

Can REDD make natural forests competitive with oil palm?

Not at current carbon prices, study finds

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Oil line: Oil palm plantation and logged natural forest, Sabah, Malaysia *Photo: R. Butler/mongabay.com*

In less than a generation oil palm cultivation has emerged as a leading form of land use in tropical forests, especially in Southeast Asia. Rising global demand for edible oils, coupled with the crop's high yield, has turned palm oil into an economic juggernaut, generating US\$ 10 billion in exports for Indonesia and Malaysia, which account for 85 percent of palm oil production, alone. Today more than 40 countries - led by China, India, and Europe - import crude palm oil.

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The economic importance of the oil palm industry to Southeast Asia is undeniable. But such financial gains have come at a high price for the native wildlife and traditional rural livelihoods in this region. Conservation scientists have shown that oil palm expansion over the past few decades has led to the destruction of large swaths of tropical rainforests—to the detriment of many rare and endangered species that depend on these forests for survival (Fitzherbert *et al.* 2008; Koh and Wilcove 2008; Danielsen *et al.* 2009). Furthermore, social activist groups, such as Oxfam (www.oxfam.org) and Sawit Watch Indonesia (www.sawitwatch.or.id) have documented numerous cases of alleged land-use conflicts between oil palm companies and indigenous communities. Not only are such impacts continuing, but they are likely to intensify in the future as international demand for oil palm products continues to grow.

In an effort to improve plantation management practices, the Roundtable on Sustainable Palm Oil (RSPO; www.rspo.org) was established in 2004 by a group of nongovernmental organizations, oil palm producers and retailers. The RSPO awards certificates to companies that produce palm oil according to

a set of principles and criteria. The ultimate goal of the RSPO is to enhance the environmental performance and corporate image of the oil palm industry. However, given the powerful economic forces driving oil palm expansion and the prolonged economic downturn, this is much easier said than done. Indeed, environmental groups continue to produce evidence of forest clearing for new plantings (Greenpeace 2007), while NGOs and regional media report ongoing conflict with local communities from their native lands (www.orangutanprotection.com, sawitwatch.or.id). But even if RSPO proves a success, many operators are not, and have no intention of becoming members. Further there is little evidence to suggest that RSPO is even finding much of a market for its eco-certified palm oil (CSPO). To date, only 15 000 tons of CSPO—representing ~2.5% of that produced—have been purchased (WWF 2009). At the same time, oil palm plantation continues to spread across the tropics (Butler 2008). Can the palm oil industry be otherwise coaxed towards practices that don't consume biodiverse and carbon-rich ecosystems?

REDD promise

A potential solution to might lie in a scheme called *Reducing carbon Emissions from Deforestation and forest Degradation* (REDD). REDD is being developed as a financial mechanism to compensate land owners, organizations or governments for the value of carbon stored in forests that would otherwise be released into the atmosphere through deforestation (Miles and Kapos 2008). Carbon credits generated from REDD could be used to pay for not only forest protection but also biodiversity conservation and poverty alleviation. But the big limitation presently facing REDD is that credits cannot be used to meet emission reductions obligations, thereby limiting them to voluntary markets like the Chicago Climate Exchange (www.chicagoclimatex.com), where they fetch substantially

lower prices than compliance credits traded in the European Union's Emissions Trading Scheme. Until REDD credits are recognized under an international climate regime they are unlikely to compete financially with oil palm on most types of land.

A recent study provides an illustration. Economic models developed to evaluate returns from REDD and oil palm under different price scenarios found that a carbon price of US\$18-46 per ton of CO₂ would be needed to make REDD credits from forest conservation competitive with palm oil. By comparison, credits on the CCX traded in mid-2009 for around US\$4 per ton. For peatlands, which lock up large amounts of carbon below ground, the break-even point with palm oil is roughly two-fifths of that—but still outside the range of voluntary market prices. Looking at the calculations in another way, the net present value (NPV) of a REDD project in voluntary markets would range from US\$614 to US\$994 per hectare over a 30-year project timeframe, as opposed to an oil palm operation that could yield NPVs of US\$3835-\$9630 per hectare (Butler *et al.* 2009). Thus it remains more profitable to convert a forest to oil palm than to preserve it for an REDD project.

However, if in future climate policies REDD becomes recognized by the United Nations (UN) as a legitimate activity for reducing carbon emissions, REDD credits would be compensated at higher prices, either via a UN-sanctioned market mechanism or a global fund. REDD could be worth more than \$6600 per hectare (Butler *et al.* 2009) under this scenario, potentially making forest protection an economically competitive land-use option compared to oil palm agriculture or other more profitable land-use activities, especially considering the potential co-benefits of environmental protection.

Another recent development that could tip land-use decisions in favour of REDD is that over the last decade or so, large plantation companies rather than small-scale rural farmers have become the dominant driving force of land-use change across the tropics (Rudel 2007; Butler and Laurance 2008; see also *TFU* 18-4). Many plantation companies now hold large tracts of concessions that are still forested—the sheer extent of which would contribute significantly to biodiversity conservation if they could be preserved. In fact, some plantation companies are already setting aside patches of forests as private nature reserves, driven by pressures from environmental groups, and also as part of the RSPO certification process (Koh and Ghazoul 2009). Furthermore, it's worth noting that oil palm companies have not always planted oil palm but have often shifted from planting rubber to coconut to cocoa over the last few decades—which suggests that companies may be on the look-out for the next profitable cash crop, which could well be carbon.

Paradigm shift

The adoption of REDD by UN climate policy makers could therefore be a tipping point for the way plantation companies operate and strategize their long-term business plans. It is not unimaginable that through their participation in REDD, some companies could transition from being destroyers of natural forests (with the loss of associated biodiversity) to become their managers and protectors—much as how former wildlife poachers in Sub-Saharan Africa and Latin America had been successfully turned into effective rangers in nature reserves (Feltner 2009).

This admittedly is a radical proposition. And there undoubtedly are difficult technical, political and ethical challenges to be resolved. Furthermore, the opportunity costs of REDD would be incurred at several societal levels and expressed as both the relatively obvious direct cost (of foregone economic potential) and less obvious indirect costs including impacts on employment,

tax revenues, societal and governmental perspectives on financial investments in REDD project regions. There are substantial challenges to overcome if REDD is to be successfully implemented in the future. However, a paradigm shift of this magnitude may be necessary, if not critical, in developing effective strategies for ameliorating the detrimental impacts of oil palm expansion and other forest conversion activities.

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Ready to plant: Oil palm seedlings near Gunung Leuser National Park in North Sumatra. Photo: R. Butler / mongabay.com