

YEARS of INVESTING DANGEROUSLY

Dimensional Fund Advisors' Ties to Palm Oil

Dimensional Fund Advisors, a U.S.-based investment company, has significant shareholdings in some of the most environmentally destructive companies in the world, including tropical logging companies and the world's largest palm oil growers and traders.

Palm oil, used in over half the food and cosmetics on our shelves, as well as in biofuels in many countries, is the single fastest growing driver of deforestation, greenhouse gas emissions, and displacement of forest-dwelling communities across the tropics. Because every 10,000 acres of new palm oil plantations requires roughly \$100 million in capital investments, this scale of destruction would not be possible without significant financing from banks and investors.

Institutional investors account for about six percent of the financing for palm oil in Southeast Asia.ⁱ Dimensional Fund Advisors is among the largest shareholders of palm oil companies in the United States, along with Van Eck Associates, BlackRock, The Vanguard Group, and Fidelity Investments. Dimensional fund advisors has at least \$775 million spread across 80 palm oil companies – the largest number of palm oil companies held by a single fund manager in the U.S.

DFA is one of United States' biggest investment firms, managing \$338 billion for clients worldwide, including Pepsi, Kellogg's and Boeing; the J. Paul Getty Trust; many public investors, such as the California Public Employees' Retirement System and the cities of Seattle, San Diego, San Francisco and Kalamazoo; and numerous universities and labor unions.ⁱⁱ



Background: the palm oil problem

Palm oil, derived from the fruit of the West African oil palm tree, is the world's most widely traded vegetable oil commodity, and its production is projected to double in the next decade.ⁱⁱⁱ It is prized for its high melting point, high yield and lack of unhealthy trans fats.^{iv} Spurred by market mandates (including a 2006 U.S. Food and Drug Administration requirement that all food labels list their trans fat content,^v and a 2010 European Union mandate requiring all transportation fuels to be blended with biofuels^{vi}), today palm oil is used in thousands of consumer products from baked goods and ice cream to cleaning products and cosmetics, to biofuels.

However, palm oil comes with a high environmental and social cost: palm oil production is the fastest-growing cause of tropical deforestation. Forest destruction for palm oil expansion is spreading quickly in South East Asia and to other rainforest regions in Central Africa and Latin America. Nearly 90 percent of global production comes from Indonesia and Malaysia,^{vii} where 55-60 percent of palm oil expansion since 1990 has occurred at the expense of native rainforests.^{viii}



In Indonesia, palm oil expansion has taken a particularly severe toll. Indonesia's forests include some of the most biodiverse areas in the world, and are home to endangered species such as orangutans and Sumatran tigers. Between 2009 and 2011, Indonesia lost at least 3

million acres of previously forested lands to palm oil plantations.^{ix} Today, less than half of the country's original forest remains.^x (As recently as the 1960s, about 80 percent of Indonesia was forested.^{xi}) Going forward, the Indonesian government pronounces plans to convert some 45 million more acres of rainforests – an area the size of Missouri – into palm oil plantations by 2020.^{xii} A less wild-eyed estimate by the Center for International Forestry Research suggests expansion plans of nearly 10 million acres by 2020.^{xiii}

Deforestation is also responsible for some 10-15 percent of global greenhouse gas emissions – more than the combined emissions from all the cars, trucks, trains, and buses in the world each year combined. In Indonesia and Malaysia, deforestation to clear land for palm oil production is especially polluting because it often happens in peat swamp forests – carbon-rich wet ecosystems that have sequestered billions of tons of carbon through thousands of years of accumulating leaf litter and organic material.^{xiv} In Indonesia 5.1 million acres of peat land have already been deforested and drained for palm oil plantations,^{xv} activities that cause the highest CO₂ emissions of all land uses.^{xvi} This conversion of peat lands to palm oil plantations^{xvii} is having an impact on the climate that is similar in scale to the world's biggest coal and tar sands projects.

In the last half-decade, large commodity producers from Asia have moved rapidly into Africa,^{xviii} making that continent the new frontier of palm oil expansion.^{xix} Some 138 million acres of land deals have taken place in sub-Saharan Africa since 2000,^{xx} with more than 6.4 million acres hectares in 10 western and central African countries either earmarked or under development to large-scale oil palm plantation projects,^{xxi} much of it for biofuel production.^{xxii}

Corporate land grabbing of Indigenous and community forests for palm oil plantations is responsible for serious human rights abuses and persistent conflicts between companies and rural communities. The palm oil monitoring group SawitWatch has identified 663 ongoing land disputes between palm oil companies and rural communities in Indonesia.^{xxiii} In too many cases, private armies and paramilitaries have been deployed and people have been killed. Many industrial palm oil plantations also rely on the use of forced and child labor. In Malaysia and Indonesia, child labor has been documented and allegations of modern-day slavery on plantations across Malaysia and Indonesia are common.^{xxiv} As palm oil plantations expand across Africa and Latin America, the same array of problems is seen.

The role of finance in the palm oil boom

Every 10,000 acres of new palm oil plantations require roughly \$100 million in capital investments.^{xxv} Since 2008, major financial institutions have extended the palm industry more than \$20 billion in loans, bonds and equity financing.^{xxvi} The availability of easy financing, combined with the lack of accountability for the social and environmental costs of plantation expansion, have fueled the palm industry's rapid growth.

DFA's palm oil holdings

Dimensional Fund Advisors is an important palm oil financier, with holdings in a large number of companies in the sector, according to research by Global Witness, Rainforest Action Network and Friends of the Earth. **(U.S. dollar amounts in brackets indicate share value held by DFA as of April 2014)**

Wilmar International (US \$20.25 million)

Wilmar International is one of the world's largest agribusinesses and the world's largest palm oil trading company, valued at US\$17.9 billion dollars. Through a raft of subsidiaries, the Singapore-based company holds a land bank of over 1,500,000 acres, principally in Sabah and Sarawak (Malaysia), and Sumatra and Kalimantan (Indonesia), as well as in Uganda, Nigeria and other countries in West Africa and the Congo basin. Together with its refining and trading businesses, Wilmar's operations account for about 45 percent of all globally traded palm oil.

Wilmar has recently gained a measure of praise from the environmental community for its December 2013 commitment to 'No Deforestation, No Peatland Destruction, No Exploitation'^{xxvii}, though its implementation of the policy remains to be seen. Immediately prior to the announcement of this commitment, however, *Newsweek* ranked Wilmar the world's worst company in terms of environmental performance for two years running,^{xxviii} due to its long history of land-grabbing, fueling of social conflicts, illegal burning of peatlands, forests and endangered habitat; failure to adhere to the law, and other abuses. Unless these problems are addressed immediately, Wilmar's new policy commitment will reveal itself as greenwashing and distraction.

The list of human rights and environmental concerns tied to Wilmar is extensive. WWF has documented Wilmar's association with companies burning and planting within the Tesso Nilo Forest Complex, an important national park in Indonesia;^{xxix} Wilmar subsidiary PT Mustika Sembuluh faces complaints about taking over customary lands, water pollution and ongoing land disputes;^{xxx} and another subsidiary, PT Permata Hijau Pasaman I, is charged with buying off community representatives and is involved in a court case at the Supreme Court of Indonesia.^{xxxi}

In a recent case, Wilmar sold off one of its Indonesian subsidiaries, PT Asiatic Persata, while the company was in the midst of mediation through the Compliance Advisor Ombudsman of the International Finance Corporation, the World Bank's private sector arm, which is a significant financier of Wilmar^{xxxii}. Shortly after the sale, the CAO formally closed its efforts to

mediate the resolution of land disputes between affected communities and PT AP^{xxxiii}, noting in a strongly worded report that “No final settlement could be reached before the termination of the mediation.” Shortly after the sale, in December 2013, community groups with land claims competing with PT AP’s concession area were forcefully evicted from their homes by a combination of police, military and the company’s security forces.^{xxxiv} Wilmar has disavowed any responsibility for the events, leading the CAO Ombudsman to note that Wilmar’s response^{xxxv} failed to address the issues substantively.^{xxxvi}



Wilmar also procures palm fruit from and holds a five percent ownership stake in Bumitama Agri Ltd., a company holding at least one illegally permitted concession in West Kalimantan.^{xxxvii} Bumitama has consistently misled stakeholders and is involved in numerous disputes within the Roundtable on Sustainable Palm Oil, a voluntary certification program which operates a formal complaints system. By producing palm oil on at least one documented unpermitted concession, Bumitama is bringing illegal palm oil into the global supply chain, through its trading contract with Wilmar. Furthermore, Wilmar is charged with illegal land purchasing, forest destruction and failure to produce an environmental impact assessment before establishing 50,000 acres of palm oil plantations in Nigeria,^{xxxviii} and a Wilmar subsidiary has violated national laws and customary rights and destroyed some 8000 acres of forest in Uganda.^{xxxix}

Sime Darby (US \$27.4 million)

Malaysia-based multinational Sime Darby Berhad is one of the largest palm oil producers in the world, supplying about six percent of world supply. The

company has a total planted area over 1,250,000 acres and a land bank over 2,250,000 acres in Malaysia, Indonesia, Liberia, and Cameroon.

Sime Darby has recently come under fire in Liberia for signing land concession contracts that violate several Liberian laws and regulations as well as several human rights principles in conventions ratified by the Liberian government and enshrined in Liberian Law.^{xi} Communities in the region allege that the destruction of their farmlands by the company in order to plant palm oil “is leaving them destitute.”^{xli}

The company’s 760,000 acres of landbank in Liberia is leased for 63 years, violating national laws that limit leases to foreign entities to 50 years. In the five years since the agreement was signed, Sime Darby has faced strong opposition, due to its failure to pay compensation for land taken from local communities, and for occupying forest areas in use by communities.^{xlii} Sime Darby’s own documents concede that one of its palm concession areas includes intact natural forest, and houses a variety of animal species including Water Chevrotain and African Buffalo, both of which are protected under Liberian laws, as well as globally endangered and vulnerable bird species. Another concession area (Bopolu District, Gbarpolu County) also has significant forest cover, including large blocks of primary and secondary forests.^{xliii}

While a recent ruling by the president of Liberia recognizes the customary and legal rights of the community to their land,^{xliv} this does not absolve Sime Darby of its responsibility for ongoing abuses of human rights and the environment in that country.



Ta Ann (US \$4.15 million)

Ta Ann is a timber and forest resource company based in Malaysia. An investigation by the Council on Ethics of the Norwegian government's sovereign wealth fund, produced in December 2012, found that Ta Ann was in the process of clearcutting at least 250,000 acres of tropical forest in Sarawak and that "there can be no doubt that [this destruction] will have serious, irreversible consequences for biodiversity and the ecosystem services delivered by the forest." Areas that Ta Ann is clearcutting are documented habitat zones for the critically-endangered orangutan. The Norwegian Government Pension Fund decided to blacklist Ta Ann^{xlv} and exclude the company from investment by the wealth fund, "due to an unacceptable risk of the company being responsible for severe environmental damage." The Council on Ethics report also found that Ta Ann had been pursuing re-entry logging in its concessions without the legally required Environmental Impact Assessments.^{xlvi}

Wah Seong Corporation (US \$2.30 million)

Wah Seong Corporation is a Malaysia-based energy group which owns 51 percent of Atama Plantation, a company which is in the process of developing the largest oil palm plantation in the Congo Basin. This plantation is located in an area of pristine forest in the Republic of Congo which is populated by endangered species including chimpanzees and gorillas. In October 2012, official inspectors found numerous breaches of regulations in Atama's forest clearance activities. More than 350 trees had been cut but not recorded in official felling reports. Records were found to have been altered and there was evidence that multiple logs had been given the same log numbers (a method often used to launder illegal logs). The inspectors concluded that Atama was in breach of the terms of the forest clearance license, and issued official forestry infraction notices to the company.^{xlvii} A mission by the officially-mandated Independent Observer of Forest Law Enforcement and Governance the following month (November 2012) also uncovered numerous breaches of regulations. The OI-FLEG found that Atama was clearing forest without the legally required Environmental Impact Assessment, that Atama had sub-contracted logging in the area to a company which was not licensed, and that Atama had cleared forest for roads outside of the allowed concession area. It recommended that the forest clearance activity be suspended and that the company be prosecuted.^{xlviii} The identity of Atama's minority owners is shielded through a web of offshore shell companies, some of which have previously been used to hide illicit activity.^{xlix}

Kuala Lumpur Kepong (KLK) (US \$12.26 million)

KLK is Malaysia's third largest listed plantation company with a land bank in Malaysia and Indonesia that stands close to 750,000 acres. It has recently made acquisitions in Papua New Guinea and Liberia, where its operations face strong community opposition.¹

In July 2013, PT Adei, a unit of KLK, was named by Indonesian National Police as a suspect for deliberately setting forest fires that led to record-setting air pollution levels in Southeast Asia, and two KLK employees face up to ten years in jail for their role in the fires^{li}.

Investigations and interviews with workers on two KLK plantations in East Kalimantan revealed horrific working and living conditions, gross violations of basic labor rights, use of child labor, and conditions amounting to modern day slavery. Evidence includes testimony from a 14 year old boy who reported working seven days a week with no days off since he was 12 years-old, and interviews with several other children with similar stories.^{lii} The allegations toward KLK were featured in *Bloomberg Businessweek* article, "Indonesia's Palm Oil Industry Rife with Human-Rights Abuses," which documented modern day slavery and extreme abuse of workers on KLK's PT 198.^{liii}

Satellite monitoring and field investigations have documented ongoing deforestation on two KLK plantations in Central Kalimantan (PT Karya Makmur Abadi II and PT Jabontara Eka Karsa) directly threatening endangered Bornean Orangutans, in violation of Indonesian law.^{liv}



KLK is also a majority shareholder of Equatorial Palm Oil, a UK-based palm oil company involved in documented human rights violations and land grabbing in Grand Bassa County, Liberia. After EPO destroyed community crops, forest reserves and sacred sites on land held under customary law by eleven villages, and physically assaulted unarmed community members, the communities filed complaints before the National Investment Commission, the Ministry of Agriculture, Parliamentarians, the Minister of Justice and the President of Liberia, leading to presidential intervention and the possible restitution of the communities' lands.^{lv}

KLK has acquired a majority interest in Collingwood Plantations Pte Ltd, a company claiming to have user rights over more than 100,000 acres in the Collingwood Bay region of Papua New Guinea. The region is home to nine Indigenous tribes, who have been exercising their constitutional rights to self-determination by using legal means and direct action to keep KLK out, saying "We do not wish to be slaves on our own land."^{lvi} The communities' demands have been upheld by Roundtable on Sustainable Palm Oil Complaints Panel and the national court of Papua New Guinea, but KLK has not taken heed.^{lvii}

Rimbunan Hijau (US \$5.59 million)

Sarawak-based Rimbunan Hijau is the world's largest tropical logging company. It controls more than 8 million hectares of logging concessions in Malaysia, PNG, Indonesia, Republic of Congo, Equatorial Guinea, Gabon, Russia and New Zealand. RH Group also manages large palm oil estates and processing facilities, and its subsidiary Rimbunan Sawit Berhad prides itself on being one of the most significant palm oil players in Sarawak^{lviii}.

A 2006 review of independent assessments of Rimbunan Hijau's three largest concessions in Papua New Guinea found that they were all operating illegally.^{lix} All of the concessions failed to meet most key criteria of legal operation. All were found to be breaching harvesting regulations, and two of the three concessions had been issued illegally. All were logging in excess of sustainable rates, and none had obtained the necessary consent of local landowners^{lx}. The Malaysian director of previously-Rimbunan Hijau-linked concessionaire Wapoga Mutiara, the largest logging firm in Indonesian New Guinea (Papua), was arrested in 2005 on charges of handling stolen timber.

In 2008, in the Republic of Congo, numerous instances of illegal logging were found by the official independent monitor at a concession controlled by Taman Industries, a Rimbunan Hijau subsidiary which is the second largest timber producer in the country. This included logging outside the concession, logging under-diameter trees, and logging in excess of licensed harvest.^{lxi} The

company was found to be cutting undersize trees again in 2010,^{lxii} while another RH-controlled concessionaire in Congo, CIBN, was found in 2011 to be cutting outside concession boundaries, cutting in excess of licensed volumes, cutting in advance of permits and fraudulently avoiding taxes by systematically under-reporting volumes harvested.^{lxiii}



Dimensional Fund Advisors' better known clients

(Note: As of March 3, 2014, this list was posted on DFA's website, <http://www.dfaau.com/firm/clients.html>, but has been subsequently removed.)

Dimensional Fund Advisors is an asset manager that manages money for institutional investors and individuals, including:

Private individuals

- Arnold Schwarzenegger

Public funds

- Arizona State Retirement System
- California Public Employees' Retirement System
- City and County of San Francisco
- City of Kalamazoo
- City of San Diego
- City of Seattle
- County of Kalamazoo
- Illinois Municipal Retirement Fund
- Indiana Public Employees Retirement Fund
- Marin County Employees' Retirement Association
- Maryland State Retirement Agency
- Mississippi Public Employees' Retirement System
- Montana Board of Investments
- Nebraska Investment Council
- South Dakota Investment Council
- St. Louis Public Schools Retirement System
- St. Paul teachers Retirement Fund Association
- Utah State Retirement System

Taft-Hartley Funds

- Local 815 Affiliated Trust Funds
- National Automatic Sprinkler Industry Pension Fund

- National Electrical benefit Fund
- UNITE General Fund and ILGWU Funds

Non-Profit Organizations

- Baptist Foundation of Alabama
- California Institute of Technology
- California Wellness Foundation
- Carnegie Mellon University
- Chicago Community Foundation
- Gonzaga University
- Idaho Community Foundation
- J. Paul Getty Trust
- Kansas Health
- Kansas University Foundation
- Lubrizol Corporation Foundation
- Lucille Packard Foundation for Childrens' Health
- Misericordia Home Endowment
- New Haven Community Foundation
- The New Jersey Education Association
- The Pennsylvania State University
- Public Policy Institute of California
- St. John's Hospital and Health Center
- San Francisco Foundation
- Toledo Community Foundation
- United Way of Palm Beach County
- University of Miami
- Western Michigan University Foundation
- Winnipeg Foundation

DFA's holdings in palm oil

(Companies listed do not exclusively trade in palm, but have significant business in the palm oil sector. Figures are from April, 2014.)^{lxiv}

Company	% of DFA Portfolio	% of Company Shares	Value of Shares (\$MM)
Al-Hadharah Boustead REIT	0.000	0.070	0,290
Anglo-Eastern Plantations PLC	0.000	0.990	4,281
Astra Agro Lestari Tbk PT	0.000	0.160	4,466
Bakrie & Brothers Tbk PT	0.000	1.130	4,566
Bakrie Sumatera Plantations Tbk PT	0.000	1.330	0,787
Barito Pacific Tbk PT	0.000	0.730	1,549
Batu Kawan Bhd	0.010	0.480	12,616
BLD Plantation Bhd	0.000	0.030	0,080
Boustead Holdings Bhd	0.010	0.960	16,168
BW Plantation Tbk PT	0.000	0.780	3,600
CB Industrial Product Holding Bhd	0.000	1.530	4,143
Chin Teck Plantations Bhd	0.000	0.400	1,039
Far East Holdings Bhd	0.000	0.340	1,085
Felda Global Ventures Holdings Bhd	0.000	0.010	0,519
First Resources Ltd	0.000	0.060	1,525
Galp Energia SGPS SA	0.010	0.030	3,779
Genting Bhd	0.020	0.340	39,051
Genting Hong Kong Ltd	0.000	0.030	1,007
Genting Malaysia Bhd	0.030	0.760	58,490
Genting Plantations Bhd	0.000	0.260	6,169
Genting Singapore PLC	0.000	0.020	3,133
Godrej Industries Ltd	0.000	0.230	3,289
Golden Agri-Resources Ltd	0.020	0.300	15,841
Gozco Plantations Tbk PT	0.000	1.130	0,561
Hap Seng Consolidated Bhd	0.010	1.020	12,443
Hap Seng Plantations Holdings Bhd	0.000	0.750	5,346
IJM Corporation Bhd	0.020	1.630	40,675
IJM Plantations Bhd	0.000	0.520	4,138
Inch Kenneth Kajang Rubber PLC	0.000	0.710	0,664
Indofood Agri Resources Ltd	0.050	0.500	4,374
Indofood CBP Sukses Makmur Tbk PT	0.000	0.090	4,898
Indofood Sukses Makmur Tbk PT	0.030	1.180	59,057
IOI Corporation Bhd	0.010	0.170	13,513
Jaya Tiasa Holdings Bhd	0.000	0.870	5,825
Keck Seng (Malaysia) Bhd	0.000	0.920	5,484
Kim Loong Resources Bhd	0.000	0.430	1,027
Kretam Holdings Bhd	0.000	0.230	0,961
Kuala Lumpur Kepong Bhd	0.010	0.160	12,257
Kulim (Malaysia) Bhd	0.010	0.750	11,089
Kwantas Corporation Bhd	0.000	0.280	0,577

Lam Soon (Hong Kong) Ltd	0.000	0.190	0,426
Lam Soon (Thailand) PCL	0.000	0.040	0,045
Land & General Bhd	0.000	3.010	2,527
Negri Sembilan Oil Palms Bhd	0.000	0.240	0,304
Noble Group Ltd	0.020	0.330	16,457
Olam International Ltd	0.000	0.330	9,397
Oriental Holdings Bhd	0.010	0.590	11,836
Perusahaan Perkebunan London Sumatra Indonesia Tbk PT	0.010	1.340	12,367
PTT Exploration and Production PCL	0.020	0.170	34,429
PTT PCL	0.070	0.620	155,732
REA Group Ltd	0.000	0.170	7,764
Rimbunan Sawit Bhd	0.000	0.790	2,393
Sampoerna Agro Tbk PT	0.000	1.380	3,827
Sarawak Oil Palms Bhd	0.000	0.410	3,494
Sarawak Plantation Bhd	0.000	0.100	0,209
Sime Darby Bhd	0.010	0.170	27,431
Sinar Mas Agro Resources and Technology Tbk PT	0.000	0.350	6,917
Sipef NV	0.000	0.590	4,141
Southern Acids (M) Bhd	0.000	0.030	0,032
Ta Ann Holdings Bhd	0.000	0.990	4,547
TDM Bhd	0.000	1.320	4,701
TH Plantations Bhd	0.000	0.380	1,819
Tiga Pilar Sejahtera Food Tbk PT	0.000	2.380	8,865
TSH Resources Bhd	0.000	0.510	3,894
Tunas Baru Lampung Tbk PT	0.000	0.950	1,768
Ultrapar Participacoes SA	0.020	0.250	32,393
Unico-Desa Plantations Bhd	0.000	0.970	3,025
United Malacca Bhd	0.000	0.940	4,003
United Plantations Bhd	0.000	0.580	9,273
Univanich Palm Oil PCL	0.000	0.150	0,489
Vale SA	n/a	n/a	8,500 ^{lxv}
Wah Seong Corporation Bhd	0.000	0.550	2,296
Wilmar International Ltd	0.020	0.130	20,248
Grand Total	.42	47.290	775,912

Conclusion and recommendations

In its own words, DFA employs “research based portfolio engineering” to develop its funds. But like many institutional investors, DFA’s investment approaches for most of its products appear to be devoid of any consideration of immediate or long-term environmental or social impacts. Meanwhile, investment flows into palm oil and tropical forestry are at record levels, providing the capital needed to expand operations deeper into the world’s dwindling areas of pristine tropical forests.

Friends of the Earth believes DFA should immediately **implement a robust forest policy** across all its products to address the grave environmental and human rights impacts associated with its palm oil holdings. It should have a **clear and effective implementation system** in place that is transparent to all stakeholders. In case of a complaint, there should be a clear and effective procedure in place with a timeframe to ensure that direct action is taken and followed up on.

Given the high risk of illegal activity, money laundering, environmental violations, and human rights abuses associated with the palm oil sector, DFA should **employ heightened due diligence procedures and eliminate the most egregious and recalcitrant companies** from all of its portfolios. DFA’s environmentally and socially screened products are natural starting points, but such due diligence and screening procedures should apply across all its portfolios.

In addition, as an investment firm known for actively engaging with the companies it owns, DFA should **use its shareholder power** to improve companies’ environmental and human rights performance, particularly in the palm oil sector.

Clients of DFA that do not wish to be associated with tropical deforestation should **divest from DFA until it commits to implementing** the abovementioned steps.

There are a growing number of large companies, palm oil and other commodity traders and forestry companies pledging to implement ‘zero deforestation policies.’^{lxvi} Similarly, banks and investment funds are also implementing policies to exclude clients known to operate in ways which are illegal or unethical. Notably, the Norwegian Government Pension Fund has blacklisted more than 20 forestry companies since 2010 due to concerns that their long-term business models are unsustainable.^{lxvii} In 2012, it sold stakes in some of the world's largest palm oil companies, including Golden Agri-Resources, Indofood Agri Resources, Kuala Lumpur Kepong, Ta Ann Holdings, United Plantations and Wilmar International, all of which are held by DFA.



NOTES

ⁱ Profundo. Financing oil palm expansion in Indonesia and Malaysia. June 2013.³⁸

ⁱⁱ DFA listed a wide range of prominent clients on its website:<http://www.dfaau.com/firm/clients.html> – though this list has been taken down since it was last accessed in first quarter, 2014.

ⁱⁱⁱ [http://www.panda.org/what we do/footprint/agriculture/palm_oil/](http://www.panda.org/what_we_do/footprint/agriculture/palm_oil/)

^{iv} <http://www.foodnavigator-usa.com/R-D/Palm-oil-reasonable-replacement-for-trans-fats-say-experts>

^v <http://www.hsph.harvard.edu/nutritionsource/transfats/>

^{vi} http://ec.europa.eu/research/energy/pdf/biofuels_vision_2030_en.pdf

^{vii} Richter, Björn. “Environmental Challenges and the Controversy about Palm oil Production: Case studies from Malaysia, Indonesia and Myanmar.” ed. Friedrich ebert stiftung, October 2009.

^{viii} UNEP. “Oil Palm Plantations: threats and opportunities for tropical ecosystems.” UNEP Global Environmental Alert Service, December 2011. http://na.unep.net/geas/getunePPageWitharticleidsript.php?article_id=73

^{ix} Some figures run much higher: Greenpeace, for example, says government maps show the country lost 4,790 square miles (12,400 square kilometers) of forest between 2009 and 2011. See:

http://www.salon.com/2013/10/24/indonesia_forest_still_dwindle_despite_reforms/

^x http://ran.org/sites/default/files/indonesia_climatechange_rainforests.pdf

^{xi} Matthews, Emily (ed.). *The State of Forests Indonesia*, Bogor 2002, Retrieved 28 May 2010

^{xii} http://www.washingtonpost.com/world/asia_pacific/in-indonesia-and-malaysia-as-demand-for-palm-oil-grows-so-do-environmental-labor-concerns/2012/11/25/857010fa-3036-11e2-a30e-5ca76eeec857_story.html

^{xiii} See: <http://blog.cifor.org/17798/fact-file-indonesia-world-leader-in-palm-oil-production#.U0OHGK1dV8I>

^{xiv} <http://www.nature.com/nature/journal/v493/n7434/full/nature11818.html>

^{xv} http://www.theicct.org/sites/default/files/publications/ICCT_palm-expansion_Feb2012.pdf

^{xvi} <http://www.peatociety.org/peatlands-and-peat/peatlands-and-climate-change>

^{xvii} Greenpeace (2011) “How the Palm Oil Industry is Cooking the Climate”.

<http://www.greenpeace.org.uk/files/pdfs/forests/cooking-the-climate-1.pdf>

^{xviii} http://www.wrm.org.uy/countries/Africa/Oil_Palm_in_Africa.html

^{xix} <http://www.greenpeace.org/usa/Global/usa/planet3/PDFs/Forests/PalmOilsNewFrontier.pdf>

^{xx} Anseeuw W et al (2012). Transnational Land Deals for Agriculture in the Global South: Analytical report based on the Land Matrix Database . CDE/CIRAD/GIGA .ISBN 978-92-95093-71-3

^{xxi} <http://www.greenpeace.org/usa/Global/usa/planet3/PDFs/Forests/PalmOilsNewFrontier.pdf>

^{xxii} http://www.ase.tufts.edu/gdae/Pubs/rp/ActionAid_Fueling_Food_Crisis.pdf

^{xxiii} <http://www.thejakartapost.com/news/2011/12/29/mining-plantation-disputes-intensify.html>

^{xxiv} <http://news.mongabay.com/2013/1119-dparker-palm-oil-worker-protest.html>

^{xxv} Climate Advisers. 2012. *Palm Oil, Deforestation and Climate*

^{xxvi} <https://www.research.hsbc.com/R/20/DP0vDigU31jp>

^{xxvii} <http://www.wilmar-international.com/wp-content/uploads/2012/11/No-Deforestation-No-Peat-No-Exploitation-Policy.pdf>

^{xxviii} <http://www.newsweek.com/2012/10/22/newsweek-green-rankings-2012-global-500-list.html>

^{xxix}

http://awsassets.panda.org/downloads/wwf_indonesia_palming_off_a_national_park_tesso_nilo_sumatra_2013.pdf

^{xxx} Forest Peoples Program, Tuk, Sawit Watch. Conflict or Consent? The Palm Oil Sector at a Crossroads. 2013.16

^{xxxi} Ibid.16

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