



SPECIAL BULLETIN

2011

Part 1 CALL FOR TRUTH IN TARGETS

■ TRUTH IN TARGETS!

It is time for developed countries to get real about the real impact of land and forestry sector emissions on their economy wide emission reduction targets. Action in the Land use, land use change and forestry (LULUCF) sector can – and should - strengthen ambition in setting higher targets. Instead, current accounting rules, and proposed changes to them, actually improperly inflate the targets of Annex 1 Parties.

A UNFCCC workshop to clarify the assumptions and the conditions related to the attainment of these targets, and options and ways to increase the level of ambition, is to be held in Bangkok this April, pursuant to the LCA decision in Cancun.

This workshop is to specifically address LULUCF, pursuant to paragraph 38 of the LCA decision (as well as considering the use of carbon credits from the market-based mechanisms)¹.

Up to 1 billion tons a year of CO2 emissions, equal to about 10% of 1990 benchmark emissions, may vanish from the national accounts of developed countries through LULUCF loopholes. Such a situation is unacceptable.

Failure to account for these emissions knocks several percentage points off Annex 1 country targets. These emissions must be brought onto the books, and targets lowered accordingly to reflect what the atmosphere sees.

Parties must now adopt ‘truth in targets’ accounting rules that will close the LULUCF loopholes. In the meantime, current negotiations on the level of ambition must be based on numbers that do not include this LULUCF ‘hot air’. The world needs Truth in Targets, not slippery targets based on hiding actual emissions that are really affecting the atmosphere. We all have an interest in confronting the reality of the situation.

Parties should also take up the opportunity to increase their level of ambition by realising the potential of the land and forestry sector. Improved land management and forest protection can contribute, alongside other sectors, towards achieving deep and early cuts in emissions.

¹ 38. Requests the secretariat to organize workshops to clarify the assumptions and conditions related to the attainment of these targets, including the use of carbon credits from the markets-based mechanisms and land use, land-use change and forestry activities, and options and ways to increase their level of ambition





WELCOME TO THIS SPECIAL BULLETIN ON TRUTH IN TARGETS. It outlines how unaccounted land and forestry emissions of developed countries are undermining emissions reduction targets and what can be done about it. Future bulletins will address other aspects of this problem.

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EXISTING EMISSIONS LOOPHOLE IN DEVELOPED COUNTRY LAND SECTOR ACCOUNTING RULES MUST BE CLOSED

Under the accounting rules of the Kyoto Protocol there is no requirement to account comprehensively for all emissions from land use, land use change and forestry (LULUCF). In a nutshell, this allows Annex 1 developed country Parties to pick and choose what they will account for and, as a result, they tend not to select to account for emissive activities. Their accounts are thus skewed by the incorporation of removals (sequestration) whilst leaving out emissions (logging).

This is the existing emissions loophole. Targets for Annex 1 developed countries are being undermined by the failure to even get important emissions onto the books.

The present accounting system is activities-based. It does not cover the entire land sector as would occur if land-based accounting was instituted. This is another problem for getting a real reflection of what is happening in land and forests into the accounts. The current LULUCF system defines several activities occurring in the land and forests sector but only mandates accounting for three activities¹, leaving it voluntary for Parties to select to account for any other identified activities². For instance there is no requirement to account for the drainage of peat soils and use of drained peatlands although both are known to be highly emissive.

The three activities that are currently **mandated** for accounting are:

- Afforestation: this means planting trees on an area not previously forested, usually it is plantation establishment;
- Reforestation: this means replanting trees (plantations) on an area that has been previously deforested and maintained as non-forested land; and
- Deforestation: this comprises land use change through clearing forest and using that land for other purposes than growing forest again.

Afforestation and Reforestation (known as A & R) deliver removals of carbon from the atmosphere via sequestration within the growing vegetation and soils.

Deforestation involves carbon emissions attributable to land use change, but this activity is restricted in the emissions it includes because it does not encompass the major emitting activity of logging when that area is subject to ongoing logging cycles, nor does it encompass the conversion of natural forest to plantations. In both cases no land use change is involved. These instead fall under the voluntary activity of Forest Management, which is only selected by some of the Parties.

A cynic might note that the current accounting system is basically constructed to indicate when land enters or leaves the control of the forest industry while hiding harm industry does with the forest it controls.

The current **voluntary** activities for LULUCF accounting are:

- Forest management (logging, and conversion of natural forests to plantations);
- Cropland management; and
- Grazing land management.

Each of these activities is generally emissive in nature and they are not frequently selected for accounting.

This loophole is of a significant size. For example drained organic soils in developed countries emit about half a billion tonnes of CO2 emissions every year.

Encouragingly, it was decided in Cancun that a new, voluntary activity of ‘Drainage and rewetting’ of peatland should be adopted. This is welcome progress, as emissions from drained peatlands are large and ongoing until such drainage is reversed and the peat is rewetted or the peat exhausted. It can be predicted that Annex 1 Parties will select this new activity only when they are rewetting peatland and can gain from accounting for the emissions reductions involved, but this is an important and welcome initiative.

Currently, there is not even a proposal to make all of the remaining voluntary LULUCF activities mandatory for accounting let alone a commitment to do so. Mandatory accounting is the least that should be expected in terms of

a move towards more comprehensive coverage in LULUCF in the Second Commitment Period. A 'hot spots' approach involving applying higher tier accounting to areas known to be of significant emissions impact, whilst the remainder is dealt with by lower tier accounting, is being discussed within the EU in order to overcome objections to the accounting impost entailed with a move to mandatory accounting. This is a commendable idea.

Proposed new accounting rules for logging ('forest management') are problematic and introduce their own emissions accounting loophole. See article below.

¹ Article 3.3, Kyoto Protocol

² Article 3.4, Kyoto Protocol & Decision 16CMP.1



This developed country logging and burning (Australia) is not accounted for under current LULUCF rules because it is voluntary for Annex 1 Parties to account for forest management (logging)

■ PLANNED NEW ACCOUNTING METHOD FOR 'FOREST MANAGEMENT' HIDES EMISSIONS IN A LARGE NEW LOOPHOLE

Criticism over the serious inadequacies of accounting for land sector emissions of developed countries under current LULUCF rules has prompted negotiations to construct new rules that will encourage most or all Annex 1 Parties to account for forest management (logging).

The problem is that the new accounting method that is proposed is more perverse than those we have now.

Developed countries are pushing hard for a new accounting framework that allows them to increase logging emissions without taking responsibility for them. This planned increase in emissions has been estimated at around half a billion tonnes of CO₂ in total¹.

The proposed approach simply removes logging emissions from the books.

How does the logging loophole happen?

This is called the 'reference level' approach. It works by allowing each developed country to pick any level of emissions it likes and use it as a baseline.

Many Annex 1 countries have indicated that they intend to use forward looking (or projected) baselines. These countries plan to use Business As Usual (BAU) emissions, including any planned increases, based on their existing national forest and forest industry policy settings, as their baseline. Only deviations in emissions from this baseline will be accounted for. In other words, however grandiose their LULUCF growth plans may be, if they meet them, their accounting liability would be zero. Perversely, if actual emissions turn out to be less than their grandiose plans, the LULUCF system will book an undeserved accounting credit.

Such a projected reference level is designed to measure deviation from planned growth. It also serves to hide any increases in emissions associated with such planned growth. It prevents any level of ambition being imposed upon the sector.

Logging emissions should be measured relative to historical emissions data, and the intent should be to reduce them relative to those emissions levels. Use of a long term historical average as the baseline is the only option that closes the accounting loophole in a realistic and acceptable way.

Why has the logging loophole been designed?

Annex 1 Parties are failing to conserve stores (reservoirs) and enhance sinks and reservoirs. Many Parties intend to increase harvest rates and emissions from forest management. They are under pressure to account for forest management in the second Commitment Period.

However most of those Parties find owning up to the real emissions to be inconvenient. *These emissions would not be reflected in accounts using the projected reference level approach.*

Why does it matter?

If LULUCF is to strengthen ambition, the proposed accounting loophole for more logging must be closed.

It is a serious departure from what a climate agreement should set out to achieve. Such perverse rules are not being constructed for other industry sectors. The forest industry is stitching up a deal all of their own with the complicit support of developed country Party negotiators. It is unlikely that other industries have been consulted as to whether they think it acceptable that forestry gets such a free ride and they do not.

There is significant carbon contained in developed country forests, and a large amount of emissions will arise from logging them. Three of the top five forested countries of the world are developed countries (Canada, USA, Russia) and Australia has the most carbon dense natural forests in the world. (see chart: Global Carbon Stocks)

Developed countries must reduce their logging emissions, not increase them. The first necessary step is that they agree to account for them properly and comprehensively.

Hiding logging emissions in this new forward looking baseline accounting loophole will significantly undermine the targets of developed countries to make quantified economy wide emissions reductions while encouraging them to miss a great opportunity to increase ambition.

¹ CAN International LULUCF working group, August 2010, on the basis of material submitted to the UNFCCC by Parties.



WHY LAND AND FORESTS SECTOR EMISSIONS FROM DEVELOPED COUNTRIES MATTER AND HOW THEY CAN CONTRIBUTE TO INCREASED TARGETS FOR EMISSIONS REDUCTIONS

Emissions from the land use sector are estimated to comprise 26% of global emissions¹, undeniably a significant contributor to anthropogenic climate change. The land sector (and oceans) also provides the only known mechanism for drawing down and sequestering atmospheric carbon.

Securing emissions reductions from the land sector alongside those in industrial sectors is imperative for achieving stabilisation scenarios which require a 25-40% reduction in emissions from developed countries. Under current forecasts Annex 1 land and forests fall far short of their potential to contribute.

Global Carbon Stocks	Mt C
Boreal forests	559,000
Temperate forests	159,000
Temperate grasslands	304,000
Wetlands	349,000**
Tropical forests	428,000

Source: IPCC AR4, CH9; **Joosten, 2009

Boreal and temperate forests contain over 700,000 Mt carbon, the vast majority of which is in developed countries, whilst tropical forests contain over 400,000 Mt carbon, the vast majority of which is in developing countries. Temperate grasslands contain over 300,000 Mt carbon much of which is in developed countries. Clearly there is a leading role that the land sector of developed countries should play.

How these developed country carbon reservoirs are managed, and the expectations that are placed on them for contribution to mitigation and sequestration, are important to achieving global climate outcomes.

At the time when past commitments were made, management of Annex 1 forests maintained a large aggregate sink. Annex 1 Parties relied on this sink to help meet their targets for the first commitment period. Now, projections outline large increases in developed countries' forestry emissions due to rising demand for wood and wood products including bioenergy. As outlined on the previous page regarding the proposed new accounting method, such emissions, including these planned increases, would not be accounted for by the proposed LULUCF accounting method employing forward looking baselines.

How can forests contribute to mitigation?

The answer to this question should be well known to those who have focused on the REDD+ mechanism developed to encourage mitigation in developing country forests. Such

actions should also be expected to be taken in the forests of Annex 1 Parties.

- Forest area: maintain or increase
- Landscape carbon density: maintain or increase through forest conservation (protect intact forests and restore degraded ones)
- Stand-level carbon density: maintain or increase by reducing forest degradation (including industrial scale logging), encouraging restoration, improving management

What measures can be agreed at the international level?

Normalise the treatment of LULUCF: All land sector stores, emissions and sinks, should be brought into the accounts in a comprehensive and transparent manner. There is no incentive to reduce emissions for which there is no recognition and no penalty.

Introduce a forest sectoral target: A sectoral target should also be applied to developed country land sector emissions just as other industry sectors have accepted emissions reduction targets as their contribution to meeting national targets. This will compel emissions reductions in this sector, and can be used to increase the ambition of developed country Parties. Such a step opens up the possibility of readily and substantially increasing national targets.



The LULUCF loophole: maize for biogas grown on peat, Germany. Energy accounted, peat emissions unaccounted. Source Hans Joosten, ECA side event presentation, Tianjin, 2010.

¹ Garnaut, R (2011) Garnaut Climate Change Review – Update 2011 Update, Paper 4: Transforming rural land use

■ HYPOCRISY: REDD+ AND LULUCF 'DO AS I SAY, NOT AS I DO'

Developing countries are being asked to reduce emissions from deforestation and forest degradation via participation in the REDD+ mechanism. Developed countries meanwhile, have no such expectation placed upon them, in fact most explicitly intend to increase their forestry emissions while using accounting rules for LULUCF allowing such increases to be ignored.

Yet the forests of developed countries contain much greater carbon stores than those of developing countries with equivalent greater emissions reduction potential which needs to be realised if we are to avoid dangerous climate change.

There is an unacceptable double standard at play. It is hypocritical of developed countries to expect to buy offset credits from REDD+ in developing countries, but not to commit to reducing emissions from, and restoring their own forests.

Neither are there any safeguards in LULUCF like those contained in the REDD+ decision in Cancun. Biodiversity is being eroded and lost by the logging of primary forests and other natural forests in developed countries as well as developing countries. Countries such as Australia have gone on a spree converting natural forests to plantations without restraint from international LULUCF rules – in fact they haven't accounted for this logging and conversion at all because self serving definitions mean no 'deforestation' was involved.



Plantation conversion Tasmania, Australia, Blakers

Plantation conversion Styx Valley Tasmania, Australia. Blakers 2008.
There is no safeguard against this conversion of natural forest to plantation in Annex 1 countries





BIOENERGY AND HARVESTED WOOD PRODUCTS – AN ACCOUNTING TRICK

The prompt introduction of land-based accounting could serve to clarify and improve how both bioenergy (including biofuels) and harvested wood products (HWP) are dealt with by UNFCCC negotiators – and by regulators, processors and consumers.

Notwithstanding the unintended consequences problems surrounding an expanding bioenergy sector’s potential to constrain food supply and destroy biodiversity, there are a suite of problems flowing directly from failure to adopt prudent and sensible accounting rules covering emissions associated with the supply and use of both bioenergy and harvested wood products.

Use of bioenergy is often asserted by both policy makers and regulators, and thence assumed by the general public, to be ‘carbon-neutral’ - rather naively by those who don’t know the reality – and very cynically by those who do. For EU regulators, for instance, such a ‘carbon neutral’ assertion is based on the assumption that emissions associated with the supply of bioenergy have been fully reported and fully accounted for in their sector of origin in their country of origin and netted out against carbon sequestration in growing the bioenergy crop in the first place.

In developed countries, such an assumption falls down because the LULUCF accounting rules, while obliging Annex 1 countries to report emissions from forest management (logging), allow them to choose not to account for them. Not surprisingly, many exercise this option in deceptive accounting. In developing countries, such an assumption also falls down simply because, while the same obligation to report exists, there is no accounting liability because there are no binding international targets to be met.

The result is that **bioenergy resources in the energy or transport sector (whether purchased from a developed or developing country) carry with them a carbon ‘footprint’ which has not been fully accounted for.** In many situations, this carbon footprint accounting gap is so large as to make bioenergy a perverse substitute for fossil fuels. An obvious example is the consumption of oil palm-derived liquid fuel from plantations established on land converted from native forest, especially if it involves drained peatland. Less well known is the consumption of biogas derived from maize grown on drained peatland.

Conventional fossil fuels	Emission factor [t CO ₂ /TJ]
Natural gas	52.2
Fuel oil	73.3
Coal (anthracite)	98.3
Peat	106
Biomass burning, from peat soil	Emission factor [t CO ₂ /TJ]
Coniferous wood, net energy (Scandinavia)	225
Maize, net energy (Germany)	240
Sugar Cane, net energy (Florida)	350
Biofuels, from peat soil	Emission factor [t CO ₂ /TJ]
Sugar cane, ethanol (Brasil)	570
Maize, biogas (Germany)	880

Source: Hans Joosten, ECA side event presentation, Tianjin, 2010

Note: The bioenergy emission factors shown are for crops grown on peat soil and fuels derived from such crops. For crops grown on mineral soils the numbers would be significantly smaller but, in most situations, emission factors are higher for biomass fuels for both stationary energy and liquid fuels than for fossil fuels.

The LULUCF negotiators, not content with accounting rules to hide logging-derived emissions, are also seeking to claim credit for wood exported from their part of the land sector and still held as wood products within other industrial sectors (harvested wood products). In conventional economic



Conversion of tropical forest to Palm Oil plantation.
Photograph: Steve Jackson

analysis, such inter-sectoral transfers are dealt with by using ‘input-output’ tables – any export from one sector is numerically matched by an equivalent import into another.

The current LULUCF accounting rules, quite properly and sensibly, require forest managers to assume that 100% of the carbon in the 'harvested wood products' they sell has been emitted to the atmosphere as carbon dioxide at the time of sale. Any potential accounting gains should be available for those industrial sectors which have purchased wood or wood products – not for those who've just got rid of them! It is ludicrous for forest managers to expect to benefit from someone else's good behaviour. The use of wood and wood products in our economies should be dealt with by:

- using land-based accounting so that all stores, emissions and sequestration can be fully and fairly accounted for;

- using 'input-output' tables such that 100% of the emissions attributable to consumption of wood is debited to the forestry sector and credited to the wood/wood products industry sector at the time of sale (and, like consumption taxes, on down the value chain, while sensible to do so, before being written off); and,

- if a price is put on carbon, creating incentives for forest managers to differentially hold onto wood in high carbon footprint forests (like primary forests and swamp forests) and for industrial sectors to use wood-based inputs more efficiently (and, where it is true to say so, to preferentially source them instead of higher carbon footprint materials, e.g., timber instead of cement and steel in the construction sector).

Additionally, the actual size of the 'carbon footprint' associated with specific 'drivers' of forest degradation, including deforestation, can be established because chain of custody can be

established throughout the value chain to the informed benefit of processors, retailers and consumers.

■ LAND-BASED ACCOUNTING THE KEY TO SENSIBLE ACCOUNTING BASED ON PROPER REPORTING OF WHAT'S REALLY HAPPENING

If the world is to make sense of what is happening to terrestrial carbon stores (or 'reservoirs' as they are referred to in the text of both the UNFCCC and Kyoto Protocol), including their behaviour as both sinks and sources of emissions, terrestrial carbon needs to be accounted for with the same degree of coherent rigour as we expect of our financial affairs. This approach is known as 'land-based accounting' – full, comprehensive and transparent reporting of the status of all terrestrial carbon stores (just as 'assets' are reported in conventional financial accounts) and changes in those stores (just like statements of 'income and expenditure').

The debacle over renegotiation of the LULUCF accounting rules illustrates all too clearly what happens if everyone gets to choose their own accounting rules. Regardless of how the LULUCF rules might eventually be set at the Durban COP for the Kyoto Protocol second commitment period, it is essential that negotiators also decide – in Durban – on the use of full, comprehensive land-based accounting for the KP third commitment period. As soon as a deadline is set for the introduction of land-based accounting, much of the heat goes out of the LULUCF accounting rules debate – which is just an argument about evading accountability for the large emissions associated with wood harvesting and supply – and defending their privileged position is worth a lot of heat. Negotiators owe it to themselves to set such a deadline – as the only way to prevent the LULUCF problem from plaguing them for evermore.

When the UNFCCC and Kyoto Protocol were being negotiated, the nature and scale of the climate change problem attributable to customary management of terrestrial carbon went largely unrecognised. Today, the scientific community is beginning to marshal available information to indicate that the problem is too great for UNFCCC negotiators to continue to leave to benign neglect. Taken as a whole (deforestation, forest degradation, intensification of cropping, drainage of wetlands, more ruminants, etc.), current terrestrial carbon emissions from land use sectors probably account for around 30% of all greenhouse gas emissions – and about the same proportion of historical responsibility for accumulated past emissions. The problem is further exacerbated insofar as these emissive activities also tend to degrade the capacity of the biosphere to buffer atmospheric carbon dioxide concentrations by absorbing it (sequestration).

It is time that these very significant contributors to the global climate change problem (where degradation not only causes emissions but

continued overleaf



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■ **LAND-BASED ACCOUNTING** THE KEY TO SENSIBLE ACCOUNTING BASED ON PROPER REPORTING OF WHAT'S REALLY HAPPENING

also inhibits sequestration) were given their own sectoral emissions reduction targets just like other industry sectors. Such target-setting needs proper reporting and elimination of perverse accounting rules. As we know from the world of finance, reporting rules can be evaded by fiddling with the data but this problem pales into insignificance compared with the problems associated with fiddling with the accounting rules.

'Terrestrial carbon' is used to describe those carbon stores created in recent geological time by prevailing biological processes that can be regarded as 'labile' – that is to say, they can be readily degraded or enlarged (either by natural processes and events or by human activities). Other labels such as 'biological' carbon or 'green' carbon are sometimes used to differentiate between part or all of such carbon and 'fossil' carbon (from which fossil fuels and associated emissions are derived).

At its simplest, we are referring to carbon in the biosphere – in soils and vegetation. The vast majority of which is to be found in soils (especially peatlands, tundra and other wetlands) where chemical processes allow perpetual accumulation of some of the organic matter created by biological processes driven by 'above-ground' vegetation or biomass. If undisturbed, the vegetation above will reach a steady state of maximum carbon content – known as natural carbon carrying capacity (CCC).

This is the benchmark against which the extent of both past degradation and potential restoration can be estimated. Importantly, the scientific evidence clearly shows that forests,

in particular, continue to accumulate above-ground biomass for much longer and to much higher levels than is generally appreciated by managers and decision-makers. Protecting intact wetlands or forests from initial degradation (e.g., protecting forests from logging) and ongoing degradation (e.g., rewetting drained swamps) is a much more attractive option for immediate, cost-effective emissions reduction than is generally appreciated by negotiators.

In its latest report, the IPCC refers to this sector as 'AFOLU' – agriculture, forestry and other land uses which includes activities in developed countries, some of which are covered by self-serving LULUCF accounting rules, and activities in developing countries where there is still considerable fluidity as to the extent of their inclusion in any REDD, REDD+ or REDD++ mechanism (which we hope will be finalised in Durban).

At present, reporting and accounting rules adopted by UNFCCC focus on emissions (despite the treaty obligations to focus on 'reservoirs' as well) – and taking such an 'income and expenditure' accounting approach is fine if negotiators limit their attention to addressing use of fossil fuels. Where terrestrial carbon management is concerned, however, proper balance sheet accounting is needed. While such a need can fairly be regarded as a self-evident 'no-brainer', getting agreement on its introduction is being severely hampered by the desperate determination of the forestry sector in developed countries to keep their LULUCF accounting rules which allow them to hide emissions and set reference levels that evade accountability.

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SPECIAL BULLETIN

PART 2 • MAY 2011

CLIMATE CHANGE

CALL FOR TRUTH IN TARGETS

■ "ACCENTUATE THE POSITIVE, ELIMINATE THE NEGATIVE" APPROACH TO LULUCF ACCOUNTING MUST END

In the Bangkok workshop on developed country targets and later Kyoto Protocol discussions this April, several countries openly recognised that, depending on how the LULUCF accounting rules might be changed, they might have to revise their targets.

What is it about LULUCF that has such an effect on targets? Why is it that intractable and shambolic discussions over LULUCF rules have been countenanced by senior UNFCCC negotiators, who may remain blissfully ignorant of the technical details of LULUCF discussions but are inescapably responsible for discussions about national emissions reduction targets?

In response to both their own citizens and the wider international community, Annex 1 Parties are understandably under pressure to announce commitments to ambitious targets – the pressure to be seen to be close to the 25-40% by 2020 range is intense.

Unfortunately, some country targets are likely to be based on a lie – because the LULUCF accounting rules not only **allow Annex 1 countries to choose not to report emissions** attributable to ‘forest management’ activities (like logging and roading), cropland and grazing land management, but also allow them to report sinks attributable to natural forest sequestration within ‘forest management’ areas **even when not in response to any human intervention**.

“Accentuate the positive, eliminate the negative” might have been a cute notion for crooner, Bing Crosby, back in 1944 but it’s no basis for sensible carbon accounting today. Citizens deserve to be told the truth by their own governments not inflated ‘feel good’ nonsense.

We have named this Bulletin series ‘Truth in Targets’ precisely because the only way out of the LULUCF mess is for senior negotiators to accept that it is ‘the right proper thing’ for them to ensure that the national targets they are claiming actually reflect expected reductions in emissions ‘seen’ by the atmosphere.

Translated, the Bangkok admissions are an acknowledgement by Annex 1 countries that, if perverse LULUCF accounting rules are abandoned, their overall national targets will need to be consequentially reduced. This is how it should be and there is no shame in deciding to do so.

Now is the time to ‘grasp the nettle’ and commit to ‘truth in targets’. Once this troublesome political decision is made – by the senior negotiators, the technical task before the LULUCF negotiators and SBSTA, becomes quite simple – well, a lot simpler, at least!

TRUTH IN TARGETS — HOW?

The truth requires Annex 1 countries to own up to two accounting deceptions:

- firstly, for those choosing not to account for emissions from their ‘forest management’, and other activities the atmosphere sees a whole lot of anthropogenic emissions that are not included in target calculations;
- secondly, by including natural sinks in managed areas, non-anthropogenic sequestration is included in target calculations (see ‘The Emissions Gap Report’, UNEP, Nov 2010).

As a result, in aggregate, targets are improperly inflated by more than a gigatonne of emissions each year.



YOUNGOs protest LULUCF loopholes, Cancun 2010.



WELCOME TO THIS SECOND SPECIAL BULLETIN ON TRUTH IN TARGETS. It outlines how unaccounted land and forestry emissions of developed countries are undermining emissions reduction targets and what can be done about it. Future bulletins will address other aspects of this problem.

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SFM in Tasmania.



Dairying — sustainable but emissive. © iStockphoto.com.



Intact tropical forest — a resilient land use. © iStockphoto.com.

■ LAND-BASED ACCOUNTING — NEXT STEPS

In the first edition of this Truth in Targets special bulletin¹ we outlined how land-based accounting is the key to sensible accounting based on proper reporting of what’s really happening to terrestrial carbon stores.

The LULUCF co-chairs’ non-paper (containing the incipient LULUCF decision) refers the issue of land-based accounting to SBSTA, in the paragraphs below:

5. *Also agrees* that it is desirable to move towards complete coverage of managed lands when accounting for the land use, land-use change and forestry sector, while addressing technical challenges and the need to focus on accounting for anthropogenic emissions by sources and removals by sinks;

6. *Requests* the Subsidiary Body for Scientific and Technological Advice to initiate a work programme to explore ways of moving towards more comprehensive accounting of anthropogenic emissions by sources and removals by sinks from land use, land-use change and forestry, including through a more inclusive activity-based approach and a land-based approach, and to report to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its [eighth] session on the outcomes of this work programme;

The important unresolved issue is timing. Negotiators for the CMP and COP need to make the political decision that land-based accounting will be adopted so that there is a deadline for the technical agenda at SBSTA.

This flows on to the proposed invitation to the IPCC to revise and develop supplementary methodologies for estimating emissions and removals in LULUCF (paragraph 10 of the non-paper) which will need to be completed in time for SBSTA to consider such revised methodologies for incorporation into a final draft decision.

We believe that a step-wise approach can and should be spelled out. More comprehensive accounting of 3.4 activities should be mandated for the second commitment period. Land –based accounting must follow for the third commitment period, or 2020, whichever is earlier. To achieve harmonisation with land-based accounting, accounting for all of AFOLU (agriculture, forestry and other land uses) needs to be made mandatory at the same time.

Negotiators need to clearly indicate this timing in the LULUCF decision in Durban so that work can be prioritised at SBSTA and the IPCC, and deadlines for implementation can then be met.

¹ http://hsi.org.au/editor/assets/Publications/Special%20Bulletin%20March_2011%20Truth%20in%20Targets.pdf

REFERENCE LEVELS: THERE SHOULD BE NO FREE LUNCH FOR THE FORESTRY INDUSTRY SECTOR IN ANNEX 1 COUNTRIES

This year Annex 1 Parties have been required to present their proposed forest management reference levels for review by the UNFCCC, pursuant to Cancun decision 2/CMP.6¹. These actions precede, and will inform, a decision on whether to adopt the reference level (forward looking baseline) proposal or something else at the Durban COP.

Having got away with using perverse accounting rules for the First KP Commitment Period, Annex 1 countries are pushing hard for an even more perverse accounting approach for the Second Commitment Period.

When initial estimates were submitted a year ago a sizeable half billion ton LULUCF emissions loophole was identified by ENGOs, compared to use of an historical base period as the baseline for forest management (logging). The scam was so unsettling, especially to developing countries, that no agreement to this approach was possible in Cancun, but a further round of updated proposals was conceived in order to keep this accounting option alive.

What can we conclude from this year's round of submissions?

Figure 1, is adapted from a diagram in the recent Climate Action Tracker briefing paper by ECOFYS, Climate Analytics and The Potsdam Institute (PIK)². Their figure neatly summarises the overall global situation as Annex 1 countries struggle to reduce emissions to avoid dangerous climate change. The red and dotted grey lines indicate the extent to which current unconditional and conditional pledges by countries would reduce emissions from business as usual (the solid grey line), respectively, while the solid and dotted black lines indicate how much is still left to be done if we are to get on track for 450ppm/2degC or 350ppm/1.5degC outcomes, respectively.

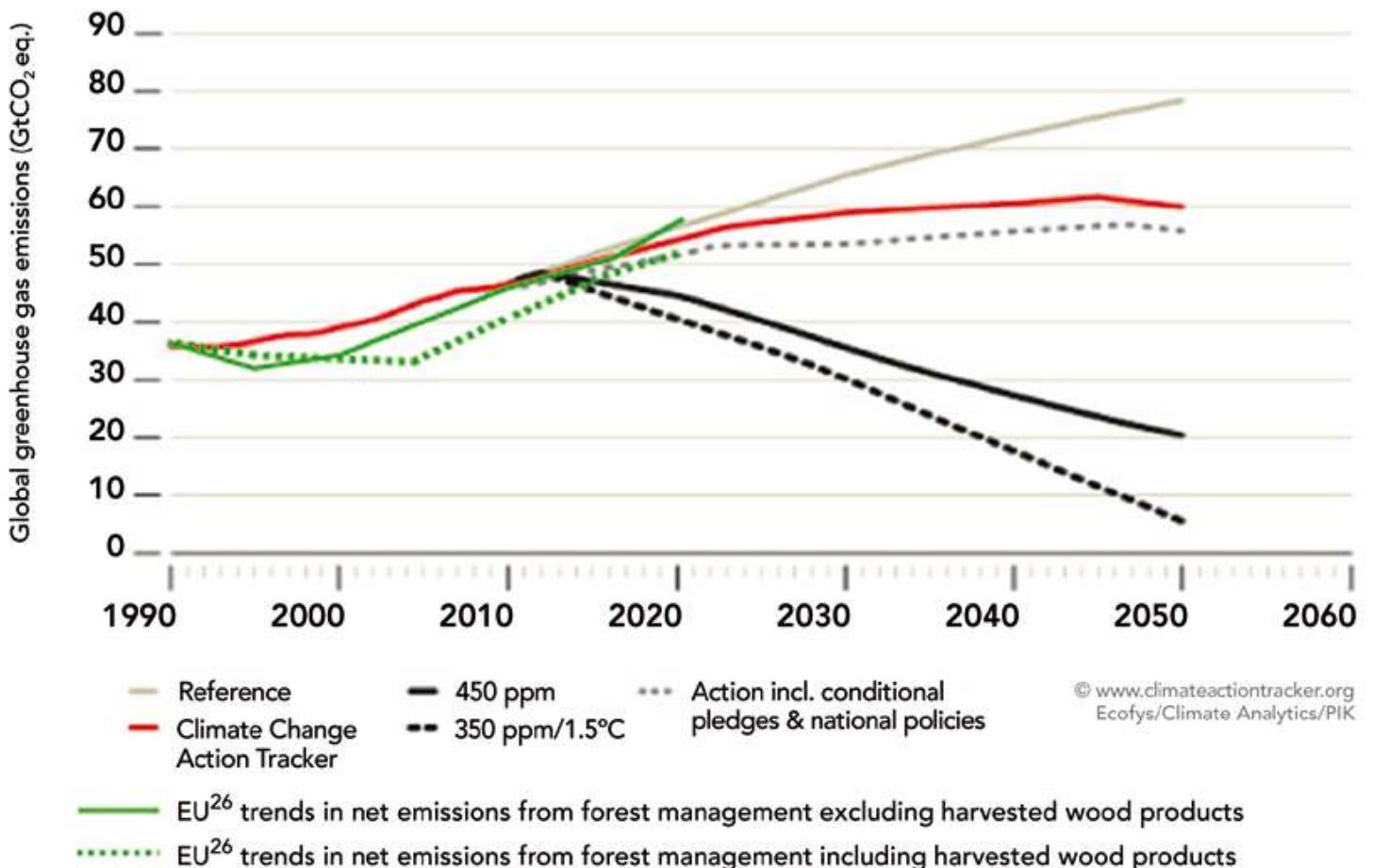
We have added in a solid and a dotted green line to compare trends in the EU's reported past and pledged future net emissions from 'forest management' (based on the numbers submitted by the Hungary and the EC on 8 April 2011 on behalf of the EU and its member states pursuant to Decision 2/CMP.6: The Cancun Agreements: LULUCF – see tables 5a, 5b, 6a & 6b, pp.11-14). These numbers are for the EU26 (all except Poland) and are broadly indicative of the overall situation for Annex 1 countries.

The solid green line represents relative changes in net 'forest management' emissions (the difference between total emissions and total sequestration for managed forests) while the dotted green line indicates the extent to which net emissions are reduced if 'harvested wood products' (estimated carbon remaining in products made from wood extracted from those forests) are included.

There is a lot of variation in the numbers – and methodologies and assumptions – both within the EU and more broadly among Annex 1 countries for their forestry industry sector emissions. The EU, however, is to be congratulated for the clarity and comprehensiveness of its submission – which is why we have singled out the EU – not because their behaviour is any more egregious than other Annex 1 countries.

The overall conclusion is inescapable – the EU intends the forestry industry sector to increase net emissions from 'forest management' activities at a time when every other sector of their economies – and individual households and citizens – are being asked to reduce their emissions. Note that the upward slopes of the green lines are almost exactly the same as the ECOFYS 'business as usual – reference' line: the forestry industry of Europe intends to carry on as if there was no climate change problem!

Continued overleaf





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To add insult to injury, Annex 1 countries are seeking the support of the international community for the adoption of a new accounting rule for the KP second commitment period that would allow each of them to set a ‘forward looking baseline’ (also known as a ‘projected reference level’) that reflects its plans for its forestry sector as a baseline. That is, regardless of the level of emissions or of any growth in those emissions, it will all be accounted for as ‘zero’ if they keep to their plans. That’s the insulting part.

The injurious part is that any failure to meet their ambition for future growth in emissions can be accounted for as a reduction in emissions (below the baseline), for which credits could be issued even if it actually represents an increase in emissions seen by the atmosphere. Welcome to the Alice in Wonderland world of LULUCF!

Annex 1 countries have submitted updated proposals and they are now being reviewed. Beware! This is only a technical review. It accepts the policy settings submitted by each Party and simply checks whether the forecast emissions under that policy are correctly derived. The reviews make no judgement regarding the use of projected reference levels. The Durban CMP/COP still has to decide whether the overall approach is acceptable.

It seems unfair that only the forestry sector is given such a ‘free lunch’ and thus allowed to shirk efforts to fight dangerous climate change. We urge negotiators to reject the whole approach of using forward looking baselines in favour of simply calling a halt to the use of deceptive accounting rules for LULUCF.

So many opportunities to achieve immediate, large and cost-effective emissions reductions by appropriately changing forest management are frustrated by the ‘free lunch for forestry’ approach. Of particular concern is the missed opportunity to make early gains by protecting intact forest, with enormous benefits not only for the atmosphere but also for other, non-carbon ecosystem services (like biodiversity conservation, landscape resilience in the face of climate change, flood and erosion control, etc). This is as much an opportunity for Annex 1 countries’ forests as for developing countries’ forests.

¹ Appendix I lists Annex 1 countries’ initial proposals for forward looking baselines and Appendix II sets out guidelines for reviewing such proposals

² Chen C, Hare B, Hagemann M, Höhne N, Moltmann S, Schaeffer M (10 Jan 2011) Cancun Climate Talks – Keeping Options Open to Close the Gap; page 6

LULUCF PERVERSE INCENTIVE FOR BIOENERGY MUST BE REMEDIED

The failure to account comprehensively for forestry and land use emissions in LULUCF constitutes a perverse incentive for bioenergy and biofuels.

Why? Because they appear not to be emissive when in fact they are – sometimes much more so than the fossil fuels for which they are to substitute.

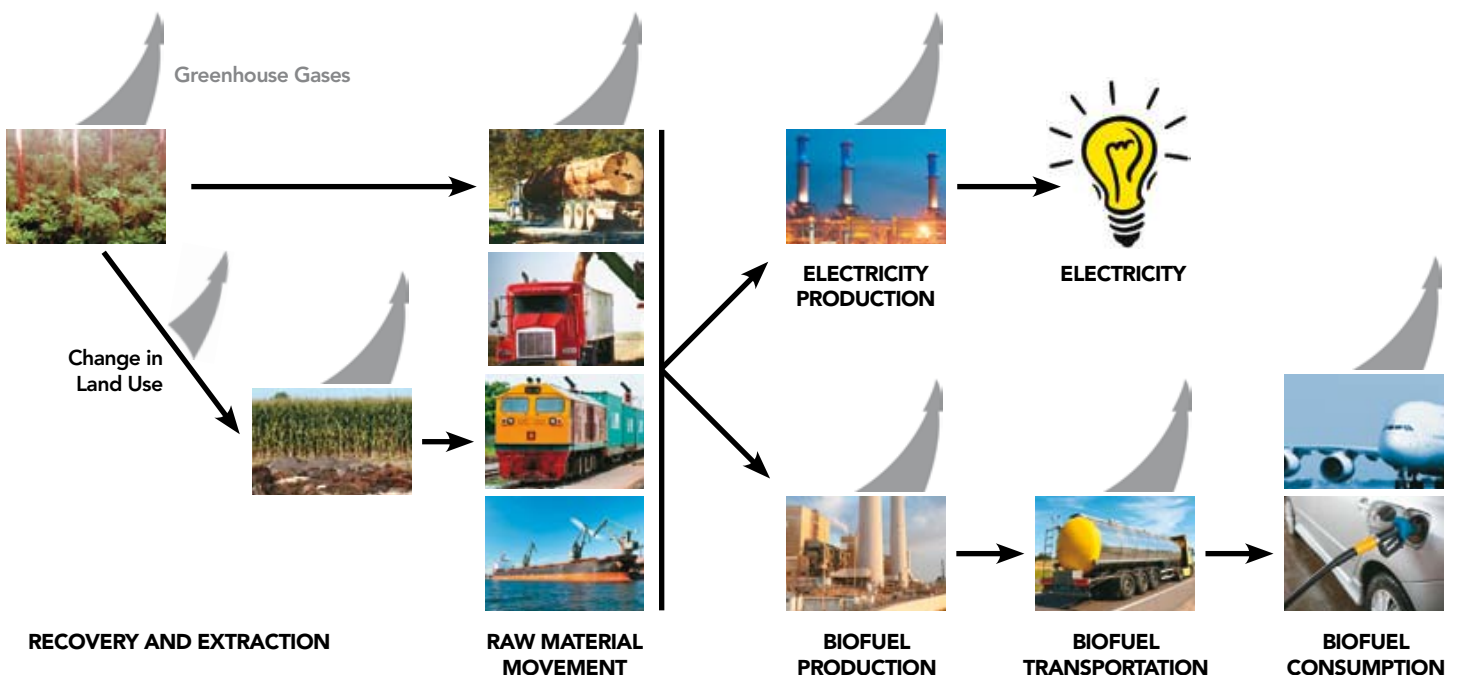
Emissions from harvesting, transport and combustion of biomass (forest products and crops), plus emissions generated in the process of converting biomass to biofuel all remain ‘off the books’ – not accounted for by most Annex 1 Parties. At the same time the accounting convention is that renewable energy is accounted as carbon neutral in the energy sector, so bioenergy emissions are not picked up there either.

Despite the fact that bioenergy / biofuels are emissive from harvest to combustion they score a false zero. This encourages expansion of this energy source based on a false premise.

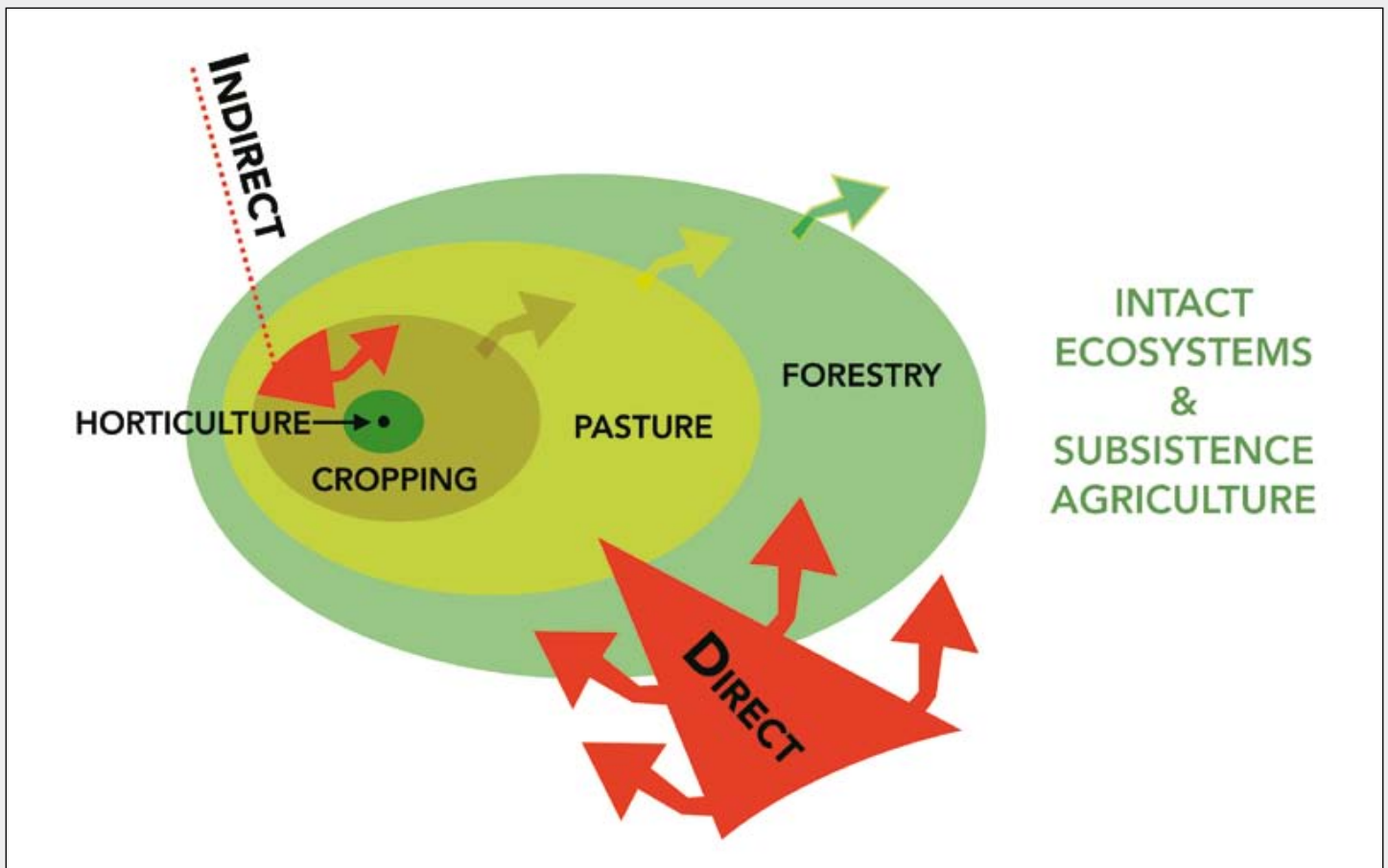
It is an unacceptable situation. We need to be absolutely clear about what the atmosphere sees when we make decisions about energy sources.

Fixing the LULUCF accounting rules so that they are comprehensively applied across the landscape, and ensuring that accounting for forest management owns up to all emissions above historical levels, is essential. A way should also be found to account for the full lifecycle and huge emissions generated by utilisation in Annex 1 countries of bioenergy / biofuels grown in developing countries.

Bioenergy / Biofuel Emissions



■ BIOFUELS — THE MOTHER OF ALL PERVERSITIES



The diagram is based on Von Thünen's Rings. Von Thünen was an early 19th Century economist from northern Germany who came up with a way of describing the relationship between choice of land use and distance from markets which has retained a remarkable utility over the years. His key concept was that those who could afford to pay higher rents tended to use land closer to markets, expressed as:

$$R = Y(p-c) - Yfm$$

[where 'R' is rent per unit of land, 'Y' is yield per unit of land, 'p' is price per unit of yield, 'c' is cost per unit of yield, 'f' is freight rate per unit of yield and 'm' is distance from market].

In Von Thünen's day when agricultural economies tended to be very localised, dairying and market gardening were in the innermost ring around a city (reflecting the absence of refrigerated transport and storage for fresh milk) and forest for fuel was in the next ring (reflecting heating realities in the days before cheap and plentiful fossil fuels – a cautionary historical note worth dwelling upon by bioenergy/biofuels enthusiasts). Next came grains and field crops followed by pastoralism, all surrounded by natural areas unprofitable for agriculture.

In today's world of globalised commodification of agriculture, Von Thünen's analysis remains remarkably valid – but the categories have shifted a bit: horticulture is still at the centre, then cropping land, then pastoral land, then forestry – all surrounded by subsistence livelihoods and natural areas/intact ecosystems. At the centre are mills and ports as such as cities. Note that these categories neatly approximate to the USDA's eight-category land use capability classification system developed mid last century and still widely used.

The policy-driven introduction of bioenergy/biofuels into the global land use mix stands to shift Von Thünen's Rings once again – in a way likely to be advantageous for some and disadvantageous to many.

Frustratingly, many governments are labouring under the misapprehension that, because biomass cropping for bioenergy and biofuels is 'renewable', it is 'carbon neutral' and thus preferable to fossil fuels as a source of fuel in their energy sectors. In the absence of proper carbon footprint analysis and in the presence of perverse accounting rules in the LULUCF sector, however, any assumption as to carbon neutrality is dangerously unsafe – leading to a whole new generation of perverse land use decisions – often with very high direct and indirect social and/or environmental costs.

'Europe's biofuels will be on average 81 to 167% worse for the climate than fossil fuels they are intended to replace', according to a recent study by IEEP (the UK's Institute for European Environmental Policy) cited in a briefing paper circulated by an alliance of ENGOs to European MPs on 'biofuels and indirect land use change (ILUC)'.

The energy sector and policy-makers more generally, need to wake up from their 'see no evil' approach to bioenergy/biofuels. Being policy-driven, rather than market-driven, the effects are rather more complex, pervasive and severe than would otherwise be the case.

While increasing attention is being given to the problem of 'indirect land use change' attributable to expansion of the bioenergy/biofuels industries, 'direct land use change' poses a more severe threat in some regards. To illustrate this problem of perspective on the issue, we have highlighted in the Von Thünen's Rings diagram above, two separate kinds of policy-induced land use change driven by artificially inflated demand for bioenergy and biofuels:

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BIOFUELS — THE MOTHER OF ALL PERVERSITIES Continued from previous page

[I] – Indirect Land Use Change – part of the problem is attributable to initiatives such as the US and EU (among others) subsidising ethanol production to substitute for petrol and diesel as a liquid fuel for their land transport sectors. There is no direct land use change, just stronger demand for crop products such as corn syrup which is diverted from the food processing industry. This indirectly drives expansion of corn and other sugar crops at the expense of other food and fibre crops. The commercial ripple effect means that: a) higher prices as a result of reduced supply drive more expensive food for richer people and less food for poorer people – causing distress and disorder; and, then b) consequential expansion of cropping in response to those increased prices does little to calm people down if their land is taken from them. Besides the social impacts, climate change impacts of converting pastoral farming systems to cropping land can be initially severe and persistent, especially if peat or erodible soils are involved. For ILUC the social problems are serious but environmental problems, including climate change perversities, tend to be secondary. This differs from direct effects:

[D] – Direct Land Use Change – the acquisition of land, currently in some other use, for the express purpose of growing bioenergy/biofuels crops. This tends to happen at the periphery of Von Thünen’s Rings – converting abandoned drained peatlands for maize in Eastern Europe or tropical rainforests in Indonesia and Malaysia for palm oil for instance. In developing countries, this often involves targeting natural and semi-natural areas frequently owned and occupied by indigenous peoples and local subsistence communities (on the economic and geographical periphery of agricultural land used for commodity production, as yet beyond the reach of Von Thünen’s Rings). This drastically exacerbates environmental impacts, especially where intact natural vegetation and/or peat soils are involved, as well as having serious social impacts. This is where the climate change perversities are most acute – vast volumes of greenhouse gases are released to the atmosphere to produce modest volumes of fossil fuel substitute – which would simply not happen were it not for the EU’s policies of perverse encouragement.

It is hard to comprehend the blind enthusiasm of policy makers and some ENGOs to encourage such policy perversity. It is a classic case of ‘out of the frying pan, into the fire’. Trenchant antagonism to fossil fuel producers coupled with cowardice in the face of consumers, encourages

advocacy for alternatives that often have much greater carbon footprints than the fossil fuels they are intended to displace. This is accompanied by awful, but obvious, consequences for biodiversity and local communities (which no-one can claim to be ‘unintended’).

The real problem is that there can be no ‘solution’ to the climate change problem if the world is consuming resources at more than twice the rate deemed sustainable for the planet, with no signs of slowing the rate at which this imbalance is being exacerbated. To pretend that the world can continue on its indulgent consumerist way by simply substituting ‘renewable’ energy crops for fossil fuels is to perpetuate a great deception – and great destruction.

We are encouraged by the discussions within the REDD+ Partnership around the importance of ‘drivers’ of deforestation (principally demand for more cropping and grazing land) and forest degradation (principally demand for industrial roundwood and pulpwood). Developed country investors in REDD projects are beginning to realise that a lot of their public money is going to be wasted competing with demand from within their own economies for wood products from developing countries coming from exactly the places covered by REDD projects (often exacerbated by aid and development money from different agencies within the same governments). The best thing developed countries can do to facilitate prompt and cost-effective implementation of any REDD+ mechanism that might be agreed at the Durban COP/CMP is to dampen their own demand for wood products harvested from the forests they are trying to save (and for agricultural and energy products driving deforestation). ‘Leakage’ can thus be seen to be a demand-side problem not a supply-side problem.

Meanwhile, we’d like to urge bioenergy/biofuels proponents to dwell upon Von Thünen’s Rings a while longer. Consider the enormous buying power of users of electricity, ships, trucks, cars and planes and the preparedness of consumers to keep buying despite price increases. Their capacity to drive reallocation of land to meet their demands is obvious, and that’s before you think about there being more such consumers every day.

The potential scale of that land reallocation, if the current fashion for bioenergy/biofuels persists, is frightening – at least for the poor and those concerned for the fate of the planet’s biodiversity and natural ecosystems.



Swamp forest converted to palm oil plantation. Photo: Marcel Silvius.



Oil Palm Plantation, Bogor, Indonesia. Photo: Flickr User A Rabin.

URGENT FOR SBSTA — TIME TO ELABORATE THE 'FOREST' DEFINITION

The definition of a 'forest' in use at the UNFCCC was determined for application to LULUCF as part of the Marrakesh Accords. It has serious flaws that already lead to perverse accounting outcomes in LULUCF and make it inappropriate for continued use, or for application to the mechanism for reducing emissions from deforestation and forest degradation in developing countries (REDD+).

The current definition makes no distinction between complex biodiverse natural forests and planted crops of monoculture perennial woody plants ("plantations").

It obscures the conversion of natural forests to plantations, and forest degradation (caused by industrial logging, for example). The conversion of a natural forest to a plantation is not defined as deforestation and hence this is not necessarily accounted for by developed countries, despite being the cause of increased emissions.

There is serious concern that adopting this flawed definition in REDD would also undermine the intention to reduce emissions from forests in developing countries, in particular confounding implementation of the safeguard against conversion. Financing of plantation conversion in the name of climate protection may not be forestalled. Emissions from conversion of peat swamp forests, including their peat soils may not be captured.

Although the intrinsic problems with the structurally-based definition were identified years ago and parties requested the scientific advisory body (SBSTA) to develop a biome-based definition, this has never been done.

The current forest definition was developed by the FAO and adopted for use at the UNFCCC. The FAO have also elaborated a range of categories of forest that sit under the definition, thus enabling critical distinctions to be made, and policy applied accordingly¹.

These categories comprise: primary forest, other naturally regenerated forest, and planted forest.

It is imperative, and urgent, for the UNFCCC to also elaborate categories within the forest definition, so as to differentiate between various conditions of forest and thus enable the emissions associated with plantation conversion and forest degradation to be identified and accounted. Picking up the FAO categories is a workable option for now.

NOW IS THE TIME FOR SBSTA TO ACT, TO PREVENT THE FOREST DEFINITION FROM UNDERMINING EFFORTS TO REDUCE EMISSIONS FROM THE WORLD'S LAST REMAINING FORESTS.



This is a 'forest'. Temporarily unstocked forest, Kapuskasing, Northern Ontario.



This is a 'forest'. Conversion of natural forest to plantation, Tasmania, Australia.

¹ Forestry Department, FAO Working Paper 135, Global Forest Assessment 2010, Specification of National Reporting Tables.



■ IPCC REPORT ON RENEWABLE ENERGY DUCKS LAND USE ISSUES ON 'BIOPOWER'

IPCC working Group III has just released the 'Summary for Policymakers' of its 'Special Report on Renewable Energy Sources and Climate Change Mitigation' (SRREN). Unfortunately, its treatment of bioenergy issues is unlikely to give much comfort to said policymakers. The report does an excellent job of bringing together the key findings of lots of studies but one of its key approaches to comparing different sources, on 'life cycle GHG emissions', glosses over biomass problems by setting as a constraint, "land-use related net changes in carbon stocks ... and land management impacts are excluded .." (see Fig SPM.8. p17). Obviously, such an exclusion of a key part of the life cycle, insofar as it only applies to any significant extent to what the report terms 'biopower' (generating electricity by burning biomass), makes biopower look relatively more attractive than it really is – by a potentially large margin!

The IPCC does indicate some sensitivity to this intentional omission by noting (p.17) that, "The sustainability of bioenergy, in particular in terms of life cycle GHG emissions, is influenced by land and biomass resource management practices. Changes in land and forest use or management that, according to a considerable number of studies, could be brought about *directly* or *indirectly* (IPCC emphasis) by biomass production for use as fuels, power or heat, can decrease or increase terrestrial carbon stocks. The same studies also show that indirect changes in terrestrial carbon stocks have considerable uncertainties, are not directly observable, are complex to model and difficult to attribute to a single cause." It would appear that this latter consideration was sufficient to exclude from life cycle analysis not only the GHG emissions implications of such *indirect* changes but also to make no attempt to include readily estimable *direct* implications.

The Summary goes on to note that, "Proper governance of land use, zoning, and choice of biomass production systems are key considerations for policy makers. Policies are in place that aim to ensure that the benefits from bioenergy, such as rural development, overall improvement of agricultural management and the contribution to climate change mitigation, are realised;". IPCC WG III was clearly thinking of another planet when they came to that conclusion and perhaps they had some awareness of this when concluding, "their (Policies in place) effectiveness has not been assessed"! Sadly, current policies on planet Earth, viz the LULUCF accounting rules, are 'in place' to hide the grim reality that the principal bioenergy/biofuels industry development strategies currently in favour are designed to hide their perversely negative impacts on climate change mitigation efforts.

If realistic estimates of likely changes in carbon stocks, and in associated gross emissions and sequestration, had been included in the IPCC's so-called 'life cycle' analysis, this perverse reality would have been obvious to all policy makers. As it is, policy makers can continue to hide behind the convenient fiction that current biomass burning for bioenergy or biofuels strategies involve 'mostly harmless' activities. A far better conclusion would have been that the sooner full land-based accounting for carbon is required to be used for national reporting and accounting purposes, so that misleading accounting becomes a thing of the past, the better for all concerned.



Tropical deforestation — the aftermath. © iStockphoto.com.



YOUNGOs in action.

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WELCOME TO THIS THIRD SPECIAL BULLETIN ON TRUTH IN TARGETS. It discusses reference levels, compensation baselines, and why measuring forest degradation and carbon stock changes of forests and their soils is vital to tackling climate change in REDD+ and LULUCF.

- In this bulletin:**
- Page 1: Carbon stock reference levels needed
 - Page 2: What is a reference level, a reference emission level, a baseline ...? How should they be used?
 - Page 4: Peat soil particularities in setting baselines and reference levels for forests
 - Page 5: The terrestrial carbon debate must focus on degradation in all its forms
 - Page 5: How a compensation baseline might be derived
 - Page 6: Forest transition curves — seeing is believing
 - Page 8: A workable framework for categorising deforestation and forest degradation activities
 - Page 8: A modified matrix can be used for peat/swamp forests

■ WHAT IS A REFERENCE LEVEL, A REFERENCE EMISSION LEVEL, A BASELINE...? HOW SHOULD THEY BE USED?

Need to clearly define terms at the outset

Currently, there is no agreed definition or consistent use of ‘reference level’ or ‘reference emission level’ in the climate negotiations (or in the literature) related to measuring emissions or carbon stocks. Similarly, ‘forest reference level’ and ‘forest reference emission level’ have no agreed definition or consistent use.

In the absence of agreed use of terms, misunderstandings are almost inevitable. Resolving this uncertainty is urgent and important. It is our view that the uncertainty created by ongoing use of undefined terms might be acting as a significant deterrent to making critical decisions on the whole range of issues relating to the management of terrestrial carbon that are before the UNFCCC.

(a) Differentiate technical and political components

There needs to be explicit recognition that the process of reporting progress towards targets, or of calculating eligibility for available incentives, has both a technical and a political component. If the technical and political components are not clearly separated, the development of any REDD+ mechanism will be beset by the same problems currently facing negotiators with respect to the future of LULUCF accounting rules under the Kyoto Protocol (KP). Past failure to separate components in LULUCF under the KP means that senior negotiators are being drawn into complex discussions over technical minutiae as a surrogate for open debate over policy. Development of a REDD+ mechanism provides negotiators with an opportunity to be transparent and sensible in taking a fresh approach.

‘Reference level’ is a technical concept

Our first proposition is that the term ‘reference level’ (and any associated qualifiers, such as ‘national’, ‘emissions’ or ‘forest’) should be used to describe the **outcome of a scientifically robust technical process** based on transparently derived data through application of methodologies approved by the COP on advice from SBSTA.

‘Baseline’ is a political concept — derived from a subsequent process

Our second proposition is that the term ‘baseline’ (and any associated qualifiers, such as ‘compensation’, historical, ‘projected’ or ‘forward looking’) should be adopted to describe the **outcome of a subsequent transparent political process** based on factors that might be adopted by the LCA. The baseline can then be used to transpose a technically derived reference level into a politically agreed **measure of progress towards a target and/or eligibility for incentive schemes**.

Decision 1/CP.16 provides that the REDD+ mechanism is to evolve into results-based actions — there is no suggestion that “results” are to be measured relative to the reference level alone. For this reason we see the need to introduce the new term “baseline” to allow for clear and transparent debate on how to convert a “reference level” based on historical data (see Decision 4/CP.15) into a “compensation baseline” for calculating results-based payments.

(b) Elaborate categories of reference levels

Reference levels should be regarded as key parts of approved methodologies designed to help Parties meet their obligations pursuant to the UNFCCC.

In this regard, it is important that, in developing methodologies for implementing a REDD+ mechanism, Parties do not repeat their earlier mistakes and omissions in seeking to implement the LULUCF provisions of the Kyoto Protocol, see Box 1, where Parties developed LULUCF methodologies based only on estimating and reporting changes in emissions rather than changes in carbon stocks.

It is hoped that negotiators will take this opportunity to give effect to the obligation to address both emissions and carbon stocks (reservoirs) in a more coherent and transparent way than has been the case with LULUCF rules under the Kyoto Protocol.

Box 1: Selected obligations of parties to the UNFCCC and Kyoto Protocol to protect carbon stores (reservoirs) as well as reduce emissions:

–UNFCCC Article 4.1 states that, “All parties ... shall (inter alia): (d) Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate of sinks and reservoirs ... including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems;”

–Article 2.1 (a) (ii) of the Kyoto Protocol commits Annex I parties to “(a) implement and/or further elaborate policies and measures in accordance with its national circumstances, such as (inter alia): (ii) protection and enhancement of sinks and reservoirs of greenhouse gases ...”.

–KP Article 3.3 requires that “the net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land use change and forestry activities, ... measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article ...”.

–KP Article 3.4 goes on to require each Annex I Party to “provide, for consideration by the [SBSTA], data to establish its level of carbon stocks in 1990 and to enable an estimate to be made of its changes in carbon stocks in subsequent years.”

There are two categories of reference levels that warrant explicit identification and elaboration based on the commitments established by ratification of the UNFCCC. These are (1) reference levels for *emissions* and (2) reference levels for *carbon stocks*:

1. **‘reference emission levels’ (RELs)**. This term should be used to describe estimates of actual historical GHG emissions from clearly identified ‘activities’ in a specific area (or a specific aggregate of such RELs). It could be further elaborated as a ‘national reference emission level’, a ‘subnational reference emission level’, a ‘forest reference emission level’ — or any other relevant qualifier. It might also be elaborated as an ‘historical emission level’ (although, ‘historical’ would be unnecessary because all ‘technical’ RELs are based on things that happened in the past — any future considerations would be based on ‘baselines’ politically derived from an REL).

2. **‘reference carbon stock levels’ (RCLs)**. This term should be used to describe estimates of carbon stocks in a clearly defined area. The area will either be defined administratively, as in ‘national’ or ‘provincial’ (or other appropriate sub-national descriptor), or ecologically, as in ‘forest’ or other agreed land use category. Such RCLs would be based on relevant guidance, notably the latest IPCC 2006 Guidance identifying a number of separate terrestrial carbon pools. An RCL might be expressed in absolute amounts of carbon, or be expressed relative to an estimate of undisturbed, non-degraded carbon levels — the natural carbon carrying capacity of a landscape (CCC) or part thereof. Use of RCLs allows for the development of ‘stock change’ methodologies necessary not only to support the introduction of land based accounting but also to support a range of useful baselines (see below) currently under discussion but which have yet to be developed. Carbon stock changes can still be attributed to activities if required and justified. See Attachment 1 of this submission for further explanation on the need to focus on carbon stocks as well as emissions.

In all cases, RELs and RCLs should be regarded as technical estimates of actual emissions to atmosphere or of carbon stores, based on approved methodologies.

(c) Derive a baseline as a basis for calculating progress and / or incentives

The term ‘baseline’ should be used to describe the result of an explicitly political exercise of converting or applying a reference level to determine an amount to be used either as the basis for calculating progress towards meeting a target or for calculating eligibility for incentives schemes, including financial benefits such as carbon credits. Examples of such ‘baselines’ would include:

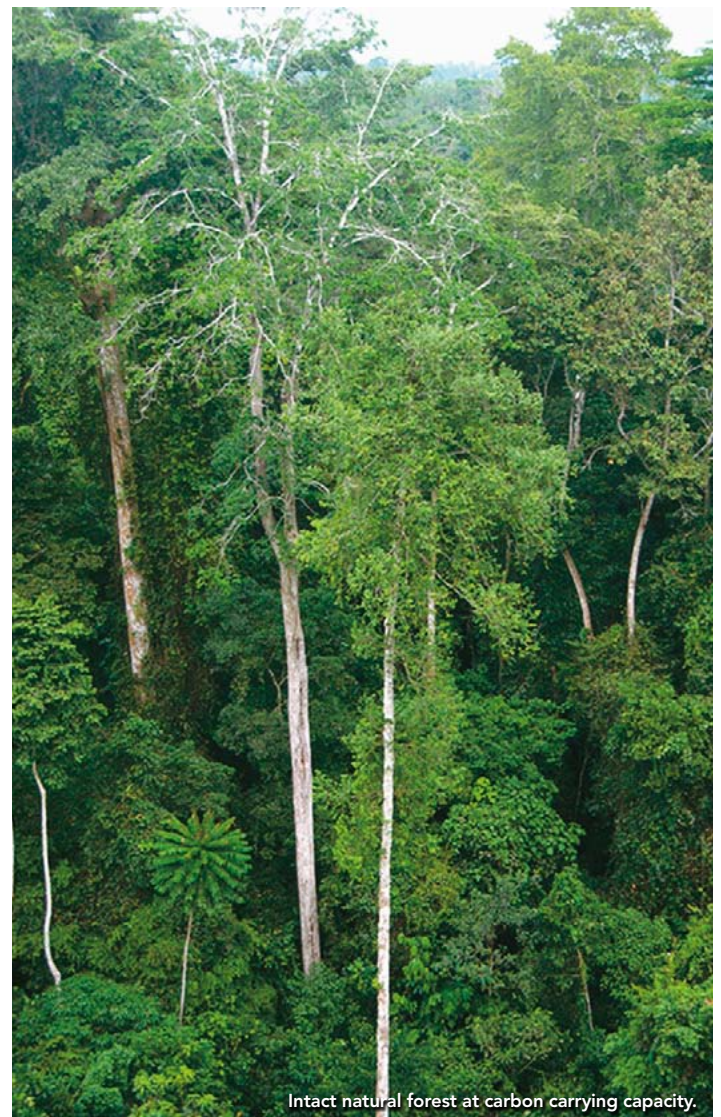
- A **‘forward-looking’ or ‘projected’ baseline** based on either a direct extrapolation of an ‘historical reference level’ of actual emissions or on a modification of an historical reference level based on the implications of identified policy settings — or any other political choice or construct that might be agreed by a COP.
- An **‘historical’ baseline**, for instance, might be simply derived from an historical reference level by choosing a specific year or period of years or by discounting or inflating such amounts by an agreed factor. Such factors might relate to the GDP of a country or province, to the scale or intensity of any driver of degradation, to the relative extent of accumulated degradation (such as Angelsen’s forest transition curves¹), or to any other factor deemed relevant by Parties.

- A **‘target’ baseline** whereby a reference level of actual emissions is converted into a different amount to be included in calculations of contributions to meeting agreed targets by application of agreed accounting rules.

- A **‘compensation’ baseline** whereby a reference level of actual emissions can be transposed pursuant to an agreed formula to derive an amount to be used for calculating benefits due for REDD+ eligible activities. Such benefits might be the number of credits to be issued to eligible entities pursuant to an agreed market mechanism or the scale of benefit due pursuant to any other funding mechanism adopted by or recognised by the COP.

This issue of a ‘compensation’ baseline is receiving much recent attention as people struggle to put the pieces together to operationalise a REDD+ mechanism. An agreement to refer to it as a ‘compensation baseline’ — rather than a ‘reference level’ — would be a good start.

In summary, we propose that the term ‘reference level’, and all its variants, would be used to describe technical estimates of real stock levels or emissions based on application of agreed methodologies. ‘Baseline’, and all its variants, would be used to describe numbers derived from reference levels by application of one or more politically chosen conversion or transposition factor.



Intact natural forest at carbon carrying capacity.

¹ Angelsen, A. 2007. Forest Cover Change in Space and Time: Combining the von Thunen and Forest Transition Theories. *World Bank Policy Research Working Paper 4117* (February).

■ PEAT SOIL PARTICULARITIES IN SETTING BASELINES AND REFERENCE LEVELS FOR FORESTS

ACKNOWLEDGEMENT: This article was supplied by Wetlands International, experts on forest peat issues.

The enormous pool of carbon in forest peat soil (on average, ten times larger per hectare than the entire carbon stock in the biomass of tropical forests), and its sensitivity to oxidation, means that the emissions behaviour of peat swamp forests is fundamentally different from that of forests on mineral soils. A fundamental error is often made by not differentiating sufficiently between emissions resulting from clearing a forest and ongoing emissions from forest peat soil after clearing and draining.

Emissions from clearing a forest primarily involve the removal and oxidation of forest biomass. These emissions can be considered to be more-or-less instantaneous, but they largely stop once clearing stops (and may be promptly reversed by subsequent regeneration). In contrast, emissions from peatland drainage continue until the drained area is effectively rewetted (reinstalling water level + revegetation) or the entire peat is depleted — i.e. emissions may continue for decades, or even centuries, after clearing and draining. See Figure 1.

Failure to deal properly with peatland drainage can result in wrong estimation of the relative importance of emissions. Emissions arise not only from initial, once-off peat swamp forest clearing and drainage but also continue from subsequent and ongoing peatland use. Such failure will lead to severe underestimation of the annual emissions from drained peatlands and, consequently, lead to adoption of wrong reference level scenarios and hence provision of wrong guidance for planning, policy review and development.

Reducing emissions from peat swamp deforestation and degradation (REDD+) is only possible by the combination of:

- 1. Preventing further peatland degradation and drainage (from new conversion or intensified drainage on already drained peatland). This will, however, merely maintain annual GHG emissions on the status quo level, because emissions from already drained peatland will continue.**
- 2. Reducing drainage intensity in already degraded and drained peatlands. This requires peatland rewetting and reforestation (i.e. reducing drainage levels and/or intensity) is the only means to decrease annual emissions from peat.**

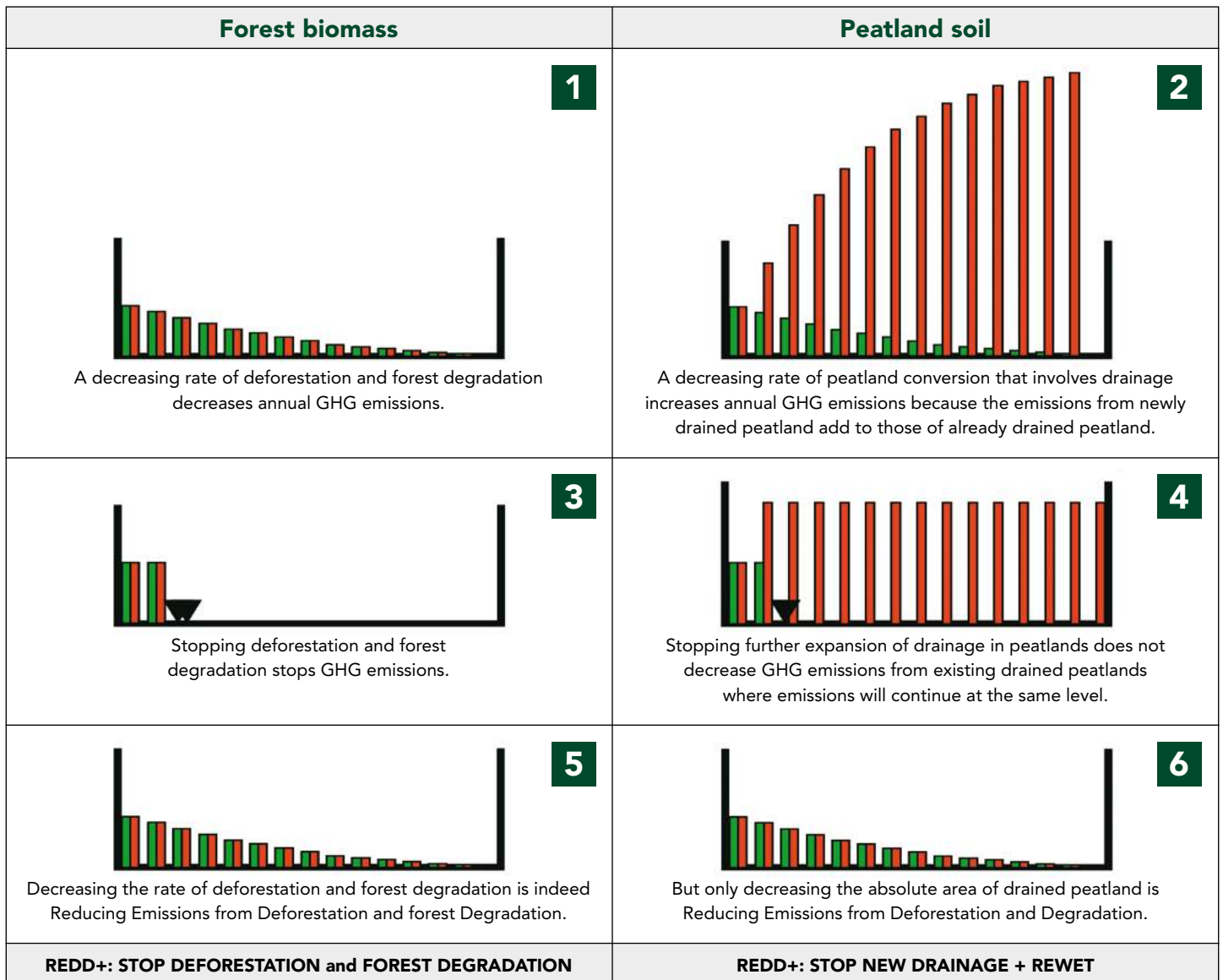


Figure 1. The relation between annual land use change ([1]-[5]) / land use ([6]) (ha/year, green) and total annual emissions (ton of CO₂ eq./year, red) when considering forest biomass only (left) and when considering peat soil (right).

■ THE TERRESTRIAL CARBON DEBATE MUST FOCUS ON DEGRADATION IN ALL ITS FORMS

Too often ‘deforestation’ is used lazily such that it is unclear whether the term is being used as shorthand to refer to ‘deforestation and forest degradation’ or to explicitly exclude other forms of forest degradation from consideration. In 2007 the Bali COP decided to include ‘reducing emissions from deforestation and forest degradation’ in the Bali Action Plan — the second ‘D’ in REDD. Parties thus have an obligation to ensure that ‘forest degradation’, in its widest sense, is given equal methodological treatment to ‘deforestation’.

Obviously, it is simpler and easier to merely drive policy on the basis of reports or estimates of deforestation, but to promote the idea that it should be used as the interim, quick and dirty, basis for introducing a REDD+ mechanism would set back the cause of harmonising carbon and forest conservation policies by a decade.

Of immediate concern is that any moves to limit reference levels to ‘deforestation’ while excluding ‘forest degradation’ (which obviously includes ‘deforestation’ as an extreme form of degradation) would exclude opportunities to report and account for carbon stock losses or emissions from forest degradation that do not involve deforestation. This has two serious problems:

- Firstly, deforestation is often the eventual result of a long and complex chain of degrading activities (such as logging, road-building, grazing, arson). Therefore, regardless of measures taken to directly limit deforestation (such as preventing conversion of forests to cropping land or pasture) if these degrading activities are not directly controlled, deforestation may eventually result;
- Secondly, forest degradation is often a major cause of carbon store reduction and a major source of emissions in its own right, and directly controlling such degrading activities is warranted in seeking to reduce emissions or maintain carbon stocks. The key degrading activity is obviously industrial-scale logging — a major source of emissions that need not directly cause deforestation. Industrial demand for wood is the

principal driver of such forest degradation. A consequential problem that would arise from failure to develop methodologies that deal with such forest degradation is that this would frustrate attempts to address commodity wood demand as a driver of emissions and carbon stock losses from forests. Additionally, in the case of forests on peat soils, addressing deforestation only would fail to deal with emissions related to the drainage of organic peat soils for activities such as small-holder agriculture and industrial plantations, which are, in the tropics, the most substantial and most rapidly growing sources of peatland emissions. If these degraded areas are excluded from the REDD+ baseline, emissions will continue and increase without any incentive to reduce them. Moreover, new plantations will then preferentially move to deforested and abandoned peatlands leading to intensified (deeper and denser) drainage and larger, but unaccounted for, emissions (displacement of emissions or leakage). It is critical that the emissions from all peat forest soils are included in the baseline of REDD+, both of currently forested and previously deforested peat soils. We recommend that UNFCCC makes this explicit in its guidance for REDD+. Although currently without canopy cover, deforested and abandoned peat swamps are nevertheless ‘temporarily unstocked as a result of human intervention’ (see definition of “Forest” in the Annex to decision 16/CMP.1) and can naturally regenerate to forests in the absence of human management and anthropogenic fires.

The broadening of the Coalition of Rainforest Nation’s ‘RED’ proposal (explicitly avoiding accountability for what happens within forests) to ‘REDD’ in Bali remains an historic step forward — it is not an historical curiosity to be put behind us as if it were an unfortunate anomaly.

Any attempt to limit consideration of the broad and complex field of forest degradation to the single extreme form of ‘deforestation’ can be expected to lead to perverse outcomes, as it turns a blind eye to the degrading effects of all those forest management activities that do not lead to ‘deforestation’ — including the conversion of native forests to plantations managed for production of wood or other products. This should be regarded as an unconscionable simplification.

■ HOW A COMPENSATION BASELINE MIGHT BE DERIVED

We support development of a fair formula for converting a reference emission level or reference carbon stock level into compensation baselines that realistically recognise the different development status of the countries and communities involved. In all situations, however, we feel that it is important that ‘compensation’ must be seen to be explicitly linked to and constrained by verifiable, scientifically credible reports of estimates of emissions reduced or emissions avoided based on methodologies that clearly, credibly and comprehensively link measurements of environmental variables to emissions estimates.

To allow a compensation baseline to be constructed which allows benefits to be received even when emissions have increased is perverse and should be regarded as unacceptable. That things are not as bad as they might have been is not good enough! The pair of graphs in Figure 2, overleaf, illustrates this potential for perverse outcomes when it comes to treatment of ‘reduced impact logging’ (RIL) or any other form of logging short of clearfelling.

A compensation level would preferably be based on the extent to which the land base of countries, or of sub-national provinces, have been degraded below carbon carrying capacity (CCC — the carbon store expected in an undegraded landscape). This is most important when considering the appropriate land use policy response. In general, low degradation jurisdictions need to be assisted along alternative development paths that avoid further degradation while high degradation jurisdictions need help in restoring carbon density while delivering other development outcomes, and all variants and combinations in between.

Thus, while an estimate of changes in carbon stores or rates of emissions is needed to identify the overall scale of atmospheric benefit to drive potential compensation, the nature and scale of appropriate compensation should be related to the overall degree of degradation (current carbon stock level relative to original CCC).

■ FOREST TRANSITION CURVES — SEEING IS BELIEVING

In 2007, the World Bank published a working paper by Arild Angelsen on ‘Forest Cover Change in Space and Time — combining the von Thünen and forest transition theories’¹. This paper asserts a relationship between ‘forest cover’ and ‘time’ commonly referred to as a forest transition curve (see figure below). In essence, ‘frontier’ development triggers loss of ‘undisturbed’ forests while ‘reinforcing loops’ facilitate further and faster forest loss until ‘stabilising loops’ slow the rate of loss as a ‘forest/agriculture mosaic’ land use pattern is established from which forest cover then begins to increase again as ‘plantations’ are added to the mozaic.

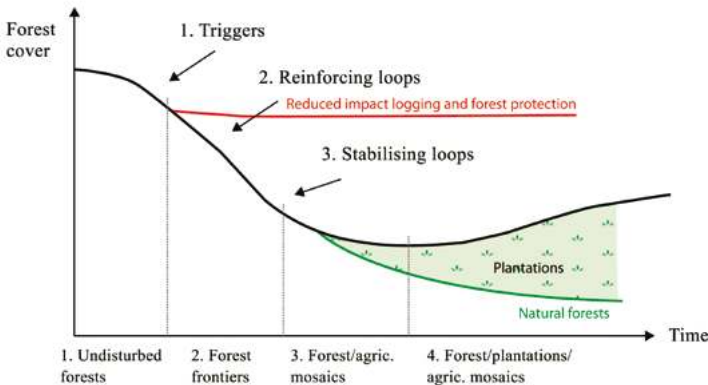


Figure 2. The original Angelsen forest transition curve modified to reveal conversion to plantations and to indicate possible effect of introducing Reduced Impact Logging or more Forest Protection.

Note that we have modified Angelsen’s curve by indicating the substitution of declining native forest cover for increasing planted forest cover. The important point to make here is that there are no economic fundamentals of development that drive maintenance, let alone recovery, of natural forest cover — quite the opposite. For as long as ‘forest cover’ (or ‘deforestation’) is used as the primary indicator and the definition of ‘forest’ includes plantations, the extraordinary losses of biodiversity value, carbon storage and wood resource associated with degradation are shielded from public policy attention.

We have additionally modified Angelsen’s curve by adding a new curve at an earlier point of departure and a higher stabilisation level. If ‘forest cover’ is the indicator, this line is the same for ‘reduced impact logging’ (RIL) regimes and for any regime to protect mature, intact, oldgrowth forest — irrespective of the wildly different degradation signatures of such a range of possible forest management regimes. To allow such losses of value to be ‘seen’ by policy-makers, ‘forest degradation’ of some policy-relevant forest characteristic has to be used as the primary indicator — which, for UNFCCC purposes, is carbon store size.

The failure to consider that loss of forest cover (deforestation) occurs in the wider context of forest degradation renders it of limited utility for advancing contemporary UNFCCC policy discussions for REDD+, as established by the 2007 Bali Action Plan. Thankfully, Angelsen, himself, is at pains to point out that, among the suite of simplifying assumptions that he makes, he “*treat(s) forest as one category which is — admittedly — a big simplification*” (his emphasis, p.8). This simplification has three serious problems for carbon policy-makers (and those concerned for a broad suite of linked environmental, social and economic values of forests):

- **Degradation** of many values of forests without involving loss of forest cover (as defined by FAO), especially by logging, is ignored (allowing loss of carbon, biodiversity, wood and a suite of other values to escape scrutiny);
- **Conversion** of natural forests to plantations is ignored (allowing FAO’s broad definition of ‘forest’ to hide ongoing loss of natural forests as planted forests are established in their stead — while this may be ‘sustainable’ for wood supply purposes, it is obviously not for any other use or value of a natural forest); and
- **Leakage** (drivers from outside the locality or country) is ignored in presenting change over time as an orderly, sigmoidal curve driven by changing local or national development patterns (exposure to global commodity markets do not allow for such laconic development strategies — the sudden and unpredictable arrival of global commercial interest triggers a sudden and disorderly collapse).

In essence, all Angelsen is recording is the propensity for economies to over-exploit ‘free’ wood resources from natural forests and then establish ‘costly’ plantations to maintain supply as rising demand elevates prices relative to agricultural prices sufficiently to justify it. Much the same pattern of human behaviour can be observed in the rise of fish farms/aquaculture to substitute for declining wild-capture fisheries — or a host of other characteristics of developing economies and societies. Angelsen claims that his curves are different from Kuznets’ ‘environmental Kuznets curves’ (see figure 3) but this is actually not true — while Angelsen uses ‘time’ on the x-axis of his graph as a surrogate for ‘level of development’, Kuznets uses ‘income per capita’ — as a different surrogate for exactly the same developmental phenomenon. If you were to transpose Kuznets’ rate of environmental degradation bellshaped curve into a sigmoidal extent of environmental degradation, it would look remarkably similar to Angelsen’s.

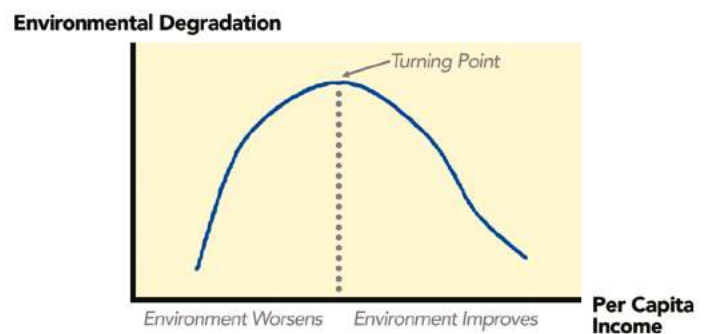


Figure 3. The environmental Kuznets curve.

While strategies aimed at increasing the relative rental value of natural forests (*vis á vis* agriculture), by maintaining their wood value for instance, may be of some utility in reducing rates and extent of forest cover loss, they actually exacerbate the loss of biodiversity and carbon value (and most other ecosystem services) of intact forest, especially where natural and planted forests are not differentiated. To be efficient and effective as instruments of climate change mitigation, such strategies need to actually protect terrestrial carbon stores rather than merely slow their rate of degradation.

This change in perspective can be neatly illustrated by changing the labelling of the y-axis on the Angelsen’s forest transition curve from ‘forest cover’ to ‘forest carbon store size’. This is illustrated in the diagram following.

¹ Angelsen, A. 2007. Forest Cover Change in Space and Time: Combining the von Thunen and Forest Transition Theories. World Bank Policy Research Working Paper 4117 (February).

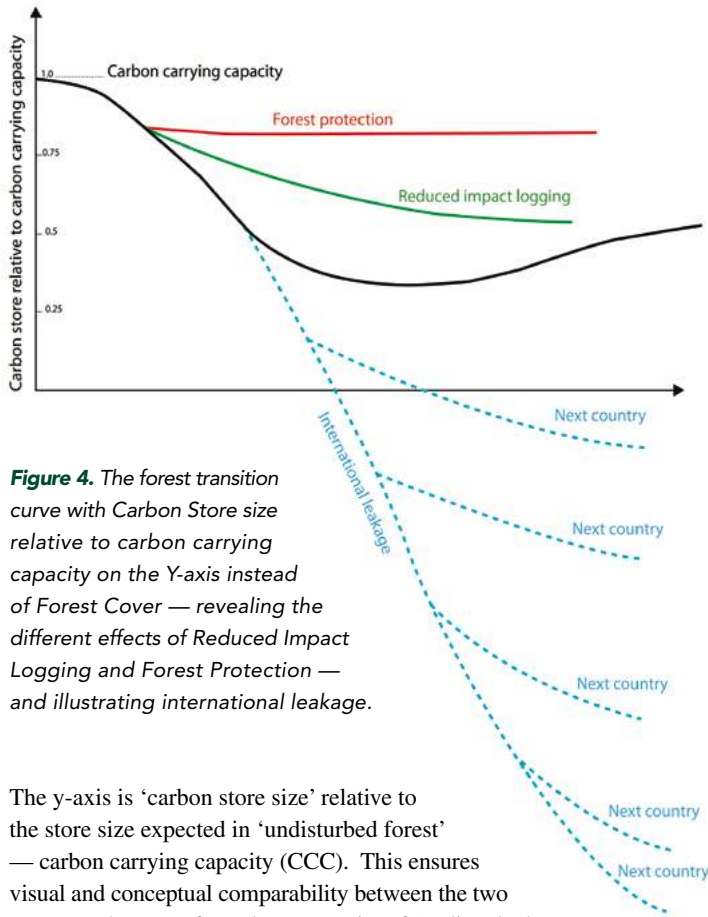


Figure 4. The forest transition curve with Carbon Store size relative to carbon carrying capacity on the Y-axis instead of Forest Cover — revealing the different effects of Reduced Impact Logging and Forest Protection — and illustrating international leakage.

The y-axis is ‘carbon store size’ relative to the store size expected in ‘undisturbed forest’ — carbon carrying capacity (CCC). This ensures visual and conceptual comparability between the two curves as they start from the same point of ‘undisturbed forest’ — as well as being the appropriate perspective to take when considering the role of forest management in climate change policy.

The critical difference is that the ‘reduced impact logging’ (RIL) line is no longer the same as the ‘forest protection’ line. It can now be clearly seen that RIL is a form of degradation that delivers an inefficient policy outcome from a climate change mitigation perspective — emissions may be reduced compared to business as usual but they are not eliminated as is the case for forest protection. Visually, it is now clear that protecting natural forests can deliver quicker and bigger emissions savings than any other management option (while also protecting that suite of other uses and values of maintaining remaining natural forests as we find them).

International Leakage — what to do about it?

Note also that we have added a suite of dotted-line curves below the modified Angelsen curve. These are intended to illustrate the leakage problem. Underlying, globalised demand for natural resources (both for land and wood) will simply displace supply from a landscape in transition to which policy controls are applied at a property, provincial or national level to others that are not so effectively controlled by such policy settings. This is a process that can be, and is being, endlessly repeated across the forested landscapes of the world — unless something is done about it!

Tuvalu has suggested that some kind of international reference level is needed to deal with this international leakage problem. Our suggestion is that a suite of international reference levels should be built around identifiable international drivers of forest degradation (including deforestation). The Cancun COP decision on REDD+ establishes an obligation on the part of all countries to address drivers of deforestation and forest degradation.

Developing countries have already begun reporting on drivers that operate within their national jurisdictions but dealing with the international component of such drivers remains unfinished business. Developed countries that are largely responsible for trade-related drivers — which is the overwhelming majority of the drivers problem — have, as yet, no equivalent obligation. This is manifestly unfair.

The trade in wood and wood products derived from tropical forest degradation might be used as the basis for a leakage reference level, for example. Each importing country might have an individual commitment to reduce its demand for such products and so reduce its contribution to international leakage. Importing countries might also have a collective global leakage reduction target imposed upon them — much like target setting under the Kyoto Protocol.

Creation of such a leakage reduction mechanism would create a powerful incentive to develop methodologies to transpose reported product trade flows into estimates of greenhouse gas emissions for reporting purposes. The product chain of custody systems needed to provide for it are already widely used in a number of industry supply chains to support a wide array of accreditation and certification systems.

In this particular instance, an appropriate international body — the ITTO (International Tropical Timber Organisation) — already exists. It could be asked to establish and operate such a leakage reduction scheme much as the IMO (International Maritime Organisation) is doing for international shipping while ICAO (International Civil Aviation Organisation) talks about doing for international airlines. ITTO’s mandate covers orderly trade in tropical timber products and has recently been modified to strengthen its mandate to support sustainable management of forests. UNFCCC could ask ITTO for its assistance in running a scheme aimed at helping maintain forest carbon, and ITTO should be well placed to make such a contribution to the shared global goal of avoiding dangerous climate change.


One of the interesting opportunities arising from taking this approach to addressing international leakage of emissions from forest degradation is that success by developed countries in reducing drivers of forest degradation in developing countries could be used as an eligibility criterion for participation in a REDD+ market mechanism. That is to say, developed countries would have to be able to demonstrate a commitment to fixing the drivers problem at home before seeking to fix the associated degradation problem abroad. This would fix the ‘do as I say not as I do’ problem that currently besets development of a REDD+ mechanism — where on the one hand developed country taxpayers are to support their government in spending money on REDD+, ostensibly to save forests in developing countries, while on the other hand, as consumers, they are spending money to drive degradation of the very same forests.

Similar leakage reference level arrangements could be developed for a suite of other international drivers of forest degradation, especially rapidly expanding agricultural and energy crops, like corn, soya beans and palm oil. Where there is no suitable existing intergovernmental international forum, like ITTO for tropical timber trade, an arrangement might be needed to appropriately recognise trade associations, roundtables or other suitable commercial or community institutions. Ultimately, however, it will be for UNFCCC member governments to formally endorse the targets and mechanisms that others might develop at the UNFCCC’s behest.




■ A WORKABLE FRAMEWORK FOR CATEGORISING DEFORESTATION AND FOREST DEGRADATION ACTIVITIES

The five categories of eligible activities included in decision 1/CP.16 (for reducing emissions from deforestation, and from forest degradation; conservation of carbon stocks, sustainable management of forests and enhancement of carbon stocks) can be usefully harmonised with the FAO categories that countries are using for their 2010 Forest Resource Assessment as follows:

	Primary forest	Other naturally regenerated forest	Planted forest	Other land uses
Primary forest	Conservation of carbon stocks	Forest degradation	Forest degradation (safeguard exclusion)	Deforestation (safeguard exclusion)
Other naturally regenerated forest	Enhancement of carbon stocks	Sustainable management of forest	Forest degradation (safeguard exclusion)	Deforestation (safeguard exclusion)
Planted forest	Enhancement of carbon stocks	Enhancement of carbon stocks	Sustainable management of forest	Deforestation (safeguard exclusion)
Other land uses	Enhancement of carbon stocks — afforestation	Enhancement of carbon stocks — afforestation	Enhancement of carbon stocks — afforestation	Not applicable

■ A MODIFIED MATRIX CAN BE USED FOR PEAT/SWAMP FORESTS

	Primary/restored peatswamp natural forest	Degraded peatswamp natural forest	Planted forest	Other land use
Primary/restored peatswamp forest	Conservation	Degradation	Deforestation and degradation (safeguard exclusion)	Deforestation (safeguard exclusion)
Degraded peatswamp forest	Enhancement of carbon stocks	Degradation	Deforestation and degradation (safeguard exclusion)	Deforestation (safeguard exclusion)
Planted forest	Enhancement of carbon stocks	Degradation	Degradation	Deforestation (safeguard exclusion)
Other land use	Enhancement of carbon stocks	Degradation	Degradation	Degradation

ABOUT THE AUTHORS

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WELCOME TO THE FOURTH SPECIAL BULLETIN ON TRUTH IN TARGETS. It focuses on decisions needed at the Conference of the Parties to the UNFCCC in Durban this December, and the path forward from Durban. Closing the LULUCF loopholes and accounting for bioenergy emissions are vital.

- In this bulletin:**
- Page 1: Durban decision time on LULUCF rules — ‘better the Devil you know...’
 - Page 4: Bioenergy — time to track, and take responsibility for, its carbon footprint
 - Page 5: Bioenergy — a rapidly escalating threat to natural forests — globally
 - Page 6: Urgent for SBSTA — time to elaborate the ‘forest’ definition
 - Page 6: VRD — the Voluntary REDD+ Database
 - Page 7: Equitable Sharing of Atmospheric Space needs a Consumption-based Approach
 - Page 7: Checklist of LULUCF related decisions needed in Durban
 - Page 8: Consumption, Leakage and Drivers — different aspects of the same problem

■ DURBAN DECISION TIME — ‘BETTER THE DEVIL YOU KNOW..’ Continued from page 1

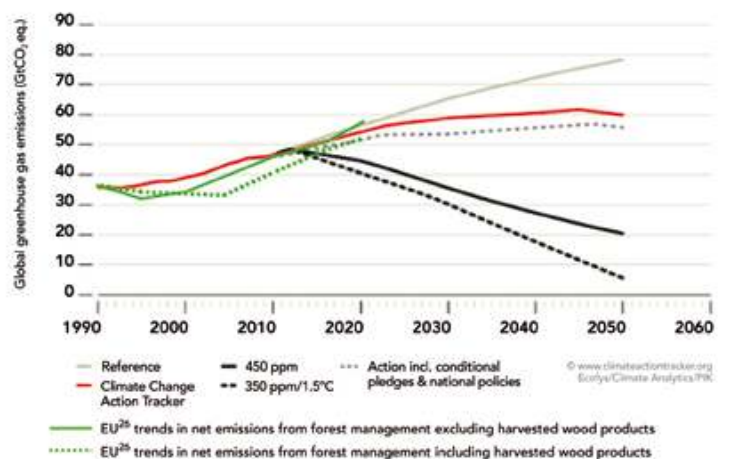
The half billion tonne ‘forward-looking baseline’ loophole

As awareness grows that emissions from the LULUCF sector are too large to ignore, the pressure is on to make it mandatory to account for these emissions, especially from ‘forest management’ (mostly industrial-scale logging of native forests, conversion of native forests to plantations and use of drained swamp forest peat soils). Unfortunately, Annex I countries’ LULUCF negotiators have responded to this pressure with a proposal to allow an even more perverse loophole — use of ‘forward-looking’ baselines.

For all other sectors of their economies, Annex I countries report and account for their emissions against an ‘historical’ 1990 base year (regardless of how individual countries might express their emissions reduction targets, such targets are compared by reference to the standard 1990 baseline). This comparability standard is obviously necessary if sensible conversations are to be had as to whether countries are making effective progress towards meeting their emissions reduction targets.

For the ‘forest management’ sector, however, a special scam is being cooked up. Annex I countries’ LULUCF negotiators want to be able to use anticipated future ‘business as usual’ emissions, based on current policy settings, as their baseline for accounting purposes. In other words, even if actual emissions from ‘forest management’ increase as anticipated, they would be accounted for as ‘zero’. If emissions growth is greater than anticipated, the accounts would show a negative value and an accounting debit would result. In a preposterous perversity, however, if actual growth in emissions turned out to be less than anticipated, their accounts would show a positive value — despite the fact that emissions had actually increased. They would be able to claim windfall accounting credits for not having done as badly as intended.

To illustrate this perversity, consider the diagram below. The aggregate numbers reported by the EU (minus Poland) show plans to increase net emissions from the ‘forest management’ sector (see the solid green line) at much the same rate as in recent years. If actual net emissions growth matches these plans, then the accounts would show ‘zero’ if they were allowed to take such a ‘forward looking baseline’ approach. For Annex I countries together, this is a half billion tonne a year scam — and they should not be allowed to get away with it.



Note that a significant driver of this anticipated increase in emissions from Europe’s supposedly ‘sustainably managed’ forests is attributable to more intensive logging on shorter rotations to feed growing demand for ‘bioenergy’. This shift is, in turn, driven by the EU’s renewable energy directive that perversely encourages this increase in emissions by pretending that they do not exist. This is discussed further in the next article.



The LULUCF logging loophole would hide that increased logging of forests in developed countries will emit more CO₂. © Shutterstock.com/Andre Nantel.

Why caps won't fix the problem

As labyrinthine LULUCF negotiations have failed to give the planet a guarantee that developed countries will be properly accountable in this sector, imposition of a 'semi-symmetrical' cap (one that caps the scale of variations between emissions plans and subsequent reality that can be included in national accounts) has been proposed to limit the damage to the integrity of those national accounts.

Why not just wear our cap at a jaunty angle and carry on? Very tempting but, unfortunately, it doesn't help. A cap can limit credits and/or debits if actual emissions deviate from expectations but it does nothing to retrieve all those emissions that have been hidden from the accounts by use of a business-as-usual, 'forward-looking baseline' in the first place. A cap cannot make an emission loophole disappear. It cannot bring missing emissions into the accounts. But it can fool the uninitiated into erroneously thinking that the problem has been contained when it has not.

Better the Devil you know...

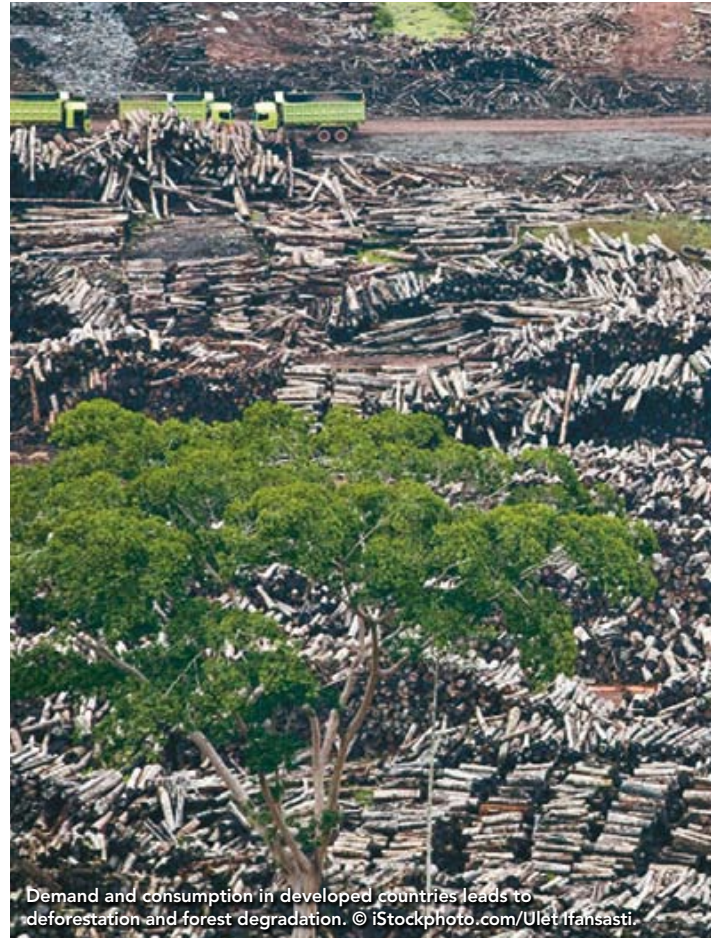
Right now, we face the awful prospect that the LULUCF emissions loophole will be doubled in size — from half a billion to a billion tonnes of emission missing from Annex I countries' national accounts. No doubt, government spin doctors will seek to publicly portray making 'forest management' accounting mandatory as a positive step forward — while failing to mention that nothing will be accounted for. **We have reluctantly reached the conclusion that it is far better to stick with the moderately perverse LULUCF accounting regime we currently have** — and to make a commitment to design a new, loophole-free regime. Moving to a more perverse accounting regime is definitely not the way to go.

Land-based accounting needed to fix the loophole problem

It is vital that the Durban COP decides that land-based accounting will be mandatory for all countries with commitments for whatever agreement is negotiated beyond a second commitment period for the Kyoto Protocol (whether that might be a new KP commitment period or a new LCA agreement). Only by insisting that all countries adopt mandatory, comprehensive, land-based accounting can we remove the incentive to come up with accounting scams for activities. More importantly for the planet and its inhabitants, we can build up a true picture of the changing nature and scale of terrestrial emissions from different land areas and land use activities and changes — for both mitigation and adaptation purposes.

Additionally, the Durban COP needs to request SBSTA to adopt a work programme that will ensure all countries have adopted and implemented land-based accounting in good time before mandatory accounting is required. To ease the SBSTA work load, we suggest that the proposed SBSTA work programme for REDD+ (set out in Annex II to the Cancun LCA decision 1) be expanded to include LULUCF considerations as well. Additionally, request to SBSTA should be for 'urgent advice' to COP 18 and CMP 8 in 2012. Commendably, a 'hot spots' approach has been proposed to allow countries with limited capacity to implement land-based accounting to 'tier 3' standards to do so progressively by concentrating on those areas where emissions are concentrated — like peat soils and wet forests.

This is not a trivial or marginal consideration. It is worth remembering that Canada, Russia and Japan have all cited unease at how LULUCF emissions might be included in national accounts, and the subsequent impact on national emission targets, as one of the reasons for not committing to a second Kyoto Protocol commitment period.



Demand and consumption in developed countries leads to deforestation and forest degradation. © iStockphoto.com/Ulet Ifansasti.



Intact natural forest at carbon carrying capacity.



BIOENERGY — TIME TO TRACK, AND TAKE RESPONSIBILITY FOR, ITS CARBON FOOTPRINT

Q: When is renewable energy not carbon neutral?

A: When it's bioenergy — especially when derived from intact natural forest, swamp forest or cropped from drained soil.

Under IPCC guidelines, emissions from burning biomass for 'bioenergy' or 'biopower' can be accounted for as 'zero' in the energy sector by Annex I countries. This accounting rule is based on the unsafe assumption that any negative emissions will be accounted for in the LULUCF sector. This is unsafe for two principal reasons:

- If a developed, Annex I, country is the source of the biomass, current LULUCF rules allow that country not to account for the emissions associated with the 'forest management' or 'cropland management' involved in biomass production and harvesting — and, not surprisingly, most exercise this option.
- If a developing, non-Annex I, country is the source of the biomass, there is no obligation to account for emissions associated with its production.

As a result, emissions associated with harvesting and burning biomass are not accounted for — anywhere by anyone.

UNFCCC perverse incentives to expand use of bioenergy

A widely espoused misinterpretation of this IPCC guidance is that bioenergy is 'carbon neutral'. This interpretation is unfounded in that greenhouse gas emissions from burning bioenergy obviously have exactly the same impacts on the atmosphere as emissions from burning any other carbon-based fuel — failing to account for emissions is not the same thing as having no emissions. The atmosphere can't tell the difference between CO₂ from burning wood and CO₂ from burning coal.

Yet this fanciful notion of 'carbon neutrality' underpins many countries' policies promoting and subsidising the production and use of bioenergy — a classic example of perverse subsidy. It is time to recognise not only expansion in the industrial use of bioenergy but also the perversity of UNFCCC accounting rules and IPCC guidance as major drivers of deforestation and forest degradation — and especially of the draining of peat soils.

This perverse incentive has already been built into the new LULUCF accounting rules being proposed by Annex I countries — by the simple expedient of including intended increases in emissions associated with more biomass harvesting, to meet demand from an expanding bioenergy industry, in their 'forward-looking baselines' — thus ensuring that the impact of such growth in emissions on their national accounts is zero.

This issue is important and urgent

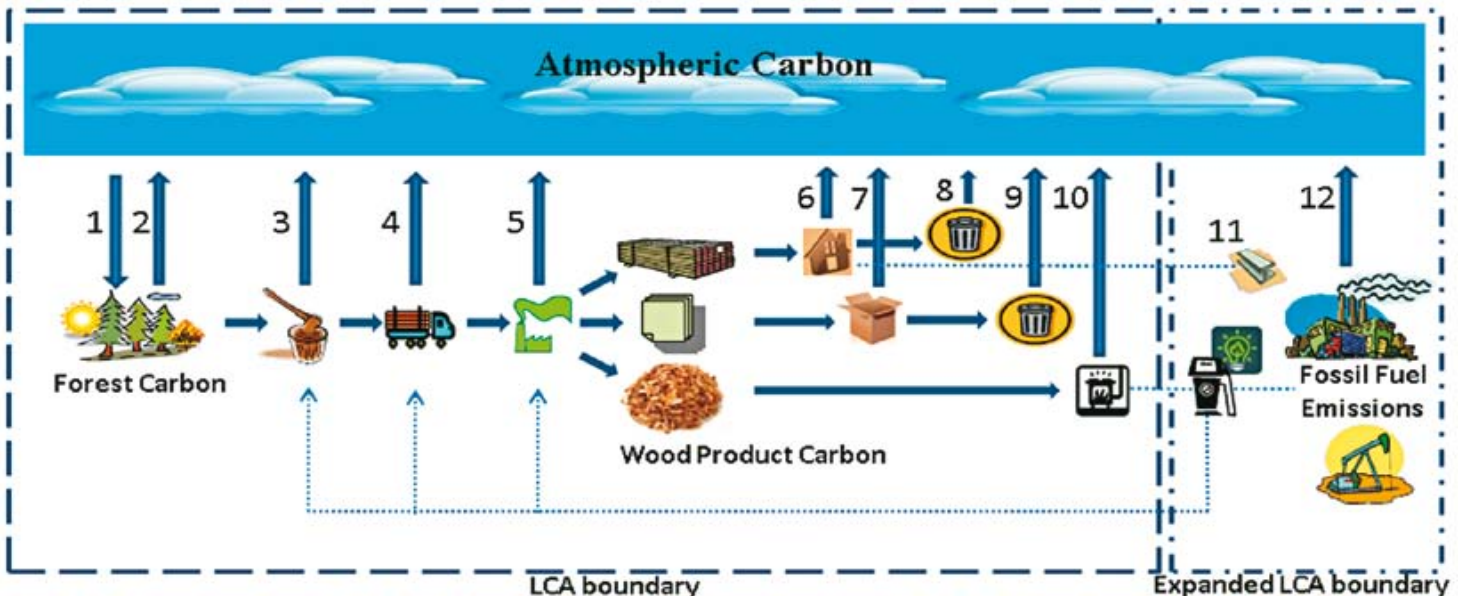
A huge increase in industrial production of bioenergy is being planned for in developed countries. This is being driven by these perverse and misguided climate policies. Bioenergy use as a substitute for fossil fuel doesn't have to be perverse but careful analysis of the climate effects of bioenergy production and use — along the whole supply chain — is needed if perverse outcomes are to be avoided. The 'carbon footprint' of bioenergy, based on lifecycle analysis, needs to be carefully and transparently established.

Consumer countries must make sure that all the emissions resulting from bioenergy production and use (its carbon footprint) are not only properly calculated but also fully accounted for — by them at the point and time of their combustion. If emissions associated with production are being fully accounted for in the LULUCF sector of the producer country, then it is fair that an equal amount of emissions can be deducted from accounts in the energy sector of the consumer country — but only if such LULUCF accounting obligations exist — and are implemented! Letting the energy sector get away with blindly assuming that bioenergy emissions are accounted for elsewhere, even when everyone knows they are not, must stop!

It is a very simple proposition to avoid double-counting of emissions by using input-output matrices, as is common practice for analysing the flows of money and materials between economies and between sectors within economies — it's not rocket science! Such an approach would also serve as a credible substitute for the LULUCF sector's disgraceful attempts to reclaim credit for 'harvested wood products' transferred to other sectors but not yet converted into greenhouse gases and released to atmosphere. It is hard to comprehend how the LULUCF sector, having sold wood to another sector of the economy, can claim what's left of that wood as a credit in their sector of origin — rather than it being a credit attributable to the sector where it can actually be found.

Forests and atmospheric carbon:

A complete "life cycle analysis" (LCA) outlines the various ways that wood products can be used and their influence on atmospheric carbon. (Graphic courtesy of Oregon State University).



BIOENERGY — A RAPIDLY ESCALATING THREAT TO NATURAL FORESTS — GLOBALLY

Huge demand is building for wood-fired electricity generation, driven by policies that indiscriminately promote bioenergy as ‘renewable’. This poses an immediate, extreme and growing threat to natural forests across the globe.

In the UK, planned increase in installed bioenergy capacity mean that there will be a growing dependence on imported biomass — by 2020, imports are expected to be about thirty times greater than they were in 2010 and wood imports will constitute two thirds of total supply¹.

That adds up to an expectation that some 32 million tpa of wood will be burnt and 27 million tonnes will be imported. These are huge amounts compared to the current UK trade in wood products. The UK is already planning and building new bioenergy power plants near ports in anticipation of this influx.

Under the EU’s Renewable Energy Directive, all member states have developed national action plans where expanded bioenergy production features strongly. The US is also planning substantial increases in bioenergy production and use — and the outlook for bioenergy use in Japan is being reworked in response to the Fukushima nuclear accident. China is also expected to increase their industrial use of bioenergy, especially by co-firing in existing coal-fired power plants, based on wood arising from clearing forest lands in Africa.

A recent industry conference in Singapore on international wood fibre supply and demand heard of dramatic projections for increased consumption of wood for electricity production that cannot be supplied from currently established or proposed plantations at anywhere near the volumes envisaged, even if it were economic to do so.

Clearly, natural forests are on the chopping block all around the world in response to this surging interest in bioenergy — the demand simply cannot be met from anywhere else. Canada, Russia, South America and Africa are all being named by industry as anticipated sources. Indonesia is pushing exports of oil palm waste for bioenergy, despite the enormous carbon footprint associated with establishment and maintenance of oil palm plantations.

Bioenergy is emerging as a big new driver of deforestation and forest degradation. No longer is bioenergy derived from secondary ‘residues’ or ‘logging waste’ — it is becoming the primary driver of destruction of forests that would otherwise be sub-economic to log for solid timber or even pulpwood fibre supply.

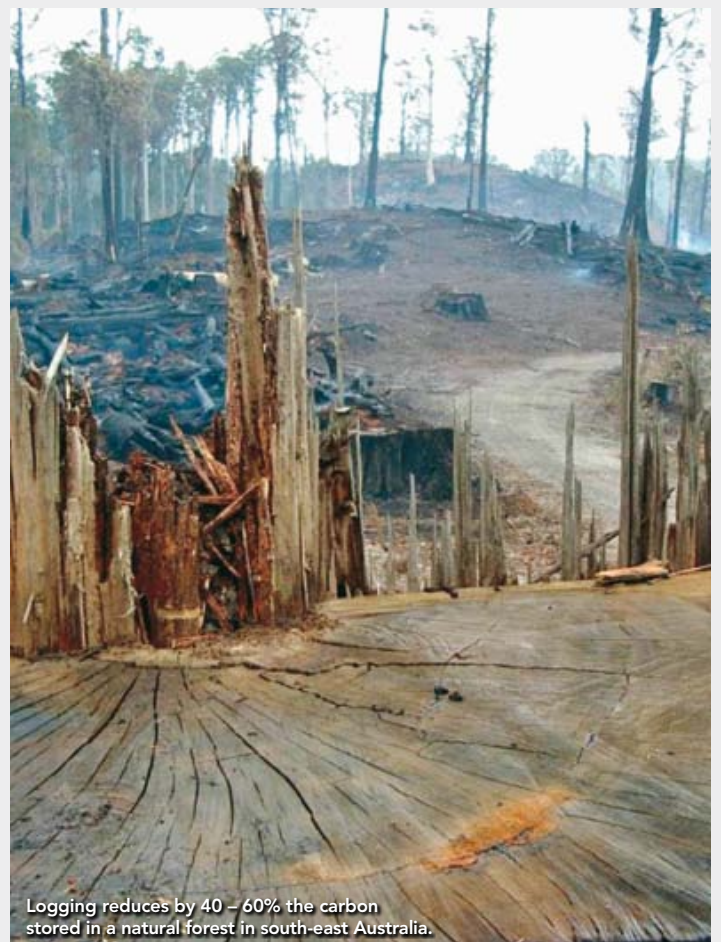
In being perversely promoted as ‘good for climate change’, industrial bioenergy is bad for the climate, bad for the forests and bad for forest communities — and, in many situations, has a bigger carbon footprint than fossil fuels.

A recent ‘Science Daily’ story (3 November 2011) for instance, notes that, “if these improved estimates [of biodiesel emissiveness from the University of Leicester] are applied to recent International Food Policy Research Institute modelling of the European biofuel market, they imply that on average biofuels in Europe will be as carbon intensive as petrol, with all biodiesel from food crops worse than fossil diesel and the biggest impact being a 60% increase in the land use emissions resulting from palm oil diesel. Biodiesel from waste cooking oil, on the other hand, could still offer carbon savings.”

¹ RSPB, ‘Bioenergy: A Burning Issue’, September 2011



A logging road into intact natural forest, Florentine Valley Tasmania. Will extraction of wood for bioenergy contribute to destruction of this forest and make the logging profitable?



Logging reduces by 40 – 60% the carbon stored in a natural forest in south-east Australia.



■ URGENT FOR SBSTA — TIME TO ELABORATE THE 'FOREST' DEFINITION

Use of the FAO definition of a 'forest' was adopted by the UNFCCC for application to LULUCF as part of the Marrakesh Accords. Failure to use the FAO categories that differentiate between complex biodiverse natural forests and planted crops of monoculture perennial woody plants ("plantations"), however, leads to perverse accounting outcomes in LULUCF.

It obscures the conversion of natural forests to plantations, and forest degradation (caused by industrial logging, for example). The conversion of a natural forest to a plantation is not defined as deforestation and hence this is not necessarily accounted for by developed countries, despite being the cause of increased emissions.

There is serious concern that adopting this undifferentiated definition for REDD+ would also undermine efforts to reduce emissions from forest degradation. Of particular concern is the need for a sophisticated categorisation to allow effective implementation of the biodiversity safeguard, especially the prohibition against conversion. There is a risk that financing of conversion to plantations in the name of climate protection could eventuate.

The same concern applies to peatswamp forests which are being drained for conversion to plantations at an alarming rate. Furthermore, emissions from ongoing draining of already deforested peatswamps may not be captured in the baseline with the current forest definition. Already deforested peatswamps may therefore need a specific subcategory in the forest definition of 'temporarily destocked naturally regenerated forests' as they will naturally regenerate to forests in the absence of drainage and fires.

Although problems with using the undifferentiated definition were identified years ago and Parties formally requested SBSTA to develop a biome-based definition, this has not been done.

The range of FAO categories of forest that sit under the FAO definition of forest allow critical distinctions to be made, and more sophisticated policy to be applied accordingly¹. The principal categories are: primary forest, other naturally regenerated forest, and planted forest.

It is imperative, and urgent, for the UNFCCC to adopt the FAO categorisation, in its entirety, so as to enable changes in carbon stocks, and emissions, associated with activities within 'forest' such as plantation conversion and forest degradation to be estimated, reported and accounted for.

¹ Forestry Department, FAO Working Paper 135, Global Forest Assessment 2010, Specification of National Reporting Tables

"FORESTS"

THIS IS A FOREST
(Temporarily unstocked forest - Kapekuzang, Northern Dinka)

THIS IS A FOREST
(Eucalyptus plantation - Richards Bay, South Africa)

THIS IS A FOREST
(Oil Palm Plantation - Bogor, Indonesia)

MARRAKESH ACCORD, DECISION 11/CP.7
"Forest" is a minimum area of land of 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30 percent with trees with the potential to reach a minimum height of 2-5 meters at maturity in situ... Young natural stands and all plantations which have yet to reach a crown density of 10-30 percent or tree height of 2-5 are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes but which are expected to revert to forest.

THIS IS A JOKE!

DON'T HIDE FOREST DEGRADATION & CONVERSION

**NOW IS THE TIME FOR SBSTA TO ACT,
TO ENSURE THAT USE OF THE UNDIFFERENTIATED
FOREST DEFINITION DOES NOT UNDERMINE
EFFORTS TO REDUCE EMISSIONS FROM THE
WORLD'S LAST REMAINING NATURAL FORESTS**

■ VRD — THE VOLUNTARY REDD+ DATABASE

The REDD+ Partnership continues to progress. A key element of its early work programme is the compilation of a database, on a voluntary basis, of all REDD+ projects and associated financial commitments and flows associated with each project — the 'voluntary REDD+ database', or VRD. Responses to secretariat questionnaires are still patchy and incomplete but some interesting issues are emerging:

- Countries and institutions handling REDD+ monies are having difficulty producing reconcilable numbers — many do not differentiate between promising to spend money and actually doing so. It is encouraging that further work to resolve discrepancies is an important priority.
- Institutions appear slow to respond apparently out of some nervousness that the numbers will show a high degree of internal expenditure relative to external disbursement despite this only to be expected in REDD-readiness phases.
- REDD-readiness expenditure is driving systematic planning exercises in parts of some recipient countries which, of themselves, are expected to

deliver some 'results' outcomes — in other words, it may be necessary to rethink the conceptual boundary between what is preparatory expenditure and what is 'results based' expenditure.

- Recipient countries and their communities are becoming very frustrated at the long gaps opening up between their investing in REDD-readiness arrangements and their hopes of compensatory funding as a result — REDD risks being stillborn unless someone gives it a good slap on the backside.

We encourage the REDD+ Partnership and its secretariat to pursue the VRD — it has the potential to become a remarkable case study in transparency for the transfer and disbursement of aid and development funds — involving some 90 countries and 64 institutions. Should UNFCCC discussions fail to resolve the question of financial arrangements to launch payments for 'results-based actions', the REDD+ Partnership membership represents the obvious grouping of like-minded states with an interest in establishing a mechanism, anyway — and we encourage members to sue the Partnership as a forum for such discussions.

EQUITABLE SHARING OF ATMOSPHERIC SPACE NEEDS A CONSUMPTION-BASED APPROACH

Since Cancun, various Annex I parties to the Kyoto Protocol have been repeatedly pointing out that, collectively, the shrinking number of countries that have committed to a second commitment period now represent less than 20% of global emissions (no USA, no BASICs, no Canada, Russia or Japan). It's obvious that necessary reductions in emissions to avoid dangerous climate change cannot be made by those remaining Annex I countries acting alone.

So, what's the new paradigm that makes it fair to extend obligations from remaining Annex I countries to all countries? That there is going to be a new 'LCA' agreement for all has been clear since many countries made pledges and commitments in the aftermath of the Copenhagen COP. There will need to be a transition path from the Kyoto Protocol — but what to?

The Kyoto Protocol is based on taking a 'supply-side' approach — and has been spectacularly ineffective in curbing growth in global emissions — let alone in actually reducing emissions. The reason for this, of course is that little has been done to persuade — or help — consumers to reduce their carbon footprint. Perhaps it's time to take a fresh look at the problem — from a 'demand-side' approach.

The US state of Oregon recently published a 'Consumption-based greenhouse gas emissions inventory for Oregon — 2005' (August 2011) prepared for its Department of Environmental Quality by the Stockholm Environment Institute. The study found that only about half of the emissions associated with consumption of goods and services in Oregon (78 Mtpa) occur within the state (36 Mtpa). The rest occur in other states of the US (24 Mtpa) or internationally (18 Mtpa).

This seems to us to be the proper perspective to take — the citizens of Oregon are collectively responsible for twice their local emissions. As a result, those elsewhere in the US and around the world are responsible for a little less of their own emissions. This is as it should be — Oregon consumers would have to work out for themselves that if they swap their gas-guzzling car using Texas oil for an electric car using electricity from Utah coal they'll have a bigger carbon footprint than before — while simply driving less reduces it a whole lot.

In the twenty-odd years since the UNFCCC was negotiated, 'globalisation' has established new global norms — and, whatever our views on the wisdom and benefit of having done so, we're stuck with them, for a while at least. Globalisation provides the perfect paradigm for shifting responsibility for emissions from producers to consumers — using carbon footprint life cycle analysis to identify who is responsible for what — with the ultimate consumer of goods and services bearing ultimate responsibility. The power of this perspective is that the analysis works the same at any scale — individual, household, community, city, province, country — or corporation. Those entities with bigger carbon footprints are more responsible, regardless of where they are.

This does not mean an end to obligations for the more developed to reduce their emissions or to help the less developed — far from it! As the climate change problem becomes more acute, the need for more developed entities to reduce emissions, and so free up shrinking 'atmospheric space' for the development aspirations of others, becomes an ever more pressing arithmetic reality. Consumers in all countries, however, share an equal responsibility to appreciate their carbon footprint. What to do about it — whether to reduce it, moderate its growth or ignore it, depends on how big it is and what the realistic alternatives are, not where it is.

CHECKLIST OF LULUCF RELATED DECISIONS NEEDED IN DURBAN

✕ Land-based accounting — the Durban COP needs to make it mandatory for all countries with commitments for the Kyoto Protocol 3rd commitment period or LCA agreement that might be negotiated, and SBSTA needs to be asked for urgent advice and guidance on how to introduce it. Party submissions on the content and scheduling of SBSTA work to deliver on this commitment will need to be called for. Methodological guidance on using a 'hotspot' approach to drive progressive, cost-effective implementation will be important.

✕ LULUCF loopholes — the Durban COP/CMP needs to decide, now, that there will be no more loopholes — and to insist on the use of historical baselines and land-based accounting for all (no forward-looking baseline loopholes or 'natural disturbance' excuses). This is decision-time — will the LULUCF sector be brought to heel or allowed to continue to escape its emissions reduction responsibilities.

✕ REDD+ Drivers — the Cancun COP asked SBSTA to look at links between LULUCF and REDD+ drivers and, now, the Durban COP needs to ask that it be done urgently and report back to the 2012 COP/CMP next year. The SBSTA needs to call for submissions from Parties so that they have something to talk about at their June 2012 meeting. It will be important to ensure the mandate is broad enough not only to allow international drivers associated with commodity trade to be included but also financial and investment flows.

✕ Reference Levels — the Durban COP needs to ask SBSTA to provide urgent advice and methodological guidance on how to develop effective reference levels to underpin a credible REDD+ mechanism (including clear separation between technical reference levels based on emission reporting and their political transposition into compensation baselines for any incentive arrangements). Taking a carbon carrying capacity and forest carbon degradation approach will be more important than merely tracking deforestation using current, unhelpful definitions. Party submissions in time for the June SBSTA meeting need to be called for.

✕ Agriculture — the Durban COP needs to ask SBSTA to initiate a work programme to help work out how best to bring agricultural landscapes into UNFCCC arrangements. It is inconceivable that an African-based COP can fail to do this but it will be important to make sure adaptation for local community food security remains the principal element of any agricultural arrangement with mitigation playing only a secondary role. Calling for Party submissions to help inform procedural and scheduling discussions at SBSTA in June next year would be a good start.

✕ REDD+ Mechanism — and, most importantly, the Durban COP needs to decide on financial arrangements so that a REDD Mechanism can be formally launched. If the COP cannot make a clear decision that explicitly establishes a REDD Mechanism, including an open-market financial component, it will be tempting to encourage like-minded countries to go off and negotiate a stand-alone agreement to establish it without waiting for the UNFCCC to sort itself out.



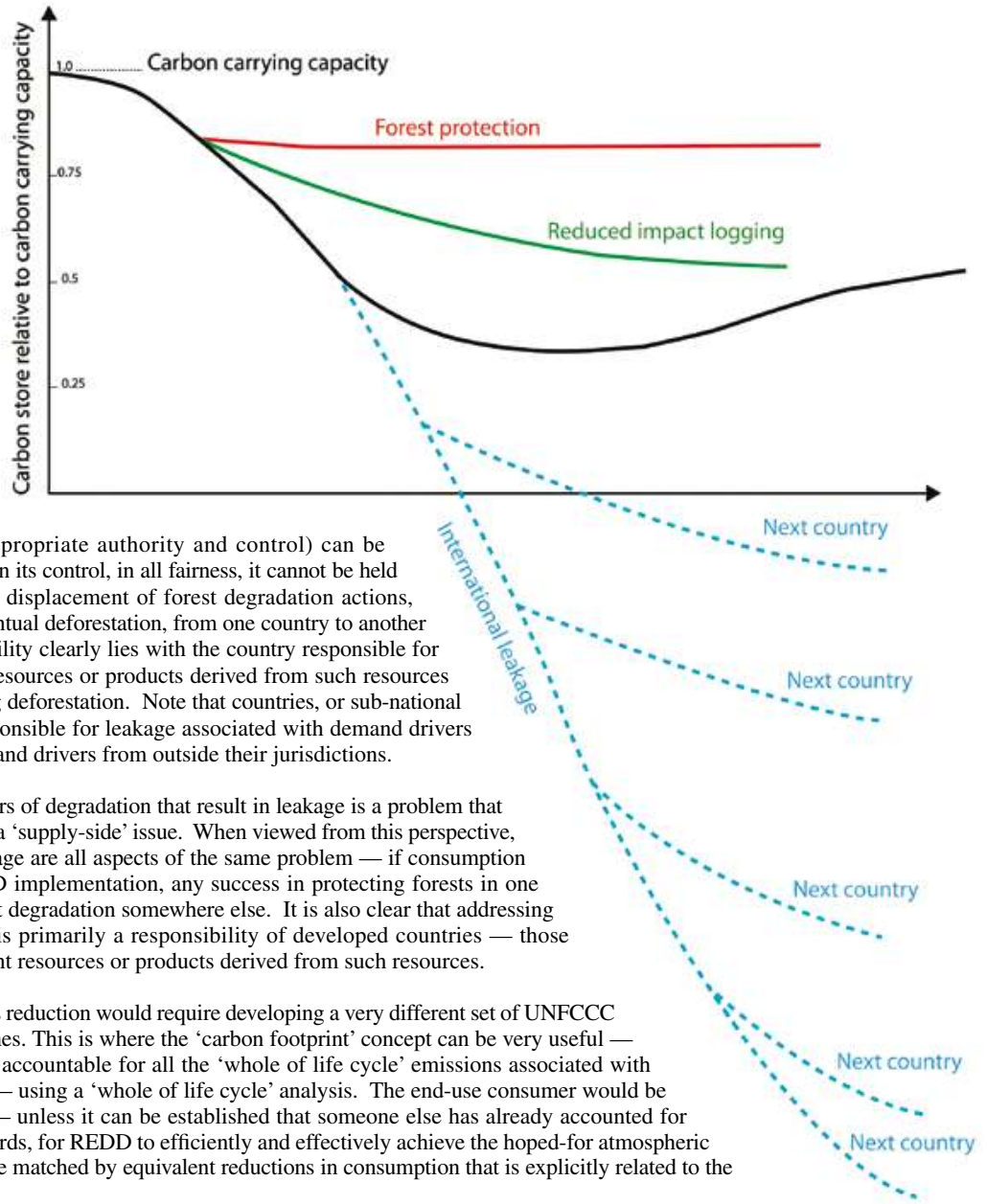
CONSUMPTION, LEAKAGE AND DRIVERS — DIFFERENT ASPECTS OF THE SAME PROBLEM

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 so important. 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).

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.



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