

## **An informal note on REDD investment and “deforestation” emissions**

### **Part 1**

There is broad agreement that CO<sub>2</sub> emissions from land which is forested or whose forest has recently (not defined) been largely cleared must, as a matter of urgency, be sharply reduced worldwide.

However, despite proposals to give huge sums of money to entities which undertake to reduce such emissions, there appears to be much uncertainty as to where (and why) most such emissions take place.

Further, those emissions tend to take place in countries which are characterised by poor governance - capacity constraints, weak institutions, and powerful vested interests. Reputable investors are consequently unlikely to provide REDD finance to projects in such countries without substantial guarantees.

This contributes to large transaction costs, which include ensuring that important stakeholders benefit equitably and which take into account the difficulty of ensuring that the reductions specified in the investment contract not only actually take place but are also attributable directly to the investment rather than external factors<sup>1</sup> such as a change of government or a collapse in demand for pulp, palm oil, beef or soy.

Those stakeholders include local people whose livelihoods have been adversely affected by the land use changes which prompted the increase of emissions above historic norms<sup>2</sup> – and this might require restoring parts of the affected land to its former state. Undervaluation of natural forest - at times for commercial gain – drives “deforestation” emissions. Also, the land tenure and other rights of forest peoples tend to be threatened by REDD schemes.

The primary driving force behind some such investments is the opportunity to offset continued or increased carbon emissions elsewhere. It is therefore imperative that such licences to pollute are (a) granted only when the specified reduction has been achieved and (b) withdrawn if that reduction is not sustained. The licence should also be withdrawn if entities culpable for causing the deforestation emissions which the REDD project seeks to address are linked with subsequent increased emissions elsewhere.

However, given the probability<sup>3</sup> that under current policy, average global temperature will exceed 2°C due to accumulated and future CO<sub>2</sub> emissions, offsets are no longer appropriate.

Finally, efforts to promote REDD investment tend to be generic (reinforcing the view that their aim is to foster continued pollution rather than reduced emissions). In contrast, most deforestation emissions are said to take place in only a handful of countries<sup>4</sup>, and are caused by specific and largely manageable factors – see Part 2 below.

### **Part 2**

Very few publications quantify deforestation emissions by individual countries. Two of them present statistics which differ greatly from each other (yet are published by the same source), see “A” and “B” below. Those statistics, and a first iteration attempt to attribute deforestation emissions to specific products<sup>5</sup> or other factors, are presented in Part 4 below. Part 5 indicates which bilateral trade flows are particularly culpable for those emissions – from Brazil and Indonesia, at least initially, to China, the EU (and India) for palm oil, pulp, cattle and soya.

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<sup>1</sup> Overpopulation and overconsumption contribute to deforestation emissions. Over consumption is facilitated by poor regulation and policies which seem to place unfettered trade above sustainable, fair trade.

<sup>2</sup> The use of long cycle slash and burn farming as a survival strategy has since time immemorial shaped natural forest ecosystems. During recent decades, over population – particularly inwards migration – has tended to make such agriculture unsustainable.

<sup>3</sup> 8% of exceeding 8°C cited in footnote 1

[http://www.decc.gov.uk/Media/viewfile.ashx?FilePath=What%20we%20do%20low%20carbon%20UK%20Carbon%20Valuation%20090714193615\\_e\\_@@\\_PEkins.pdf&filetype=4](http://www.decc.gov.uk/Media/viewfile.ashx?FilePath=What%20we%20do%20low%20carbon%20UK%20Carbon%20Valuation%20090714193615_e_@@_PEkins.pdf&filetype=4)

<sup>4</sup> <http://www.iied.org/natural-resources/key-issues/forestry/redd-protecting-climate-forests-and-livelihoods> §1

<sup>5</sup> as others already do – see <http://forestdisclosure.com/footprint.html>

**A** Table 1 “A Core Participation Requirement for Creation of a REDD market” Nicholas Institute for Environmental Policy Solutions (May 2008) <http://www.nicholas.duke.edu/institute/pb-redd.pdf>

This table indicates that two countries account for half the world’s deforestation emissions - 25% from Brazil and 23% from Indonesia. The immediate causes of these two countries’ emissions are well known – the cattle and soy industries (soy replacing cattle when the latter move on)<sup>6</sup> in Brazil, and the palm oil and pulp industries in Indonesia. A handful of enterprises dominate those four industries. Consequently, it should be easy to apply a simple market-based strategy to rapidly and inexpensively curtail those emissions – consumers and intermediaries should (indeed must) stop buying products which contain their output. However, in leading markets – particularly China – the chain of supply is not interested.

Nigeria, the Democratic Republic of Congo and Burma - the other three countries in the top five, together account for a further 13%. Many might consider it unlikely that REDD investments will be sound and effective in these countries, even if permissible.

**B** Figure 1.2 of “The Crucial Role of Forests in Combating Climate Change” Nicholas Institute for Environmental Policy Solutions (June 2009) [http://www.nicholas.duke.edu/institute/policy\\_brief\\_09.05.pdf](http://www.nicholas.duke.edu/institute/policy_brief_09.05.pdf)

This chart seems to use the same data as a World Bank<sup>7</sup> publication and a CIFOR<sup>8</sup> presentation. Statistics compiled by WRI<sup>9</sup> are cited as the source cited for that chart.

The statistics of CO<sub>2</sub> emissions from “Land-use Change & Forestry” which that WRI source presents differ greatly from those in the table mentioned under “A” above (after converting to similar units of measure). They do not include statistics beyond 2000 – so are nine years out of date. REDD investments based on data which are no longer valid would not be prudent.

They indicate that – during 2000 - Indonesia, Brazil and Malaysia (in descending order) were the world’s leading sources of “deforestation” emissions. This echoes information presented to the Stern Review<sup>10</sup> some of which has since been considerably amended.<sup>11</sup> Although the causes of “deforestation” emissions from Malaysia tend to be similar to those in Indonesia, they are associated more with palm oil than with pulpwood plantations.

Another WRI publication<sup>12</sup> indicates that more than half the area deforested during recent years occurs in Brazil (48%) and Indonesia (13%). This is not the same as “deforestation” emissions.

### **Part 3**

In conclusion, there is general agreement that deforestation emissions must be reduced<sup>13</sup> and that two countries (Brazil and Indonesia) and four sectors (palm oil, pulp, cattle and soy) in those two countries account for much the largest emissions.

It seems likely that the most efficacious and most rapid reductions in “deforestation” emissions can be achieved by ceasing most trade in pulp and palm oil from Indonesia and products which derive from cattle and soya from Brazil – and restoring the former forest.

Such actions would greatly inhibit a shift in commercial operations to other countries, and would prompt action to reduce similar deforestation emissions elsewhere.

Unless these primary drivers of “deforestation” emissions are central to REDD strategy, then REDD strategy will not only fail to achieve urgently needed reductions in deforestation emissions but enable industrial and consumption emissions elsewhere to continue or increase.

<sup>6</sup> cited in [http://www.whrc.org/resources/published\\_literature/pdf/NepstadetalPhilTrans.08.pdf](http://www.whrc.org/resources/published_literature/pdf/NepstadetalPhilTrans.08.pdf) §1 p3

<sup>7</sup> [http://siteresources.worldbank.org/INTINDONESIA/Resources/Environment/ClimateChange\\_Full\\_EN.pdf](http://siteresources.worldbank.org/INTINDONESIA/Resources/Environment/ClimateChange_Full_EN.pdf) Table 1

<sup>8</sup> <http://www.fao.org/forestry/foris/ppt/outlook2020/seymour.pdf> slide 15

<sup>9</sup> <http://cait.wri.org/cait.php?page=yearly&mode=view&sort=val-desc&pHints=shut&url=form&year=2000&sector=lucf&co2=1&update=Update>

<sup>10</sup> [http://www.hm-treasury.gov.uk/d/annex7f\\_land\\_use.pdf](http://www.hm-treasury.gov.uk/d/annex7f_land_use.pdf) Figure 3

<sup>11</sup> <http://cdiac.ornl.gov/trends/landuse/houghton/houghton.html>

<sup>12</sup> <http://www.wri.org/stories/2008/07/groundbreaking-study-finds-hotspots-most-responsible-deforestation> §1

<sup>13</sup> <http://www.parliamentlive.tv/Main/Player.aspx?meetingId=4388> first 61 minutes (esp. 10:10-11:10 & 39:03-43:13)

**Part 4**

**Examples of emissions from deforestation and land use change** (million tonnes of CO<sub>2</sub>)

Source of data in columns A and B: see A and B above respectively

	<b>A</b>	<b>B</b>
<i>Reference period</i>	2000-2005	2000
<b>Total</b>	<b>7,700</b>	<b>c.8,300</b>
Brazil	1,903	2,563
Indonesia	1,781	1,372
Nigeria	452	195
DR Congo	318	317
Burma	241	425
Zambia	233	236
Cameroon	221	77
Philippines	182	95
Venezuela	169	144
Bolivia	151	84
Ghana	151	28
Tanzania	138	15
Ecuador	127	59
Papua New Guinea	120	146
Honduras	118	18
Malaysia	115	699
Paraguay	103	21
Uganda	96	39
Angola	90	18
Cambodia	85	56
Peru	-	187
Nepal	-	124
Colombia	-	106
Mexico	-	97
Ivory Coast	-	91

Assumes 3 tonnes of carbon is equivalent to 11 tonnes of carbon dioxide

These statistics refer to **net** emissions.

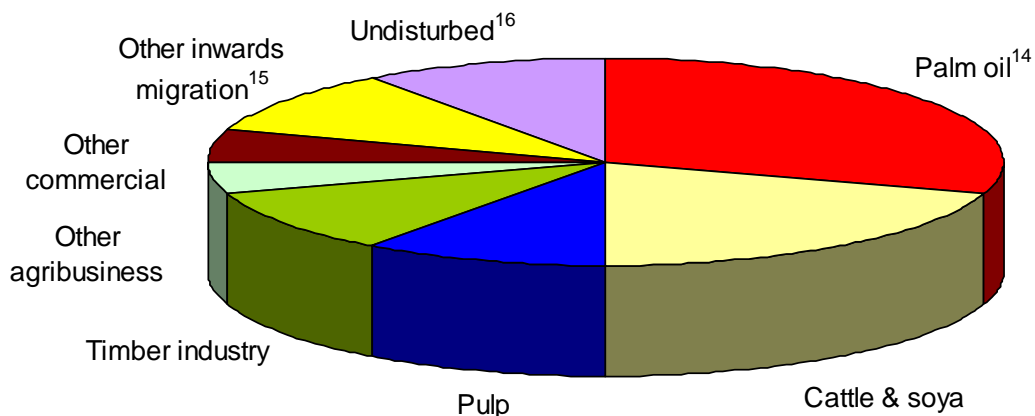
Consequently, they underestimate the emissions of those countries which have expanded their plantations during recent years (at great cost to local people and biodiversity, not just the climate).

Because Brazil, Indonesia and Malaysia account for the majority of those plantations, the proportion which these three countries have in total gross emissions is therefore likely to be significantly greater than those implied in columns A and B.

**Further, basing policy on gross-rather than net-emissions would much better reflect the actual loss of social and environmental benefits which are embodied in natural forest but absent from plantations.**

**First iteration estimates\* attributing the above to specific factors**

\*- for amendment on receipt of evidence suggesting different attributions



Contributory factors – worldwide - include poor governance, over-population, inappropriate valuation, and pursuit of economic growth<sup>17</sup> regardless of consequence, and (particularly in end-user countries) unsustainable levels of consumption.

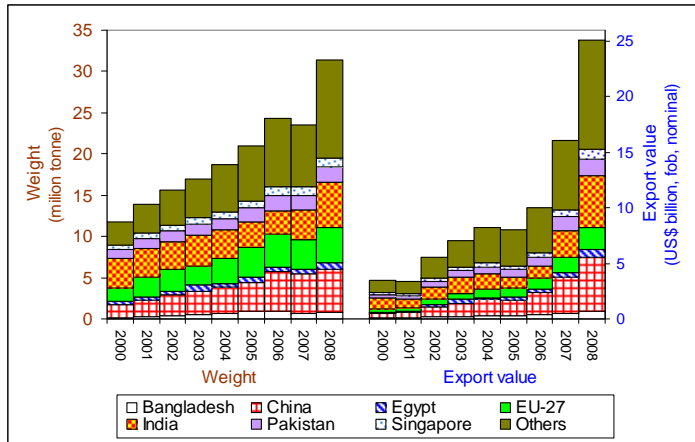
<sup>14</sup> Converting forest to palm oil for use as agro-fuel is highly unlikely to benefit the environment – see Abstract p1 <http://www.nordeco.dk/assets/346/Danielsen%20et%20al.%202008%20Double%20Jeopardy...%20Cons%20Biol.pdf>

<sup>15</sup> In part as a consequence of *de facto* government policy, poverty and inequitable access to land

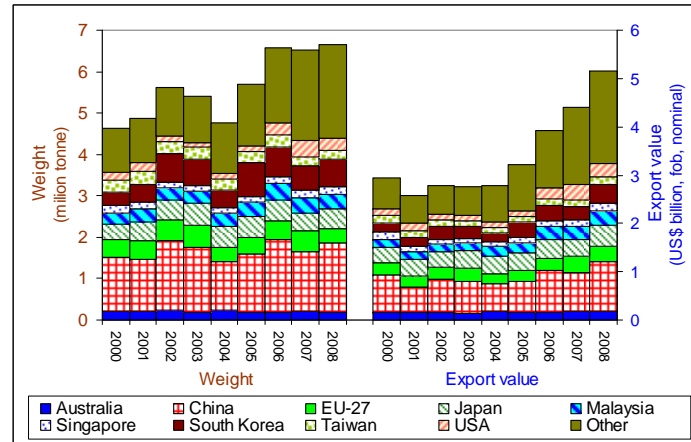
<sup>16</sup> Includes sustainable swidden by indigenous peoples and climate change

<sup>17</sup> <http://news.bbc.co.uk/1/hi/sci/tech/8169716.stm>

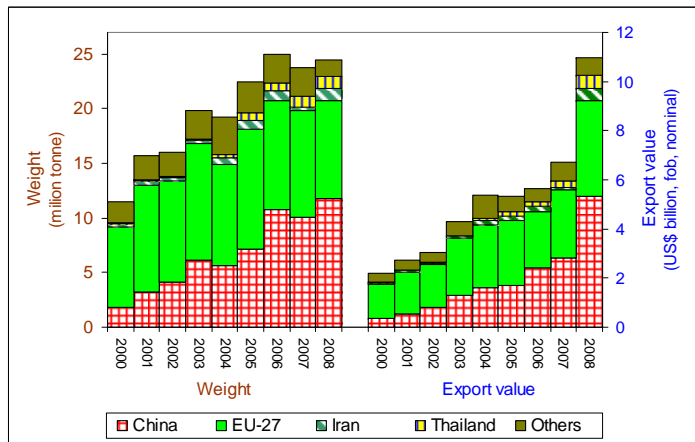
**Part 5<sup>18</sup>** – Which countries are *initial* destinations for the products which contribute most to deforestation emissions?



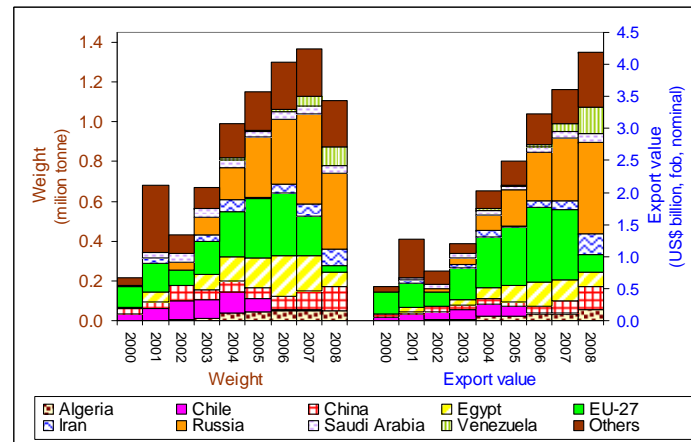
Palm oil exports from Indonesia and Malaysia



Pulp and paper exports from Indonesia



Soya exports from Brazil



Beef exports from Brazil

<sup>18</sup> Source: UN Comtrade (e.g. <http://comtrade.un.org/db/dqQuickQuery.aspx?cc=120100&px=H1&r=76&y=2008&p=ALL&rq=2&so=8>) - product codes 120100, 48 and some 0201\*, 0202\*, 020\*, and 47\*