‘REDD faces all around’:
Implementing reducing emissions from deforestation and forest degradation in Indonesia

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Abstract

At a UN Climate Change conference held in Cancun, Mexico, in 2010 an updated version of the Reducing Emissions from Deforestation and Forest Degradation convention (REDD+) was adopted. This convention provides a legal framework for commodifying the value of sequestered carbon emissions saved by avoiding deforestation or degradation in the global south; integrating forests into a broader international carbon market. This paper examines the processes for implementing REDD+ in Indonesia and argues that while it may help nations of the global north to reach their emissions reduction targets, it does little or nothing to curtail the drivers of deforestation and forest degradation in Indonesia. Indeed, the paper argues, REDD+ makes forest protection in Indonesia more difficult by undercutting community-managed forest conservation strategies. International solidarity is needed to help forest-dependent communities in Indonesia to promote their alternative to REDD+.

Introduction: ‘Market environmentalism’ and REDD+

The idea of RED (Reducing Emissions from Deforestation) was first proposed in November 2005 and was endorsed as a United Nations Framework Convention on Climate Change (UNFCCC) policy approach in the Bali Action Plan in 2007.2 The 2010 Cancun Agreements make strategies for reducing deforestation and forest degradation; conserving forest carbon stands; sustainable management of forests; and enhancement of forest carbon stands subject to the same policy approaches and positive incentives.3 Reducing Emissions from Deforestation and Forest Degradation (REDD+) has since emerged as a legal mechanism for incorporating forests into international financial flows. REDD+ commodifies the value of sequestered carbon emissions saved from avoiding deforestation or degradation in the global south. The resulting carbon commodity is then earmarked for sale as an ‘offset’ towards meeting the greenhouse gas reduction targets of the global north.4 REDD+ thus links rewards for enhancing carbon
storage capacity with strategies to avoid current negative carbon emissions from deforestation and forest degradation, such as forest restoration and rehabilitation and afforestation/reforestation (A/R). The initial belief by states and market actors in the north and south that REDD+ offers easy and cheap carbon offsets propelled it to centre stage in discussions of the development of international carbon markets, and international climate governance more generally, even though REDD+ has not been approved by the UNFCCC process as a market offset mechanism.

Carbon markets themselves have emerged as one of the key sites of international climate governance. Their predominance represents a triumph of ‘neoliberal’ or ‘market’ environmentalism which champions the capacity of free markets to achieve environmental protection outcomes. Their proponents argue that so-called ‘cap and trade’ systems—which place legislative limits on greenhouse gas emissions and create tradable property rights in greenhouse gas emissions to be auctioned or allocated to polluters—provide the most cost-effective way to reduce greenhouse gas emissions. Markets, so the argument goes, operate to enable overall lowest cost mitigation and therefore might result in globally higher levels of greenhouse reductions than non-market mechanisms. Market proponents also highlight what they claim are the transformative impacts of carbon markets, namely that carbon markets will ‘incentivise’ the shift from unsustainable to sustainable practices. The standard argument is that ‘internalising’ environmental ‘externalities’ as costs to market actors will promote a shift from ‘carboniferous’ to ‘green’ or ‘climate capitalism’. As such, REDD+ is said to promote a structural shift, away from unsustainable land use patterns that drive deforestation and towards greater forest conservation and more sustainable land use patterns.

This paper builds on existing critiques of the use of REDD+ as an international carbon ‘offset’ mechanism. Generalising from a specific case study—the development of REDD+ policies in Indonesia—I explain why REDD+, as a carbon offset strategy, is unable to bring about a structural transformation of capitalism of the kind needed to steer social reproduction onto a sustainable footing. This is because rather than enabling a transformation from fossil-fuel dependency and unsustainable land use practices, such ‘market environmentalism’ is itself deeply implicated in perpetuating the kinds of economic practices that they promise to transform. The schema of offsets are materially embedded in the continual operation and, arguably, expansion of ‘carboniferous’ capitalism. Indeed, I develop the view here that the ‘offsets’ that REDD+ enable actually support fossil fuel dependency lock-in. I argue that with the introduction of ‘carbon offsets’ to Australia’s recently announced Clean Energy Future legislative package, as well as in the international climate regime itself, Indonesian REDD+ offsets in particular are enabling the continued burning of fossil fuels in Australia and other northern countries. Consequently, the growing demand for REDD+ necessarily involves an increase in fossil fuel extraction and
burning. Therefore, my point is that the business of ‘offsetting’ politically enables otherwise inexcusable delays in transitioning to low-carbon modes of production, consumption and distribution in industrialised countries.

**Background to REDD+**

REDD+’s international architecture is, in part, a product of the global interactions that drive unsustainable land use patterns. Moreover, clear political decisions were made to define REDD+ narrowly as a ‘supply-side’ measure, rather than to implement broader measures to address demand for the products of deforestation. This resistance to addressing the increasing international demand for products from Indonesian pulp, timber and agrofuel industries creates a paradoxical situation for forest policymakers. Both the exports of carbon credits from standing forests and products from industries driving deforestation are lucrative sources of export earnings. I argue that these conflicting international economic demands and pressures are shaping the manner in which nationally-based implementation of REDD+ is occurring in Indonesia. REDD+ has developed not as a strategy that provides financial incentives to shift away from these unsustainable land uses, but rather in a manner that is increasingly compatible with unsustainable agro-forestry.

There are fundamental flaws in assuming that a market-based model of REDD+ can operate as an environmentally effective carbon offset scheme. The controversial question of what funding model will be adopted for REDD+—that is, whether funds will come from the international carbon market or from international funds—has been officially left open at the UNFCCC level. The incorporation of REDD+ within international carbon markets has been highly contested. The position of the climate justice movement, which has been articulated in Bolivia’s submissions to the Ad-hoc Working Group for Long-term Cooperative Action (AWG-LCA) of the UNFCCC, is that the global north should fund deforestation projects in the south in recognition of its historical carbon debt. However, initiatives being pursued on the ground through bilateral and multilateral channels have de facto confirmed that REDD+ will be a market-based mechanism, as national policy development, ‘demonstration activities’ and other ‘facts on the ground’ increasingly supersede the UNFCCC as the site of REDD+ norm development.

Primary amongst these is the World Bank’s Forest Carbon Partnership Facility (FCPF), the UN REDD+ Programme and the World Bank’s Forest Investment Programme. FCPF was launched in 2007 with the explicit purpose of ‘jump-start(ing) a forest carbon market’. The Intern REDD+ Partnership established in 2010 is designed to co-ordinate the development of REDD+ policy between various governments, multilateral institutions, conservation organisations and other stakeholders. These bodies have pursued the three stage-approach recommended by the *Eliash Review*.21
That is, that public and private international funds should be used to support the adoption and implementation of policy and institutional reforms in developing countries to establish a REDD+ framework, with public funds earmarked as an interim measure that ‘should taper off as carbon markets increase the availability of capital’.\textsuperscript{22} The tactical support for this approach in the Cancun Agreement and the substance of transnational and national REDD+ policies confirms the conclusion that REDD+ already does, and will continue to, exist as a market-based climate mitigation strategy.

Most importantly, REDD+ does not provide for global greenhouse gas emissions reductions in addition to what is already emitted; rather it enables the site of emission reductions to be displaced from fossil fuel addicted developed economies to tropical countries in the global south. Proponents argue that making emissions reductions at the sites where they can be achieved at lowest international cost increases the global effectiveness of a scheme by allowing more globally ambitious targets.\textsuperscript{23} Critics, however, highlight that if REDD+ credits used to offset northern emissions do not represent genuine emission reductions, this scheme could simply divert attention for an overall increase in global greenhouse gas emissions. This is a real risk, given that there is no effective way to ensure the ‘permanence’ of carbon sequestered in forests pursuant to REDD+; i.e., to ensure that forests are not subsequently destroyed or damaged by processes outside of government control such as fires, droughts, floods, the impacts of climate change or illegal activity.\textsuperscript{24} Moreover, there is an essential incommensurability between terrestrial ‘green’ carbon, such as that stored in forests, which is in continuous interchange with the atmosphere, and fossil fuel ‘grey’ carbon which, prior to its extraction, had been securely contained below ground.\textsuperscript{25}

Using market mechanisms to determine the site and nature of greenhouse gas reductions globally has serious distributional justice implications as well. The carbon market shifts the principle of the framework for determining the appropriate site for emissions reductions away from that of ‘common but differentiated responsibility’. This principle, central to the UNFCCC, is designed to ensure that primary responsibility lies with the global north, due to its historical responsibility for, and greater economic capacity to reduce, GHG emissions. Given that questions of cost and benefit are made in an international framework in which lives are unequally valued\textsuperscript{26}, carbon markets risk perpetuating or deepening existing global inequalities.\textsuperscript{27} Thus, in the case of REDD+, the impacts of achieving global level lowest cost reductions become displaced onto the least economically and politically powerful groups in the global south, such as forest-dependent communities, who may face risks from REDD+ implementation on their lands, including dispossession where practices of ‘coercive conservation’ are used.\textsuperscript{28} Indeed, some forest-dependent communities and their advocates are fearful of an impending ‘land grab’ and have sought to challenge this threat\textsuperscript{29} by demanding proper participation in REDD+ design, implementation and monitoring as well as recognition of the rights articulated in the United
Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Other groups, which have rejected REDD+ outright, are also organising internationally through grassroots social movements.

Turning to Indonesia

With such critiques of market-based REDD+ mechanisms in mind, let us now examine how REDD+ implementation in Indonesia is ‘entangled’ in both the globalised ‘old’ and ‘new’ carbon economies. We begin by examining the ways in which such tensions are playing themselves out in debates over REDD+ policy development in Indonesia and discuss in detail how these inform seemingly technical and apolitical discussions around measurement units, definitions, baselines and legal categorisations. Such underlying conflicts are corrupting the content of the ‘offset commodity’, this paper argues. In the case of Indonesia, a reductionist, market-oriented focus on simply achieving ‘emission reductions’ appears to be unsuccessful in terms of achieving an environmentally effective or socially just transition away from unsustainable fossil fuel or land use activities. This can be attributed to the nature of the international ‘entanglements’ within which Indonesia finds itself; entanglements that tend to corrupt the very content of the ‘emission reduction unit’ and undermine opportunities for broader social transformation to address climate change. Thus it is important to about the key international players who have been involved in the implementation of REDD+ in Indonesia. Secondly, we need to consider how REDD+ links Indonesia to the international carbon market and international demand for carbon offset credits. And thirdly, it is important to note that the drivers of Indonesian deforestation are international, rather than simply national, players.

This context then enables an examination of how Indonesian REDD+ policy development is influenced by conflicting demands for Indonesia to produce and export both material commodities—from forestry and agribusiness—and new ‘immaterial’ carbon offset commodities for international consumption. These conflicting demands and pressures are leading to corruption in the way the REDD+ offset commodity is being defined. As such, these ‘entanglements’ raise serious questions about whether REDD+ is being implemented in Indonesia in a way that will enable a transition to more sustainable land use patterns. Instead, there is a risk from corporate and vested interests seeking to gain from the international carbon market without any disruption to the unsustainable status quo.

Implementing REDD+ in Indonesia

Indonesia’s national efforts to reduce greenhouse gas emissions afford a central role to REDD+ strategies. The greenhouse reduction commitments made by Indonesia differentiate between what could be achieved unilaterally (26 per cent) and with international support (41 per cent) and
propose even more ambitious commitments if there is an international market for avoided deforestation carbon credits. Indonesia has associated itself with the Copenhagen Accord and has accordingly committed to reducing its emissions by 26 per cent by 2020, compared to a business as usual baseline.  

Indonesia’s National Climate Strategy, elaborated in the Climate Change Sectoral Roadmap, applies a risk management framework to prioritise adaptation and mitigation activities. It proposed that 14 per cent of planned emissions reductions could be achieved in the forestry sector through projects for sustainable peat land management, reducing rates of deforestation and land degradation, and developing carbon sequestration projects in forestry and agriculture. The remaining 12 per cent of emission reductions are from other sectors including agriculture, communications and energy through projects such as the promotion of energy efficiency, development of alternative and renewable energy sources, reduction in solid and liquid waste, and shifting to low emissions transportation modes. The role of forests in climate mitigation is therefore seen as ‘crucial’ for Indonesia’s adaptation and mitigation strategies.

This emphasis on forests highlights the uneasy intersection of national and international climate mitigation policies. This emphasis on strategies to reduce deforestation is unsurprising, given that almost half of Indonesia’s current greenhouse gas emissions derive from forestry and land use activities. Deforestation in Indonesia is continuing at an alarming rate: 3.5 million hectares—i.e.1.9 per cent of Indonesia’s total forest area—were deforested between 2000 and 2005. This high rate of deforestation has disastrous consequences not only in terms of greenhouse gas (GHG) emissions, but also for biodiversity conservation, protection of waterways and water quality and for the livelihoods of 30 to 100 million Indonesians who live in or near forests or depend on forest produce for their livelihoods. Also unsurprising is the international focus on supporting ‘avoided deforestation’ efforts in Indonesia, given that Indonesia accounts for one third of global deforestation-related emissions.

Indonesia’s country submissions to the UNFCCC have consistently supported the idea of REDD+ and called for international support in preparing readiness, especially in relation to monitoring, reporting and verification. Policy development has been proactive: the Indonesian Forest and Carbon Alliance, was established in July 2007 in the lead-up to the Bali COP which produced Indonesian Forest Climate Alliance Consolidation Report (‘IFCA Report’) on proposed REDD+ approaches. The Indonesian government has passed several regulations to prepare for REDD+ implementation. Following NGO complaints, the central regulation—Reduction of Emission from Deforestation and Degradation Procedure—was severely criticised by the UN Committee on the Elimination of Racial Discrimination on the grounds that Indigenous peoples’ rights to lands,
territories and resources were insufficiently taken into account by the regulations and their process of development.\textsuperscript{44} A draft REDD+ Strategy was released in September 2010. The latest draft of Indonesia’s REDD+ strategy was released mid-August 2011; however, to date, it is only available in Indonesian.\textsuperscript{45}

Indonesia is also receiving funds and supports for REDD+-readiness from the World Bank’s Forest Carbon Partnership Facility (FCPF), and it submitted a readiness plan (R-Plan) to the Faculty in May 2009.\textsuperscript{46} This R-Plan has been criticised by NGOs representing Indigenous peoples for again failing to make reference to the rights of Indigenous peoples or incorporating Indigenous peoples’ right to participate in decision-making.\textsuperscript{47} Concerns have been raised about the lack of transparency and access to FCPF consultation meetings.\textsuperscript{48} Indonesia is also an implementing party of the multilateral UN-REDD programme and produced a ‘Programme Document’ in November 2009 pursuant to this collaboration.\textsuperscript{49} Indonesia is also a party to several bilateral agreements related to REDD+. The 2008 Indonesia-Australia Forest Carbon Partnership is part of Australia’s $200 million International Forest Carbon Initiative (IFCI), which is jointly administered by the Australian Department of Climate Change and Energy Efficiency and AusAID. The agreement commits the parties to co-operation for UNFCCC policy support, capacity building and technical support, such as Australian assistance for Indonesia to develop a National Carbon Accounting System, Forest Resource Information System, a satellite-based fire monitoring system. Critically, Australian aid is to be used to implement two demonstration activities.\textsuperscript{50}

\textbf{Australian funded demonstrations}

To date, two demonstration activities have been announced pursuant to the agreement. The first of these is the contentious Kalimantan Forests and Climate Partnership (KFCP) on the site of the ecologically disastrous Soeharto-era Ex-Mega Rice Project in Central Kalimantan. Here the demonstration activity has received AU$30 million in funding and is designed to be ‘scaleable’ to AU$100 million if additional international donors become project partners.\textsuperscript{51} The project will cover an area of approximately 130,000ha in the northern part of the Ex-Mega Rice Project in Central Kalimantan. Approximately 20,000 people—9,000 of whom are Ngaju Dayak peoples—reside in the area, in 12-15 villages along the Kapuas River. A second demonstration activity in Jumbi Province in Sumatra, has also been announced, but few details have been publicly released.\textsuperscript{52} Indonesia and Germany have similarly entered into a REDD+ bilateral agreement which aims to support ‘the implementation of strategies for forest conservation and sustainable forest management resulting in reduced GHG emissions from the forest sector and improved living conditions of the rural population’\textsuperscript{53} with a focus on ‘direct implementation’ in East and West Kalimantan.
Along with these, possibly the most significant bilateral agreement is the US$1 billion that Norway has committed towards REDD+ in Indonesia, under a letter of intent signed on 27 May 2010. The funds are ‘devoted to finalizing Indonesia’s climate and forest strategy; building and institutionalizing capacity to monitor, report and verify reduced emissions; and putting in place enabling policies and institutional reforms’. A key plank of the agreement is a two-year moratorium, under which no new concessions for the conversion of natural forests and peatlands to plantations will be issued. The agreement was welcomed by some environmental groups, whilst others already anticipated problems. Internal tensions around what precisely is to be protected pursuant to this moratorium are discussed below. Finally, it is important to note that over 20 voluntary projects, or ‘demonstration activities’, are in various stages of development in Indonesia, with a total of 3 million hectares of forest land proposed for REDD+ development. Agencies and organisations involved in the funding or implementation of these include Merrill Lynch, Carbon Conservation, Flora and Fauna International (Ulu Mason Project, Aceh), Macquarie Bank, FFI and World Wide Fund for Nature (WWF) (West Kalimantan Kapuas Hulu project), Royal Society for the Protection of Birds, Birdlife International, and Burung Indonesia (Harapan Rainforest, Jambi, Sumatra).

**REDD+ ‘embeds’ Indonesia within the international carbon economy**

The centrality of REDD+ to Indonesia’s climate mitigation and adaptation approaches embeds Indonesia firmly within the operations and ‘entanglements’ of the international carbon market. The international carbon economy mediates between Indonesian policy’s desire for export earnings from ‘immaterial’ carbon commodities (i.e. avoided deforestation) and northern countries’ desire for cheap offsets. In 2009 US$142.2 million was transacted in forest carbon primarily on voluntary carbon markets; however, analysts predict a greater volume of transactions once REDD+ is fully established. The global carbon market in 2010 was worth US$144 billion, with 8.7 billion tonnes of CO₂-equivalent traded, and it is predicted to grow to an annual market value of US$3.1 trillion by 2020. The majority of this trade came from the EU’s Emissions Trading Scheme, where US$119 billion in allowances and derivatives were traded. Increasingly, the trade was in financial products of emission reduction units. Futures constituted 73 per cent of the trade. The spot market increased to 1.4 billion tonnes, and the options market grew 70 per cent to 420 million tonnes. Such speculative trading has prompted environmentalists to raise serious concerns about a ‘carbon’ subprime crisis. Indeed, large financial sector speculators—including Goldman Sachs, Morgan Stanley, Barclays Capital, Deutsche Bank, Rabobank, BNP Paribas Fortis, Sumitomo, Kommunalkredit, Cantor Fitzgerald, Credit Suisse and Merrill Lynch—are all involved in creating complex new financial instruments out of carbon credits, some of which are involved in the Indonesian demonstration projects.
As a growing sector of the international carbon market, REDD+ promises Indonesia both international financing and foreign exchange income from the export of forest related carbon credits. Indonesia is clearly positioning itself to be a key supplier of ‘offset’ credits from avoided deforestation or other land use activities to the global carbon market. The Indonesian government sees key economic benefits from REDD+. The Ministry of Forestry writes that ‘Indonesia has the potential to significantly benefit from REDD’ and that ‘there are strong financial reasons for Indonesia to prepare itself as a REDD carbon credit seller.’ The analysis completed by the Ministry of Forestry found that, even by conservative estimates, the estimated value of forest carbon credits, if annual rates of forest loss between 2000-2005 are reduced by 50 per cent, would be between US$2.5 and US$5 billion per year. Compared to the total annual sum of US$1.5 billion of overseas development assistances provided to the forest sector in all developing countries, these REDD+ payment predictions represents very significant amounts of money. Similarly, intense international interest from multilateral organisations and northern domestic governments to support and fund ‘REDD+ readiness’ in Indonesia, described above, have been driven by the promise of the plentiful and cheap supply of the carbon ‘offset’ credits that Indonesia represents. In this ‘low carbon development’ paradigm, overseas development aid and climate adaptation funds are channelled from the north to the south in return for carbon offset credits. However, fundamentally, the global south remains as it has been historically; the producer of raw materials for the north. The difference is that the raw material now produced is the green, post-material carbon commodity.

**Links to Australia’s emissions policies**

A continuing, and generally unacknowledged, reliance on cheap international offsets has been a central plank of Australian domestic climate policy. The Gillard government’s recently-announced ‘carbon tax’ policy allows 50 per cent of all emission reductions commitments between 2015 and 2020 to be sourced from international carbon markets, and is yet to fix a cap on the quantity of post-2020 offsets allowed. The policy, set out in *Securing a Clean Energy Future: The Australian Government’s Climate Change Plan* would see an initial fixed price on carbon of AU$23 per tonne (increasing by 2.5 per cent per year) introduced from 1 July 2012. The scheme then transitions to an emissions trading scheme with a fluctuating, market-set, price on carbon from 1 July 2015. During the initial set-price period of the scheme, no international offsets would be allowed. However, once the scheme becomes an operational carbon trading regime it will be linked to international markets. The rationale for these international linkages is that they allow ‘reductions in carbon pollution to be pursued globally at the lowest cost’. Until 2020 liable entities can meet up to half of their emissions reduction commitments through the purchase of international offsets. This restriction will be reviewed by the Climate Change Authority in 2016.
Treasury modelling, as set out in *Strong Growth, Low Pollution: Modelling a Carbon Price*, explicitly predicts a heavy reliance on international offsets to achieve Australia’s emissions reduction targets. The modelling predicts that domestic emissions will increase from 556 MtCO\(_2\)-e in 2000 to 621 MtCO\(_2\)-e in 2020. This translates to an actual 12 per cent *increase* in domestic greenhouse emissions compared to the promised *reduction* by 5 per cent. The difference between the promised reduction and the domestic increase is to be accounted for by the purchase of 94 MtCO\(_2\)-e international offset permits. The modelling predicts that domestic emissions would be 545 MtCO\(_2\)-e by 2050 which represents only a 2 per cent *decrease* in domestic emissions from 2000, rather than the promised 80 per cent emission cut. Again, the shortfall is made up by the anticipated purchase of 434 MtCO\(_2\)-e abatement internationally. In the same vein as the *Clean Energy Future* package, accompanying legislation seeks to establish a domestic land-based offset scheme. The Carbon Farming Initiative (CFI) allows landholders in Australia to generate carbon credits which can be sold pursuant to the scheme. Methodologies under consideration include savanna burning, capture and combustion of landfill gas, destruction of methane generated from manure in piggeries, environmental plantings and even shooting feral camels! In addition to purchasing international permits under the carbon tax, liable entities are permitted to purchase an unlimited amount of Kyoto-compliant credits created under the Carbon Farming Initiative to meet their emissions reduction targets during the market-based period of the scheme; CFI credits are capped to five per cent during the fixed-price period. The Treasury modelling assumes that 7 MtCO\(_2\)-e of CFI credits will be used towards domestic abatement by 2020, and 22 MtCO\(_2\)-e of CFI credits will be used towards domestic abatement by 2050. Thus, when both international and domestic offsets are excluded domestic greenhouse gas emissions would actually *increase* by 13 per cent by 2020, and *increase* by 2 per cent by 2050 compared to 2000 levels (see, Table 1.0).
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<tr>
<th>Year</th>
<th>Carbon price</th>
<th>Target</th>
<th>Predicted domestic emissions</th>
<th>Predicted offsets purchased</th>
<th>Predicted CFI offsets</th>
<th>Reduction in domestic emissions from 2000</th>
<th>Reduction in domestic emissions from 2000 (excluding CFI offsets)</th>
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<tr>
<td>2000</td>
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<td>555MtCO₂-e</td>
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<td>2020</td>
<td>$29</td>
<td>527MtCO₂-e</td>
<td>-5 %</td>
<td>621MtCO₂-e</td>
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<td>2050</td>
<td>$131</td>
<td>111MtCO₂-e</td>
<td>-80 %</td>
<td>545MtCO₂-e</td>
<td>434MtCO₂-e</td>
<td>-10MtCO₂-e</td>
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<td>22MtCO₂-e</td>
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Figures from columns 1-4 and per centage figures in column 6 taken from Table 5.1, Treasury Modelling. Column 5 figures taken from page 77 Treasury Modelling. Column 6 MtCO₂ figures column 7 figures author’s own calculations. Figures assume core policy scenario rather then the high price scenario that would presumably accompany an ambitious global action reference.

Importantly, the Clean Energy Future scheme allows for both Kyoto and non-Kyoto compliant offsets to be used towards achieving Australia’s targets. Provisions have been included which exclude international offsets under the Kyoto Protocol’s flexible mechanisms (Clean Development Mechanism or Joint Implementation) coming from nuclear projects, the destruction of trifluoromethane, the destruction of nitrous oxide from adipic acid plants and large scale hydropower projects which do not meet the EU criteria for such offset projects.\(^7\) Given that the highly contentious\(^8\) trifluoromethane projects and nitrous oxide projects and hydropower projects currently make up 77 per cent of all CDM credits\(^9\) — and are, by 2012, expected to make up 42 per cent of CDM credits issued\(^10\) — one assumes that, in order to exclude these offset credits from the scheme, an alternative source of offsets would need to be found. The clear assumption being made by Treasury in compiling this model is that a significant proportion of the offsets purchased under the scheme will come from forestry or land use change activities. The report comments that forestry sinks will ‘provide substantial emission sequestration, wholly offsetting non-combustion CO₂ emissions from all sources by around 2020\(^11\) and assumes that there will be net global forest sinks of 130-150 GtCO₂-e from 2013-2050, with most of the sinks coming from South and East Asia and the United States.\(^12\) Thus, the scheme represents not simply a reliance on international offsets to meet the reductions commitments but, more specifically, represents a reliance on offsets from avoided deforestation, with a significant proportion of credits likely to come from Indonesia.
The Australian government’s use of money from their international aid budget for REDD+ demonstration projects under their International Forest Carbon Initiative—jointly administered by AusAID and the DCCEE—is in this view inappropriate. The use of aid money to support projects generating ‘offsets’ which are domestically relied upon by the funding country violates Australia’s own aid policy, OECD aid requirements and UNFCCC obligations that climate aid is additional to existing overseas development aid. The Australian example demonstrates how offsets provide a smokescreen for government climate policy. They conceal from the public the fact that the government’s own modelling does not assume any significant change to Australia’s domestic emissions by 2050. As such ‘offsets’ provide a ‘dangerous distraction’ from the urgently needed structural changes, especially in Australia’s energy production, use and distribution.

**International linkages as drivers of deforestation in Indonesia**

In the same manner that REDD+ is embedded within international import-export economic relations and a particular model of ‘development’, the drivers of deforestation in Indonesia are situated within a complex matrix of international consumer demand and international financing, enacted through export trade and currency flows. The key ‘planned’ drivers of Indonesian deforestation are the pulp and paper and agro-fuel industries, with illegal logging the key ‘unplanned’ driver. Indonesia’s agrofuel-driven land grab is embedded within the emerging global ‘biofuels’ complex and international patterns of demand, driven in part by ‘false climate solutions’ such as the promotion of biodiesel as the ‘climate responsible’ alternative to fossil fuel powered transport. Similarly, the pulp industry is a highly internationalised industry whose major players are global; the key sites of decision-making power remain located in the global north, advice for governments comes from northern-based consulting firms, the machinery used in pulp production is manufactured in the north, and the majority of paper is destined for northern consumption. The argument is not only that export-orientated industries create perverse incentives mitigating against climate action in Indonesia, but that there is broader (actual and perceived) pressure from international financial institutions to pursue a model of export-orientated development. Hadi Daryanto, Indonesian Secretary-General of the of the Ministry of Forestry, articulates this when he discussed barriers to acting on climate change;

> There is $10 billion coming in from palm oil, $4bn from pulp and paper, and the people who work in these concessions are many, so we cannot just stop it all or the IMF will collapse us as an economy.

The international community is certainly not ‘absent’ in relation to tropical deforestation. Various ‘entanglements’ highlight the numerous international sites and processes which produce the outcome of deforestation in Indonesia. However, rather than acknowledging these ‘entanglements’ and
reconstituting these international pressures, REDD+, as a policy approach, has explicitly resisted an engagement with the manner in which tropical deforestation is embedded in a broader global economic and political economy. REDD+ has focused on ‘supply-side’ problems, and REDD+ proponents have explicitly reject ‘demand-side’ mechanisms for reducing deforestation.\(^9\) Additionally, the tensions generated between conflicting foreign exchange earnings from REDD+, pulp and agrofuels have led some commentators to label carbon pricing as a ‘doubled-edged sword’\(^9\) because as the value for conserved forests increases, the relative decrease in supply of other commodities will increase their market price value, creating perverse price incentives to deforest for plantations again.

**Tensions within Indonesian REDD+ policy making**

The tension between competing export incomes— from avoided deforestation carbon credits, and from exports of pulp, paper, timber and agrofuel products— has created internal contradictions in Indonesian forestry policy. Concerns have been expressed by environmental groups about how Indonesia will seek to meet its REDD+ targets\(^9\), as greater governmental REDD+ commitments coincide with Indonesian plans to expand palm oil and pulp and paper industries.\(^6\) Moreover, alongside the embrace of REDD+ is a simultaneous policy commitment to bring an additional 63 million hectares of land into production by 2030. Greenpeace identified plans by the relevant ministries to develop an additional 28 million hectares of timber plantations (including pulpwood), 9 million hectares of estate crops (including palm oil), 9 million hectares for agrofuel crops (including palm oil) as well as the conversion of 13 million hectares of forested land to agricultural land and the use of 4 million hectares of forest estate for mining.\(^7\) The *Jakarta Post* reported in November 2009 that the government was reviewing current laws which prevented mining in conservation forests\(^8\). The resulting tensions between Indonesia’s REDD+ policy and agro-fuel, pulp and plantation policy— which institutionally play out between the REDD+ Taskforce and the Ministry of Forestry— are best illustrated by the process of implementing the moratorium pursuant to the Indonesia-Norway bilateral REDD+ agreement.

The behind-the-scene tensions and struggles over the content and coverage of the moratorium on conversion of forests implemented as part of the US$1 billion Norway-Indonesian agreement appear highly indicative of Indonesian REDD+ policy development. The two year moratorium, which was due to have started on the 1 January 2011, was finally implemented by a decree signed by the Indonesian President on 20 May 2011. One reason for the delay was the existence of two conflicting draft decrees, one prepared by the Ministry of Forestry and the other prepared by the REDD+ Taskforce. The former would only apply to the conversion of primary forests and
Local–Global

forests on more than three metres of peat. The second, more comprehensive, decree would apply to secondary forests, primary forests and forests on peat. The former, narrow version of the decree was heavily criticised by environment groups, primarily because it offered only minimally greater levels of forest protection than what has already been established by prior legislation. Save our Borneo argued that 75 per cent of forests protected pursuant to the decree were already protected under existing law. They argued that this draft decree would only protect three per cent of the forest area in Indonesia because primary forests cover a small area—the majority of which is already protected—and logging on peat more than three metres is already illegal. Greenpeace also condemned this version of the decree for failing to protect 45 million hectares of natural forest and peatland. When the moratorium came into force, almost five months behind schedule, it was the second version of the decree which prevailed. The fact that its announcement was welcomed by both Indonesia’s biggest paper producer, Asia Pulp & Paper, and the Indonesian Palm Oil Association (Gapki) demonstrates that the moratorium will not significantly threaten these industries’ unsustainable operations. Additionally, on the eve before the Presidential signing of the Decree, three million hectares of plantation concessions were issued to 44 firms. The perversity of international incentives is aptly demonstrated by the chance discovery by two NGOs that the moratorium was being breached by illegal logging on very day it came into force. Although the moratorium is sponsored by Norway, the Norwegian government’s pension fund was likely to profit from the illegal logging activity as it had a US$41.5 million shareholding in the parent company of PT Menteng, which was conducting the illegal logging. The exposure of Norway’s conflict-ridden role in both profiting from and seeking to prevent Indonesian deforestation led to what Chris Lang described as ‘REDD faces all around.’

REDD ‘assisting’ agroforestry expansion

However, of greater concern than the tensions between REDD+ implementation and expansion of the pulp, paper and agrofuel industry is the way that these competing export objectives are viewed in Indonesian REDD+ policy documents as being mutually compatible. This represents a shift from tensions between Indonesia’s REDD+ policy, forestry policy, and different institutional actors. Instead, these tensions are displaced into the heart of Indonesia’s REDD+ policy itself, to play themselves out in the definition of the REDD+ offset commodity. In the IFCA report, the Indonesian government states that it does not see any contradiction between pursuing REDD+ as well as an expansion of the palm oil, paper and pulp industries. Instead, the report envisages that REDD+ payments could actually ‘assist’ government proposals to double the pulp and paper
industry, to double palm oil exports and to expand the timber industry. The report rationalises this by arguing that:

REDD is not directed at stopping the use of forests for timber, nor stopping planned conversion of forests to other economic uses. REDD represents a way to value the natural resource of carbon so that it can be considered along with other conventional forest resources, when land use and forest use decisions are made.

Policy discussions around definitions, legal classification, baselines and cost-benefit analysis for REDD+ have become sites of contestation, where the unsustainable status quo is seeking to protect and enable its growth. The power of vested interests within this process has meant that REDD+ policy in Indonesia is developing in a manner which corrupts still further the (already dubious) environmental credibility of the strategy.

Greenpeace has been highly critical of Indonesia’s greenhouse gas abatement plans which suggest plantations have a role in ‘rehabilitation’ of ‘degraded’, ‘critical’, ‘idle’ or ‘unproductive’ land, and that afforestation/reforestation is a cheaper option than preventing deforestation. Further, the IFCA Report states that ‘plantations on degraded land … would allow Indonesia to claim significant carbon credits in avoided deforestation.’ Greenpeace argues that this has ‘led to a concerted rebranding of industrial activities driving deforestation as “rehabilitation of degraded” lands’. The implication that if such redefinitions are legally successful international funds for forest protection may actually be used as a subsidy for forest destruction. Additionally, as Claude Fontin highlights, the terms ‘unproductive’, ‘idle’, or ‘under-utilised’, are highly contested when applied to Indonesian land, especially given the essential role that such land plays in supporting the livelihoods of politically and economically disenfranchised communities.

**Dubious definitions**

These tensions have been playing themselves out in debates about modifying the unsettled definition of ‘forest’ for REDD+ purposes in Indonesian law. Controversy arose when the Jakarta Post reported in February 2010 that the Forestry Ministry was drafting a decree which would define palm oil plantations as forest for REDD+ purposes. By April that year strong protest from environmental groups forced the government to publicly retract such reclassification plans. However, in August a special advisor to the Forestry Minister publically defended palm oil plantations’ carbon sequestration potential and confirmed that the Forestry Ministry was working together with Bappenas, the national planning agency on the feasibility of incorporating palm oil plantations within Indonesia’s national REDD+ strategy, so that both existing plantations and future plantations on ‘degraded’ land may be eligible to earn international carbon credits.
Similar contestation surrounds the definition of a baseline against which emission reductions are measured. In the Consolidation Report, three baseline scenarios were canvassed: 1) the low case which would take as its baseline the average carbon loss from deforestation over the previous five years; 2) the medium case which would assume that deforestation rates from 2004-5 continue for the next five years; and 3) the high emission projection which would assume 30 per cent growth in emissions per year. Frank Jotzo highlights the divergent projection growth between 2005-20 in two reports released in 2010 by Indonesia’s Ministry of Environment and the National Council of Climate Change; the former projecting a 65 per cent increase, the latter a 23 per cent increase. Viewed in light of the target for reducing emissions by 26 per cent compared to business as usual, these divergent projections are the difference between a one-quarter increase in forestry related emissions or a slight decrease in forest related emissions compared to 2005. Projections of business as usual scenarios are essential to both the credibility and ambition of deforestation schemes. Over-inflated baselines will enable credits to be claimed for ‘reductions’ which are not grounded in reality and which allow additional carbon emissions elsewhere by the purchasers of these ‘offset’ permits.

**Who benefits from cost-benefit analysis**

Policy decisions about which sites REDD+ strategies should be implemented are being driven by economic ‘cost-benefit’ analysis. The Consolidation Report promoted the value of such analysis because it ‘provide(s) a comparative scale of magnitude of cost to the country of stopping or reducing deforestation.’ It thus calculates a ‘break even price’ by dividing the ‘opportunity cost’ — the income which could be earned by non-REDD+ land-use activity — by the amount of carbon which would be saved by curtailing those alternative activities. It thus advocates preventing small holder activities — such as rubber plantations, rice or cassava (which would only cost $0.2/tonne, $0.14/tonne and $0.1/tonne respectively) — as a cheap and therefore desirable ways to implement REDD+. In comparison, it highlights the much higher opportunity cost of implementing REDD+ in a manner which would prevent timber or palm oil plantations; it would cost of $21.54/tonne for avoiding palm oil plantations on degraded mineral soils or $5.83/tonne for avoiding timber plantations on degraded mineral soils. Similar economically-driven modelling has been produced for the Indonesian government by consulting firm McKinsey and Company. McKinsey, in its modelling, prepare a ‘cost-curve’. This sets out both the cost of reductions and the quantity of reductions which could be achieved from differing policy responses. Economically, this methodology is flawed, because it only takes into account the projected financial costs that would be foregone, but fails to incorporate implementation costs, transaction costs and institutional costs of various polices.
highlights, a particular problem is that products grown for subsistence purposes and not sold at markets are not included in the cost curve. For this reason the market-driven analysis ‘tends to recommend that action is taken where the least economic value is drawn from the forest, or in other words, in areas controlled by poorer forest users.’ This logic ‘perpetuat(es) the poverty of the poorest farmers.’ REDD thus promotes the further marginalisation of peasant communities through an international ‘land grab’ for carbon offsets.

Conclusions
The above discussion demonstrates that there is a substantial risk that the content of the ‘emission reduction unit’ within Indonesian REDD+ policy is being developed and defined in ways which are arguably more compatible with agroforestry, and the continued operations of the pulp, timber and agrofuel industries, than with a shift toward more sustainable land uses. This corruption of the content of the ‘emission reduction unit’ is due to the international ‘entanglements’ within which Indonesian finds itself and the competing demands to export both carbon offset commodities and forest products. The way REDD+ has evolved internationally—as a narrow, market-orientated, ‘supply-side’ policy—makes it unable to address demand-side drivers of deforestation in Indonesia. Instead, these unaddressed drivers of deforestation heavily influence the content of REDD+ policy in environmentally problematic ways.

The examination of Indonesian REDD+ policy development demonstrates that when climate policy is conceptualised in narrow ‘carbon fetishistic’ terms—with a reductionist, market-orientated focus on achieving the ‘lowest abatement cost reductions’—it appears unsuccessful in achieving environmentally effective or just transitions away from fossil fuel or land use activities. In this paper I have sought to demonstrate that the development of REDD+, or the ‘new carbon economy’, in Indonesia is problematically entangled in the ‘old carbon economy’; i.e. the political and social relations which have generated fossil fuel lock-in and driven deforestation. The various policy decisions made in developing REDD+, its emergence as a market-based rather than fund-based mechanism, its national rather than international focus and supply rather than demand focus, demonstrate starkly that REDD+ represents a ‘particular framing of the problem of climate change and its solutions that validates and legitimates specific tools, actors and solutions whilst marginalising others.’ To properly address such drivers of deforestation in an effective and just manner a much broader project of social transformation is required. This requires a broader challenging of consumption paradigms in the global north, including ‘greener’ forms of consumption, such as that sparking the agrofuel boom. Moreover, increasing evidence is emerging that community-managed forests provide better conservation outcomes then state protected
Therefore, acceding long fought battles for tenurial justice and land rights to forest-dependant communities presents an alternative and more genuine mechanism for achieving climate and forest protection objectives than REDD+. The REDD+ debates—especially around social safeguards, and the need to facilitate the ‘participation’ and ‘consultation’ of forest-dependant communities—obscure tenurial justice as an alternative, arguably more just and effective, climate and forest protection policy.

While REDD+, as a carbon offset strategy, is unable to bring about a structural transformation of capitalism of the kind needed to steer social reproduction to a more sustainable footing, we must take seriously claims that carbon pricing represents a major change to national economies and the international economy. Scholarship which is sceptical about the environmental benefits of carbon markets nevertheless needs to be attentive to what broader shifts in political economy are promoted by economically internalising environmental externalities, how this shifts power relations, and which social groups benefit and lose from these changes. Critiques have generally been orientated towards what REDD+ fails to do; it fails to deliver global greenhouse gas reductions by enabling industrialised countries to delay emission reductions; and its fails to promote climate justice because it lacks respect for the rights of forest-dependant communities. However, beyond critiques of what agendas it is marginalising, it is necessary to identify what broader economic shifts REDD+ is facilitating and enabling. REDD+ has the potential to become a climate legitimised ‘land grab.’ It thereby risks facilitating the ‘enclosure’ of forested areas within capitalist development, and the associated dispossession of communities living on or in forested areas, resulting in their incorporation within the market economy, as cheap labourers on conservation or environmental service schemes.

Hence, what REDD+ is facilitating is the greater incorporation and valuation of ‘nature’ as ‘natural capital’ within market exchanges and the financialisation of conservation. There is an expanding literature on ‘neoliberal natures’; i.e. critiques of the re-writing of ‘nature’ as ‘natural asset value’ by ‘green’ knowledge/power regimes seeking the ‘accumulation of knowledge for the control of nature’s value’. The outcome may also be the commodification of environmental commons, leading in the case of the atmosphere to ‘accumulation by decarbonization’. Examinations of recent conservation practices have stressed ‘market-based transferability, mobility, standardization and flexibility of natural features’ as emblematic features and conservation as providing an ‘environmental fix’ serving capital’s growth and reproduction. Conservation projects have a long history of operating as units of exchange, whether formally between northern and southern states as debt-for-nature swaps, or more symbolically as public relations driven ‘offsets’ for extractive industries. REDD+ intensifies this trajectory. The REDD+ carbon accounting
framework has enabled a quantifiable commercial conservation transaction, as well as the creation of property rights in avoided deforestation. These property rights are capable of being traded on international financial markets and can support a plethora of derivative, option and related financial markets.

REDD+ is also a key component of the ‘green growth’ agenda of the Rio+20 Conference which will be held in 2012. The project of ‘green growth’ has been elaborated and developed in two recent reports from the United Nations Environment Programme (UNEP); The Economics of Ecosystems and Biodiversity139 and the Green Economy Report.140 Both argue for the greater valuation of ‘nature’ in economic terms and the incorporation, or realisation, of the value of this ‘natural capital’ into economic modelling, cost-benefit analysis and policy decision-making. Ironically, it was only in the name of saving the climate that this financialisation of conservation was made possible, enabling the trade in new commodities from conservation, primarily carbon, but also biodiversity, on international markets. We are thus developing a growing industry of ‘accounting of socio-environmental relations’.141 The illusion of fixing the ‘value’ of ‘nature’ in tradeable and substitutable economic terms is both reductive and repressive, because such a move to universality flattens out other value systems, ‘alienating them in its homogeneity’.142 When the ‘messy materiality of life’ is rendered ‘legible as discrete entities, individualised and abstracted from complex social and ecological entanglements’143, it dismisses other logics of evaluation.144 This analysis shows that whilst REDD+ is unable to bring about a structural transformation of capitalism of the kind needed to steer social reproduction onto a more sustainable footing, REDD+ is enabling an economic transformation to more ‘neoliberal natures.’

Such analyses highlight the urgent need for climate policy to eschew a narrow focus on ‘emission reductions’ in favour of more broadly visualising and then embarking upon historical trajectories away from fossil fuels and carbon-intensive land uses, and the political and social contestation that this demands. This necessitates directly addressing the political and social relations that have produced and sustained fossil fuel lock-in, and driven deforestation. Moreover, it necessitates articulating visions of what a ‘low-carbon future’ would look like. Statements from grassroots social movements for climate justice have stressed that this must involve a ‘fundamental change in social, political, and economic structures’ and the ‘restoration of local and democratic ownership of, control over, and access to, natural resources’.145 It is beyond the scope of this paper to present normative visions of climate justice. However, it suggests that the processes by which we envision such futures and the processes by which we work towards them must necessarily be collective and democratic rather than market driven. With regard to environmentally effective and just solutions to address Indonesian deforestation, the recognition of the land tenure
rights of forest-dependent communities is a prerequisite. The international entanglements that are driving deforestation and creating the carbon markets which have corrupted the content of the REDD+ also provide opportunities for mobilising transnational solidarity and support for climate justice solutions, including the demand for localised self-determination of forest-dependent communities.

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Endnotes


2. Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forest, enhancement of forest carbon stocks in developing countries’ (1(b)(iii)). Decision 1/CP.13 UNFCCC, Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 December 2007, FCCC/CP/2007/6/Add.1.


4. The terminology of ‘North’ and ‘South’ is used primarily to refer to the countries classified as ‘Annex 1’ and ‘non-Annex 1’ countries under the Kyoto Protocol respectively. However, at times the terms are used in a broader way to refer to the economic and political power concentrated in what is referred to as the ‘developed’ and ‘developing’ world respectively. However, I appreciate the clear limitations of this framework, as the globalised world is increasingly ‘scrambled’ with pockets of economic privilege in the South, and the corollary of pockets of economic deprivation in the North. See for example W. Sachs, ‘Rio+10 and the North-South Divide’, World Summit Papers of the Heinrich Böll Foundation, No 8, 2001.


14. Article 77 simply requests that the AWG-LCA ‘exploring financing options for the full implementation of the results-based actions’.


17. Submission by the Plurinational State of Bolivia to the ad-hoc working group on long term co-operative action, Tenth Session Bonn, 1–11 June 2010: UNFCCC.


19. Civil society groups have been highly critical of the World Bank’s central role in financing forest-carbon markets do to the Bank’s long history of funding climate change inducing projects, (see for example K. Orenstein, ‘Capitalizing on climate: The World Bank’s role in climate change and international climate financing’, Friends of the Earth United States, 2010) and financing forest destruction K. Horta, ‘Warning: World Bank policies destroy forests’, in K. Danaher, ed., *Democratizing the Global Economy*, Common Courage Press, 2001. Ironically, senior Bank staffers have expressed their limited faith in the Indonesian government’s ability and willingness to tackle deforestation. Timothy Brown, senior natural resources management specialist at the World Bank in Jakarta, commented in a pre-Copenhagen news article that ‘Indonesia hasn’t shown the ability to prevent deforestation’. (J. Cochrane, ‘Can REDD keep Indonesia’s forests green?’, *JakartaGlobe*, 4 December 2009.)


22. Ibid, p. 213.


27. Ibid, 319.


29. C. Lang, ‘‘We want to change this threat to an opportunity’: Interview with Abdon Nababan and Mina Setra’, *REDD-Monitor*, 4 July 2010.

30. See for example ‘Pushback: Local power, global realignment’, Rights and Resources Institute, 2011.

31. See for example C. Lang, ‘“No Redd! No Redd Plus!” Durban Group statement on Redd’, *REDD Monitor*, 7 January 2010. See also the position of WALHI/Friends of the Earth Indonesia articulated in Mann and Surya, ‘REDD: Wrong path, pathetic ecobusinesses’.


39. See in particular, Indonesia and Australia, reducing emissions from deforestation and forest degradation in developing countries joint submission to the AWG-LCA and SBSTA, received 7 August 2009, (http://unfccc.int/resource/docs/2009/awglc7/eng/misc06.pdf) accessed 17 June 2010.

40. ‘Consolidation report: Reducing emissions from deforestation and forest degradation in Indonesia’.

41. Ibid.


45. Available http://ukp.go.id/informasi-publik/doc_details/12-draft-final-strategi-nasional-redd, however to date only available in Indonesian, therefore its contents are not discussed in this article.


51. For critiques of the KFCP see J. Goodman and E. Roberts, ‘What a Scam!: Australia’s Redd Offsets for Copenhagen’, WALHI, Friends of the Earth Australia, AidWatch, 2009 as well as numerous posts on REDD-Monitor (www.reddmonitor.org) addressing the project.


56. ‘Press release: Norway and Indonesia agree to a US$1 billion partnership on forests: this could be an important step for the preservation of Indonesia’s forests’, 26 May 2010 cited in C Lang, ‘Norway and Indonesia sign US$1 billion forest deal’, REDD-Monitor, 27 May 2010.


65. ‘Consolidation Report: Reducing emissions from deforestation and forest degradation in Indonesia’, p. 18.


67. Ibid, p. 18–9 and p. 62. These estimates assume a carbon price of US$ 7-20 per tonne CO₂.

68. Ibid, p. 62. They also estimate that investment cost of such an integrated land use program would be in excess of $10 billion between 2008 and 2012. These estimates include the costs faced by provincial and district administrations, paper, pulp, oil palm and timber industries, and the cost of providing alternative livelihoods for forest dependant communities (p. 3).


70. Ibid. There will be legislatively set ceiling and floor ‘safety valve’ price caps on the price of carbon for the first three years of the flexible period.


73. ‘Strong growth, low pollution: Modelling a carbon price’, p. 75. The Australian Greens contest the accuracy of the Treasury modelling in relation to offsets, arguing that the modelling assumed a $20/tCO² starting price and did not take into account additional measures including $13.2 billion investment in renewable energy, $1 billion for energy efficiency measures, $1.7 billion investment in green carbon and biodiversity protection and the 2000MW closure of coal fired power stations. Additionally, they argue the modelling relied on conservative assumptions for growth in renewable energy. (Email from Tim Hollo to grassroots_climate_oz@yahoogroups.com 29 July 2011). Alternative economic modelling conducted by ClimateWorks founds that if ‘implemented optimally’ the Clean Energy Future Package could cut domestic emissions by 133MtCO²-e and therefore be able to achieve 83 per cent of the 2020 target domestically. ‘Low Carbon Growth Plan for Australia: Impact of the Carbon Price Package’, ClimateWorks Australia, 2011.

74. ‘Strong growth, low pollution: Modelling a carbon price’, p. 72.

75. Ibid, p. 72.

76. Ibid, p. 72.


78. ‘Strong growth, low pollution: Modelling a carbon price’, p. 75.

79. Ibid, Table 8, p. 107.

80. For discussion of the controversy of offsets from the destruction of trifluoromethane (HFC-23) see H. Sterling Burnett, ‘Carbon offsets: No sure bet to prevent climate change’, National Centre for Policy Analysis, 2009.

81. 47 per cent HFC projects, 23 per cent NO² projects and 7 per cent hydropower Figures from 1 August 2011. UNEP Riso Centre, available at http://cdmpipeline.org/cdm-projects-type.htm, accessed 23 August 2011.

82. 17 per cent, 9 per cent and 16 per cent respectively, ibid.

83. ‘Strong growth, low pollution: Modelling a carbon price’, p. 45.

84. Ibid, p. 63.


89. Ibid, 106.
93. Eliasch, Financing Global Forests, p. 67, see also the discussion in Fry, ‘Reducing emissions from deforestation and forest degradation’, p. 178 as well as alternative mechanisms for addressing deforestation in Indonesia discussed in Parker et al., ‘The little Redd+ book’.
94. Persson and Azar, ‘Preserving the world’s tropical forests – a price on carbon may not do’.
95. Satriastanti, ‘Spell out Indonesia’s carbon-cutting plan, SBY told’.
96. Lang, ‘Indonesia’s climate promises and policy incoherence’.
100. C. Lang, ‘Indonesia’s President signs the decree on forest moratorium: Too little, too late’, REDD-Monitor, 20 May 2011.
101. Lang, ‘Indonesia: The three draft decrees’.
103. C. Lang, ‘Norwegian finance for forest destruction in Indonesia. Oh, and where is the moratorium, by the way?, REDD-Monitor, 3 March 2011.
105. C. Lang, ‘On the eve of the logging moratorium, Indonesia’s Ministry of Forestry issued almost three million hectares of concessions’.
106. Lang, ‘Redd faces all round. Norway’s investment in forest destruction’.
107. ‘Consolidation Report: Reducing emissions from deforestation and forest degradation in Indonesia’, p. 3.
109. Ibid, p. 3.
110. This article sidelines the related, additional problem that the assumption relied upon in REDD+ that implementing governments are rational, economic agents capable of acting upon incentive schemes, by firstly making a decision to shift land-use
development pathways and secondly, implement and enforce the related policies and measures. These assumptions are themselves highly problematic given the reality that REDD+ implementing countries often face chronic institutional crisis, conflicting agendas fuelling corruption. (A. Karsentry and S. Ongolo, ‘Can ‘fragile states’ decide to reduce their deforestation? The inappropriate use of the theory of incentives with respect to the Redd mechanism’, *Forest Policy and Economics*, forthcoming, 2011.)

111. ‘Protection money’, p. iv.
112. Ibid, p. 120.
116. Currently ‘forest’ is defined in Law Number 41 of 1999 as ‘a unit of ecosystem in the form of lands comprising biological resources, dominated by trees in their natural forms and environment, which can not be separated each other’ (Article 1(2)).
120. ‘Consolidation Report: Reducing emissions from deforestation and forest degradation in Indonesia’, p. 98.
121. F. Jotzo, ‘Reaching for the sky’, *Inside Indonesia*, 25 July 2011. For example, the National Strategy on Climate Change, sets the reference level for 2020 as 1.5GtCO\(_2\)e from forest related activities. In contrast the draft REDD strategy sets the 2020 baseline as 2.9GtCO\(_2\)e from forestry activities.
122. Ibid.
123. ‘Consolidation Report: Reducing emissions from deforestation and forest degradation in Indonesia’, p. 129.
124. Ibid, 129.
126. N. Dyer and S. Counsell, ‘McREDD: How Mckinsey ‘cost-curves’ are distorting Redd’, *The Rainforest Foundation*, 2010. Greenpeace too, has criticised the McKinsey ‘cost-curves’ for failing to meet ‘basic standards of accuracy, rigour, utility or ethical accountability’. The report is also critical of the way forests are understood only in reductionist economic values, and not integrated within a ‘web of social and environmental value’. Additionally, there are accusations that business as usual scenarios are being over inflated in the analysis. ‘Bad Influence – How Mckinsey-Inspired Plans Lead to Rainforest Destruction’, Greenpeace, 2010.
128. Thompson, Baruah, and Carr, ‘Seeing Redd+ as a project of environmental governance’, p. 100.


134. A. Bumpas and D. Liverman, ‘Accumulation by decarbonization’.


145. ‘System change — Not climate change: A people’s declaration from Klimaforum 09’, 2009.