

**Submission to the
Subsidiary Body for Scientific and Technological Advice (“SBSTA”)**

REDD+ methodological guidance for activities relating to the drivers of deforestation and degradation and relevant issues

**- a contribution from the following members of the Ecosystems Climate Alliance (ECA):
Environmental Investigation Agency, Global Witness, Humane Society International,
Rainforest Foundation UK, Wetlands International and David Shepherd Wildlife
Foundation**

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The below represents our initial input on drivers, and we welcome the opportunity to provide a more detailed submission to SBSTA in anticipation of its report to COP18 in 2012.

I. Summary

Commercially produced timber, agricultural and livestock commodities are now the main drivers of deforestation and forest degradation worldwide.¹ As developing countries’ middle classes expand, these drivers are expected to become even more important. Recent research shows a strong correlation between increased greenhouse gas emissions from agriculture, forestry and other land use activities and increased consumption among wealthier populations in the developing world.

The impact of these activities, on tropical forests in particular, is compounded by the fact that demand for these commodities comes primarily from developed country markets that are largely ‘no questions asked’ regarding social and environmental impacts in developing countries of origin. Consumers remain largely ignorant and thus indifferent not only to deforestation but also to illegal and corrupt practices that undermine governance, landholder, local community and indigenous peoples’ rights, and the rule of law at every level of government within supplier countries.

Governance in all its facets is fundamentally linked to how and to what extent these drivers affect forests and is thus a critical issue for the success of any proposed mechanism for reducing emissions from deforestation and forest degradation plus conserving, sustainably managing and enhancing forest carbon stocks (REDD+). If properly structured, REDD+ programs could bring together the interests of governments, individuals, communities and the private sector to improve protection of forests in a collaborative and equitable manner.

REDD+ Readiness efforts must also consider how to create an enabling regulatory environment for REDD+ projects at multiple scales. In addition to identifying and developing plans to address the diverse local and national drivers on the ground in REDD+ countries, it will be essential to

¹ Butler, R. A. and W.F. Laurence, 2008. New strategies for conserving tropical forests. *Trends in Evolution*, 23, 469-472

confront the ramifications of international demand and consumption issues not only through targeted policies and measures in all consumer countries but also through concerted action in appropriate international fora.

II. Background

In the REDD+ context, ‘Drivers’ is the term used to describe the immediate and ultimate reasons why people engage in activities that degrade forests. They may, either directly or indirectly, lead to forest degradation, including deforestation. The term embraces not only the immediate act of logging or clearing a forest but also the commodity supply chain that drives that act, including any international trade and processing, the commercial use of such commodities and ultimate retail demand for resultant products. The term also includes complex social, cultural and economic circumstances as well as simple commercial transactions to help explain and understand why drivers persist. Drivers may thus have local, national and global aspects, direct and indirect effect and simple or complex rationales.

Drivers have been a part of the Reducing Emissions from Deforestation (RED) discussions since the idea was first proposed by the Coalition of Rainforest Nations in 2005. The 2006 United Nations Framework Convention on Climate Change (UNFCCC) RED workshop highlighted the complexity of proximate and underlying causes of deforestation and forest degradation, as well as the need for a diagnostic framework to address the drivers.² In Bali, the 2007 Conference of Parties (COP) saw the importance of drivers and “*encourage[d]* Parties to explore a range of actions, identify options and undertake efforts, including demonstration activities, to address the drivers of deforestation relevant to their national circumstances, with a view to reducing emissions from deforestation and forest degradation and thus enhancing forest carbon stocks due to sustainable management of forests.”³ Note that this encouragement is for all Parties, developed and developing, with forests to conserve and with commodities to consume.

As a follow up, COP 15 in Copenhagen in 2009 “*Request[ed]* developing country Parties...[t]o identify drivers of deforestation and forest degradation resulting in emissions and also the means to address these...”⁴ Unfortunately, developing countries have interpreted this request as applying only to drivers within their national jurisdiction for which they are responsible rather than also identifying drivers from other countries that impact upon their forests.

The 2010 Cancun Agreement (Decision 1/CP.16) on REDD+ “*[e]ncourage[d]* all Parties to find effective ways to reduce the human pressure on forests that results in greenhouse gas emissions, including actions to address drivers of deforestation.”⁵ Thus, once more, addressing all Parties

² United Nations Framework Convention on Climate Change Secretariat. 2006. Background paper for the workshop on reducing emissions from deforestation in developing countries. Part I: Scientific, socio-economic, technical and methodological issues related to deforestation in developing countries. Working Paper 1(a), paras. 18-20. Workshop on reducing emissions from deforestation in developing countries. 30 August – 1 September 2006, Rome, Italy. Available at http://unfccc.int/files/methods_and_science/lulucf/application/pdf/part_i_scientific_issues.pdf. Accessed August 5, 2011.

³ Decision 2/CP.13, para. 3.

⁴ Decision 4/CP.15, para. 1(a).

⁵ Decision 1/CP.16, para. 68.

and not just developing countries. The COP also requested the Subsidiary Body for Scientific and Technological Advice (SBSTA) to:

Identify land use, land-use change and forestry activities in developing countries, in particular those that are linked to the drivers of deforestation and forest degradation, identify the associated methodological issues to estimate emissions and removals resulting from these activities, and assess the potential contribution of these activities to the mitigation of climate change, and report on the findings and outcomes of this work to the Conference of the Parties (COP) at its eighteenth session (2012) on the outcomes of the work referred to in this paragraph...⁶

Note that this COP request to SBSTA correctly differentiates between the relevant ‘activities’ that only occur in developing countries (because the mandate to develop a REDD+ mechanism is so limited) and the ‘drivers’ which may occur in any country. It will be important to ensure that any SBSTA work program developed in response to this request gives appropriate attention to the international aspects – both direct and indirect - of relevant drivers.

Recently at its 34th session, in June 2011, the SBSTA invited observers to submit their views on drivers, noting that “methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries, taking into account issues identified in appendix II to decision 1/CP.16 and relevant issues”⁷ has been requested. Based on appendix II to decision 1/CP.16, the SBSTA invited observers to submit views on methodological guidance in at least three specific areas related to drivers:

“[1] [i]dentify land use, land-use change and forestry activities in developing countries, in particular those that are linked to the drivers of deforestation and forest degradation,
[2] identify the associated methodological issues to estimate emissions and removals resulting from these activities, and
[3] assess the potential contribution of these activities to the mitigation of climate change...”⁸

Given the SBSTA call for input, this Ecosystems Climate Alliance submission identifies relevant issues concerning drivers that need to be considered for successful implementation of any equitable and transparent REDD+ mechanism. Based upon the paragraph 68 language in the Cancun Agreement, the Ecosystems Climate Alliance believes that the SBSTA advice on methodologies must evaluate the impact of BOTH domestic and international drivers on deforestation and forest degradation in REDD+ countries, and must therefore make recommendations for all parties to address these drivers.

The Cancun Agreements ask SBSTA to report back on drivers to COP 18 in 2012, while other SBSTA REDD+ outcomes are due at COP 17 in Durban at the end of this year.⁹ However, the SBSTA 34 call for submissions from observers did not distinguish between due dates for

⁶ Decision 1/CP.16, Appendix II, para. 1(a).

⁷ Draft conclusions proposed by the Chair (FCCC/SBSTA/2011/L.14), paras. 1, 4.

⁸ Decision 1/CP.16, Appendix II, para. 1(a).

⁹ Decision 1/CP.16, Appendix II.

submissions on drivers or other SBSTA outcomes, saying that outcomes would be considered at COP 17.¹⁰ The SBSTA should clarify when its drivers deliberations will occur and when resultant drivers outcomes will be complete. Ideally, such outcomes should be complete at the same time as other REDD+ preparatory work, which would ensure a successful, complete and consistent launch of the mechanism can be achieved.

III. Key Elements in Assessing the Drivers Necessary for Successful REDD+ Implementation

A. International Drivers

While some of the dynamics that drive deforestation and forest degradation must be resolved at a national level, others are inherently international in scope. It is increasingly clear that demand-side drivers of deforestation and degradation need to be addressed.¹¹ Without consumer countries' actions that will reduce demand for food, fuel and fiber, help sustainably increase land-use efficiency and productivity, and send market signals that incentivize legal and forest-conserving production practices, there is little hope of tackling forest destruction and degradation in a coherent way.

- *Commodities:*

The scale of international commodity markets is enormous, and consumption by developed and fast-growing developing economies is driving much of the deforestation and forest degradation around the globe. The timber market alone is worth over \$220 billion annually.¹² Logging, both legal and illegal, causes forest degradation and creates opportunities for further forest degradation and eventual deforestation in response to demand for export-led commercial agriculture, such as palm oil, cattle and soy, which has become so great that together these activities are now the primary cause of tropical deforestation.¹³ Cocoa, coffee and rubber production play a role as well, while mining and growing demand for biofuels result in both direct and indirect forest degradation and loss. Frequently, the indirect effect is attributable to local agricultural communities displaced by reallocation of already cleared land from local community subsistence to corporate commodity exporting. The further displacement of cropping land from commodity food production to commodity fuel production often exacerbates this indirect effect.

The seriousness of the situation is largely attributed to significant demand for these commodities from international markets that have historically taken a 'no questions asked' approach to the legality or sustainability of products. Such indiscriminate markets feed profits into illegal activities, which artificially depress prices and drive a 'race to the

¹⁰ Draft conclusions proposed by the Chair (FCCC/SBSTA/2011/L.14), para. 3.

¹¹ DeFries RS, Rudel T, Uriarte M, and Hansen M. 2010. Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nature Geoscience* doi:10:1038/NGEO756.

¹² 2006 statistics from the Food and Agriculture Organization

¹³ DeFries RS, Rudel T, Uriarte M, and Hansen M. 2010. Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nature Geoscience* doi:10:1038/NGEO756.

bottom' that rewards poor governance, and tramples not only the rights of forest-dependent communities but also the rule of law. Good and effective governance is a critical issue for the success of REDD+ objectives and monitoring and constraining these international commodity drivers is necessary if improvements in governance on the ground are to be achieved.

- *Investments:*

It is also important that donor countries ensure that their investment and consumption activities do not undercut their REDD+ commitments. Many donor nations, such as Norway, are demonstrating positive interest in and support for avoided deforestation activities in REDD+ countries while simultaneously allowing for unchecked international investment policies and consumption practices at home that are responsible for destroying those very same forests. Reconciling such international investments and financial issues needs to be explicitly recognized as an aspect of REDD+ policies and actions that must be addressed by all countries.

If an international REDD+ mechanism and supporting national legal frameworks are properly structured to constrain international drivers of deforestation and forest degradation, then implementing REDD+ could significantly alter these conventional incentive structures by establishing incentives for companies and consumers buying and investing in food, fiber and fuel commodities and products to distinguish between them based upon their legality and sustainability, including their social, environmental and climate impacts or benefits.

A July 2010 study released by Chatham House offers an example that underscores the effectiveness of this approach and its direct connection to REDD+ outcomes. The report found that illegal logging has dropped by approximately 25% globally in the past decade. Credit for this significant reduction is attributed to a combination of improved governance and enforcement in key producer countries such as Indonesia, Brazil and Cameroon, as well as transformative market signals sent by demand-side policies and measures such as the U.S. Lacey Act, designed to close the U.S. market to illegal wildlife products – including plants and wood products, and the European Forest Law Enforcement Governance and Trade Initiative and the EU's Timber Regulation. The report also estimates that this reduction in illegal logging saved 17 million hectares from deforestation and forest degradation since 2002, totaling between an estimated 1.2 billion and 14.6 billion metric tonnes of avoided carbon emissions. Even at the low end of this range, the impact of a unified approach to stopping illegal logging is significant.

B. Expand Scope of drivers analysis beyond the Forest Sector

It becomes readily apparent that in order to reduce deforestation and forest degradation, one cannot rely solely on changes to forest policy, but must engage the multiple land use sectors and industries that contribute to forest loss and degradation, both directly and indirectly. These competing commercial interests, such as agriculture, beef production, mining, and biofuels are often represented by different ministries than are forestry activities. These various government agencies must coordinate their plans and unify their priorities, including how they award and monitor forestry concessions, if REDD+ is to succeed.

C. Policies to Prevent Leakage

Understanding, quantifying and minimizing leakage is a serious methodological issue for SBSTA to consider. Further, to achieve the REDD+ objectives of protecting forest cover and forest carbon, the mechanism must prevent leakage.¹⁴ The first step in preventing leakage is to prohibit project-based implementation of REDD+ in the absence of effective national implementation frameworks. ECA is concerned that indecision over this issue has allowed ‘sub-national’ approaches to be taken on an interim basis. Insofar as ‘sub-national’ has no agreed definition and includes ‘project’ approaches, there is an acute danger that REDD+ could get off to a perverse start – whereby project-based REDD+ payments simply displace forest degrading activities to adjacent forests with absolutely no net benefit to the atmosphere.

To be effective, implementation of any REDD+ mechanism needs to include the following characteristics:

- All developing countries must have a comprehensive, national framework for developing, approving, implementing and monitoring REDD+ projects;
- Countries can choose to implement REDD+ sub-nationally only insofar as they have sub-national constitutional and jurisdictional arrangements (e.g., states, provinces, districts) with the authority and capacity to meet all national commitments (and where the national government remains responsible for accounting for leakage between sub-national jurisdictions);

All countries should address drivers in relation to all land use activities, and with consideration of jurisdictions beyond just the location of the project, including international commodity demand.

When developing national REDD+ strategies, understanding the role that international investments and commodity markets play in forest loss is essential. Also imperative is the understanding of the ways in which these commercial forces threaten to undermine the positive incentives created by national programs designed to avoid forest loss through REDD+ mechanisms and policies.

A recent study¹⁵ examined forest transitions, trade and the global displacement of land use in 12 countries. The findings demonstrate that reductions in deforestation and/or increases in reforestation in some countries around the globe are achieved by domestic policies in the REDD+ country that then lead to the direct increase of forest extraction abroad, particularly in neighboring countries.

For example, forest cover in Vietnam has increased since a 1992 prohibition on domestic cutting, but approximately 39% of the regrowth from 1987 to 2006 was offset by a coincident increase in

¹⁴ Nabuurs GJ, Masera O, Andrasko K, et al. 2007. Forestry. In: Metz B, Davidson OR, Bosch PR, Dave R, and Meyer LA (eds.), *Climate change 2007: mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, p. 571, § 9.6.6.1, p. 572 Table 9.9).

¹⁵ Meyfroidt, P. and E. Lambin. 2009. Forest transition in Vietnam and displacement of deforestation abroad. *PNAS Early Edition 4 September*.

deforestation in its neighbors like Lao and Cambodia. Approximately half of wood imports to Vietnam during this period were illegal. Leakage due to policies restricting forest exploitation and displacement due to growing domestic consumption and exports contributed respectively to an estimated 58% and 42% of total displacement. The leakage figures in this case were so large due to a government policy-driven boom in exports of Vietnamese wood products.

The authors of the study conclude that, “policies allocating credits to countries for reducing deforestation and forest degradation should monitor illegal timber trade and take into account the policy-induced leakage of wood extraction to other countries.” We (ECA) would like to go further and commend the proposal from Tuvalu at the last UNFCCC meeting in Bonn that an international leakage control mechanism is needed.

D. Governance and Enforcement

Efforts to achieve REDD+ will only be successful if they support developing countries to address the fundamental governance challenges that drive deforestation. Failing to tackle problems of weak institutional capacity and coordination, accountability, transparency, and public participation may exacerbate current conflicts over the use of forest resources, and risk creating perverse outcomes for forest dependent people, forest ecosystems, and the global climate.¹⁶ Enforcement actions should include ensuring that adequate measures have been undertaken to establish and maintain the rule of law, prevent illegal logging and other forest illegalities, and implement effective anti-corruption measures.

E. Change in Drivers

Small-scale farming and fuel wood collection has become less important to deforestation and forest degradation in many developing countries in recent decades, as rural populations have leveled off or declined and large businesses producing commodities for urban and export markets have expanded into tropical forest regions.¹⁷ It will be extremely important to conduct an analysis that accurately identifies the current drivers of deforestation and forest degradation, particularly large-scale commercial drivers, such as agriculture, logging and mining, and not place the blame at the doorstep of local communities and traditional agriculture as has been the case in some instances. A key issue, in this regard, will be the importance of developing the capacity to differentiate between local direct drivers and international indirect drivers.

F. Degradation

It is essential that the “D” of degradation is not overlooked when discussing drivers. Degradation has received less attention to date, but it undermines resilience to change of intact natural ecosystems—a particularly important consideration as the impacts of climate change itself begin to bear down on natural ecosystems more harshly in many places around the world. Intact

¹⁶ Instituto Centro de Vida, Imazon Instituto do Homen E Meio Ambiente Da Amazonia, World Resources Institute, The Governance of Forests Toolkit (Version 1), The Governance of Forests Initiative, September 2009, available at http://pdf.wri.org/working_papers/gfi_tenure_indicators_sep09.pdf, pg. 2.

¹⁷ DeFries RS, Rudel T, Uriarte M, and Hansen M. 2010. Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nature Geoscience* doi:10:1038/NGEO756.

ecosystems are much more resilient to change than degraded ones such that the realities of climate change impacts make it all the more important to protect largely intact ecosystems and to restore degraded ones. If degradation of natural ecosystems is allowed to persist, synergistic feedback loops that exacerbate degradation are likely to intensify as climate change worsens.

G. Stakeholder Engagement

It will be essential to ensure the full and effective participation of all stakeholders, and particularly indigenous peoples and forest-dependent communities, as a country conducts analysis of drivers and determines courses of action. This is critical to ensure that the wealth of local knowledge and experience is included in a realistic assessment of the causes of forest loss and the strategies for dealing with it, and that local livelihoods are not adversely impacted by high-level policy decisions.

H. Capacity Building

As mentioned in Decision 4/CP.15, Parties should engage in significant capacity building endeavors to ensure that developing country parties can “collect and access, analyze and interpret data.”¹⁸ As drivers are clearly not confined to the local community, let alone the country affected by or responsible for deforestation or forest degradation activities (see *supra*), developed countries should assist developing countries in capacity building with regard to, *inter alia*, drivers analysis at all levels of their operation. This should include analysis of those international components of drivers that operate within their own jurisdiction and control, including the involvement and activities of their nationals.

I. Coordination with the Safeguards Information System

The drivers framework should be coordinated with the safeguards information system, not only to incorporate many of the same characteristics (such as transparency and others listed in the Ecosystems Climate Alliance *Submission on the System for Providing the Information on how the REDD+ Safeguards Are Being Addressed*), but also to ensure that drivers do not impinge on safeguards or otherwise impede actual REDD+ mitigation.

IV. Activities of Particular Concern

A. Illegal Logging

Logging, both legal and illegal, causes forest degradation and creates opportunities for further degradation and land clearance, particularly in response to demand for export-led commercial interests. The most serious forest crime is committed for exports, not firewood.

The profits that lie in exporting valuable hardwoods or softwoods can be staggering: merbau stolen from Indonesia’s Papua province in 2005 was worth US\$120 per cubic meter in the port, twice that much upon arrival to China – and US\$2200 by the time it wound up as solid wooden

¹⁸ Decision 4/CP.15, para. 4.

flooring in an American store.¹⁹ Impoverished indigenous communities in the Peruvian Amazon are swindled into selling, for a mere \$5.30 per cubic meter, mahogany trees that go for over \$1700/m³ on international markets.²⁰

Illegally-logged timber that does not fetch luxury-good prices is also a goldmine, simply because the costs of harvesting it are so much lower. A 2004 study by the Center for International Forestry Research (CIFOR) found that in Indonesia, legal wood cost a large forestry firm on average \$85/m³ to deliver to a sawmill, while illegal wood cost \$32/ m³. For small concession holders the difference was even more striking: \$46 versus \$5 per cubic meter.²¹ And further down the chain, tax evasion through under- or mis-declaration of exports is another commonly employed illegal technique that can dramatically reduce a trader's costs – as well as government revenues.²²

The incentive structure must be changed by improving laws, governance and enforcement domestically, while curbing incentives for such activities such as largely indiscriminate and growing global consumption patterns.

Estimating emissions from illegal logging is challenging, given among other reasons (a) the inherently off-the-books nature of the activity; (b) the different forms of illegal activity, ranging from clear-cutting large areas without appropriate permits to selective removal of high-value species, and (c) the incentives for under-estimation of this activity. ECA encourages the SBSTA to refer to the Chatham House Illegal Logging Study (2010) as one important methodological resource.

B. Biofuels and Clearance of Peatlands

Peatlands (forested and non-forested peat soils) play a critical role in climate regulation, storing twice as much carbon as the entire world's forest biomass and emitting large amounts of carbon not only when first drained, but for as long as they remain drained. While covering only three percent of the land area, the world's peatland soils contain nearly 30 percent (550 GT C)²³ of all soil carbon. Peatswamp forests contain, on average, 10 times more carbon per hectare (mostly in their peat soil) than forests on mineral soil. In undrained condition, peatlands provide diverse goods and services to local livelihoods, are rich in – often unique - biodiversity and play an important role in water regulation, with a clear link to climate change adaptation. Yet they are being drained and cut at an alarming rate, especially the peatswamp forests in SE Asia, which – without rapid adequate action – will have been largely lost by 2020.

¹⁹ EIA. 2005. The Last Frontier.

²⁰ Fagan, C. and D. Shoobridge. 2007. The Race for Peru's Last Mahogany Trees: Illegal Logging and the Alto Purús National Park. Round River Conservation Studies.

²¹ Tacconi L., Obidzinski K., and F. Agung. 2004. Learning Lessons to Promote Forest Certification and Control Illegal Logging in Indonesia. CIFOR.

²² EIA, 2007, No Questions Asked

²³ Parish, F., Sirin, A., Charman, D., Joosten, H., Minayeva, T., Silvius, M. and Stringer, L. (Eds.) 2008. Assessment on Peatlands, Biodiversity and Climate Change: Main Report. Global Environment Centre, Kuala Lumpur and Wetlands International, Wageningen.

REDD+ activities that reduce or avoid greenhouse gas emissions from peatsoil degradation can play a major role in combating climate change at relatively limited costs. The key priorities for reducing emissions from forests and peatlands are to (1) immediately stop conversion of 12 million ha remaining peat swamp forests in SE Asia (net gain 1 Gt CO₂), (2) restore half of the already drained peat swamp forests in SE Asia (net gain 0.5 Gt CO₂), and (3) restore half of the degraded peatlands in the temperate zone (net gain 0.2 Gt CO₂). These initiatives should be done within the overall priority of conservation and restoration of other forest types of the world and of reducing emissions from other land uses such as agriculture. Peatlands should be treated as ‘hotspots’ or ‘key categories’ for climate change mitigation since they occupy a very small land area but have enormous importance as climate regulators.

The main drivers of peatland drainage are agriculture (including palm oil), pulp wood production and peat mining. The keys to addressing these drivers are straightforward. To protect the largest share of relatively undisturbed peat forests existing concessions (for pulp wood and palm oil plantations) must be revoked. Plantations should be shifted to already degraded mineral soils (based on adequate definition of degraded land). Palm oil and pulp wood supply chains must exclude products from drained peatlands, for example for use as ‘biofuel’ / biomass, because of unacceptably high soil carbon emissions that render any success in displacing fossil fuels perverse (fuel derived from peat soil cropping has a much higher carbon footprint than fuel derived from coal, oil or gas).

To block existing and emerging accounting loopholes, the SBSTA should stress to the COP that the UNFCCC must ensure that soil and biomass carbon losses associated with bio-energy crop production are fully accounted for by the energy sector. If the AFOLU emissions have already been accounted for in that sector, the energy sector can fairly net out those emissions from its calculations – but current energy account methodologies that erroneously assume that AFOLU emissions have been accounted for must be abandoned.

By decision of the Clean Development Mechanism (CDM) Board (Sept 2010), plantations on peat soils are already no longer supported by the CDM. This is an encouraging step in the right direction – but the perverse driver to convert forest to palm oil plantation will exist for as long as the emissions from burning of biofuels and biomass are accounted as zero.

For more information on peatlands in the context of REDD+, please see Wetlands International’s *Policy recommendations to SBSTA on Peatlands & REDD*, at www.wetlands.org/unfcccsubmissions.

C. Animal Agriculture

Pasture expansion for livestock is a key driver of deforestation and forest degradation, especially in Latin America, and it is estimated that “some 70 percent of previously forested land in the Amazon is used as pasture, and feed crops cover a large part of the remainder.”²⁴ The FAO estimated that approximately 2.4 billion tonnes of carbon dioxide emissions are from deforestation

²⁴Food and Agriculture Organization of the United Nations. 2006. Livestock Impacts on the Environment. <http://www.fao.org/ag/magazine/0612sp1.htm>. Accessed October 13, 2010.

to make way for grazing and animal feed production.²⁵ Since the 1970s, Brazil, in particular, has suffered extensive deforestation in its Amazon region for cattle ranching.²⁶ Between 1990 and 2002, Brazil's cattle population located in the Amazon expanded from approximately 18% to 31%, which represents 80% of Brazil's total cattle herd growth during this period.²⁷ A World Bank paper found that in 2004 "[c]attle ranching enterprises...[occupied] nearly 75 percent of the deforested areas of Amazonia."²⁸ Thus, it is no surprise that cattle ranching is the main contributor to deforestation in the Brazilian Amazon.²⁹

Soybean production for animal feed is another emerging cause of rainforest destruction.^{30,31} According to the 2006 FAO report, the cultivation of soybean and corn for animal feed contributes to the clearing of forests in Brazil and Latin America.³² Over 97% of global soymeal production is fed to animals used in agriculture, and during the last four decades of the 20th century, over 60% of the corn and barley crop were also fed to these animals.³³ Globally, soybean production increased rapidly in recent decades, and expanding production is currently largely due to demand for animal feed.³⁴ A 2010 study of Amazonian deforestation during the years 2000–2006 concluded that "even if the proximate cause of deforestation was mainly ranching, it is likely that soy cultivation is a major *underlying* cause."³⁵

²⁵Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, and de Haan C. 2006. Livestock's long shadow: environmental issues and options. Food and Agriculture Organization of the United Nations, pp. 86 -93, 113 Table 3.12.

²⁶Barona E, Ramankutty N, Hyman G, and Coomes OT. 2010. The role of pasture and soybean in deforestation of the Brazilian Amazon. *Environmental Research Letters* 5:1- -9, p. 8. http://iopscience.iop.org/1748-9326/5/2/024002/pdf/1748-9326_5_2_024002.pdf. Accessed May 20, 2010.

²⁷Kaimowitz D, Mertens B, Wunder S, and Pacheco P. 2004. Hamburger connection fuels Amazon destruction: cattle ranching and deforestation in Brazil's Amazon. Center for International Forestry Research, pp. 2-3. http://www.cifor.cgiar.org/publications/pdf_files/media/Amazon.pdf. Accessed May 20, 2010.

²⁸Margulis S. 2004. World Bank Working paper No. 22: Causes of Deforestation of the Brazilian Amazon, p. xviii. The World Bank. Available at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2004/02/02/000090341_20040202130625/Rendered/PDF/277150PAPER0wbwp0no1022.pdf. Accessed May 20, 2010.

²⁹Barona E, Ramankutty N, Hyman G, and Coomes OT. 2010. The role of pasture and soybean in deforestation of the Brazilian Amazon. *Environmental Research Letters* 5:1 -9, p. 8. http://iopscience.iop.org/1748-9326/5/2/024002/pdf/1748-9326_5_2_024002.pdf. Accessed May 20, 2010.

³⁰Barona E, Ramankutty N, Hyman G, and Coomes OT. 2010. The role of pasture and soybean in deforestation of the Brazilian Amazon. *Environmental Research Letters* 5:1 -9. http://iopscience.iop.org/1748-9326/5/2/024002/pdf/1748-9326_5_2_024002.pdf. Accessed May 20, 2010.

³¹Morton DC, DeFries RS, Shimabukuro YE, et al. 2006. Cropland expansion changes deforestation dynamics in the southern Brazilian Amazon. *Proceedings of the National Academy of Sciences of the United States of America* 103(39):14637 -14641, p. 14638. <http://www.pnas.org/content/103/39/14637.full.pdf+html>. Accessed May 20, 2010.

³²Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, and de Haan C. 2006. Livestock's long shadow: environmental issues and options. Food and Agriculture Organization of the United Nations, p. 12.

³³Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, and de Haan C. 2006. Livestock's long shadow: environmental issues and options. Food and Agriculture Organization of the United Nations, pp. 38 -39, 43.

³⁴Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, and de Haan C. 2006. Livestock's long shadow: environmental issues and options. Food and Agriculture Organization of the United Nations, pp. 43 -44.

³⁵Barona E, Ramankutty N, Hyman G, and Coomes OT. 2010. The role of pasture and soybean in deforestation of the Brazilian Amazon. *Environmental Research Letters* 5:1 -9, p. 8. http://iopscience.iop.org/1748-9326/5/2/024002/pdf/1748-9326_5_2_024002.pdf. Accessed May 20, 2010.

As “the single largest anthropogenic user of land”³⁶ and responsible for an estimated 18% of human-induced GHG emissions,³⁷ the farm animal production sector must be held accountable for its many deleterious impacts, and changes in animal agricultural practices must be achieved. Because mitigation and adaptation options in the animal agriculture sector are complex and inextricably connected to other global initiatives on food security, poverty alleviation, equitable development, and environmental sustainability, the viability of each proposed solution in this sector must be evaluated within this broader context.

Solutions that favor the industrialization of animal agriculture carry numerous negative consequences for public health, the environment, and food security. Rather than supporting large-scale, industrial animal agriculture, policies should promote small-holder, rural, and organic production systems that allow for climate change mitigation and adaptation, while simultaneously increasing food security, strengthening rural communities, and providing for long-term environmental sustainability. These specific considerations remain relevant when evaluating animal agriculture as a driver, as well as a potential solution.

V. Recommendations

For countries seeking to reduce emissions from their deforestation and degradation activities, SBSTA should require the following with regard to drivers:

- A robust analysis of drivers and proposed actions to address drivers reflected in national REDD+ strategies.
 - These documents, including the process for drafting them, must be publicly available and reflect some consensus among stakeholders.
 - There must be a demonstrated political commitment to identify all the major drivers of deforestation, including infrastructure (e.g. roads), energy (e.g. dams, biofuels) and foreign direct investment in agriculture, forestry and mining projects. If these significant drivers are left out, then most plans will fail.
- Reporting on major infrastructure projects, reporting on trade data in key commodities, and development of mitigation strategies for the relative impacts of these different sectors/drivers.
- Commitment by Parties to policies and measures designed to support legal and sustainable practices in all land use sectors, especially the agriculture and forestry sectors. Parties must also ensure that their markets and policies do not encourage harmful activities, such as illegal logging and displacement of peasant and subsistence communities.

³⁶Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, and de Haan C. 2006. Livestock’s long shadow: environmental issues and options. Food and Agriculture Organization of the United Nations, p. xxi.

³⁷Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, and de Haan C. 2006. Livestock’s long shadow: environmental issues and options. Food and Agriculture Organization of the United Nations, p. 112.

- Prioritizing the following activities:
 - Protection of primary tropical forests and restoration of part-degraded forests, including forested, degraded and entirely deforested peatsoils;
 - Resolution of land tenure and land rights issues;
 - Establishment of legal frameworks to address the illegal timber trade including the adoption of legislation to do so;
 - Establishment of sustainable procurement policies;
 - Establishment of anti-corruption measures to ensure that forest policies are enforced and that REDD+ funds are not diverted;
 - Evidence of improved law enactment and enforcement
- REDD+ activities receive consistent and coordinated focus within the federal government and among federal, regional and local governments in REDD+ countries.
- Ongoing monitoring of international drivers to identify shifting pressures, both direct and indirect, on forests from these drivers, and assess the effectiveness of policies and measures to address them.

As mentioned in Decision 4/CP.15, Parties should engage in significant capacity building endeavors to ensure that developing country parties can “collect and access, analyze and interpret data.”³⁸ As drivers are clearly not confined to the country of deforestation or forest degradation activities (see *supra*), developed countries should assist developing countries in capacity building with regard to, *inter alia*, international drivers analysis.

SBSTA should also assist in the development of strategies and methodologies for consumer countries to address their role in driving deforestation and degradation abroad, as their actions in this area will be essential to the success of REDD+ programs. Such strategies include:

- Improving the tracking and sharing of data on trade in relevant food, fuel and wood fiber commodities;
- Establishment of legal frameworks to address the illegal timber trade including the adoption of legislation to do so;
- Improving transparency and coordination around these policies to promote procurement and trade of legal timber and wood products;
- Developing demand management strategies designed to avoid leakage associated with implementation of REDD+ projects, programs and strategies;
- Building the international communication and cooperation tools for joint enforcement activities to prevent illegal logging and associated trade;
- Promoting North-South and South-South research cooperation on improving agricultural productivity and primary product monitoring systems;
- Information sharing to ensure that donor funding for REDD+ activities is not undercut by contrary investments by those same countries that support deforestation or degradation activities in REDD+ countries.

³⁸ Decision 4/CP.15, para. 4.

Finally, SBSTA should stress to the COP that the UNFCCC must ensure that Parties fully account for soil and biomass carbon losses associated with bio-energy crop production.

Only by using such comprehensive frameworks and initiatives can the REDD+ mechanism ensure it addresses the drivers of deforestation and forest degradation.

VI. Conclusion

All countries must ensure that their laws and regulations fully support reducing pressures on forests if REDD+ is to prove an effective and efficient climate change mitigation strategy. As the Global Legislators Forum (GLOBE) International Commission on Land Use and Forests stressed in June 2009, “voluntary bilateral timber licensing regimes and legislation in consumer countries such as the United States’ amendment to the Lacey Act, have been welcome interventions that could be replicated across the major economies. Equally, the demand side drivers of deforestation need to be addressed by promoting sustainable agriculture, improving its productivity and providing support to supplier nations to reform governance where necessary.”

We look forward to working with SBSTA to advise and refine the methodologies to accurately and completely analyze the drivers of deforestation and forest degradation in REDD+ countries, and effectively prioritize actions to address them in a way that respects the rights of indigenous peoples and local communities, emphasizes the protection of primary forests, and ensures that ALL parties support these efforts by putting in place policies and measures that successfully curb rampant deforestation and degradation.

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