

HOW THE PALM OIL INDUSTRY IS

# COOKING THE CLIMATE



*‘Climate change is market failure on the greatest scale the world has seen. It results from the fact that the costs of greenhouse gas emissions are not paid for by those who create the emissions.’*

**2007 King Review for the UK Government Treasury**



# INDONESIA'S PEATLAND CARBON STOCKS PLUMMET AS PALM OIL DEMAND SOARS

***'Our actions now cast their shadow far into the future. [Climate policy needs to] have the economics of risk at its core; and go beyond the marginal changes which are the usual daily fare of economists.'***

**Nicholas Stern, former Chief Economist of the World Bank**

Every year, 1.8 billion tonnes (Gt) of climate changing greenhouse gas (GHG) emissions are released by the degradation and burning of Indonesia's peatlands – 4% of global GHG emissions from less than 0.1% of the land on earth.

This report shows how, through growing demand for palm oil, the world's largest food, cosmetic and biofuel industries are driving the wholesale destruction of peatlands and rainforests. These companies include Unilever, Nestlé and Procter & Gamble, who between them account for a significant volume of global palm oil use, mainly from Indonesia and Malaysia.

Overlaying satellite imagery of forest fires with maps indicating the locations of the densest carbon stores in Indonesia, Greenpeace researchers have been able to pinpoint carbon 'hotspots'. Our research has taken us to the Indonesian province of Riau on the island of Sumatra, to document the current activities of those involved in the expansion of palm oil. These are the producers who trade with Unilever, Nestlé and Procter & Gamble, as well as many of the other top names in the food, cosmetic and biofuel industries.

The area of peatland in Riau is tiny: just 4 million hectares, about the size of Taiwan or Switzerland. Yet Riau's peatlands store 14.6Gt of carbon – if these peatlands were destroyed, the resulting GHG emissions would be equivalent to one year's total global emissions.

Unless efforts are made to halt forest and peatland destruction, emissions from these peatlands may trigger a 'climate bomb'.

## FORESTS AS TICKING CLIMATE BOMBS

Forest ecosystems currently store about one and a half times as much carbon as is present in the atmosphere. Without drastic cuts in GHG emissions, climate change – which is in part driven by forest destruction – may soon tip these carbon

stores into sources of emissions. Resulting temperature increase could disrupt ecosystems in ways that provoke yet more greenhouse emissions, potentially leading to further acceleration of climate change.

Conclusions from the world's leading climate scientists in the Intergovernmental Panel on Climate Change (IPCC) show that large cuts in GHG emissions are needed rapidly. Time is desperately short. The greater the delay in realising emissions reductions, the higher the financial, social and ecological costs will be.

## INDONESIA'S RAINFORESTS AND PEATLANDS IN THE POLITICAL SPOTLIGHT

Indonesia offers a critical example of why GHG emissions arising from deforestation and land-use change need to be dealt with at the international level, by governments and corporations.

Indonesia holds the global record for GHG emissions through deforestation, putting it third behind the USA and China in terms of total man-made GHG emissions. During the last 50 years, over 74 million hectares of Indonesia's forests have been destroyed – logged, burned, degraded, pulped – and its products shipped round the planet.

Unlike industrialised country (Annex I) signatories to the Kyoto climate treaty, Indonesia – as a developing country – is not required to set a target to reduce its GHG emissions. Consequently, since the Kyoto Protocol provides no incentives for preventing the destruction of tropical forests, the expansion of palm oil into carbon-rich landscapes such as peatlands and rainforests makes short-term economic sense but no ecological sense.

In December 2007, negotiating teams from governments around the world will gather in Bali, Indonesia to thrash out an agreement that will ideally lead to an international plan to deliver deep cuts in global GHG emissions, as an extension of the current Kyoto climate treaty.

These climate negotiations are first steps toward international political measures to tackle deforestation. Meanwhile, global industry continues business-as-usual, and is expanding into the world's rainforests.





## **PALM OIL'S BOOM!**

NASA's climate scientists warn that 'continued rapid growth of CO<sub>2</sub> emissions and infrastructure for another decade' may make halting high-risk increase in global temperatures 'impractical if not impossible'.

A report published by the United Nations Environment Programme (UNEP), in 2007, acknowledges that palm oil plantations are now the leading cause of rainforest destruction in Malaysia and Indonesia.

Indonesia has destroyed over 28 million hectares of forest since 1990, largely in the name of land conversion for plantations. Yet the area of oil palm or pulp wood plantations established in this period was only 9 million hectares. This clearly implies that most of the companies obtained permits to convert the forest only to gain access to the timber. Rainforest continues to be destroyed for plantations because of the financial value of the timber.

Oil palm plantations feed a growing global demand for cheap vegetable oil used in the production of food, cosmetics and fuel. Compared to the year 2000, demand for palm oil is predicted to more than double by 2030 and to triple by 2050.

A handful of powerful players control much of the international trade in palm oil from Indonesia, among them Cargill, the world's biggest private company, the ADM-Kuok-Wilmar alliance, currently the world's biggest biofuels manufacturer and Synergy Drive, the Malaysian government controlled company that is soon to become the world's biggest palm oil conglomerate.

Following business-as-usual logic, industry's current expansion strategy – including taking advantage of concern about climate change to push palm oil as a source of biodiesel – casts an ominous shadow over our ability to cut emissions.

Much of the current and predicted expansion oil palm plantations is taking place on peatlands which are among the world's most concentrated carbon stores. Ten million of the 22.5 million hectares of peatland in Indonesia have already been cleared of forest and have been drained, resulting in a substantial and continuing increase in GHG emissions as peat soils dry out, oxidise and even burn.

GHG emissions from peatlands are set to rise by at least 50% by 2030 if predicted expansion proceeds.

## RIAU: A LIT FUSE



In early 2007, through satellite monitoring, Greenpeace identified fire hotspots in Riau Province.

Comparing and overlaying maps of peatlands and forest concessions signalled there was significant overlap between the location of fires, oil palm concessions and peatlands.

The peat soils of this once heavily forested province of 9 million hectares have the highest concentration of carbon stored per hectare of anywhere in the world. The area of peatland involved is small: just 4 million hectares – about the size of Taiwan or Switzerland. But they store 14.6Gt of carbon, or 40% of Indonesia's peatland carbon.

Riau's huge carbon store is at high risk from drainage, clearance and ultimately from fire. Destroying these peatlands could release GHG emissions equivalent to one

year's total global emissions or to five years' emissions from all fossil-fuel power plants in the world.

A quarter of Indonesia's oil palm plantations are located in Riau. By 2005, 1.4 million hectares of oil palm plantation had been established in the province. Data suggest that over one-third of oil palm concessions in Riau are sited on peat.

Riau is facing further expansion in palm oil due to its available infrastructure. A further 3 million hectares of peatland forests are earmarked for conversion over the next decade. Where once there was mostly forest, soon half of Riau will be covered in oil palms.

According to a 2001 report by the European Union and the Indonesian Ministry of Forestry, 'It is inevitable that most new oil palm will be in the wetlands, as the more "desirable" dry lands of [Sumatra] are now occupied.'

# DUTA PALMA: THE OIL PALM INDUSTRY'S RECIPE FOR CLIMATE DISASTER



The privately-held Duta Palma group is a company with major operations in Riau. It is one of Indonesia's ten-largest palm oil refiners.

Duta Palma now controls about 200,000 hectares of land, over half of it in Riau. This landbank overlaps significant areas of deep peat, which are theoretically protected under Indonesian law.

Greenpeace analysed satellite data from the period 2001-2007. This showed significant forest clearance within several of Duta Palma's contiguous concessions in Riau. According to official maps, nearly half of the total area of the concessions is on peatlands with a depth greater than 2 metres. One area is officially designated as protected peatlands, ie more than 3 metres deep.

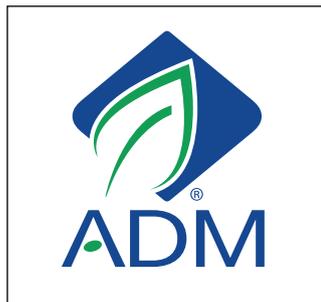
Measurements made by Greenpeace of the peat depth in October 2007 show that the concessions lie on very deep strata

of peat ranging from 3.5 metres in depth outside the boundary of the concession to more than 8 metres in the middle of the concession area. Therefore, the entire area should be protected under Indonesian law.

Additional field investigations by Greenpeace confirms extensive peat drainage, including construction of large canals, and clear-cutting of rainforests is happening across these concessions.

Duta Palma is also involved in the destruction of habitat critical to endangered and protected species including the critically endangered Sumatran tiger.

# WHO CONTROLS THE TRADE?



## ROUNDTABLE ON SUSTAINABLE PALM OIL

The Roundtable on Sustainable Palm Oil (RSPO) is a high profile initiative chaired by Unilever. Its members include major companies along the supply chain from plantations through to commodities traders, including Cargill and ADM, to the world's food giants, including Cadbury's, Nestlé and Tesco. Together they represent 40% of the global production and use of palm oil.

On-the-ground investigations by Greenpeace reveal that RSPO members are dependent on suppliers that are actively engaged in deforestation and the conversion of peatlands.

## THE FOOD GIANTS

The RSPO board president Unilever is a major player in the global palm oil trade. It uses around 1.2 million tonnes of palm oil every year, or about 3% of total world palm oil production, most of which originates from Indonesia and Malaysia. It uses palm oil in brands such as Flora margarine.

Other leading brands including KitKat, Pringles, Philadelphia cream cheese and Cadbury's Flake and leading companies including Gillette, Burger King and McCain are complicit in the expansion of palm oil at the expense of Indonesia's peatlands.



## THE COMMODITY GIANTS

Much of the global trade in Indonesian palm oil is handled by traders based in Singapore. Some of the largest Singapore-based commodity traders are RSPO members, including the ADM-Kuok-Wilmar alliance, Cargill, Golden Hope and Sinar Mas.

The traders are also processors, blending palm oil which originates from deforestation and peatland destruction through their refineries and biofuel facilities.

The companies' control over the entire palm oil supply chain – from plantations in Indonesia to refined palm oil or biofuel – means that they are in a decisive position to affect and change the market.

One RSPO member, a major food retailer, has complained to Greenpeace that efforts towards sustainability are hampered because: '...the global palm oil industry is unable at present to provide anyone with evidence of traceability beyond processor, to plantation level'.

Consequently, consumer companies who manufacture products using palm oil have virtually no way of knowing whether or not the palm oil they are using is from rainforest destruction and conversion of peatlands.

Through carrying on business as usual, the commodity trade and other big players are not taking the urgent action necessary to abandon destructive and socially unjust practices linked to the industry's expansion.

# BIOFUELING RAINFOREST DESTRUCTION



***'The draining of wetlands to produce any type of biofuel would produce a loss of stored carbon that would take hundreds of years to make up through the biofuels' annual greenhouse gas savings.'***

**European Commission, 2007**

The scale of global diesel consumption dwarfs currently available feedstocks for biodiesel production. Substituting even 10% of worldwide demand for diesel fuel for road transport would require more than three-quarters of total current global soya, palm and rapeseed oil production.

Biofuels have a relatively low financial value compared to other agricultural products. Therefore, biodiesel is generally made from the cheapest of the bulk oil crops: soya, palm and rapeseed. Palm is far more productive per hectare than either soya or rapeseed and is the most significant vegetable oil in the world, accounting for 30% of world edible oil production in 2006/7.

Feeding the growing demand for biodiesel is likely to take place through expanding palm oil plantations in Indonesia. Big commodity traders are already planning significant expansion in the biodiesel infrastructure. Once this is established, it will feed off forest destruction and fuel not only cars but climate change.

Supplying Europe's demand for biofuels is being driven by binding EU targets covering transport fuels. In early 2007, the EU Summit endorsed a minimum target for biofuels to constitute 10% of transport fuels by 2020. This almost doubles the target of the 2003 Biofuel Directive of a 5.75% contribution by 2010. The increased target is dependent on production being both 'cost effective' and 'sustainable'.

Diesel fuel currently meets around 60% of the road transport fuel

demand in Europe. Europe's diesel fuel consumption was 172 million tonnes (Mt) in 2005. According to one RSPO member company, there is insufficient rapeseed available to meet EU targets. Of the alternatives, 'vegetable oil sourced from palm oil is among the most widely and commercially available'. The company predicts a growth in the demand for biodiesel of 52Mt between 2005 and 2030 in the EU alone as road transport fuel demand continues to rise.

Meeting this projected growth in demand for vegetable oil through palm oil, for example, would require more than 15 million hectares of mature oil palm plantation. This is nearly three times the acreage that was under oil palm in Indonesia in 2005.

Many other countries from oil-dependent regions are turning to biofuels from Indonesia's rainforests. This trade amounts to emissions transfer, not emissions reduction. GHG emissions associated with palm oil production, such as forest clearance, are attributed to the producer country.

The Chinese government expects that biofuels will meet 15% of its transport fuel demand by 2020. India has set a target of securing 20% of its diesel fuel from biofuels by 2012.

Greenpeace estimates that current plans for biodiesel refineries in Indonesia will create an additional biodiesel production capacity of up to 9Mt a year, including a 5Mt 'mega-project' planned by Sinar Mas.

To feed this desire for an expansion in capacity, companies are thinking ahead and turning their attention to the region of Papua on the island of New Guinea – the last great expanse of rainforest in Southeast Asia. There is already evidence of large-scale land-grabbing in the name of biofuel, with one company alone reportedly laying claim to nearly 3 million hectares of forest.

# TICK TICK TICK... TIME FOR ACTION

Time is running out.

The debate is not whether we need to reduce emissions from fossil fuels in the industrialised world or whether we should stop deforestation in the remaining forests of the developing world. The inescapable reality is that we must do both, and now.

The increasing worldwide demand for vegetable oil for food, combined with current land-grabbing by biofuel companies – many of them RSPO members – is significantly increasing pressure on the world's threatened rainforests and other vulnerable habitats. Continued clearance of tropical rainforests, and their replacement with agricultural commodity crops like palm oil, seems inevitable unless action is taken now by industry and governments.



## MAKING BIG EMISSIONS CUTS FAST: HALTING DEFORESTATION

Tropical rainforest destruction accounts for about one-fifth of global GHG emissions – more than the world's cars, lorries and aeroplanes combined. Destruction of Indonesia's peatlands alone accounts for almost 4% of global annual GHG emissions. Curbing tropical deforestation is one of the quickest, most effective ways to cut GHG emissions.

Where can big emissions be cut quickly and cost effectively?

### **Cut one: Cut global deforestation: annual emissions savings – up to 2Gt CO<sub>2</sub>**

According to an IPCC report, up to 2Gt CO<sub>2</sub> (equivalent of up to 4% of current annual GHG emissions) can be cut cost effectively. The report puts the cost for making these emissions savings at up to \$100/tonne CO<sub>2</sub>.

Significantly, this figure does not include potential to halt emissions from peatland and other bog fires.

### **Cut two: Stop Indonesian peatland fires, establish a moratorium on peatland conversion: annual emissions savings – 1.3Gt CO<sub>2</sub>**

The emissions from Indonesia's peatland fires largely represent new expansion and peatland clearance. The best way to avoid these emissions is to stop further conversion of peat swamp forests. Since use of fire for forest or agricultural clearance is illegal, as is degradation of deep peat, the only cost is that of law enforcement and improved governance.

### **Cut three: Rehabilitate Indonesia's degraded peatlands: annual emissions savings – 0.5Gt CO<sub>2</sub>**

Avoiding emissions from the ongoing decay of Indonesia's degraded peatlands poses a cost effective opportunity to make rapid emissions reductions. The area involved is miniscule – about 10 million hectares or less than 0.1% of the earth's land surface. One project being pursued by Wetlands International aims to rehabilitate 43,500 hectares of degraded peatlands in Central Kalimantan, avoiding the emission of 3.4Mt of CO<sub>2</sub> a year, for a one-off investment of €500,000 (this equates to €0.15/tonne). This is small change in global climate change terms.

### **Total cuts: Potential annual emissions savings: up to 3.8Gt CO<sub>2</sub>. This equates to nearly 8% of current annual GHG emissions.**

# KEY DEMANDS

## **STOP THE PROBLEM: ZERO DEFORESTATION**

Moratorium on forest clearance and peatland degradation.

## **START THE SOLUTION: CLIMATE PROTECTION**

Prioritise protection of remaining peat swamp forests and other forest areas with high carbon storage capacity, biodiversity values and benefits for indigenous peoples and other local communities.

Agree a global funding mechanism to reduce emissions from deforestation and make this a central part of the next phase of the Kyoto Protocol (post-2012) agreement on climate change.

Make available international funds to help countries take immediate action to reduce their emissions from deforestation: agree a global funding mechanism to transfer money from rich to poor countries for forest protection.

## **START THE SOLUTION: CUT ONGOING EMISSIONS**

Rehabilitate degraded peatland areas with natural and native flora.



*'Activities in forestry are the largest contributor to emissions of greenhouse gases in Indonesia. It is time we put together all of our resources to prevent forest fires and irresponsible deforestation. We need to be united in this effort because the potential dangers of climate change are too great to ignore'*

**World Bank/ UK Government funded report, 2007**



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Greenpeace is an independent global campaigning organisation that acts to change attitudes and behaviour, to protect and conserve the environment and to promote peace.

Greenpeace is committed to stopping climate change.

We campaign to protect the world's remaining ancient forests and the plants, animals and peoples that depend on them.

We investigate, expose and confront the trade in products causing forest destruction and climate change.

We challenge governments and industry to end their role in forest destruction and climate change.

We support rights of forest peoples.

