

# Memo - Environmental Integrity

January 29, 2019

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The troubled history of the Kyoto Protocol's carbon offset program, the world's major experiment in international offsetting, is a warning to policy-makers about the risks associated with reducing deforestation through emissions trading.

The large majority of the Kyoto Protocol's offset projects did not reduce emissions (Cames et al. 2016, Haya 2009). The payments were intended to enable new projects to proceed, but instead the program mostly paid for businesses-as-usual -- projects that were already happening on their own. Industrialized countries used these false credits to meet substantial portions of their reduction targets. This happened even though many involved knew of the poor quality of the credits. Paying countries embraced the program to drive down costs of meeting their climate targets, at least on paper, and recipient countries promoted it for the funds their businesses received. What resulted was a substantial weakening of global climate agreements.

Ensuring the quality of credit trading in the forest sector is even more challenging than the industrial sectors targeted by the Kyoto Protocol's offset program. Avoided deforestation was excluded from the Kyoto Protocol's program because of concerns about the environmental integrity of the resulting credits (Aukland et al. 2003). The challenge of ensuring that credits represent only real reductions caused by the program, and not business-as-usual, remains a challenge. Offsetting in the forest sector has the additional challenges of leakage and permanence.

When forests are conserved in one location, but the demand for the products that drive that deforestation remains largely unchanged, forest conservation can displace rather than reduce deforestation. The result is little net reduction of carbon emissions, an effect called *leakage*. Assessing leakage is inherently uncertain (Ingalls et. al. 2018). ARB has proposed addressing leakage by ensuring that production of the commodities driving deforestation does not decline in the jurisdiction; intensification of production does not necessarily avoid leakage and can increase leakage (Oliveira & Hecht 2016).

The *permanence* of the reductions is also tenuous, since forest policy can change such as with a change of government, fail to be enforced, or be designed to target small-holders rather than the major drivers of deforestation which has been the case with the large majority of forest-sector offsets so far. The level of profit from deforestation-driving commodities is far higher than

today's offset prices, and many of the industries driving deforestation are politically powerful. Counter to the fundamental logic of carbon offsets as a market mechanism that pays for reductions, when carbon payments are too low to cover the opportunity costs of reduced deforestation it is difficult to reasonably assure that the reductions will not be reversed.

This also makes it difficult to assess the extent to which payments are actually responsible for causing reductions to happen (are *additional* to what would have otherwise happened).

Leakage, permanence, and additionality are serious concerns for both project-based forest offsets and for jurisdictional credit trading programs; a jurisdictional approach does not solve these challenges.

While certain conditions can make permanence, additionality, and leakage avoidance more likely, these requirements cannot be ensured, and assessing them is inherently uncertain and subjective. For example, whether a program addresses the major drivers of deforestation, and whether the program does so in a way that could lead to sustained permanent reductions is very context specific. Assessing whether the payments will make a meaningful difference in whether a policy is enacted or enforced also requires deep understanding of the considerations of the linked jurisdiction. The subjectivity of these assessments means that third party auditors and participating countries are able to give positive assessments to programs of widely varying quality. Under the CDM, the subjectivity of assessments of additionality led to lenient judgements and widespread false crediting. There is no reason to believe that subjective assessments will be made in a more conservative manner with credit trading in the forest sector.

Endorsement of the TFS by California would help legitimize a credit-based strategy at a time when carbon-market financing of conservation is extremely controversial in the ongoing Paris Accord negotiations and elsewhere among governments and conservation and development organizations. Endorsement of a TFS that embraces carbon trading risks substantial weakening of global climate agreements, the same way the Kyoto Protocol's offset program did, while simultaneously taking attention and resources away from alternative approaches to forest protection that have proven to be effective.

Given the urgency of reducing global emissions, we cannot risk allowing climate action in high-emitting industrial sectors to be traded for support for biodiversity protection with uncertain and often questionable carbon benefits. International climate agreements forcefully state that wealthy countries have the obligation to both reduce their emissions *and* to support emission reductions in poor countries. At best, international emissions trading trade these two obligations off of one another. At worst, emissions trading allows wealthy jurisdictions to buy their way out of doing either.

## ***Citations:***

- Aukland L., P. M. Costa & S. Brown (2003) A conceptual framework and its application for addressing leakage: the case of avoided deforestation, *Climate Policy*, 3:2, 123-136
- Cames, M., R. O. Harthan, J. Füssler, M. Lazarus, C. M. Lee, P. Erickson & R. Spalding-Fecher. 2016. How additional is the Clean Development Mechanism? Berlin. Oeko Institut. Report commissioned by the EU Commission.
- Haya, B. 2009. Measuring emissions against an alternative future: fundamental flaws in the structure of the Kyoto Protocol's Clean Development Mechanism. (Report No. ERG09-001). Berkeley: Energy and Resources Group.
- Ingalls, M. L., P. Meyfroidt, P. X. To, M. Kenney-Lazar & M. Epprecht. (2018). The transboundary displacement of deforestation under REDD+: Problematic intersections between the trade of forest-risk commodities and land grabbing in the Mekong region. *Global Environmental Change*, 50, 255-267.
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Barbara Haya spoke statement - January 28, 2019

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I studied the outcomes of the Kyoto Protocol's offset program for several years, including through field research in India.

The troubled history of this program, the world's major experiment in international offsetting, should be a strong warning to policy-makers about the risks associated with reducing deforestation through emissions trading.

The large majority of the Kyoto Protocol's offset projects did not actually reduce emissions. The payments were intended to enable new projects to proceed. Instead the program mostly paid for businesses-as-usual -- paying project developers to build projects they were already building.

Industrialized countries used these false credits to meet substantial portions of their reduction targets. They did this even though many involved knew of the poor quality of the credits. Paying countries embraced the program to drive down costs of meeting their climate targets, at least on paper, and recipient countries promoted it for the funds their businesses received. What resulted was a substantial weakening of global climate agreements.

Ensuring the quality of credit trading in the forest sector is even more challenging than the industrial sectors targeted by the Kyoto Protocol's offset program. The challenge of ensuring that credits represent only real reductions caused by the program and not business-as-usual (called "additionality") is the same. In addition, there are the serious challenges of leakage and permanence, which Kathy described.

Leakage, permanence, and additionality are concerns for both project-based forest offsets and for jurisdictional credit trading programs; a jurisdictional approach does not solve these challenges.

While certain conditions can make permanence, additionality, and leakage avoidance more likely, these requirements cannot be ensured, and assessing them is inherently uncertain and subjective. For example, whether a program addresses the major drivers of deforestation, and whether the program does so in a way that could lead to sustained permanent reductions is very context specific. Assessing whether the payments will make a meaningful difference in whether a policy is enacted or enforced also requires deep understanding of the considerations of the linked

jurisdiction. The subjectivity of these assessments means that third party auditors and participating countries are able to give positive assessments to programs of widely varying quality. Under the CDM, the subjectivity of assessments of additionality led to lenient judgements and widespread false crediting. There is no reason to believe that subjective assessments will be made in a more conservative manner with credit trading in the forest sector.

Endorsement of the TFS by California would help legitimize a credit-based strategy. Endorsement of a TFS that embraces carbon trading risks substantial weakening of global climate agreements, the same way the Kyoto Protocol's offset program did, while simultaneously taking attention and resources away from alternative approaches to forest protection that have proven to be effective.

Given the urgency of reducing global emissions, we cannot risk allowing climate action in high-emitting industrial sectors to be traded for support for biodiversity protection with uncertain and often questionable carbon benefits. International climate agreements forcefully state that wealthy countries have the obligation to both reduce their emissions *and* to support emission reductions in poor countries. At best, international emissions trading trade these two obligations off of one another. At worst, emissions trading allows wealthy jurisdictions to buy their way out of doing either.

**End of memo, more notes/text is below**

## Leakage (outline form)

1. What is leakage
2. Why leakage is a serious concern for REDD
  - a. The main drivers of tropical deforestation are: [timber, palm oil, mining, beef, soy](#). [Swidden agriculture can also cause deforestation, but is not a primary driver.](#)
  - b. These commodities have the characteristics of high leakage.
    - i. Globally traded
    - ii. [Low-medium elasticity of demand and high elasticity of supply.](#) (Galik)
  - iii. Literature points to high leakage rates – cite
    - c. Accounting for leakage is difficult – a lot of uncertainty (Ingals).
    - d. ARB has proposed intensification.
      - i. Can work,
      - ii. But when it's beef, must account for lifecycle emissions of beef production, especially when shifting from pasture to Cafos, and considering the enteric emissions from beef itself.
      - iii. And can cause more deforestation (Gustavo Hecht).
  - iv. Put this in context of what is needed –
    1. Intensification can be a part of the solution, but only if it is paired with efforts to reduce demand. And it shouldn't involve carbon trading because of the level of the uncertainty. If we believe that emissions over the next 20 years matters, then we need to make sure that we are reducing them AND also supporting efforts to reduce deforestation.

## Permanence

*This is very rough, just an outline.*

Unlike in the industrial sector, the carbon benefits of a forest carbon project can be completely reversed in a single event, like a fire, or reversal in logging restrictions.

Reversal from policy change or lack of enforcement is particularly a problem because of the large profits from extraction, that can not be covered by carbon payments. Payments can support governments, but there is always a risk of reversal.

We have seen this discrepancy in the nature of REDD programs so far. So often target small holders. because drivers are too hard to address, and small holders are able to be coerced.

It can be good to reward governments. But needs to be funds and other forms of support, and not credit trading because of the risk of reversal, and the risk that participating countries will choose lenient rules (see CDM section below).

Paragraphs moved over from Kathy's memo. We need to clearly link this to issues of permanence and additionality:

The focus of existing forest-conservation programs on restricting land use by the poor also reflects the difficulties and higher economic costs of addressing the major drivers of deforestation and the limits of political power at the jurisdictional level to do so. The great majority of forest conservation interventions under the rubric of REDD+ have targeted the least powerful forest users rather than the extractive and agribusiness industries and infrastructure development programs that cause far more forest loss than do small-scale landholders and indigenous communities. Adoption of jurisdiction-wide conservation targets for reduced deforestation does not eliminate this tendency.

This is especially true if jurisdictional programs depend on carbon-market financing in the form of sales of offset credits. This is because markets in offset credits are designed to be profitable – that's how their advocates think they can generate new funds for conservation – and they would be based on competition. Buyers, brokers, and bankers of credits seek the least-cost means of meeting the emissions-reduction requirements of climate-compliance regimes such as California's. The would-be sellers of offset credits, whether at the project or jurisdictional level, must offer credits at low enough prices to attract buyers who would otherwise purchase credits from a different source: from a competing tropical jurisdiction or REDD-type project or on the voluntary carbon market. That means that the projects or jurisdictions that produce the credits for sale need to implement conservation rules and incentives that can reduce deforestation at the least cost.

REDD+ interventions typically do this by requiring people whose incomes are low and whose options and bargaining power are limited, such as indigenous and peasant communities who hunt, collect, or practice shifting crop cultivation in forested areas, to stop using forests for these purposes and paying them some form of compensation for their losses. In environmental-economic jargon, the low opportunity costs of stopping forest use by poor people make this relatively affordable. These are not the major drivers of deforestation in most tropical regions, but in a market-based system for selling credits it would be much more expensive to generate saleable credits by paying the opportunity costs of stopping those activities that are the main deforestation drivers: plantation agriculture, ranching, and mining. That is a major reason why the great majority of REDD+ and similar payments for ecological services projects have focused on small-scale land users, not agribusiness or mining corporations. There is nothing about the jurisdictional approach that would alter this calculus.

Legally unable to ensure permanence - who is going to replace the credits if there is a regime change and a reversal of policy.

## Additionality

Given the urgency of reducing global emissions, we cannot risk allowing climate action in high-emitting industrial sectors to be traded for support for biodiversity protection with uncertain and often questionable carbon benefits. International climate agreements forcefully state that wealthy countries have the obligation to both reduce their emissions and to support emission reductions in poor countries. At best, international emissions trading trade these two obligations off of one another. At worst, emissions trading allows wealthy jurisdictions to buy their way out of doing either.

Can not be additional in the offsets sense. Can not reasonably expect that payments are making reductions happen that wouldn't have happened anyway.

Linkage - Non-reciprocal - one country has binding target and the other doesn't. Can not ensure that the reductions are happening because of risk of leakage and reversals (impermanence).

## California's endorsement of international carbon trading in the forest sector risks weakening global climate agreements

The history of the Kyoto Protocol's offset program, the world's major experiment in international offsetting, should send a strong message of caution to policy-makers that credit-trading-based conservation could undermine strong climate action.

The large majority of carbon credits of the UN's offset program, the Clean Development Mechanism (CDM), do not represent real emissions reductions (Haya 2009). A report commissioned by the EU Commission estimates that the quality of 85% of CDM offset credits is questionable (Cames et al. 2016).

This was able to happen for two reasons. First, the emissions reduced by offset projects are highly uncertain, requiring subjective rather than objective assessments of whether projects meet the required quality standards. The emissions reduced by carbon offsets is inherently uncertainty because offsets *pay* for *reductions* instead of *charge* for *emissions* (Haya et al, forthcoming). Instead of internalizing an externality, as is done by a carbon tax or a solid emissions cap, offsets require estimating emissions reductions against a counterfactual scenario that never happened. Under the CDM, the large majority of projects participating in the program would have happened anyway; instead of reducing emissions, the program mainly paid for business-as-usual (Haya 2010). In addition, estimates of counterfactual baseline emissions were exaggerated, allowing for further

over-crediting (Lazarus). Further, at times the CDM actually inadvertently paid businesses to increase their emissions in order to decrease them to earn offset credits. Manufacturers of HCFC refrigerants found it profitable to increase HCFC production and decrease the efficiency of that production process in order to generate more HFC gas, a bi-product of the HCFC manufacturing process and a very potent greenhouse gas, to burn the HFCs as carbon offsets (Kolmus 201?, Wara 200?).

Second, countries didn't have the political will to address this uncertainty with conservative assessment methods. Instead, buying and selling countries implemented lenient rules that allowed a wide range of projects to participate and generate exaggerated quantities of reduction credits. Even though there was widespread understanding that the program was grossly over-crediting, countries buying credits embraced the program to drive down costs of meeting their climate commitments, at least on paper, and recipient countries promoted it for the funds their businesses received (Haya 2010).

Uncertainty especially high with forest activities because of the additional risks of leakage and impermanence (see discussions above). ARB lays out requirements aimed at addressing the challenges of leakage, impermanence, baselines, and additionality. However, assessing whether these requirements have been met are very subjective. Does the jurisdictional forest sector plan effectively address the drivers of deforestation to permanently avoid deforestation rather than just postponing deforestation temporarily? Is leakage really avoided? (Barbara will expand this question after finishing the leakage section.) Has the jurisdiction demonstrated its good will to implement the safeguard standards in a way that truly protects forest communities rather than simply checking safeguard requirement boxes? (See safeguards section for a discussion of why safeguard standards are too subjective to on their own ensure that forest communities are protected.) There is no reason to believe that the countries and subnational jurisdictions that embraced the false credits of the CDM as buyers and sellers will choose to implement a much more challenging and risky offset program in the forest sector in a conservative manner.

The risk posed by credit-based REDD is large enough to undermine global climate efforts. So far, where offsets can be used to meet emissions caps, they have been used in large quantities, trading real reductions under the cap with uncertain or dubious reductions outside of the cap. Parties to the Kyoto Protocol used offsets to meet substantial portions of their reduction targets, undermining the stringency of global climate agreements. For example, during the first commitment period of the Kyoto Protocol (2008-2012), countries participating in the European Union Emissions Trading Scheme used offset credits equal to 11% of covered emissions (Ellerman, Marcantonini, & Zaklan, 2014, 2015), or xx% of total EU-wide emissions reductions. In California, current use of offsets equals 51% of the total reductions needed from ARB's business-as-usual estimates in the capped

sectors during 2013-2020.<sup>1</sup> During 2021 to 2030, TFS credits could equal up to 10% of total state-wide greenhouse gas (GHG) emission reductions and 28% of the expected effect of California's cap-and-trade program on emissions.<sup>2</sup> If trading in tropical conservation credits is allowed to be used instead of reductions in industrial emissions in wealthy countries, and the credited reductions in deforestation leak to other forests, or are reversed some years later, our climate agreements will have failed.

Additionality: Can not be additional in the offsets sense. Can not reasonably expect that payments are making reductions happen that wouldn't have happened anyway.

Linkage - Non-reciprocal - one country has binding target and the other doesn't. Can not ensure that the reductions are happening because of risk of leakage and reversals (impermanence). Given the urgency of reducing global emissions, we cannot risk allowing climate action in high-emitting industrial sectors to be traded for support for biodiversity protection with uncertain and often questionable carbon benefits.

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### ***Citations:***

Cames, M., R. O. Harthan, J. Füssler, M. Lazarus, C. M. Lee, P. Erickson & R. Spalding-Fecher. 2016. How additional is the Clean Development Mechanism? Berlin.

Haya, B. 2009. Measuring emissions against an alternative future: fundamental flaws in the structure of the Kyoto Protocol's Clean Development Mechanism. Berkeley.

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<sup>1</sup> I will put out a blog post on this.

<sup>2</sup> <http://bhaya.berkeley.edu//docs/FACTSHEET-the-size-of-CAs-offset-program-Haya.pdf>

---. 2010. Carbon Offsetting: An Efficient Way to Reduce Emissions or to Avoid Reducing Emissions? An Investigation and Analysis of Offsetting Design and Practice in India and China. Berkeley: (Doctoral dissertation) Energy & Resources Group, University of California.