



## CLIMATE CHANGE

# Forest Carbon Counts

Welcome to the first **Special Bulletin: Forest Carbon Counts**. It informs participants at the UNFCCC negotiations on a new Paris agreement about issues to be addressed in relation to primary forests. It follows on from the **Truth in Targets Special Bulletins** produced for earlier COPs. See [www.hsi.org.au/go/to/25/climate-change](http://www.hsi.org.au/go/to/25/climate-change)

## Emissions from forest degradation (logging) are too big to ignore

Last month, the UK's Prince of Wales' International Sustainability Unit (ISU) published its report, **Tropical Forests—a Review** which is an excellent review of the relevant scientific literature. The key take-home message identified by the Prince in his foreword, that "The potential for greenhouse gas emissions mitigation from reducing deforestation, reducing [forest] degradation and pursuing forest landscape restoration is highly significant. Together, doing just these three things could play a major role in our efforts to meet the global obligation [to avoid dangerous climate change]. **And we can act on forests now, therefore buying much-needed time to enable the global transformation to a low carbon economy...**" (p.iv). This 'wedge effect', and its potential scale, is poorly appreciated by UNFCCC negotiators—protecting forests can provide a large, one-off emissions reduction boost that can get the world onto a safer emissions reduction trajectory ahead of longer term initiatives.

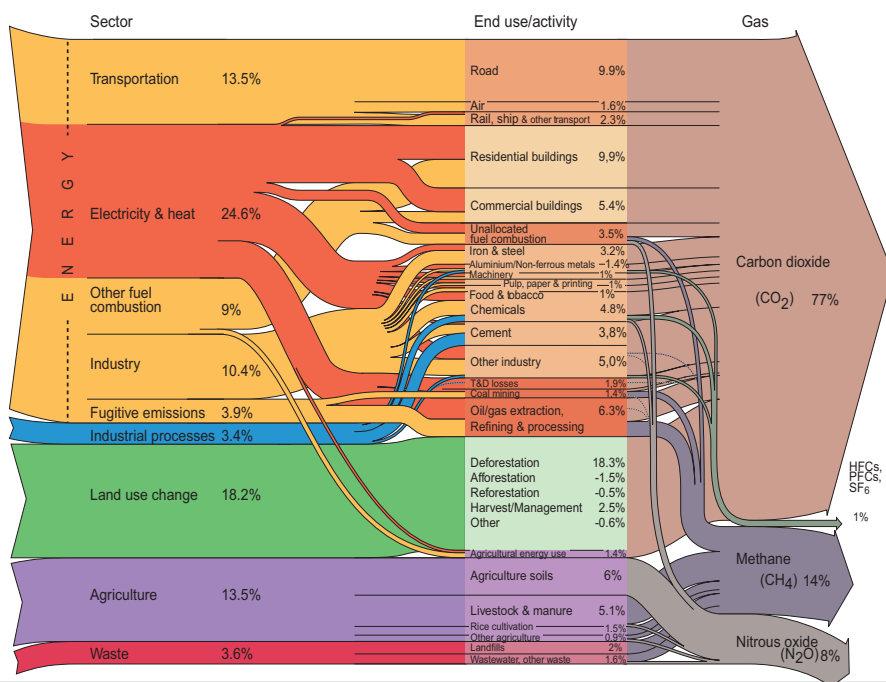
With this win-win-win opportunity in mind, we have joined IntAct, a growing network of civil society organisations seeking to secure the protection of the world's remaining primary forests and appropriate restoration of forest landscapes (see Statement of Principles, p7)—in all countries both developed and developing. While others are clutching at impossible straws, viz the IPCC's 'BECCS' scenarios (bioenergy with carbon capture and storage, see page 6 for more commentary), we're hoping that Paris agreement negotiators will wake up to their 'elephant in the room'—the potential for very large and very fast reductions in emissions from protecting the carbon stores/ reservoirs that are the world's remaining intact, primary forests. This potential, available at relatively low cost, is hidden from them by the perverse Kyoto accounting rules developed by Annex 1 countries' self-serving forestry agencies seeking to shirk their responsibilities to contribute to their countries' binding emissions reduction targets.

Insofar as pledges associated with a Paris post-2020 agreement are not expected to be binding, the rationale for these misleading and perverse Kyoto LULUCF accounting rules disappears. Non-binding pledges can be fairly and openly monitored using natural accounting rules—land-based accounting, using 'gross' accounting that separates out emissions in the land sector from removals (sequestration). Using natural, gross, land-based accounting, it readily becomes clear that **'acting on forests now', as the Prince puts it, requires a reduction in demand for wood** and wood products derived from native forest

logging—in importing, developed countries where most of the demand originates. If demand for wood is not moderated, any success in protecting forests and reducing emissions in one country or province is simply reflected in increased logging and emissions somewhere else (see "Consumption, leakage and drivers", p8) — **only a global consumption moderation commitment can capture the immediately available emissions reduction opportunity.**

The ISU Report notes that "Tropical deforestation remains a major driver of global warming, emitting 0.8-0.9 Gigatonnes of Carbon (GtC) annually, equating to 8% of global carbon emissions. **Less widely recognised, tropical forest degradation accounts for a further 0.6-1.5 GtC per annum, equating to a range of 6-14% of all anthropogenic carbon releases** (or 10-14% if estimates are based on the recent noteworthy studies by Grace et al. and Houghton. In aggregate, the two sources may account for 14-21% of all carbon emissions, perhaps higher still when tropical peatlands and mangroves are included." (ibid. p.4).

In other words, tropical forest degradation—principally attributable to so-called 'sustainable forest management' for industrial logging—is as big an emitter of carbon to the atmosphere as is deforestation, yet it receives very little policy attention by comparison. **At somewhere around 10% of global emissions, tropical forest degradation is too big to ignore.** This imbalance in policy attention between deforestation



## ► Emissions from forest degradation (logging) are too big to ignore...continued

and forest degradation needs to be rectified, in time for incorporation into any post 2020 agreement in Paris at the end of this year.

The ISU Report further notes, “Projected increases in global demand for wood products and agricultural commodities will significantly increase pressure on tropical forests over the next few decades.” FAO points out “reduced overall emissions, but increased degradation” in the front-page, take-home message of its leaflet, “FAO assessment of forests and carbon stocks, 1990–2015” (I4470E/1/03.15 ©FAO 2015). While emissions from deforestation may have gone down by 25% over this period, emissions from degradation for the period 2011–15 are double those for the period 1991–2000 (albeit still amounting to only a third of the emissions attributable to deforestation).

This is the first time that FAO has published separate figures for emissions from and sequestration into forests and it’s time the IPCC and UNFCCC did likewise. Netting out emissions and sequestration hides this alarming trend of increased emissions from forest degradation. As demand for wood and wood products grows while deforestation slows, it is inevitable that degradation increases.

Remember, this 10% of emissions from forest degradation is from logging tropical forests only—there’s roughly as much again from logging temperate and boreal forests. It is fanciful to think that the world can generate sufficient emissions reduction pledges to avoid dangerous climate change without including pledges to substantially reduce emissions from Land Use, especially from deforestation and forest degradation.

Industrial logging has largely escaped the attention of mainstream UNFCCC negotiators over the years because they, rather unwisely, left it to the forestry agencies within their governments to develop their own emissions accounting rules for the LULUCF sector when the Kyoto Protocol was originally developed (Land Use, Land Use Change and Forestry) and renewed in 2011—a case of leaving the fox in charge of the hen-house if ever there was one.

Not surprisingly, the resulting set of perverse and arcane accounting rules did a good job of hiding emissions attributable to the forestry industry from those not familiar with its workings—especially the use of so-called ‘net-net accounting’. And, not to be outdone in the perverse accounting stakes, the developers of the REDD+ process have developed their own equally perverse accounting rules, especially the use of ‘forward looking baselines’. A critique of these accounting rules is shown on page 3. This graph (below) from Gabon’s INDC illustrates the situation very neatly.

The ICU Report goes on to note, “On the other side of the tropical forest carbon ledger, current sequestration of atmospheric CO<sub>2</sub> is also significant, drawing down 1.2–1.8GtC a year. The convention in [UNFCCC rules for] greenhouse gas accounting is to ‘offset’ these removals against tropical forest emissions; that approach is arguably insufficient, for two reasons. Recent findings on the importance of forest protection as a means to safeguard continuing sequestration

indicate that a significant proportion of CO<sub>2</sub> absorption occurs as a result of human agency. Additionally, the net accounting approach distracts attention from the reality of much higher gross emissions.” (ibid. p.4)

A good example of this perverse accounting is to be found in Norway’s INDC where footnotes clarify that, if land use were to be included in the 1990 base year emissions estimates, using net-net accounting, it would be reduced from 52.0 Mtpa CO<sub>2</sub>eq. to 41.8 Mtpa. What remains hidden is how much higher than 52.0 Mtpa Norway’s actual, or ‘gross’, emissions were in 1990, if realistic accounting rules were used for the land sector that required separate reporting of, and accounting for, both emissions and removals. These perverse accounting rules have been adopted by the UNFCCC for use by all member states and are not a peculiarity of how Norway reports its emissions.

	Harris <i>et al</i> <sup>(b)</sup>		Grace <i>et al</i> <sup>(c)</sup>		Houghton <sup>(d)</sup>	
	GtC	% of all emissions	GtC	% of all emissions	GtC	% of all emissions
Tropical deforestation	0.80	8.00%	0.90	8.49%	0.81	7.44%
Tropical forest degradation	0.60	6.00%	1.10	10.38%	1.47	13.51%
<b>Deforestation plus degradation</b>	<b>1.40</b>	<b>14.00%</b>	<b>2.00</b>	<b>18.87%</b>	<b>2.28</b>	<b>20.96%</b>
Fossil fuels and cement production <sup>(a)</sup>	8.60	86.00%	8.60	81.13%	8.60	79.04%
<b>Total emissions<sup>(d)</sup></b>	<b>10.00</b>		<b>10.60</b>		<b>10.88</b>	

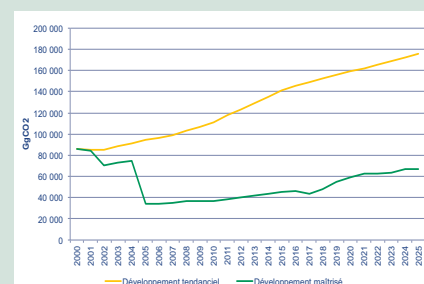
Sources: (a) Le Quere, C., *et al.* 2013. *Global Carbon Budget 2013*. Earth Syst. Sci. Data Discuss., 6, 689–760 (averaged for 2003–2012); (b) Harris, N., *et al.* 2012. *Progress Toward a Consensus on Carbon Emissions from Deforestation*. Winrock International; (c) Grace, J., *et al.* 2014. *Perturbations in the carbon budget of the tropics*. Global Change Biology (data from 2005–2010); (d) Houghton, R.A. 2013. *The emissions of carbon from deforestation and degradation in the tropics: past trends and future potential* (data from 2000–2005). Carbon Management. (d) emissions from other land-uses are included on a net basis (see IPCC AR5, chapter 11, pp16–22)

**The Norwegian INDC indicates why:** net removals (sequestration being bigger than emissions) from Norwegian forests in 1990 is estimated at 10.1 Mtpa and it is estimated to grow to 21.2 Mtpa by 2030. As logging steadily continues, it leaves behind an ever-larger extent of carbon-depleted regenerating forests such that the gap between emissions and sequestration continues to increase. This gap represents the ongoing—and permanent—reduction in carbon carrying capacity (the carbon density of primary, unlogged forest) attributable to so-called ‘sustainable forest management’ for industrial wood supply as primary forests are converted into regrowth forests. SFM may be sustainable for industrial wood supply but it comes at an awful cost to existing forest carbon stores—at a time when the world’s atmosphere really can’t cope with such emissions profligacy like it used to be able to do in past centuries.

Interestingly, the size of the gap between emissions from logging and sequestration from regrowth after logging represents the relative age of a country’s forest industry—lots of past logging means lots of current sequestration i.e. using a net-net accounting methodology allows developed, ‘old world’ countries, with lots of past logging, to hide their emissions from current logging much more readily than ‘new world’ countries, with relatively less past logging and relatively more deforestation.

**Gabon’s forward-looking baseline** (développement tendanciel) is simply a fanciful projection of continued expansion while their statement of ‘new’ intent (développement maîtrisé), is what is expected to happen after some—very welcome—parks have been declared and anticipated logging rates subsequently reduced.

Calling the difference between the two a 62% ‘gain’, however, is **fanciful ‘straw dog’ accounting**. What is fair for Gabon to call a ‘gain’ is the actual reduction in emissions from forest degradation throughout Gabon from a baseline year—which would be a real benefit to the atmosphere. **When it comes to voluntary pledges, there’s no need to slavishly copy Kyoto Annex 1 countries’ accounting perversities.**



## ► Opportunity for a clean break from forest accounting scams and failures

A new agreement arising from the ADP negotiations must not be undermined by current failures to fully and fairly account for forest carbon emissions. When these emissions are not transparently accounted for, everyone is misled about the impact on the Earth's atmosphere and there is a consequent failure to take readily available measures to restrain forest carbon emissions. Even worse, policy incentives favouring these hidden emissions are passed off as contributing to a climate solution when they actually wreak further havoc on the atmosphere.

Yet there are proposals to carry the Kyoto Protocol's rules for accounting Land Use, Land Use Change and Forestry (LULUCF) into the new agreement and so entrench this unsatisfactory situation. It is one thing to continue efforts under the KP to tackle climate change and to build upon them, but quite another to allow developed countries to carry on with perverse accounting.

### Forest biomass burning is not carbon neutral

Burning forest biomass to produce heat and electricity has been erroneously promoted as carbon neutral. In fact, biomass combustion emits more ghgs than fossil fuels per unit of useable energy in nearly all cases. This is because the material is less dense and contains more moisture. Additional emissions associated with logging and processing forest biomass must also be taken into account.

Whilst the emissions associated with logging and biomass combustion are immediate, regrowing those forests takes many years such that it will be decades or even centuries before the carbon released to atmosphere is re-sequestered in the forest—if that forest is regrown at all. We only have a few short years to turn around our emissions trajectory so we should not be pretending that the huge initial emissions aren't happening. The truthful approach is to acknowledge the large pulse of emissions when they occur and then acknowledge the much smaller and incremental sequestration as the forest regrows, if and when that happens.

### A carbon accounting gap

As a result of IPCC guidance, bioenergy combustion is not accounted for in the energy sector. This is another source of the misapprehension that bioenergy is carbon neutral i.e. it appears as a zero for carbon emissions in the energy sector. Instead the guidance assumes that bioenergy use will be comprehensively accounted for in the land use sector (under LULUCF rules for A1 countries).

But LULUCF accounting for forest management (the activity where most forest biomass production is focussed) was voluntary in the First Commitment Period, meaning that most of these forest emissions were not captured at all in the accounts. An agreement to mandate accounting for forest management in the Second Commitment Period has been claimed to have rectified this problem. **It hasn't.**

### Two outstanding problems remain:

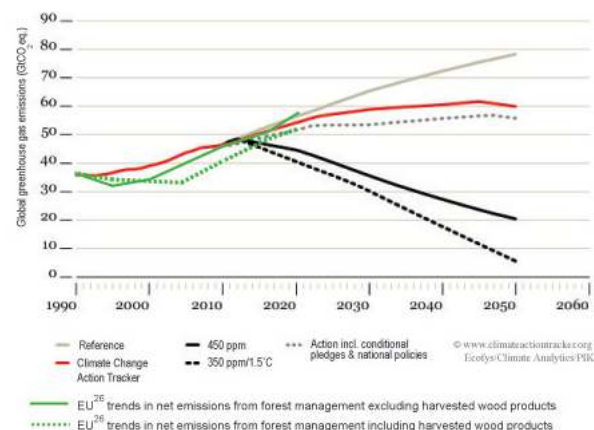
**1) Not every source of forest biomass actually accounts for the emissions as the IPCC assumed** would be the case, because many parties are not subject to the binding targets and accounting rules of the Kyoto Protocol. Europe is importing huge quantities of forest biomass—some from developing countries which do not account at all, and some from the US and Canada who also do not submit accounts as they are not signatories to the Kyoto Protocol. The assumption that comprehensive accounting would occur in the land use sector was deeply flawed and has created a large emissions loophole. What is occurring is a failure to account at all for these emissions.

**2) Even for those parties for whom accounting for forest management is now required** under the Kyoto Protocol, the new KP2 LULUCF rules for forest management enable most of the emissions to be ignored. This is due to the use of the forward looking baseline, also known as a projected reference level. In the case of the EU the

baseline against which forestry emissions are measured includes projected emissions increases under a business as usual (BAU) scenario. This BAU scenario allows for increased forestry emissions because of increased logging, much of which is to fill growing demand for biomass for heat and energy production. As these increased emissions are included into the baseline against which emissions are accounted for, they do not appear in the accounts—i.e. the EU does not have to take debits for these emissions even though they will increase over time, unless they increase even more than predicted. This is a scam we do not want to see further validated, let alone adopted more widely. Put simply, claiming a 'gain' when actually suffering a 'loss' is not acceptable accounting practice.

### Perverse incentives to burn forest biomass

Based on the failure to require that burning this material be accounted for when and where that occurs and the misapprehension that forest biomass is carbon neutral, many developed countries have introduced policy and financial incentives to burn it as so-called renewable energy. Coal fired power plants that would otherwise be faced with closure are getting a new lease on life co-firing with wood pellets, despite no change in emissions. Others are making a complete transition to burning forest biomass. **New biomass combustion facilities are being built, and even some environment groups have mistakenly advocated biomass burning as part of a renewable energy solution.** The adverse climate impacts are significant.



*Data submitted by the EU to the UNFCCC in 2011 shows this trend of increased emissions from so-called 'sustainable forest management'. While the EU may be seeking to sharply reduce emissions overall, this will be done despite the forestry sector's perverse increase in emissions.*

### Account for biomass emissions where they are consumed

The best way to fix this problem is to require that emissions from combustion of biomass be accounted for where they occur—in the consuming country. This is what happens for coal and oil, and to ensure there are incentives to restrain the carbon emissions arising from biomass burning the same basic dispositions for accounting should be made, regardless of the fuel type and source. Sequestration as forests regrow can be accounted for where and when that occurs. This would also give us a real picture of what is actually happening with forest emissions.

As a matter of principle consumers should take responsibility for the emissions created because of their demand for energy. Surely it is not going to be acceptable under a new agreement for developing countries supplying developed country markets with wood pellets and other forest biomass to have to own the emissions from the combustion of that material in wealthy countries?

**The bottom line** is that burning forest biomass is highly emissive, the emissions must be accounted for, and perverse incentives that encourage use of this fuel source by hiding emissions must be abandoned.



## ► Forests in the Geneva Negotiating Text

This analysis addresses the negotiating text agreed in Geneva, published at: [unfccc.int/resource/docs/2015/adp2/eng/01.pdf](http://unfccc.int/resource/docs/2015/adp2/eng/01.pdf)

Negotiation on the text will commence in Bonn this June.

Forests are addressed as part of the land use sector. There is quite a bit of text about land use generally, especially accounting rules. There is not much specific to REDD+.

Parties have not determined where land use should be included and so it appears in two main places: Section D on Mitigation (under the subheading of Commitments/contributions/actions on mitigation) and Section I on Transparency of Action and Support (under Rules and Modalities). Land use appears together with other issues in both places: market mechanisms under Mitigation, and with provision of support under rules and modalities.

An expanded version of this article that includes the wording of all text options is available online: [www.hsi.org.au/go/to/25/climate-change](http://www.hsi.org.au/go/to/25/climate-change)

### General text on land use

“A. Preamble” to the Agreement

Option b) page 3 makes specific reference to land, saying that the “special characteristics” of land use systems be recognised.

**Comment:** It is appropriate to recognise in the introductory preamble that land is important to a lot of people for many different purposes, such that there are competing demands on the ability of the land to limit emissions. Emissions reductions and sequestration will be limited by these constraints. From this point of view keeping primary forests intact is an easy and practical contribution as they are not currently being used for other conflicting purposes.

“D. Mitigation” Under the general sub-heading of “Commitments/contributions/actions on mitigation”: see para 21 Option 6; 21.1 Options 5 & 6, 21.2, 21.11 which address mitigation generally, including some matters of particular relevance to land (including forests).

**Comment:** We strongly agree with a mitigation objective to conserve sinks and reservoirs—this includes the huge carbon stores that are primary forests and peat soils. Mitigation in the land sector, be it emissions reduction or sequestration, should indeed be accompanied by information about how the results are to be estimated and accounted for, as suggested in the text. We believe that emissions and removals should be accounted for separately, not netted out to hide emissions from logging behind sequestration.

### Specific Mitigation text on land use/land sector

The two main references to land use in the Mitigation section are as options for paragraph 39, where some options cover just market mechanisms and some both market mechanisms and land use. The first land use option is Para 39 Option 1, see 39.5 & 39.6; the second is Para 39 Option 3. Another, Para 39 Option 6, is for no provisions in the land sector for either market mechanisms or land use accounting.

**Comment on proposals under Para 39:** Actions in the land sector will no doubt reflect national circumstances, a point made in the text, but what we need to see for most effective climate action is a **priority given to gross emissions reduction in this sector**, within the overarching context articulated in the preamble about the special circumstances created by competing demands on land.

Proposing ‘proper incentives’ flags payment for mitigation results, presumably to developing countries from a source such as a fund, or via a market mechanism such as REDD+. Availability of such incentives would enable emissions reductions by primary forest protection to be taken early. It is important that accounting rules quantify real emissions reductions (no use of forward looking baselines) and ensure no double

counting the giver and taker of an incentive have to decide who accounts for what). An assumption contained in this provision is that **results-based payments warrant accounting** rather than simply reporting under the Convention—as is currently the case for developing countries.

The text also must tackle the suite of inadequacies of current accounting. Negotiators quite rightly worry about double counting, but where is the parallel concern about the failure of developed countries to account at all for some existing forest and other land use emissions—these loopholes and accounting scams need to be done away with. **Including all sources and removals by key categories in a new agreement would go a fair way towards overcoming incomplete coverage resulting from the use of Kyoto Protocol LULUCF rules by developed countries to understate their land sector emissions whilst taking credits for land sector removals.** The activities-based approach under the Kyoto Protocol with its pick and choose options for which activities in which parts of the land sector get accounted for should be abandoned and instead all key categories (under the Convention) be addressed.

The aim is emissions reductions, and the approach must therefore be to **separate out emissions and sequestration** (removals). Netting out emissions and removals is pointedly unhelpful, yet these are currently confounded in the numbers that are produced. It is necessary to clearly see the gross emissions and the gross sequestration separately in order to accurately understand what is happening in the land sector and to then make informed decisions on effective mitigation action. Text recommendations are for net-net accounting, which entrenches this serious shortcoming of the status quo and evades the accounting and analysis that is vital to effectively identify and target the most appropriate actions to be taken.

Other problems remain (see ‘Opportunity to Make a Clean Break from Forest Accounting Scams and Failures’). One is the current failure to account at all for emissions from combustion of biomass, including biofuels, sourced from developing countries and used in energy production and transport in developed countries. This is the opposite of double counting—it’s the complete evasion of accounting. Another is the use of forward looking baselines, also known as projected reference levels, BAU baselines, or dynamic baselines. **Entrenching these accounting scams, as explicitly recommended in the text, should not be acceptable.**

We must **abandon the KP Land Use, Land Use Change & Forestry (LULUCF) rules**, not to carry them into the ADP. We need a **fully comprehensive land-based gross accounting** system free of scams.

In relation to consistency, and truthfulness, **baselines used in the land sector should not be different** to those used in other sectors. We assert



that they should be **historical**—quite simply so that we can know whether we are doing better or worse than in the past.

**Stuff happens.** In the land sector natural occurrences, such as wildfire, can have a significant impact on emissions. Developed countries tasked with meeting a binding target under the KP have thus been at pains to exclude non-anthropogenic emissions from accounting so that they only take responsibility for human actions. However this can be a disincentive to taking action in relation to non-anthropogenic sources, such as implementing fire suppression strategies. We certainly **need to know what actual emissions and removals occur**. As the ADP will have voluntary NDCs, why not account for everything but allow parties to identify which anthropogenic sources they want to take responsibility for? This would still elucidate the extent to which parties deliver on their NDC pledges.

Lastly, it seems that option 6 is postulating no actions in the land sector. Such an approach would ignore a substantial source of ghgs at a time when **we need to make all efforts** to reduce emissions. Fears that land sector removals will overwhelm the incentive to act on emissions in other sectors are best dealt with **by rectifying land sector accounting** to give a truthful reflection of the situation for emissions and sequestration.

#### **“I. Transparency of action and support”**

Much of this is very general but could be applied to land use or REDD+ if parts of the mitigation text and the transparency text are merged. The section begins with four different proposals for a transparency framework, in para 141. Three options follow under para 143 saying, in outline, what the framework should cover. More detail appears up to para 147. There is then a short section on commitments, followed by a section on rules and modalities where most text pertaining to land sector accounting is situated.

**“Rules and modalities”** There are five options for land sector rules in paragraph 152—see option 1, option 3 & option 5, as well as option 4 for no new rules. There is also a later option (para 154) saying that the governing body of the new treaty should adopt rules on transferable mitigation outcomes and the land sector at its first session.

**Comment:** An unacceptable provision to exclude accounting for carbon stocks appears in option 5 for para 152, and should be removed. We need an accounting system that recognises stocks, and their qualities (longevity, resilience, etc), as well as flows. There is an issue about how much detail regarding rules should be contained in the text of the new agreement and how much should be left to be developed subsequently, pursuant to agreed principles. Some of the detailed rules proposals seem to be an attempt to transport existing perverse rules into the new agreement.

Points made in discussion of the text in the mitigation section (above) also apply to this text on transparency of action and support, as the many of the same issues are raised in these textual options.

#### **REDD+**

There are not many specific references to REDD+ and they are short. See para 21.5 option 3; paras 37, 38, 39 option 1: 39.5 & 39.6, 39 option 3 & option 6, & para 43.

This seems to reflect a view that the Warsaw decisions establish REDD+ and set a framework for further work, such as more detail and rules on safeguards. Note however that the textual proposals on land use reviewed above should be read with REDD+ in mind.

**“L. [Procedural and institutional provisions]”** contains para 212 re institutional arrangements that proposes the governing body shall establish a REDD+ mechanism / The Warsaw Framework for REDD-plus, and also a joint mitigation and adaptation mechanism for the integral and sustainable management of forests.

**Comment:** Use of a REDD+ market mechanism to secure emissions reductions in forests is an important potential contribution.

REDD+ accounting should separately account for emissions and sequestration for each of the REDD+ activities (conservation, sustainable management of forests, restoration) These activities also should be defined and separately accounted for. We need to unpack what is happening in forests so that we can track what is happening to primary forests. ‘Conservation’ must include and prioritise the protection of primary forests so that genuine conservation is financed ahead of ‘sustainable management of forests’ and ‘restoration’. Otherwise the outcome will be subsidised logging followed by subsidised restoration of forests that have been degraded by logging (or other activities). The point is to target action so as to restrain the largest forest emissions as a priority, to recognise that restoration of forests is a slow process of sequestration with less immediate carbon benefits than emissions cessation from large intact forest carbon stores, and not to support degrading industrial forestry.

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## ► BECCS—a silly idea!

**BECCS, bioenergy with carbon capture and storage, is one of a huge array of elements** included in emissions reduction scenarios developed by IPCC Working Group 3, especially integrated assessment model (IAM) scenarios. The idea is that biomass crops can be harvested (or standing forests logged using perverse Kyoto accounting rules) and burnt to generate electricity (BE) and the emissions then captured and buried somewhere (CCS).

The idea is **silly primarily because it presupposes a reallocation of land to biomass cropping that would displace farming communities, food production and native ecosystems at such a scale as to be fanciful in practice.** There's nothing intrinsically wrong with this—the IPCC runs fanciful scenarios all the time. The problem is that somebody might be tempted to take this suite of BECCS scenarios seriously.

Apart from the problem finding the land, there are two more immediate problems. Firstly, CCS technology remains commercially unproven—it fails the BATEA test (it may be technically feasible at the pilot scale but it's not economically feasible as a broadly deployed mitigation technology, especially where deep ocean storage is anticipated).

Secondly, it only looks attractive if net-net emissions accounting rules are used to evaluate it—which may be OK for assessing crops planted for the purpose but delivers a perverse result when applied to the harvesting of standing native forests, especially if those forests are, themselves, major carbon stores.

The real worry with the BECCS scenarios is that they are based on the assumption that it has become politically and technically impracticable to reduce emissions from fossil fuel burning at a rate and scale large enough to avert dangerous climate change. Thus the proper **response to the BECCS 'answer' is that it was a really stupid question**—emphasising that it's time for the world to do more to rapidly reduce emissions, from the biosphere as well as from the geosphere, rather than shift the burden onto hugely enhanced biosphere-mediated sequestration regardless of the social, economic and environmental cost—which would be the very antithesis of sustainable development.



Intact natural forest, Sweden

Photo: Malin Sahlin, Swedish Society for Nature Conservation

## Forestry Definitions

*As adopted by FAO (Nov., 2007) for their latest specifications for national reporting tables for the 2010 Forest Resource Assessment*

**Primary forest: Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.** Some key characteristics of primary forests are: (i) they show natural forest dynamics; (ii) the area is large enough to maintain its natural characteristics; (iii) there has been no known significant human intervention or the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.

**Other naturally regenerated forest: Naturally regenerated forest where there are clearly visible indications of human activities.**

Explanatory notes: (i) includes selectively logged-over areas, areas regenerating following agricultural land use, areas recovering from human-induced fires, etc.; (ii) includes forests where it is not possible to distinguish whether planted or naturally regenerated; (iii) includes forests with a mix of naturally regenerated trees and planted/seeded trees, and where naturally regenerated trees are expected to constitute more than 50% of the growing stock at stand maturity. Other naturally regenerated forest of introduced species (*sub-category*).

**Planted forest: Forest predominantly composed of trees established through planting and/or deliberate seeding.** Planted forest of introduced species (*sub-category*).

**Special categories:** (i) Rubber plantations; (ii) Mangroves; Bamboo.

**Comment:** FAO's use of the phrase 'significant human intervention' to discriminate between primary and secondary forest is problematic. From FAO's perspective, the phrase simply means evidence of industrial logging, clearing or similar major commercial disturbance. Indigenous peoples' representatives, however, could be forgiven for thinking that FAO regards longstanding occupation and traditional use of forests and forest resources by indigenous communities as inconsistent with 'primary forest' designation. **This is obviously not true, regardless of what FAO thinks—unless they take up industrial scale logging.** Now would be a good time to raise this issue with the FAO Secretariat while they are reviewing the specifications for the next FRA for use in 2020 with a view to **making it clear that 'primary forest' is not inconsistent with occupation by indigenous peoples.**



Logged primary forest, Sweden

Photo: Malin Sahlin, Swedish Society for Nature Conservation

**EU LULUCF Discussions: A delicate negotiation** about how to account for forestry and land use emissions looms large over this year's UN climate conference in Paris. The issue is potentially divisive within the EU and **threatens to unravel the bloc's proclaimed leadership on climate change.** The European Commission launched (25 Mar.) a public consultation on the integration of agriculture, forestry and land use into the EU's climate and energy policy for 2030. The consultation is important with implications for the next round of emissions cuts expected in Europe, and globally.

The European paper industry, which is heavily reliant on the forest sector, sees a missing link between LULUCF and the EU's wider climate policies. **"What is considered missing** is the link between the LULUCF emissions and/or removals and the overall EU commitment to reduce CO<sub>2</sub> emissions, in other words how to factor the LULUCF positive or negative impact into the overall EU climate effort," said Bernard de Galember, of the Confederation of European Paper Industries (CEPI).

Media story (abbreviated), 12/5/15





## IntAct Statement of Principles (abbreviated)

Earth's remaining primary forests are unique and irreplaceable **natural life-support systems**, critical to sustain forest dependent communities, indigenous peoples and cultures, biological diversity, and vital ecosystem services, such as climate stabilization, and clean water. Primary forests are fundamental to the good ecological functioning of the planet and to human wellbeing.

Despite their global importance, Earth's primary forests are in crisis. Over a third of the planet's original forest cover has been cleared, much of it in the last 60 years, and **between 2000 and 2012 we destroyed over 230 million hectares of forest**, an area larger than Greenland. Of our remaining forests, only about a third qualify as primary forests and we lose at least 4 million hectares of primary forest each year.

Only about a fifth of our remaining primary forests are protected, just 5% of their original extent. By comparison, about a third of the planet's forests overall are primarily used for the production of wood and non-wood products

A convergence of recent findings creates a powerful impetus for a new global consensus to respond to this crisis and protect our remaining primary forests:

- Primary forest degradation and destruction continues at very high rates and **significantly contributes to the global biodiversity and climate change crises**.
- Primary forest degradation and destruction has **profound social and cultural impacts**.
- Current best practices and certification schemes **have not reconciled industrial activity with primary forest conservation** at large scales.
- Excluding industrial activities from primary forests is the **most effective way to keep primary forests intact**.
- We can develop solutions to **meet global wood demand** that do not involve resorting to exploiting primary forests.

We therefore call upon governments, intergovernmental and non-governmental organizations, corporations and financiers around the world to recognize as a matter of principle that the planet's primary forests should be set aside as "No-Go Areas" for industrial activities.

**A new policy consensus is needed** on the protection of Earth's remaining primary forests to secure the ecological health of our planet and the wellbeing of people everywhere.

We will not achieve the objectives of key social and environmental agreements, including the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and the Sustainable Development Goals, **unless we move quickly to protect Earth's remaining primary forests**.



Primary forest, Tasmania, Australia

Photo: Kip Nunn



Primary forest subject to clearcut logging, Tasmania

**excluding industrial activities  
from primary forests is the  
only effective way to  
keep them intact**

## ► Consumption, leakage and drivers—different aspects of the same problem

While responsibility for ensuring permanence and additionality can fairly be laid at the door of developing country landholders and/or communities receiving benefits through any REDD mechanism, leakage is a different issue. While any country (or sub-national province with appropriate authority and control) can be expected to address those issues that are within its control, in all fairness, it cannot be held responsible for international leakage—the displacement of forest degradation actions, including those resulting in immediate or eventual deforestation, from one country to another as a result of REDD actions.

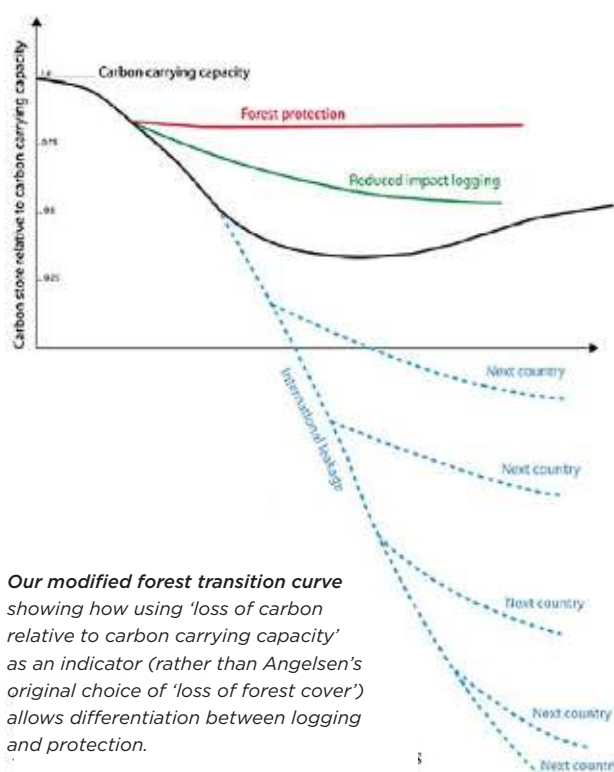
This responsibility clearly lies with the country responsible for the underlying demand for relevant natural resources or products derived from such resources—the drivers of forest degradation, including deforestation. Note that countries, or sub-national provinces, would still be expected to be responsible for leakage associated with demand drivers within their jurisdictions—just not for demand drivers from outside their jurisdictions.

It seems obvious to us that international drivers of degradation that result in leakage is a problem that must be tackled as a 'demand-side' issue, not a 'supply-side' issue. When viewed from this perspective, it is clear that consumption, drivers and leakage are all aspects of the same problem—if consumption is not addressed as an integral part of REDD implementation, any success in protecting forests in one place risks being negated by increasing forest degradation somewhere else.

It is also clear that addressing consumption driving international leakage is primarily a responsibility of developed countries—those importing and consuming most of the relevant resources or products derived from such resources.

Taking a 'demand-side' approach to emissions reduction would require developing a very different set of UNFCCC mechanisms than the current 'supply-side' ones. This is where the 'carbon footprint' concept can be very useful—consuming entities would be expected to be accountable for all the 'whole of life cycle' emissions associated with use and consumption of goods and services—using a 'whole of life cycle' analysis.

The end-use consumer would be expected to account for all such emissions—unless it can be established that someone else has already accounted for some of the identified emissions. **In other words, for REDD to efficiently and effectively achieve the hoped-for atmospheric benefits, any gains in forest protection must be matched by equivalent reductions in consumption that is explicitly related to the drivers of degradation being displaced.**



**Our modified forest transition curve** showing how using 'loss of carbon relative to carbon carrying capacity' as an indicator (rather than Angelsen's original choice of 'loss of forest cover') allows differentiation between logging and protection.

This is why taking the second D in REDD (forest degradation) seriously is essential. The figure also illustrates how any success in moderating loss of forest cover in one country does little to stop the drivers of that loss simply popping up in other countries (see the blue dotted lines).

obvious that international drivers of degradation that result in leakage must be tackled as a 'demand-side' issue, not a 'supply-side one

**Sri Lanka Commits:** The Sri Lankan Government is backing a partnership between local NGO, Sudeesa (an organisation of small fishers) and global NGO, Seacology, to protect all Sri Lanka's remaining 8,800 ha. of mangrove forests and to restore the 3,900 ha. that have been logged. Such comprehensive ambition is billed as a world first and Seacology hope to use it as a model

for other coastal communities. That mangroves are efficient sinks and stable stores of carbon sequestered from the atmosphere means that this project should make a significant contribution to Sri Lanka's INDC in preparation for the UNFCCC Paris COP.

BBC News, 12/5/15



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CLIMATE CHANGE

# Forest Carbon Counts

Welcome to the second **Special Bulletin: Forest Carbon Counts**. For earlier editions of this, and our previous Truth in Targets Special Bulletins, see [hsi.org.au/go/to/25/climate-change](http://hsi.org.au/go/to/25/climate-change)

## REDD+ is too big to ignore

The Coalition for Rainforest Nations made strong and repeated interventions at ADP2.10 (Bonn, September) that REDD+ should be specifically mentioned in the Paris agreement. The coalition comprises developing nations with tropical rainforest resources and other important nations with rainforest resources. Its membership covers the three largest tropical forest areas: Amazonia, Congo Basin and New Guinea.

These are countries where a huge difference can be made to the 20% or so of global emissions that result from deforestation and forest degradation, and we need to tackle these emissions in addition to action in other sectors. They are telling us that for them REDD+ is a vital ingredient for the agreement under negotiation for Paris. We should all pay them heed.

They pointed out that *“what is missing in the mitigation section is the urgency and therefore prioritisation of actions that can drive necessary ambition”*. Accordingly, *“mitigation should prioritise low cost and immediately implementable mechanisms”*.

*“Specifically in the land use sector, REDD+ actions by developing countries to halt deforestation and forest degradation and conserve existing forests are needed if we want to stay below the 1.5/2C target. The technical details and methodological guidance on REDD+ were finalized in the last June SB session after 10 years of negotiations. REDD+ is therefore mature and ready for implementation.”*

Therefore the coalition wanted specific mention of REDD+ in that part of the agreement that addresses ambition. They also want REDD+ explicitly recognised as a market mechanism, together with a provision that transfer of mitigation outcomes should be counted for meeting the INDCs—under accounting principles that respect environmental integrity and avoid double counting.

Reducing deforestation and forest degradation can play a significant role in mitigation, both due to the large emissions reductions involved and because such action can be immediate, thus buying time for the transformation to low carbon economies.

### Retaining primary forests is significant for climate mitigation

Primary forests warrant particular attention. Why? Because they are large carbon stores/reservoirs best

kept intact and out of the atmosphere, and are not already subject to other competing activities so should be the easy ‘low hanging fruit’ for early action. They also have very important biodiversity values. All that needs to happen is to retain them as they are and allow them to continue in their natural state.

Yet, despite all the rhetoric and international initiatives to date, these intact, immense natural carbon stores are still subject to degradation at an unacceptable rate, with associated large emissions. **Primary forests that are logged or otherwise degraded lose 30-70% of their carbon** (see IntAct Fact Sheet on Primary Forests and Carbon in this bulletin).

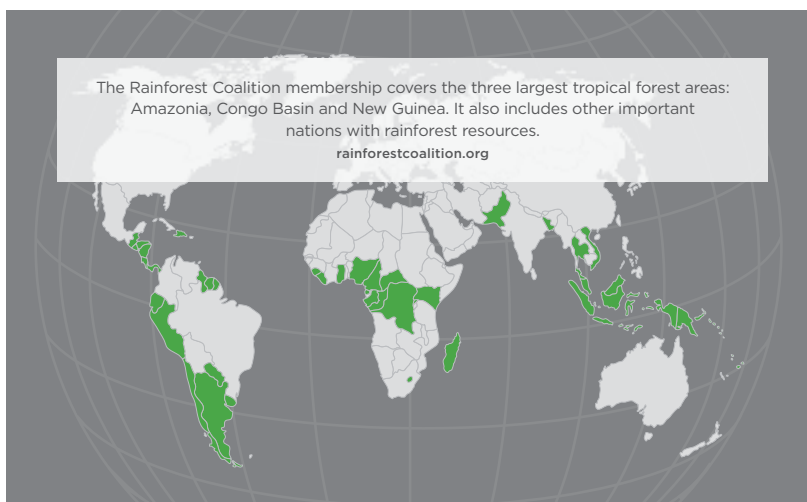
The most recent Global Forest Resources Assessment (FRA) finds an overall 10% decline. That is 62 million hectares of primary forest lost, shown by tropical countries that reported on their primary forest area between 1990 and 2015. With Indonesia included there is a further loss of about 3.4 million hectares of primary forest between 2000 and 2015.

Subtropical countries reported a similar proportional reduction in forest area of 5 million hectares.

Forest degradation, which is most of what is happening to primary forests, is increasingly important for its emissions and for the undermining of resilience of forest ecosystems so important for carbon stock stability and for adaptation. The FAO Assessment of Forest Carbon Stocks, 1990–2015, headlined reduced overall emissions but increased degradation. Emissions from forest degradation, estimated for the first time, are increasing over time and represent one-quarter of total emissions. These forest degradation emissions are as large as 1 Gt CO<sub>2</sub> per year, and overall emissions from forest degradation have more than doubled in the period 2011–2015 compared to the period 1991–2000. Much of this is due to the introduction of industrial logging.

Whilst it is commendable that emissions from deforestation (i.e. land use change that has converted forested areas to other uses) has decreased by 25%, the increasingly important role of forest degradation that has been revealed underscores the importance of conservation and restoration in addressing climate change mitigation. **‘Nice’ logging isn’t the solution, it’s often the problem.**

Continues...



62 million hectares of primary forests have been lost

## ► Vital for mitigation

The latest on forests and land in negotiating text—September discussion in Bonn and subsequent Co-Chairs' info document for October session



Countries have met twice in Bonn and a third negotiating session will take place there from 19-23 October to progress the text for a new Paris agreement. Whilst the Geneva negotiating text of February (FCCC/ADP/2015/1) remains the only official document before the ADP until withdrawn by Parties at COP 21 in Paris, informal documents have provided a basis for discussion and refinement of ideas and content.

In September parties continued to refine and consolidate text, via use of the 'Co-Chairs Tool' which had reorganised the proposed text. Work progressed slowly, and the Co-Chairs were then tasked with producing a further refined document to provide a basis for negotiations at the upcoming October intersessional.

This informal document (ADP.2015.8.InformalNote) was released on 5th October and comprises a 9 page draft Agreement and an 11 page draft Decision pursuant to the Agreement. It indicates areas in which further work is needed to develop appropriate text. In the following discussion we call this the Co-Chair's October offering.

### Mentioning land, noting its special characteristics

There is contention about whether the land sector should be explicitly mentioned in the Paris Agreement or not. The rationale either way seems to come down to the same set of concerns, that the land is where vital human activities and ecological processes take place and the importance of these special characteristics of land should be recognised as countervailing imperatives to mitigation and adaptation action. We are talking about agricultural production and trade, food security, indigenous rights, biodiversity and natural ecosystems.

A failure to mention the land sector would not exclude it from the Agreement, and neither should it be excluded—there is much to be done on mitigation and adaptation here. Remember that we cannot reach a temperature goal of 1.5-2C warming without significant action in this sector, especially on forest protection and peat soils. It does however remain the right of parties to choose what actions they will take, including whether they will undertake action in the land sector and, if so, on which land uses and in which parts of their territory. This is how the INDC (indicative national contributions) process works.

The Agreement should recognise the special characteristics of land such that we can safeguard against future efforts to ride roughshod over them in the name of climate action.

The placement of such an element should ideally be in a section of the Agreement that is overarching in its application. Currently the basic notion is expressed in the Co-Chair's October offering at paragraph 3 of Article 4 (Adaptation):

*"Parties acknowledge that adaptation action should follow a country-driven, gender-sensitive, participatory and fully transparent approach,*

*taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional and indigenous knowledge, with a view to integrating adaptation into relevant social, economic and environmental policies and actions, where appropriate."*

It would be ludicrous for parties to agree on the need for such an approach solely for adaptation and not for mitigation actions. This peculiar placement is an artefact of the Geneva negotiating text and should be rectified by parties so as to apply more generally when they negotiate in Bonn next.

Additionally, the draft Decision text's preamble includes a paragraph (reproduced below) which covers these and other important rights related matters to be respected and taken into account, with the notable omission of the protection and maintenance of natural ecosystems. We hope this omission is an oversight—it should be rectified or we will have a ludicrous proposition that degraded ecosystems be restored but not that their degradation (which entails significant carbon emissions) should be avoided in the first place:

Pp6: *"Emphasizing the importance of respecting and taking into account human rights, gender equality, the rights of indigenous peoples, intergenerational concerns, and the needs of particularly vulnerable groups, including women, children and persons with disabilities, when taking action to address climate change, as well as of aligning actions with the goal of promoting food security, restoration of degraded lands, national health policies, participation in environmental decision-making by civil society and individuals, and a just transition of the workforce and creation of decent work and quality jobs in accordance with nationally defined development priorities and strategies."*

### Mentioning REDD+

As outlined in our front page article, developing countries with forests want REDD+ explicitly mentioned in the Agreement. The idea is that specific mention gives forests an important role, parties and others an impetus and direction to get on with it, and a signpost to sources of finance that this is ready for the application of money. They argue correctly that early action is urgent and that the REDD+ mechanism has now been finalised with the conclusion of guidance on information systems for REDD+ safeguards at SBSTA in June (to be adopted by the COP in Paris) and can be a potentially significant contributor to early action.

**Unfortunately there is now no mention at all of REDD+ in the Co-Chair's October offering** and the only surviving relevant text is on finance for forests in the draft Agreement text on Article 6 (Finance).

Although we are mindful that a stampede to include matters that

were edited out would be problematic, we believe that REDD+ really should get a mention as it is imperative to see action to restrain forest emissions. Also the countries where it would be implemented are saying that explicit reference to REDD+ is a necessity.

## It would be a disaster to build on Kyoto Protocol LULUCF accounting rules

At Article 9 (Transparency) of the Agreement text (Co-Chair's October offering) envisages building on Convention arrangements in establishing a transparency system covering both action and support. On transparency of action, the purpose is to:

"(a) Provide the clearest possible understanding of the emissions of individual Parties and of global aggregate emissions in the light of the global temperature goal;

(b) Ensure clarity and tracking of progress made in implementing and achieving individual Parties' respective nationally determined mitigation [contributions][commitments][other] under Article 3, as well as tracking progress in implementing adaptation actions under Article 4."

There has been a strong push in text from developed countries to hang onto the infamous LULUCF rules and build from there. That would not fulfil the purpose as outlined. These rules allow incomplete coverage of the land sector and incomplete accounting of emissions for those parts that are covered, such that there is a serious discrepancy between the emissions that the atmosphere sees and those that are accounted for—these missing emissions must be captured by an accounting and reporting system developed under the new Agreement or it simply won't work.

Land based accounting, the established alternative that covers the all land (including forests) and operates under the Convention, is required. Historical baselines that allow current emissions to be calculated relative to historical emissions are also required. A way to undertake further development of this, as necessary, is available under the new draft text.

The Co-Chair's October offering flags under Article 3 (Mitigation) that rules and guidance relating to accounting, including land use, will be set forth in the Decision text. The draft Decision (at paragraph 30) then provides for rules and guidance for accounting to be developed to be

adopted in 2017. The rules should ensure methodological consistency; explanation for exclusion of key categories and strive to include them all over time; continue to include sources, sinks or activities once originally accounted; use metrics and methodologies adopted by the IPCC; and that internationally transferred mitigation outcomes used to meet any INDC are supplemental to domestic action.

Guidelines to work up accounting rules, including those for land, are thus set up and a process to develop these, with a March 2017, deadline is envisaged. It would be developed under the auspices of the new governing body for the Agreement (the CMA), with SBSTA providing methodological guidance. This is an opportunity to develop rules that comprehensively account for land sector emissions, and separately account for removals (sequestration). Such rules will not only provide more accurate figures, but by avoiding netting out emissions at the sectoral level it becomes possible to identify the key sources so they can be acted upon.

## Adaptation

There is an important role for the land sector to play in adaptation as well as mitigation. This is especially true for natural forests, and frequently the benefits are concurrent.

Sri Lanka's commitment to protect their remaining mangrove forests and restore those that have been logged or otherwise destroyed is an excellent example. Vital for adaptation as they buffer the onslaught of increasingly severe tropical storms and rising seas, these ecosystems are also very rich in carbon, found in the mud accumulated as well as in the growing wood. An additional benefit is that mangroves are nurseries for fish stocks and their retention and restoration assists food security.

The text should express the importance of this relationship between adaptation and mitigation. A textual suggestion from Bolivia that addressed the issue in terms of postulating a joint mechanism has disappeared from the adaptation section in the Co-Chair's October offering. A requirement to balance adaptation support relative to mitigation support is found in paragraph 6 of Article 6 (Finance) and specifically mentions that this should occur in relation to forests.

**It's a backhanded acknowledgement that both things can and should be done in forests, but not recognition that they can be undertaken concurrently on many occasions.**

## Caring for land, securing our food

**Does anyone really question whether land is central to what we're all trying to do here in the UNFCCC?** No, didn't think so. Not only is the land sector critical to our mitigation efforts, but one of the key reasons we so urgently need to stop climate change is to still be able to use it to grow food and—um—eat in a few decades time.

It's obvious that to help us stay below 1.5°C temperature rise, some types of land must act as sinks and carbon stores. We need to do everything we can to protect, maintain and restore critical ecosystems such as natural forests, grasslands and degraded peatlands. Our survival, and most of the living species we share our planet with, depend on it. In fact, we need the work on land to come on top of everything else we can do to reduce our emissions from other sectors, particularly industry and energy. So let's be honest; land cannot be used to lower ambition elsewhere.

At the same time, let's not get carried away in our enthusiasm for mitigation in the land sector. Countries need to avoid any perverse incentives that conflict with food production, destroy natural

ecosystems, threaten indigenous peoples' rights, drive land grabs, increase hunger, harm animal welfare, or make life even tougher for vulnerable communities. ECO has a rather elegant solution: **Parties should be as clear as possible in the text about the kinds of lands and mitigation actions that should be prioritised, and that peoples' rights must be protected.**

With this in mind, ECO hopes there will be resounding support for the parties that have introduced text to ensure food security and social and environmental protections into the General Objective of the new agreement.

Addressing land properly in the new agreement presents an exciting opportunity to fix the gaps in the old regime, step up ambition, and protect our future food security. We're all hungry for change.

*Source: reprinted from Climate Action Network's ECO 4th Sept 2015.*

**work on land must complement other actions to reduce emissions**





## Fact Sheet: **Primary forests and carbon**

**The total carbon stored in terrestrial ecosystems (living and dead biomass, soil) is estimated at up to 650 Gt in vegetation and 2,400 Gt in soil (Ciais et al. 2013). The amount of carbon in the living tree biomass of forests has been estimated at 289 Gt (FAO 2010).**

A little over half of the tropical forest carbon is in the Neotropics—the Amazon basin stores around 86 Gt of Carbon (Berenguer et al. 2014) with the remaining half in Asia and Africa (Dixon et al. 1994). The boreal forest biome is also a major global carbon storage pool estimated at 600–1,000 Gt C with a more substantial carbon storage role being played by boreal soils, accounting for as much as 84% of boreal carbon (Moen et al. 2015).

**Around 35% of the world's natural forest cover has been lost** (Mackey et al. 2014), with temperate forests suffering the greatest level of deforestation (WRI 2011). About 60% of remaining forests are subject to industrial logging and degradation (FAO 2010). Consequently, current carbon stocks reflect both natural conditions (as reflected in biome and ecosystem type) and land use history. Currently, some 55% of living forest carbon is found in tropical forests, 32% in boreal forests, and 14% in temperate forests (Bonan 2008).

Because most forest biomass carbon is stored in large, old trees (Stephenson 2014), and industrial logging targets older successional stages resulting in forest landscapes being dominated by regenerating stands (Shearman et al. 2012, Cyr et al. 2009), primary forests store up to 30–70% more carbon than logged and degraded forests (Krankina and Harmon 2006, Bryan et al. 2010, Keith et al. 2014).

Carbon stocks in primary forests are not only significantly larger than logged and degraded forests, they are also more stable as primary forests are more resilient to climate change and less prone to fire (Thompson et al. 2009).

Keeping the current forest carbon stock intact and undisturbed is critically important if we are to avoid dangerous climate change. Complete deforestation this century could increase atmospheric concentrations of CO<sup>2</sup> by 130–290 ppm (House et al. 2002). Loss of the world's primary forest by 2100 would release about 100 billion tonnes of carbon, which could increase atmospheric carbon dioxide by ~50–100 parts per million.

The significance of these potential emissions is evident given that to limit global warming to less than 2 degrees requires we limit atmospheric CO<sup>2</sup> concentrations to around 450 ppm (IPCC 2013); they have already reach 400ppm.

A halt to deforestation and forest degradation would reduce emissions by 1.4 Gt C per year and allowing secondary forests to regrow could remove 1–3 Gt C per year from the atmosphere (Houghton 2013). Forest protection is therefore a critically important mitigation action that will both avoid emissions and enable significant sequestration.

### **Do primary forests function as carbon sinks?**

Contrary to previous belief, primary forests are not carbon neutral: it is now well-established that in addition to protecting massive carbon stocks, most primary forests are substantial carbon sinks, continuing to sequester carbon for centuries (Luyssaert et al. 2008; Pan et al. 2011).

A single hectare of primary forest can absorb 2 tonnes of carbon every year (FAO 2010) and primary forests accumulate approximately 5 tonnes C km<sup>-2</sup> per year in biomass, accounting for 1.3 GtC across all tropical forests (Lewis et al. 2009; Luyssaert et al. 2008). Amazonian and African primary rainforests have significantly increased

their carbon storage over recent decades (Luyssaert et al. 2008; Pan et al. 2011, Lewis et al. 2009).

While some primary forests may be carbon-neutral, forests are very rarely sources of carbon dioxide unless they are disturbed (Luyssaert et al. 2008). Maintaining forests intact is therefore critical for protecting carbon stocks while continuing carbon uptake (Mackey et al. 2014, Keith et al. 2009).

### **How globally significant are the emissions from deforestation and degradation?**

Historically, emissions from the land sector have contributed about 1/3 of human greenhouse gas emissions. From 1750 to 2011, CO<sup>2</sup> emissions from fossil fuel combustion and cement production released 375 GtC to the atmosphere, while deforestation and other land use change released 180 GtC. This resulted in cumulative anthropogenic emissions of 555 GtC.

Currently, the land-use sector still accounts for 25% of greenhouse gas emissions (10–12 Gt CO<sup>2</sup>eq per yr), the second highest sector—following just behind emissions from electricity and heat generation (26%) and nearly doubles that of transportation (14%). Within the land sector, deforestation and forest degradation account for about 40% of emissions (IPCC 2014).

Every year 0.8 to 0.9 GtC (as much as 220 tonnes of carbon per hectare) or about 8% of total annual global emissions are released into the atmosphere as a result of deforestation (ISU 2015). These emissions are largely irreversible as land that is cleared of its original vegetation and converted to pasture or other land-uses is unlikely to revert to its original vegetation cover and carbon storage capacity.

Forest degradation as a result of road construction, large-scale infrastructure, industrial logging and other industrial extractive activities makes a major contribution to annual global emissions.

Degradation contributes from 0.6 GtC to 1.47 GtC per year, about 6–13% of annual emissions (ISU 2015). In 2008, degradation in the Amazon, largely from industrial logging, accounted for an area twice as large as that affected by deforestation (Berenguer et al. 2014). Forests degraded by selective logging can increase desiccation and fuel loading, resulting in a greatly increased vulnerability to fire and consequently increased emissions (Matricardi 2010, Huang and Asner 2010, Cochrane 2003). Extensive road networks associated with degrading activities also often facilitate deforestation (Laurance et al. 2014).

### **Maximizing carbon benefits from forest conservation**

Carbon sequestration also occurs through natural regeneration and regrowth as well as through restoration and reforestation (ISU 2015). Tropical forest regeneration currently sequester 1.2 to 1.8 GtC every year. This rate could be increased significantly if more land were allowed to recover and restoration was prioritized in tropical forests (ISU 2015).

Land-based solutions to climate change, including avoided deforestation and avoided forest degradation combined with forest regeneration and restoration can represent a significant solution for climate change mitigation and the stabilisation of CO<sup>2</sup> concentrations in the atmosphere. This combination could reduce emissions by 3.45–3.86 Gt C every year, representing 24–33% of all mitigation every year (ISU 2015).

Re-establishment of forest on previously cleared lands through reforestation or natural regeneration could yield even greater emissions reductions (Houghton 2013).

## Too Big to Ignore...

It is important to enshrine REDD+ in the Paris agreement. This could be done with a short paragraph or two, noting that REDD+ is up and running and will remain a key means of achieving both short (pre-2020) and longer term mitigation goals.

Embodying REDD+ in the treaty is especially important for

poorer and smaller countries which are not yet ready to participate in results-based REDD+. Their governments and especially their leaders and prospective sources of finance **need to be reassured that REDD+ is here to stay**, even if it takes some time to be ready to use it to full effect.

REDD+ remains key to achieving short and longer term mitigation goals

## What is a forest?

FAO defines forest as land with trees higher than 5m height and a minimum canopy cover of 10 per cent, excluding land that is used mainly for agriculture or urban use.

Trees may be temporarily absent in managed forests and still be classified as forest land. These parameters are used for international reporting through the FRA.

Forest area is further subdivided into: **natural forest** (including two subdivisions: **Primary forest** and **Other naturally regenerated forest**) and **Planted forest**.

Deforestation occurs when forest land changes to non-forest use e.g. conversion to pasture and conversion to oil palm.

Forest degradation is a net annual decrease in carbon stock density in land remaining forest e.g. conversion of natural forests to forest plantations, and the use of natural forests for industrial logging.

## ► The trouble with the Kyoto Protocol's LULUCF accounting rules

**Efforts to drag the Kyoto Protocol's LULUCF** (land use, land use change and forestry) accounting rules into the new Paris agreement as a basis for counting the emissions from the land sector of individual parties and of calculating the contribution of land to global aggregate emissions must be firmly rebuffed.

'Creative accounting' is a term used to cast aspersions when accounting methods are employed to obscure the true state of affairs. It could be applied to the current LULUCF rules which enable developed countries to appear to reach their targets when in fact a lot of land-based emissions caused by anthropogenic actions never make it onto the books or are obscured by perverse accounting methods.

Realisation is spreading that there are substantial carbon emissions from the land sector that are missing in LULUCF accounting under the Kyoto Protocol. It would be unacceptable for these serious problems to be replicated in the new Paris Agreement and applied in all countries.

Early release of a section of an upcoming Chatham House report hones in on the matter as it applies to forest emissions. A working paper "Forest-based biomass energy accounting under the UNFCCC: finding the 'missing' carbon emissions" was circulated in Bonn this June at a side event to draw the attention of attendees to this nagging problem.

### Key messages include:

- The current land-use accounting rules result in a significant quantity of emissions from forest-based biomass energy being excluded from the global accounting system
- The assumption that forest-based biomass energy is carbon neutral is flawed
- The UNFCCC's GHG accounting framework treats biomass energy as carbon neutral within the energy sector, based on the faulty assumption that the emissions will be fully accounted for within the land use sector
- The global increase in the use of biomass for heat and electricity is making it increasingly clear that the accounting rules currently in place cause gaps in carbon accounting that can lead to perverse climate outcomes

- Accounting for emissions from land use should be comprehensive and, where possible, against the same baseline for the energy sector.
- Countries could instead account for emissions from forest biomass used for energy within the energy sector, thereby overcoming the problems

**The LULUCF accounting system does not require countries to account** for all anthropogenic emissions from the land sector. It should be a land-based accounting system that covers all the territory of a country, but instead it is an activities-based system. Not all activities are mandated for accounting—for example, cropland management and grazing land management are only voluntarily accounted. As a result, many countries don't account for them at all. The effect of such a 'pick and choose' system is that parties only choose to account when to do so will enhance their claimed emissions reductions and not when the activity is emissive overall.

Even where accounting is mandated, for forest management in the 2nd Commitment Period, the use of BAU baselines allows countries to avoid accounting for anticipated emissions, including emissions increases that have been locked in by forest management practices and policies. For example, of 37 countries accounting for forest management in the 2nd Commitment Period, 34 are doing so against BAU baselines and 21 of these explicitly include policies encouraging the use of biomass. Any biomass energy emissions that are built into a BAU baseline will not be counted towards that party's emissions target.

An accounting framework that allows countries to build anticipated increases in forest harvests into their projections **fails to reflect the true atmospheric impacts of forest-based biomass energy**.

A further accounting gap results when the forest material is produced in a country that does not account under the Kyoto Protocol. This is where the assumption that all land-based emissions will be captured breaks down badly. Instead, the forest biomass from these sources appears to create no emissions as it does not appear in accounts of the user or the producer. **A tonne of CO<sub>2</sub> from biomass may not be accounted for in the same way as a tonne of CO<sub>2</sub> from another energy source, thereby perversely incentivising biomass energy.**



## ► Forests: the weak underbelly of Brazil's INDC

**Announcement of Brazil's INDC** on 26th September by President Dilma Rousseff attracted strong criticism from environment groups active within the country for its complete lack of ambition on forests.

Brazil committed to ending illegal deforestation by 2025 in the Amazon only (out of six Brazilian biomes). This is backsliding on an earlier commitment to halt all forms of deforestation by 2020 under the UN Sustainable Development goals. Now the promise is limited to Amazonia and takes 5 years longer to accomplish.

It is important to note that it will take 10 years for the government merely to enforce the law within the area actually subject to the commitment, meaning an acceptance that Brazil will tolerate illegality for another decade. Emissions from that illegal logging will continue during that time.

We also highlight that **Brazil's legislation still allows for much deforestation**. So, even where the commitment operates this is not a clamp on all deforestation. Forest degradation does not seem to get a mention, or action.

All of this is unacceptable considering that deforestation is the main source of greenhouse gas emissions in the country, accounting for nearly a third of all emissions.

There is also nothing new in the proposal of restoring 12 million hectares of forests—the announcement doesn't explain if the planned restoration will include exotic species such as oil palm or eucalyptus, as allowed by the Forest Code. Yet the nature and use of the restored 'forest' has important implications for the amount of carbon sequestration, the quality of carbon stocks, and the potential for future emissions.

*"Promising zero illegal deforestation in Amazonia by 2025 means telling all countries that are expecting a meaningful commitment by Brazil that we will tolerate illegality for another decade. Worse, the government silences about the advance of deforestation in other biomes, particularly in the cerrado, which doesn't have the same command and control apparatus", said Brenda Brito, a researcher at Imazon (Instituto do Homem e Meio Ambiente da Amazônia), a think-tank based in Belém. "Illegal deforestation should already be zero, and not only in Amazonia."*



Government offers nothing new  
and will tolerate illegality for  
10 more years



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CLIMATE CHANGE

# Forest Carbon Counts

Welcome to the third **Special Bulletin: Forest Carbon Counts**. For earlier editions of this, and our previous Truth in Targets Special Bulletins, see [hsi.org.au/go/to/25/climate-change](http://hsi.org.au/go/to/25/climate-change)

## Saving forests

### What's needed from the Paris Agreement and Decision

The opportunity to conserve the intact natural forests of the world for their immense carbon stores remains on the table after the last preparatory negotiations before the Paris COP. Political will is needed to realise that potential in the text of the final agreement and its associated decision.

Whilst the Geneva negotiating text of February (FCCC/ADP/2015/1) remains the only official document before the ADP until withdrawn by Parties at COP 21 in Paris, informal documents are the basis for negotiation in Paris. There are two key documents: ADP Contact Group text: [unfccc.int/resource/docs/2015/adp2/eng/11infnot.pdf](http://unfccc.int/resource/docs/2015/adp2/eng/11infnot.pdf) and a technical paper from the Secretariat that outlines where there are overlaps and opportunities for streamlining of the text: [unfccc.int/resource/docs/2015/adp2/eng/12infnot.pdf](http://unfccc.int/resource/docs/2015/adp2/eng/12infnot.pdf)

Four key points are at issue for forests and natural ecosystems:

- **REDD+** Tropical forests in developing countries need the REDD+ mechanism that is designed to assist them avoid deforestation and forest degradation to be explicitly recognised as a climate solution. Specific mention gives parties and others an impetus to implement it, and a sign to sources of finance that REDD+ is ready. This is especially important for poorer and smaller countries not yet ready to participate in results based REDD+ who need reassurance that it is here to stay, even if it takes time to be ready to use it.

The Coalition for Rainforests Nations has reinserted it in the

negotiating text. All parties, particularly developed-country donors, should support explicit recognition of REDD+ in the Agreement.

- **Land Use Accounting** Incentive to act in the carbon rich temperate and boreal forests of developed countries is also needed. This means including provisions to develop new land sector accounting rules that do not hide forest emissions like the current discredited Kyoto Protocol rules do. New rules must provide for land-based accounting, ie complete coverage of the land rather than 'pick and choose' activities-based accounting that enables evasion of accounting for emissions. Developed countries must abandon proposals to hang onto KP accounting with understated forest emissions. Other more satisfactory options should be supported.
- **Safeguards against environmental damage** A safeguard must be incorporated to ensure that actions taken to address climate change do not damage the ecological integrity and resilience of natural ecosystems so vital to both mitigation of, and adaptation to, climate change—and for other values.
- The '**special characteristics**' of land should also be recognised, being its importance for food security, livelihoods, biodiversity and etc, as these can be important countervailing priorities to a pure mitigation focus and there is concern that countries would be compelled to ignore them.

### DRAFT AGREEMENT—text suggestions

#### Preamble

The preamble contains some good language (Pp11, Pp12 Option 1, and Pp13) regarding the special characteristics of land and the importance of maintaining ecosystem integrity—with Pp13 preferred—although streamlining the paragraphs could pull this together nicely.

Another important point in Pp14 "... [recognising that sustainable lifestyles and sustainable patterns of consumption and production play an important role in addressing climate change, [with the lead of developed countries]..." should be included. Without addressing the consumption and demand that is driving deforestation and forest degradation global progress will be stymied.

#### Mitigation, Article 3

**Art 3.7 Features:** This is about things that Nationally Determined Mitigation Contributions (NMDs) should contain when they are

confirmed. The 2 options and 7bis all include an identical provision that drives to the heart of the matter on **REDD+**: [Prioritise actions that are immediately implementable, scalable and results-oriented, including REDD-plus]. Support.

Another issue in these options is the lists of **accounting approaches**. Most of these are good, are very similar in the differing options, and should be supported with the following exceptions: those that mention reference levels, or baselines, imply a BAU or some sort of projected baseline for measurement of emissions reductions rather than the use of an historical base year or base period. This is unacceptable and its use in KP LULUCF forest management accounting has introduced loopholes. An explicit requirement for an historical baseline should be introduced.

**Art 3.10 Accounting:** Of the five options, Option 3 is preferable although it would benefit from inclusion of the first sentence in

*Continued overleaf...*

new accounting rules to displace current discredited Kyoto Protocol ones

## ► DRC leads in gearing up for investment in REDD+ Results

The Washington-based Union of Concerned Scientists has been looking at what states had to say about curbing land sector emissions in their INDCs and is praising the DRC for being clear about their bold intentions.

The UCS media release with links to the report and associated material is: [www.ucsusa.org/news/press\\_release/land-sector-emission-targets-brazil-indonesia-india-fall-short-drc-6037#.VkJTORf-FPIW](http://www.ucsusa.org/news/press_release/land-sector-emission-targets-brazil-indonesia-india-fall-short-drc-6037#.VkJTORf-FPIW).

"In terms of income, food insecurity, unemployment, and access to electricity and potable water, the DRC ranks as one of the least developed countries in the world. Yet of the four countries examined in this analysis (Brazil, Indonesia, India and DRC), the DRC's proposals for its land use sectors as laid out in its INDC were the most clearly defined. The DRC proposes a 17 percent carbon emissions reduction by 2030 compared to business-as-usual and breaks down how much of this will come from each sector and how the goal is contingent on international assistance. The country is home to the largest area of the Congo Basin rainforest, the world's second-largest tropical forest.

"The DRC's plan is clearer and includes more quantitative detail than plans submitted by far richer nations," said (the UCS's Doug) Boucher. "Further, the DRC's proposed reductions are in line with the amount of emissions they can cut and should cut, based on the extent to which their emissions have contributed to climate change." The DRC is a key player in the Coalition for Rainforest Nations and we hope that the other CfrN members will match the DRC's commitment as their INDCs are converted to NDMCs.

Of concern is Indonesia's failure in confirming the current moratorium on **clearing forests and draining peatland will continue—or not**. Yet another burning season of peat fires has served to remind the world that Indonesia must find the political will to take firm domestic action to curb emissions from its land sector—and that the international community provide the support to help make this happen.

A key step on this path is that the Paris Agreement includes the land sector, endorses the REDD+ mechanism and establishes best practice

accounting principles for all sectors, including land that can be relied upon to come up with a new land-based accounting framework for the land sector that leaves behind the perverse and deceptive LULUCF accounting framework used for Kyoto commitment periods 1 and 2.

Emissions from the land sector, at around 25% of total emissions (see UCS report), are so large that it is **inconceivable that the UNFCCC's goal of avoiding dangerous climate change can be met** without dramatic, immediate changes to protect and restore carbon stocks (stores or reservoirs) in the biosphere. Indonesia's emissions from deforestation, forest degradation and drained peatlands, alone, amount to some 3% of total global emissions from all sources—while the large scale of the problem may be confronting, the equally large scale of the opportunity is compelling.

The CfrN has been doing great work pushing these issues and we hope other countries will accommodate their ambition.

### It's important that:

- estimates of biological carbon stocks are included in post-2020 accounts (as per the commitments set out in Articles 3.3, 4.1(d), 4.2(a) & 7.2(d) of the Convention)
- reducing emissions and enhancing sinks/sequestration, that drive changes in stocks, are separately accounted for—as they generally relate to different activities and different areas of land, requiring different methodologies to ensure potential benefits to the atmosphere are made transparent and thence maximised by introduction of appropriate activities and exclusion of inappropriate activities (hopefully all funded by REDD+ results-based payments).
- a comprehensive land-based accounting framework is introduced (promptly, in time for application to the post-2020 regime at its start in 2020) which will require some clear, time-bound instructions to SBSTA in the Paris Decision (and that this replaces the current obscure patchwork of Kyoto LULUCF activities accounting).

## ► Peat: the wetter the better

"Forestry on drained peat—is like a system of capturing carbon by trees from burning lignite—producing fossil renewable energy.

"Raising the ground water level from 40cm to 20cm below the surface can reduce peat emissions by 33%, and a full re-wetting to water in the soil surface can mitigate emissions by 90%. From a study made by at University of Gothenburg, **using the CoupModel for forested drained peatland, the wetter the better**".

Dr. Åsa Kasimir, Department of Earth Sciences,  
University of Gothenburg; [asa.kasimir@gu.se](mailto:asa.kasimir@gu.se)

So Dr Kasimir summarises the results of a study due for publication shortly. The important point is that drained peat oxidises naturally, behaving just like coal being burnt to generate heat or electricity. Drained peat continues to oxidise away, emitting carbon to the atmosphere until it is all gone or it oxidises down to the new water table. As far as the atmosphere is concerned, there's no difference between carbon dioxide pollution from burning fossil fuels and from oxidising peat—or any form of biomass burning for that matter.

While peat may only have been accumulating biological carbon sequestered from the atmosphere for many millennia whereas the biological carbon in fossil fuels was sequestered countless millions of years ago, the impact of their release back into the atmosphere

is the same. And the scale is simply too big to ignore if we are to make the 2°C target. It's time the international community took conservation of carbon in the biosphere as seriously as it does the retention of fossil fuels in the geosphere.

This is why we regard rewetting peat as an equal top priority for the REDD+ mechanism (along with the protection of remaining intact natural forests). There is a **compelling global argument for an immediate halt to more draining of peatlands and for an urgent programme of rewetting drained peat** where REDD+ offers the opportunity to mobilise the resources needed to help affected landholders, communities and countries find alternative livelihoods and development paths.

Yet another season of uncontrolled peat fires in Indonesia as the Paris COP finally completes development of the REDD+ mechanism, provides perfect timing to act—at the scale needed to be effective. If Indonesia were to make such a request for help from the international community, could we organise a REDD+ response of appropriate scale and purpose?

Intriguingly, there is growing interest in 'paludiculture' (the commercial exploitation of marshland crops) as a component of alternative livelihoods for affected landholders and communities.

## ► State of Forest Carbon Finance

After an entirely appropriate early concentration on ‘readiness’ funding over the last decade, and a later distraction with quick-and-dirty plantation establishment and forest management, carbon finance is now focussing on the original intent: protecting natural forests through results-based funding of activities to reduce emissions from deforestation and forest degradation (REDD).

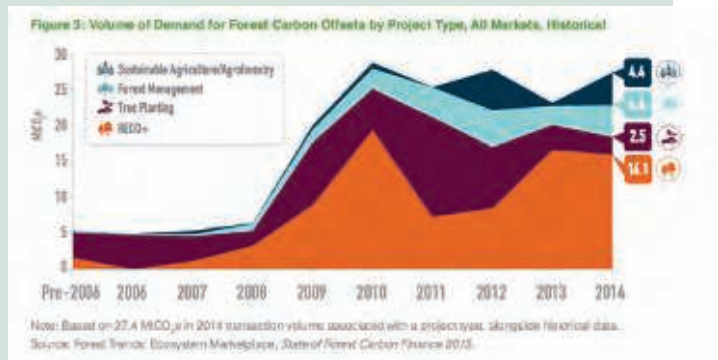
In 2014 companies and governments committed US\$705m of new finance to enhance the role of forests in combating climate change, according to a recent report by Forest Trends’ Ecosystem Marketplace.

“Converging at the Crossroads: State of Forest Carbon Finance in 2015” is available at: [forest-trends.org/releases/p/sofcf2015](http://forest-trends.org/releases/p/sofcf2015)

- Across all years, Forest Trends’ Ecosystem Marketplace has tracked a collective \$5.1 billion committed by governments, companies and individuals to keep threatened forests standing, manage existing landscapes for carbon sequestration, or plant new trees.
- The majority of forest carbon finance (\$2.8bn, tracked in 13 key tropical forest countries) has gone towards “readiness” efforts as countries prepare for Reducing Emissions from Deforestation and Forest Degradation (REDD+) while \$2.4bn has been contracted through results-based payments for emissions reductions. However, the focus on readiness is fading as countries move towards implementation.
- In 2014, buyers and donors committed \$705m in new finance for forest carbon, with two-thirds of that finance (\$476m) paying for emissions reductions and one-third (\$229m) paying for REDD+ readiness.
- Payments for emissions reductions occur both through market-based transactions and through bilateral, nonmarket agreements. In 2014, market value reached \$257m while non-market payments totalled \$219m, as Norway and Germany committed new finance towards reducing tropical deforestation in Brazil and Guyana.
- On the carbon market side of the equation, 2014 represented a breakout year, with voluntary and compliance buyers demanding record offset volumes of 23.7m tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e) and 10.6 MtCO<sub>2</sub>e, respectively. Voluntary value reached \$128m as prices recovered slightly to \$5.4/tonne.
- Compliance buyers (mostly in California and Australia) spent \$129m on offsets that helped them cost-effectively meet carbon regulation in 2014, with compliance prices converging just beneath the going allowance price or the set carbon tax.
- On the supply side, offsets issued have grown rapidly in the last two years, with 29.9 MtCO<sub>2</sub>e of new issuances in 2014. And offset retirements under the major voluntary carbon standards more than doubled over 2013’s volumes to reach 10.8 MtCO<sub>2</sub>e last year.
- Despite the uptick in both voluntary and compliance market demand for offsets, forest carbon project developers reported that 51.2 MtCO<sub>2</sub>e remained unsold in their portfolios at the end of 2014. In 2014, 87% of offset transactions were for past or current

vintages as supply stacked up; upfront investment in future emissions reductions fell to just one-third of market value.

- Ecosystem Marketplace’s supply-and-demand model shows that by 2025, voluntary demand for forest carbon offsets is projected to exceed supply in only two of eight scenarios. However, with positive policy signals, voluntary demand is projected to reach a minimum of 106 MtCO<sub>2</sub>e in the next 10 years—up almost 350% from 2014 levels.
- California’s cap-and-trade program is the key compliance market in the near-term, with demand expected to ramp up as more sectors of the economy are folded under the regulation. Korea, China and South Africa have recently launched or have upcoming carbon pricing policies that include land use, though the supply and demand of forest carbon offsets on these markets is yet to be seen.
- Non-market payments for emissions reductions are expected to ramp up now that more than half of REDD+ readiness finance has been disbursed and countries move towards the implementation phase. A flurry of Letters of Intent and other early-stage agreements in 2013-2015 indicate that \$1.2bn in results-based finance is currently ‘on the table’ for tropical forest countries in the next few years.
- The Paris climate talks are being watched for whether an international climate agreement will allow expansion of results-based payments for avoided deforestation. So far, 57 developing countries’ climate plans include potential emissions reductions that are ‘conditional’ on international finance and 29 specifically mention REDD+.



**The most important of these findings is the need for ‘positive policy signals’ if a likely excess supply of voluntary credits is to be matched by increased demand. And one of the most encouraging opportunities is the potential for increased demand for compliance credits from California and Australia. Here’s hoping the EU may see the light and join them.**



## ► New Accounting Needed for Land in a New Post-2020 Regime

In the *Weekend Australian*, 14-15 Nov 2015 (Australia's principal national newspaper), Bjorn Lomborg, from the rather oxymoronically named **Copenhagen Consensus Centre**, makes the misinformed and indulgently divisive assertion that, "In reality, Paris (like Copenhagen, Lima, Warsaw, Doha and all the others) is very unlikely to achieve any significant progress...As the saying goes, 'insanity is doing the same thing over and over again and expecting a different result.'"

Au contraire, the Paris COP stands to adopt an Agreement and associated omnibus Decision that will establish a very different regime from that established by the Kyoto Protocol. In an historic shift, the post-2020 regime will expect all countries to make commitments to reduce emissions—or enhance sequestration. No longer will the diplomatic commitment to 'common but differentiated responsibilities' (CBDR) be reflected in developed (Kyoto Annex 1) countries having all the obligations and developing countries having none. Instead, CBDR will be reflected in the differential scale of the commitments (relatively more developed countries are expected to make relatively more effort to cut emissions) and in the differential contributions to supporting those efforts (richer countries are expected to contribute to poorer countries' commitments).

Additionally, while the Paris Agreement will be binding, meeting national commitments will not be binding. The obligation to make a commitment will be binding and the rules for associated reporting and accounting will be binding—but there will be no penalties for any failure to meet commitments. This is another historic departure from the Kyoto Protocol which had a rather 1950s 'us-and-them', 'guilty developed/hapless developing countries' feel about it. Instead, there will be a 'pledge and review' regime based on the 'trust and verify' approach habitually championed by the US.

Under this 'Paris approach', the incentive to be more ambitious is not fear of non-compliance against past commitments but knowledge that the aggregate of every country's commitments is not yet enough to meet the planetary target. Assuming there is a five-year commitment cycle, countries can remain in constant dialogue with each other with a view to finding the next tranche of cost-effective activities that can be incorporated into the next five-year cycle. Importantly, there should be more flexibility to match who's prepared to pay for a commitment and who's responsible for implementing it—where the REDD+ mechanism stands to be a key component, like the CDM.

With the emergence of the G20 grouping of countries following the recent Global Financial Crisis, the deeper fractionation of the G7 & China global grouping of developing countries into subsets of tighter national interests and levels of development—and China becoming the biggest emitter, the old division into 'developed' and 'developing' countries that underpinned the Kyoto Protocol is no longer fit for purpose in the 21st Century. The need to fix the planet's atmosphere could not be a better justification for ushering in a new, 'we're all in it together' approach, albeit with proper respect for the principle of CBDR. The Paris COP is the launch-pad.

The Paris Decision also offers an historic opportunity to fix the perversities and lack of transparency in the LULUCF-specific accounting rules developed for the land sector for the Kyoto Protocol second commitment period. Without binding commitments, there is no longer any incentive to use accounting sleight of hand to hide emissions from clearing and logging forests or to 'pick and choose' which land management activities are accounted for (given that the LULUCF rules make it voluntary whether or not to account for emissive activities like grazing land or cropland management).

Indeed, there is now an incentive to ensure emissions and sequestration from all sources and activities are clearly and fully accounted for, thus maximising the potential flow of REDD+ benefits (and we need an accounting regime fit for purpose to match it).

No longer is there any justification for using net accounting rules that allow: for offsetting of anthropogenic emissions hidden behind natural sequestration; or for using 'forward looking baselines' to invent inflated business as usual scenarios to make actual increases in emissions look like 'reductions' from what might have been; or for using 'sustainable forest management' to offset emissions today against sequestration many decades later.

Simple and natural reporting of actual emissions, and sequestration, compared with actual historical emissions/sequestration will do the job more easily, more honestly and more usefully.

Likewise, the introduction of comprehensive land-based accounting in the absence of a penalty regime, means there's no longer any justification for splitting forests into 'managed' and 'unmanaged' areas. This was always a rather inappropriate differentiation (as many indigenous peoples and local communities can attest to) the on-ground reality is that the mere absence of control by institutional foresters doesn't make forests 'unmanaged'.

This means that initiatives to address issues like foregoing logging opportunities, changed fire regimes or improved pest and disease control can be included, regardless of where such activities might take place. There's still a need for a force majeure consideration but there's no need to use it to hide uncontrollable emissions from 'managed' areas.

Carbon stocks in, emissions from and sequestration into each area of land would be simply and transparently reported. Then only those components of those fluxes relevant to activities contributing to a nominated commitment to change them would need to be accounted for. In other words, accounting is confined to working out whether commitments have been met—addressing the question, 'did what we set out to do, happen in practice?' The 'Paris approach' means that any failure to meet a commitment doesn't attract any penalty but establishes a supportive environment allowing the international community to help a country do better or to accept that it doesn't work and to select other commitments instead.

This far more open-minded and flexible 'Paris approach', while not much of a difference for non-land sectors of the economy, is revolutionary for how land-based activities are accounted for. Indeed, **we ask no more than that the land sector be treated just like the energy sector: where emissions are reported and accounted for when they occur and where they occur.** The key accounting principle here is that all commitments need to be comparable—the land sector can no longer be an unloved exception. Comparability is needed so that everyone's efforts can be properly aggregated to see what progress in being made towards meeting the global target.

Implementation however requires the Paris COP to include appropriate instruction to SBSTA in its Decision so that SBSTA advice on the details for a post-2020 land-based accounting regime are ready for adoption by COIP in 2017 or 2018 in enough time for parties to the new Agreement to apply the 'Paris approach' rules in 2020.

*We need an accounting regime  
fit for purpose, commitments  
need to be comparable*

DRAFT AGREEMENT—text suggestions *Continued*

amendment of rules and guidance is set up. Reference to decision 1/CP.21 is about its proposed provisions for rules development. The idea of dealing with these matters under Transparency of Action and Support (Option5) is conceptually OK, but in practice that Article (9) does not include as many detailed principles as found here.

**Art 3.11 Methods and guidance:** This addresses building on existing methods and guidance, with a bracketed inclusion of land use and REDD+. It is problematic as the KP LULUCF rules are an appalling foundation on which to build, whereas REDD+ is complete and should not be opened up to uncertainty. The preceding paragraph on accounting encompasses the development of methods, making 3.11 superfluous, although caution should also be exercised here on KP LULUCF rules as an entry point—we want to build from Convention reporting on land.

Options for no provisions on accounting and land use in the above paragraphs are not acceptable. Land use is a significant contributor to emissions and can play an important role in emissions reductions—development of common accounting will be important.

**New Article 3 bis** that defines the REDD+ mechanism was inserted by the Coalition for Rainforest Nations and should be supported. The bracketed JMA proposal may not fly.

**Article 9 Transparency:** Art 9.4 has two options re provision of transparent, complete, consistent, comparable and accurate information, in accordance with subsequent Art 9.6 on guidelines. Option 2 contains more detail and is thus preferable although not as comprehensive as provisions outlined in Art 3.10. Part (b) "[Projected estimated emissions and removals]" should be deleted however, as it points to projected reference levels/BAU baselines instead of measurement against historical emissions levels.

## DRAFT DECISION—text suggestions

## Mitigation

**Para 26:** includes an important provision to ensure the integrity and resilience of natural ecosystems when pursuing mitigation actions. Support.

**Para 27:** lists information to be provided in NDMCs, but is not as explicit as Art 3.7 in the draft agreement—so there will need to be some harmonisation following a determination of whether this detail should reside in the agreement or the decision.

**Para 28, Option 1:** Provides for adjustment of NDMCs to make them consistent with new accounting rules and guidance. This explicit statement is important as it obviates objections about moving away from KP LULUCF accounting that were raised by several developed countries in their INDCs.

**Para 36:** Provides for the development of principles and guidelines for actions in the land sector that, "[a] ensure the integrity and resilience of natural ecosystems; ...". Reference to other listed safeguards is also important. Support.

**Para 37:** Option 1 decides that the CMA (the new governing body for the Agreement) will adopt rules and guidance, including for the land sector, at its first session – which implies their negotiation in the interim. It operationalises Art 3.10 and Art 9.4 of the agreement. (i) is focused on historical reference levels. Support.

**Para 38:** recognises existing rules for REDD+, which is important. Support. It requires the deletion of para 42, however, that sets up for the IPC to elaborate accounting using methodological advice from SBSTA, such accounting to be adopted by the CMA. This is also needed, but can be provided for alternatively by use of **para 39 Option 1** (keeping the bracketed reference to para 37 therein) and with the option of the CMA reaching a conclusion at its first session. **Para 42** can then be deleted.

**Para 41:** wants no retrospective guidance for NDMCs and should also be deleted.

## Finance

**Para 72** is a placeholder for thematic funding, including for REDD+, and **para 78** is specifically about funding for REDD+. Support.

## Transparency of Action and Support

**Para 100:** presents a range of options that actually deal with different things. **Option 4** is most relevant for us, requesting the IPC and SBSTA to develop rules, guidelines etc for a common framework of transparency action and support—however does not contain as many detailed principles as in the text on NDMCs.

*KP LULUCF rules are an appalling foundation on which to build*



Forest degradation - partial logging under sustainable forest management, Tasmania, Australia

## ► REDD+ Roll-out needs less demand for wood products from natural forests

As the FAO observed in its recent Assessment of Forest Carbon Stocks, 1990-2015, **some success in reducing deforestation has seen global leakage in wood supply from deforestation activities to forest degradation activities.** Relatively, more wood is coming from logging or 'forest management', sustainable (or otherwise), clearfelling (or otherwise), than from conversion to non-forestry uses than was the case in 1990.

This is an unsurprising, demand-driven trend as losses of standing forests, whether permanently (deforestation/clearing) or temporarily (forest degradation/logging) are increasing as industrial demand for, and consumption of, wood products continues to grow unabated.

It's equally clear that, unless something is done to suppress industrial demand for wood and associated consumption of wood products, **it will be very hard to realise the global potential of a REDD+ mechanism to actually protect forests, cost-effectively.**

Encouragingly, this concern is reflected in preamble text for the proposed Draft Agreement, albeit as yet bracketed text: "Pp14 ... [recognizing that sustainable lifestyles and sustainable patterns of consumption and production play an important role in addressing climate change, [with the lead of developed countries] ...".

At an earlier Bonn meeting, some years ago, Tuvalu identified the need for such an international leakage reduction mechanism and this idea deserves revisiting once REDD+ is operational and a Paris Agreement and Decision has been adopted. Perhaps ITTO might be the best forum for this conversation.

As ever, the key issue is how best a REDD+ mechanism can support developing countries in choosing alternative development paths that allow communities to benefit from retaining intact forests, reducing logging rates and restoring degraded landscapes.

In line with the preambular notion of looking to developed countries

to lead in moderating consumption, we would like to suggest that a new funding arrangement be developed based on a levy on the value of imported wood products derived from natural forest areas eligible for inclusion in the REDD+ mechanism.

Recent developments in big-data collection and processing would allow the size of the levy to be varied depending on the carbon footprint of each consignment of wood—**wood from drained swamp forest would be considerably more expensive.** In this way, consumers in developed countries pay something commensurate with the carbon footprint of the wood products they consume; even if, under UNFCCC rules, the emissions are being reported by exporting developing countries.

Such a levy would serve to remind importing country wood products supply chains and their retail customers that their demand is the driver directly responsible for forest degradation in developing countries and that such degradation has a very large carbon footprint and often a large biodiversity and social impact as well.

Funds levied in this way could be made available to those players in REDD+ eligible countries who choose to forego opportunities to log intact forest (or choose to reduce rates of logging or to rewet peatlands or to restore degraded landscapes) to support whatever alternative lower-carbon footprint development strategies they might pursue.

**A funding formula could be developed to ensure funds flow to countries, communities and landholders retaining high levels of forest cover even if they have low rates of logging.** And the levy would act as a broad disincentive to degrade natural forests by logging thus making participation in the REDD+ mechanism relatively more attractive while, at the same time, providing funds for REDD+ eligible programmes.



## Fact Sheet: Primary forests and carbon

Here [<http://primaryforest.org/blog/forest-carbon-fact-sheet-1/>] we provide a summary of key facts about the role of primary forests in storing carbon and climate change mitigation. We draw upon the most recent estimates from reputable scientific publications. Typically, a range of values is provided reflecting the uncertainty in scientific estimates, land use history and the natural variability of ecosystems. Around 35% of the world's

natural forest cover has been lost (Mackey et al. 2014) with temperate forests suffering the greatest level of deforestation (WRI 2011). Of the remaining forests, about 60% (approximately 2.337 billion Ha) are subject to industrial logging and degradation (FAO 2010), leaving about 35% (c. 1.277 billion Ha) as intact primary forest.



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