

DEVASTATED LANDS, DISPLACED PEOPLES

Agrofuel costs in Indonesia, Malaysia, Papua New Guinea

Rapidly increasing demand for palm oil for biodiesel production is causing massive deforestation and displacing millions of indigenous peoples in the South-East Asian region, including Indonesia, Malaysia, Papua New Guinea, India. Destruction of the region's extraordinarily rich biological diversity in exchange for palm oil to fuel automobiles is criminal, report **DR RACHEL SMOLKER, BRIAN TOKAR, ANNE PETERMANN, EVA HERNANDEZ.**

Horrific impacts from the agrofuels push are nowhere more evident than in Southeast Asia's palm oil sector, where deforestation and peatland degradation are so severe they make a mockery of the whole concept of growing plant biomass to mitigate climate change. Indonesia and Malaysia are the world's largest palm oil producers, supplying about 85% of the world market. Historically, palm oil has been used for food and other consumer products and is now the world's leading vegetable oil, surpassing soy oil. It's also now considered to be an efficient biodiesel feedstock, increasingly in demand for heat and energy production, especially in Germany and the Netherlands. Much of Southeast Asia's palm oil is exported to Europe and China.

With rapidly increasing demand for palm oil for biodiesel production, demand is currently outstripping supply, so governments and industry are planning

huge expansions throughout Indonesia and Malaysia. By 2006, Malaysia, the world's largest palm oil exporter, responsible for about 45% of global production, had established over 4 million hectares of palm plantation, and is expanding rapidly into Sabah and Sarawak (the Malaysian part of the island of Borneo). Indonesia, in 2004 had about 6.5 million hectares of oil palm plantations in Sumatra and Kalimantan, with potential for significant growth.¹ The country plans a staggering 43-fold expansion in the area dedicated to oil palm, an additional 20 million hectares of plantations, which would bring the country's total to 26 million hectares by 2025.²

Plans to develop the Kalimantan Border Oil Palm Mega-Project, for example, would convert an additional 3 million hectares to oil palm in Borneo. In the process, this will "trash the primary forest in three National Parks, cut through rugged slopes and mountains utterly unsuitable for oil palm cultivation and annihilate the customary land rights of the indigenous Dayak communities in the border area."³

Palm oil expansion is bolstered by

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Tropical rainforest in West Kalimantan being destroyed for palm oil to fuel cars

tax breaks, subsidies, domestic targets and massive investments, including the US\$5.5 billion deal between Sinar Mas Group (PT Smart) and China National Offshore Oil Corporation⁴ and a US\$4 billion dollar investment in a refinery and plantations in Sumatra by Raja Garuda Mas. PT Wilmar Bioenergy is developing 150,000 ha of plantations in Riau and East Kalimantan. Many new refineries are under construction and international investment is flowing in from China, Japan, India, Brazil and South Korea.⁵ Oil and agribusiness companies are also investing in palm oil, including Shell, Neste Oil, Greenenergy International, BioX, Cargill and Archer Daniels Midland. Impacts on people and the environment in Asia's tropical forests are mostly found in Malaysia, Indonesia and Papua New

Guinea, covering an area of about 136 million ha, a large proportion of which has already been or is currently being cut. A recent UN report predicted that at current rates, 98% of the forest cover of Borneo and Sumatra will be severely degraded by 2012, and completely gone by 2022.⁶

Illegal logging in Indonesia is out of control with 73–88% of logged timber extracted illegally and government's capacity to control it minimal. Even milling capacity in the country exceeds legal limits by 2 to 5 times and illegal logging has been uncovered in 37 out of 41 of Indonesia's national parks.⁷ Logging is often carried out as a precursor to establishing oil palm plantations. Indonesia had about 6.5 million ha of oil palm plantations by 2006, yet almost three times that area, nearly 18 million acres of rainforest, was destroyed by plantation owners, mainly for access to timber, even where palms were never planted.⁸ Timber extraction is lucrative and yields immediate rewards, providing profits while the oil palms mature.

Peatland destruction releases carbon

Meanwhile, destruction of South East Asian peatland forests, found mostly in Indonesia, is a major source of carbon emissions. Peatland forests cover 27 million ha of peatland and are estimated to contain at least 42,000 megatons of carbon.⁹ About 45% of these forests (12 million ha) have already been cleared and drained, a process which began with Suharto's failed 'mega rice program.' As they are drained, the peatlands dry out and oxidation causes emissions. More emissions occur if, once dried, the peat then burns. Fires are frequently set deliberately, to clear woody debris in preparation for installing palm



Dayak longhouse in Borneo: millions of forest people in SE Asia living sustainable lives are under threat from palm oil plantations.

oil plantations. Thousands of fires burn annually now, with the worst 'fire years' to date being 1997, 2002 and 2006. Over 60,000 hotspots were observed in each of these years, and smoke created a haze over much of SE Asia, causing widespread respiratory problems. Once set, they are difficult to contain.

Emissions from oxidation and the burning of Indonesia's peatlands are difficult to measure precisely, but it's estimated 2.57 billion tons of carbon were released by fires in 1997 alone.¹⁰ Total emissions resulting from loss of forest vegetation, soil emissions, peat oxidation and burning are 562 million tons per year, and even more during a bad fire year.¹¹ These massive emissions make peatland destruction responsible for close to 8% of annual global greenhouse gas emissions, making Indonesia the world's third largest contributor to global greenhouse gas emissions, topped only by the US and China.

Reflooding and restoring South East Asia's peatlands must be made a priority for governments seeking to mitigate climate change. Promoting biodiesel use from palm oil is worsening the situation and contributing to global warming, rather than being a solution. One study estimates using palm oil for biodiesel results in 2 to 8 times more carbon emissions than are saved in replacing mineral diesel.¹²

Invading indigenous peoples' lands

At least 45 million indigenous people in Indonesia alone depend on forests for their livelihood.¹³

In West Kalimantan alone, over 5 million forest-dependent indigenous people are at risk of being displaced by palm oil expansion



Orangutans, elephants and other creatures are in rapid decline in Borneo, Sumatra, Kalimantan with expanding plantations destroying their forest homes.

Throughout South East Asia, forest dwelling people, including the Dayak in Indonesia, the Senoi in West Malaysia and the Asmat in Papua New Guinea, have struggled for decades to protect their customary lands from timber extraction industries. But these people rarely hold formal land rights and if they resist eviction, they are often faced with police, military and government officials who are paid to quell unrest, in some cases violently. There is little regulation and the remoteness of many of the affected areas makes it virtually impossible to enforce control.¹⁴

As demand for palm oil rises, so do pressures for access to indigenous lands. Malaysia is planning palm expansion into about a million ha of land held under Native Customary Rights in Sarawak. Indonesia, which formally recognizes customary land rights, but is also under tremendous pressure to make more land accessible for timber and oil palm, seems willing to overlook these rights. In West Kalimantan alone, over 5 million forest-dependent indigenous people are at risk of being displaced by palm oil expansion.¹⁵

A recent report to the UN Committee on Elimination of Racial Discrimination, states: "Experience with existing and extensive oil palm plantations in other parts of Indonesia conclusively demonstrates Indigenous peoples' property and other rights are disregarded, their right to consent is not respected, some are displaced, and they are left with no alternative but to become de facto bonded labourers gathering oil palm fruit for companies that manage the plantations."¹⁶ The plantation sector is the most conflict-prone sector in Indonesia. The Consortium

for Agrarian Reform (KPA) reports plantation-related social conflicts account for over a third of land conflicts in the country and very often involve military intervention. In a 2002 report, the KPA found 480 people had been tortured, 12 killed, 134 shot, 25 abducted and 936 arrested.¹⁷ Close to 308,000 hectares of peasant-occupied lands had been damaged and 284 houses burned. In 2006, Sawit Watch reported over 350 communities were engaged in conflicts over land access for palm expansion.¹⁸

Corruption is rampant and when palm oil producers are detected to be engaged in illegal activities, authorities are reluctant to enforce laws, often accepting bribes. Indigenous people have few resources and little or no recourse to justice. They are left to cope with the situation on their own, often forced into blockading roads, sabotaging machinery and harassing workers as a last resort.

Dangerous work conditions

As in Latin America, working conditions on palm plantations are extremely poor. Daily wages are very low, and exposure to agrichemicals is a major cause of health problems. At least 25 different chemicals are in use, including paraquat, which is potentially fatal if inhaled, ingested or absorbed through the skin. In Malaysia, a ban on paraquat was imposed in 2002, but later lifted in 2006. Indonesia has never imposed any ban and only requires 'training' prior to use (loosely defined and even more loosely enforced). Most sprayers are women: approximately 30,000 women work daily as pesticide sprayers in Malaysia alone.¹⁹ Because of the hot humid climate, wearing protective clothing is impractical. Many sprayers develop acute paraquat poisoning symptoms, including nosebleeds, eye irritation, contact dermatitis, skin irritation and sores, nail discoloration and loss and abdominal ulceration.²⁰

Palm oil plantations are mostly controlled by a small number of very large producers. Indonesia, for example, promotes a system where large plantations form a core, surrounded by smallholders. Smallholders have to rely on large plantations for services like pressing and marketing their oil. As they must first invest, then wait for their trees to mature, they frequently become indebted. The rainforests of South East Asia are also among the most biodiverse on earth. Borneo, for example, is considered one of the world's threatened 'biodiversity hotspots.' Destruction of these forests has resulted in cataclysmic biodiversity loss. Most oil palm has been planted on

These elephants are often starved due to loss of their native habitat, making them especially unpredictable, they are shot, poisoned, sometimes captured and transported to 'training centers'

lowland evergreen tropical forest, the most diverse of terrestrial ecosystems. Indonesia, which covers only 1.3% of the earth's surface, is home to about 10% of all species of flowering plants, 17% of all bird species, 12% of all mammals and 16% of reptiles and amphibians. Destruction of this unbelievably rich biological diversity in exchange for palm oil to fuel automobiles is nothing short of criminal.

Among the more well known creatures being pushed to extinction are the Bornean and Sumatran orangutans, the Sumatran tiger (about 400 remaining), the Asian elephant and the Sumatran rhinoceros (only 300 remaining). Oil palm plantations can support, at best, about 20% of the biodiversity found in primary rainforest.²¹ The fires in 1997-8 alone probably killed a third of the orangutan population in Kalimantan. Orangutans are long lived and slow to reproduce. With increasing encroachment into their habitat, they are forced into more and more contact with humans which is often fatal. Because they will eat young oil palm shoots, they are considered a threat to plantations and are often exterminated. The outlook for their future at this point is bleak.

Due to habitat loss, conflicts between elephants and people are also on the rise: elephants are responsible for over US\$100 million damage per year in Riau Province alone.²² These elephants are often starved due to loss of their native habitat, making them especially unpredictable. They are shot, poisoned and sometimes captured and transported to 'training centers.'²²

While destruction in Indonesia and Malaysia proceeds, other Asian countries are also developing agrofuel industries, setting mandatory blending targets, and investing in supply and technology transfer deals. China is facing massive loss of agricultural lands to desertification, as a result of poor agricultural practices and is also experiencing a rapid rise in living standards. It is faced with a stark choice, between using lands for food or fuel crop production. Yet, China exported an estimated 8-900,000 tons of ethanol, mostly to the US, and new refineries are under construction. The trend is towards importing feedstocks from other countries, including Nigeria, Malaysia, Indonesia and the Philippines, and investing in refineries in Indonesia and Malaysia. China aims to replace 16% of energy use with "renewable" sources by 2020, and is negotiating an agreement with the U.S. to exchange technologies and expertise.²³

Japan has invested heavily in securing agrofuels supplies, especially from Brazil, and has plans for a jatropha biodiesel plant in South Africa, a coconut biodiesel plant in the Philippines and cassava ethanol plants in Indonesia, Thailand and Vietnam. India is

producing ethanol from sugar cane and importing Brazilian ethanol. Yet many vehicles in India run on diesel, and the country is looking to expand jatropha, with 14 million hectares of jatropha production already planned.²⁴ In August 2007, farmers rioted in opposition to the plan which has displaced them from traditional lands without any consultation.²⁵ ■ PE

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REFERENCES

1. *The Oil for Ape Scandal: How Palm Oil is Threatening Orangutan Survival*. Friends of the Earth, The Ape Alliance, The Bornean Orangutan Survival Foundation, The Sumatran Orangutan Foundation, The Orangutan Foundation. http://www.foe.co.uk/resource/reports/oil_for_ape_summary.pdf
2. Klute, M. 2007. *Green Gold Biodiesel: Players in Indonesia*. <http://www.Biofuelwatch.org>
3. Wakker, E. *The Kalimantan Border Oil Palm Mega-Project*. Commissioned by Milieudefensie-Friends of the Earth Netherlands and the Swedish Society for Nature Conservation (SSNC), April 2006, Amsterdam, http://www.foe.co.uk/resource/reports/palm_oil_mega_project.pdf
4. PT Sinar Mas enters agreement for renewable energy project. *Renewable Energy Today*, 10 January 2007. http://findarticles.com/p/articles/mi_moOXD/is_2007_Jan_10/ai_n17156182
5. Klute, M. 2007. *Green Gold Biodiesel: Players in Indonesia*. <http://www.Biofuelwatch.org>
6. UNEP 2007. *Last Stand of the Orangutan. State of Emergency: Illegal Logging, Fire and Palm Oil in Indonesia's National Parks*. <http://www.grida.no/products.aspx?m=23&amid=571>
7. UNEP 2007. *Last Stand of the Orangutan. State of Emergency: Illegal Logging, Fire and Palm Oil in Indonesia's National Parks*. <http://www.grida.no/products.aspx?m=23&amid=571>
8. Colchester, M., Jiwan, N., et al. 2006. *Promised Land, Palm Oil and Land Acquisition in Indonesia. Implications for Local Communities and Indigenous Peoples*. Forest Peoples Programme, Perkumpulan Sawit Watch, Moreton-in-Marsh and Bogor, pg 11. http://www.forestpeoples.org/documents/prv_sector/oil_palm/promised_land_eng.pdf
9. Hooijer, A., Silvius, M., Wösten, H. and Page, S. 2006. PEAT-CO₂ Assessment of CO₂ emissions from drained peatlands in SE Asia. Delft Hydraulics report Q3943 (2006) <http://www.wetlands.org/publication.aspx?id=51a80e5f-4479-4200-9be0-66f1aa9f9ca9>
10. Page, S.E., F. Siegert, J. O. Rieley, V. Boehm Hans-Dieter, A. Jaya, and S. Limin. 2002. The amount of carbon released from peat and forest fires in Indonesia during 1997. *Nature* 420: 61, 65
11. Southeast Asia's Peat Fires and Global Warming, Factsheet 1: (www.biofuelwatch.org)
12. Roland, J. 2007. An estimation of the expected CO₂ emissions caused by producing South East Asian palm oil for biodiesel, compared with the avoided diesel emissions. *Biofuelwatch*, February 2007. http://www.biofuelwatch.org.uk/SE_Asia_palm_biodiesel_analysis.doc
13. Colchester, M., Jiwan, N., et al. 2006. *Promised Land, Palm Oil and Land Acquisition in Indonesia. Implications for Local Communities and Indigenous Peoples*. Forest Peoples Programme, Perkumpulan Sawit Watch, Moreton-in-Marsh and Bogor, pg 11. http://www.forestpeoples.org/documents/prv_sector/oil_palm/promised_land_eng.pdf
14. Ernsting, A. 2007. *Agrofuels in Asia: Fueling poverty, conflict, deforestation and climate change, Seedling, Grain*, July 2007, http://www.grain.org/seedling_files/seed-07-07-4-en.pdf
15. United Nations Permanent Forum on Indigenous Issues. *Oil Palm and Other Commercial Tree Plantations, Monocropping: Impacts on Indigenous Peoples' Land Tenure and Resource Management Systems and Livelihoods*, Victoria Tauli-Corpus and Parshuram Tamang. 7 May 2007. http://www.un.org/esa/socdev/unpfi/en/special_rapporteurs.html
16. Request for Consideration of the Situation of Indigenous Peoples in Kalimantan, Indonesia, under the United Nations Committee on the Elimination of Racial Discrimination's Urgent Action and Early Warning Procedures Committee on the Elimination of Racial Discrimination, Seventy-First Session, 25 June 2007.
17. Data from Coalition for Agrarian Reform (KPA Indonesia) referred to in: Wakker, E. *Greasy Palms: The Social and Ecological Impacts of Large Scale Oil Palm Plantation Development in Southeast Asia*. Friends of the Earth UK, Sawit Watch. 2005 http://www.foe.co.uk/resource/reports/greasy_palms_impacts.pdf
18. Palm oil for Biofuels Increases Social Conflicts and Undermines Land Reform in Indonesia. An Open Letter to the European Parliament, European Commission and citizens of the European Union. Sawit Watch. January 26th, 2007. <http://www.biofuelwatch.org>
19. Wakker, E., *Greasy Palms: Social and Ecological Impacts of Large Scale Oil Palm Plantation Development in Southeast Asia*. Friends of the Earth, 2005. Page 25.
20. Isernring, R. 2006. *Paraquat: Unacceptable Health Risks for Users*. Pesticide Action Network, (UK and Asia and Pacific) and Berne Declaration. <http://www.evb.ch/en/p10285.html>
21. Laidlaw, R.K. 1998. A Comparison Between Populations of Primates, Squirrels, Tree Shrews and Other Mammals Inhabiting Virgin, Logged, Fragmented and Plantation Forests in Malaysia. In *Conservation Management and Development of Forest Resources*. Proceedings of the Malaysia-U.S. Programme Workshop, 21-24 October 1996.
22. Elephants Made Homeless on Indonesian Island of Sumatra. WWF March 23 2006. http://www.panda.org/news_facts/newsroom/news/index.cfm?NewsID=64520
23. U.S.-China biofuel agreement being discussed. 17 November 2007. http://news.xinhuanet.com/english/2007-11/16/content_7909748.htm
24. Vidal, J. Global food crisis looms as climate change and fuel shortages bite. *The Guardian*. 3 November 2007. <http://www.guardian.co.uk/environment/2007/nov/03/food.climatechange>
25. Olden, M. Growing Concern. *New Statesmen*, 25 October 2007. <http://www.newstatesman.com/200710250020>