia's forest carbon. [5]

Oil Palm Expansion Will Affect Biodiversity:

Expansion and intensification of agriculture is the greatest current threat to biodiversity. Vegetable oils are among the most rapidly expanding agricultural sectors, and more palm oil is produced than any other vegetable oil. Global palm oil production is increasing by 9% every year, prompted largely by expanding bio-fuel markets in the European Union and by food demand in Indonesia, India, and China. The ecological impact of oil palm depends crucially on the extent to which its expansion causes deforestation, and on the extent to which it can support biodiversity. Here we review the contribution of oil palm to deforestation, with a focus on Malaysia and Indonesia. We compare the biodiversity value of oil palm plantations with that of forest and alternative land uses to assess whether biodiversity loss can best be reduced by making plantations more wildlife-friendly or by linking yield increases with habitat protection.[6]