

## Palm oil and tropical peatlands

Palm oil is a driving force behind the destruction of tropical peatlands by deforestation, soil degradation and fires. Decomposition of the degraded organic soils which cover 0.2% of the global land surface leads to 8% of the global CO<sub>2</sub> emissions.

Wetlands International calls for a world wide end to all supportive legislation and subsidies on palm oil as bio-fuel until appropriate certification is in place that excludes palm oil from peatlands for any use.

### Global rush for palm oil

The global demand for palm oil is increasing rapidly. Until quite recently, palm oil was mostly used for food production and cosmetics. However, the use of palm oil for bio-fuels is now the driving force behind the expansion of the production; mainly because of supportive measures of several governmental authorities. Of the 28,000,000 metric tonnes globally exported palm oil, the EU countries import a large share, in the second place just after China.

The largest share of the palm oil production takes place in South-east Asia, in Malaysia and Indonesia; this applies also to current expansion of plantations with another 6 million hectares being planned. Establishment of these plantations on existing agricultural areas or reclaimed lands is expensive due to existing land tenure. The main areas remaining for new extensive plantations are the large tracks of tropical peatlands – until recently virgin rainforest areas. Over 50% of new plantations are planned in these peatland areas.

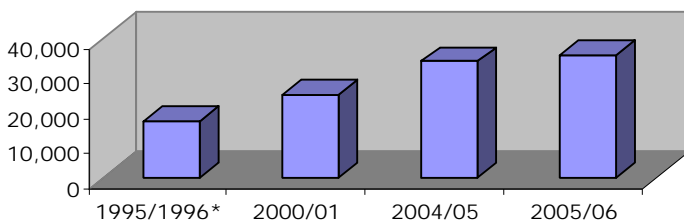
### Palm oil and peatlands

The peat swamp forests of South-East Asia have remained relatively unharmed till recent years, as they were unattractive to agriculture. The infertile and wet soil is unsuitable for most crops. However, when deeply drained they are quite suitable for palm oil, and with the palm oil boom of the last decades large tracts of these rainforests have been converted to palm oil plantations. The current international hunger for bio-fuels has given the boom an additional major push, and as a result peat swamp forests are now increasingly destroyed. As a result of continued land degradation, involving soil subsidence and loss of hydrological functions many of the plantations and surrounding areas will become irreversibly destroyed and useless wastelands.

Oil palm estate in former peatswamp forest

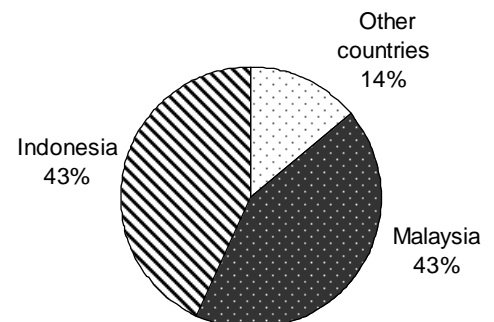


Global palm oil production  
(1000 metric tonnes)



Source: Aid Environment, 2006

Share of global palm oil production



### Palm oil, peatland loss and climate change

Besides causing the destruction of large areas of rainforests, palm oil plantations on peatlands also cause massive emissions of the greenhouse gas carbon dioxide. Peat soils are in fact a huge carbon stock consisting of thick layers of organic material that have accumulated over thousands of years. Peatland soils are also important water retention areas, keeping water for months after the wet season and slowly releasing this during the dry season. As such they help prevent floods and droughts. As soon as the peatlands are drained, the process of carbon accumulation is reversed into decomposition of the organic material and the carbon stores become carbon sources, emitting huge amounts of carbon dioxide (CO<sub>2</sub>).

Under tropical conditions, the process of decomposition takes place very rapidly. The bad news is, this is happening now. Drainage channels are dug into the peat swamp forest to enable logging equipment to enter and to transport logs. Palm oil plantations are established once the forest areas are cleared. Oil palms need at least 70 centimetres of dry soil but the plantations are often drained even deeper. The resulting CO<sub>2</sub> emissions from these plantations are in the order of 50 to over 100 tonnes of CO<sub>2</sub> per hectare per year.<sup>1</sup> The palm oil yield is between 3 and 6 tonnes per hectare per year; 'preventing' fossil fuel emissions of only 9 to 18 tonnes.

Plantations and peatland area of Indonesia (million ha)

	Palm oil	Timber
total plantations	10,337,800	7,485,800
Plantations on peat	2,800,900	1,992,300
% on peat	27%	27%

Oil palm fruit



Oilpalm harvest Sungai Gelam, Jambi

By conservative estimate about 25% of all Malaysian and Indonesian palm oil plantations are now on peatlands; new plans aim at further expansion of palm oil plantations especially on peatlands. In Indonesia already 14% of the peatlands are used or earmarked for palm oil production. Over 50% of new plantations are planned in these peatlands.

In Indonesia alone, almost 600 million tonnes CO<sub>2</sub> are annually released due to the invisible decomposition of the dried peat (source: PEAT-CO<sub>2</sub>). A much more visible form of oxidation are the peatfires. The drained peatland areas are extremely fire prone. In the dry season, just a cigarette butt is enough to start a peat fire. In 2006, over forty thousand fires occurred in the drained peatland areas of South-east Asia; lasting for weeks and causing huge air pollution. Our most conservative estimates show an annual average CO<sub>2</sub> emission from fires 1400 million tonnes in Indonesia alone.

These emissions make Indonesia the third largest contributor of CO<sub>2</sub> in the world; emitting some 8% of the global 26,000 Mt fossil fuel emissions or 2,000 million tonnes CO<sub>2</sub> just by peatland destruction alone.

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Source table & figures:  
Hooijer, A, Silvius, M., Wösten, H. and page, S. 2006  
PEAT-CO<sub>2</sub>, Assessment of CO<sub>2</sub> emissions from drained peatlands in SE Asia. Delft Hydraulics report Q3943 (2006).