Money for Nothing?

Principles and Rules for REDD and their Implications for Protected Areas

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Prepared for the Workshop:
"Connecting Protected Areas and Indigenous Lands to REDD Frameworks"

School of Earth Sciences
Stanford University
Palo Alto, CA

11-12 February 2009

The development of the carbon market and the concept of reducing emissions from deforestation and forest degradation (REDD) would appear to present new opportunities for protected area development in the Amazon Basin. If there will be markets paying tens of dollars per ton for forest carbon, should not protected areas, with over a hundred tons of carbon in each hectare of forest, be able to make large amounts of money? This paper explains why, given the likely rules governing REDD and the role of carbon markets in them, the benefits to protected areas are not at all certain. They may not come directly to the protected areas and those who own, develop or maintain them, but rather indirectly, through national governments. Nonetheless, the potential is there, and with a good understanding of some of the basic rules likely to emerge for REDD, protected areas can benefit substantially.

A Fundamental Distinction: Stocks vs. Flows

To understand how the rules will affect protected areas, it's important to remember a basic distinction: between stocks and flows. The stock is the amount of a substance in a particular place. For example, if a reservoir contains 5 million liters of water, then that 5 million liters is the stock of water it contains. On the other hand, if 800,000 liters of water flows out of the reservoir, over the top of the dam, each year, then the flow of water out of it is 800,000 liters per year. Thus, flows are the amounts of the substance that enter or leave the stocks during a certain period of time.

Why is this relevant to deforestation? Consider the total stock of carbon in all tropical forests (roughly 300 billion tons). Each year, about 1.5 billion tons of it is converted by deforestation into about 6 billion tons of carbon dioxide, and emitted into the atmosphere. Thus, although the stock of tropical forest carbon is very large, only about 0.5% of it flows from forest to atmosphere annually (1.5 billion/300 billion). This flow into the atmosphere, the emissions from deforestation, is what matters for global warming.

Now, recall the meaning of the "E" and the "R" in REDD: "emissions" and "reducing". What matters for REDD – and what is paid for – is not the stock of forest carbon, but the flow from forest to atmosphere – the emissions. The fundamental goal of REDD programs is to reduce those emissions. Thus, REDD pays, either directly or indirectly, for reductions in the flows, measured as tons of emissions, not for maintaining stocks.

Another distinction is closely related – between carbon and carbon dioxide. Although we commonly talk about "the carbon market", "carbon trading", and the like, actually it's a carbon dioxide market, because it deals with emissions. From the point of view of market payments, what matters is the amount of carbon dioxide flowing into the atmosphere. REDD is not a way to preserve forest carbon stocks, but rather a way to reduce carbon dioxide flows – in the same way that the purpose of energy technologies such as hybrid cars, wind turbines and biofuels is not to preserve petroleum or coal in the ground, but rather to reduce carbon dioxide flows into the atmosphere. Whatever their details, their purpose of the REDD rules will be to decrease the flow of CO_2 into the atmosphere – to Reduce Emissions from Deforestation.

A Fundamental Principle: Additionality

Why do these distinctions matter? Don't maintaining the stock of forest carbon, and reducing the flow of carbon dioxide emission into the atmosphere, amount to the same thing?

An analogy will show why they don't. Let's say I discover an enormous deposit of coal under the Pacific Ocean, 5000 meters below sea level. Since I'm an environmentalist and want to stop global warming, I offer to declare this deposit the "Pacific Coal Protected Area", and guard it so that it will not be mined. In return, I ask you to pay me a modest price of $ 2 per ton of carbon protected. Would you pay me? Should you?

The answer of course is no, because there is no way to mine coal 5000 meters under the sea – not now, not tomorrow, perhaps not ever. By establishing my "Protected Areas", I am not reducing the burning of coal, and thus the emissions of carbon dioxide from coal burning, by even one gram. In the terminology of climate change policy, my coal preserve is not "additional" from the point of view of emissions. Converting to energy-efficient light bulbs, putting more insulation in my house, or deciding to walk to work rather than drive to work, all are decisions that reduce CO_2 emissions – they add to the global reduction of greenhouse gases. My "Pacific Coal Protected Area" does not, and so there is no reason for you to pay me for it.

Thus, the rule of additionality says that emissions reductions programs, including REDD, should only pay for activities that reduce global emissions. If a stock of carbon is not likely to release a flow of carbon dioxide in the coming year, then paying to protect it is not additional – it doesn't reduce global emissions. Since only about 0.5% of the planet's tropical forest carbon stock is emitted each year, it is clear that for the large majority of the world's tropical forests, protection would be non-additional, at least for the next few decades.

Ironically, there is another kind of protection activity that is also non-additional by this definition – maintaining protected areas that already exist. For if the area is truly "protected", not just in law but also in fact, then it is not at risk for emission in the coming year. Thus, maintaining its protection will not reduce global emissions, and thus is non-additional and ineligible for compensation – unjust as that may seem.

Another Fundamental Principle: Leakage

Consider another hypothetical situation. Imagine that I win the lottery and, as a dedicated environmentalist, I decide to buy some forest land in the Amazon Basin and established a private preserve. Knowing the importance of additionality, I choose to buy this land in an area of active deforestation, where commercial soybean farmers are in the process of clearing forest to expand their production. My preserve totals 1,000 hectares, that otherwise would have been deforested and emitted 500,000 tons of CO_2. Now, should I be able to claim to have reduced emissions from deforestation (additionally!), and ask you to pay me?

Before you write me a check for several million dollars, you need to ask another question. What has happened to those soybean farmers? What if they have not given up the idea of expansion, but have simply gone to a different area of forest – perhaps even just outside my preserve – cleared 600 hectares, and established new farms there?

If they have simply deforested the same amount of land nearby, then my preserve has not truly reduced global emissions by 500,000 tons. It has reduced them by 200,000 tons, and just moved 300,000 tons of emissions from the land I bought to other pieces of land. That movement does no good for the effort to prevent climate change..

This problem, called “leakage”, is in some ways just another kind of non-additionality. If my activities, although they protect a threatened forest, do not reduce global emissions because deforestation moves elsewhere, then they make no additional contribution to the fight to stop global warming. What matters is not the reduction of emissions on my land, but the overall reduction over the whole planet. Unless my actions make an additional contribution to that global effort, I cannot claim compensation under REDD.

Carbon Market Offsets Make Additionality and Leakage Especially Critical

So far, we have not considered the source of the money that I’m asked to be paid for my protected areas. I don’t really care; all that matters to me is that you pay me my millions. But in fact, the source of the money is important for the additionality and leakage rules. In particular, it’s especially critical to avoid non-additionality and leakage, if the funding comes from the sale of carbon market offsets.

REDD credits sold in carbon markets are called “offsets” because they allow offsetting emissions increases by those who buy them. The purchaser – a coal company, electric power plant, or cement manufacturer in an industrialized nation – is buying the right to emit more tons of CO2 than they would otherwise have been permitted. This is okay, because the amounts of the decrease (in the tropical country) and the increase (in the industrialized country) offset each other. One decreases emissions, and the other increases emissions, and by the same amount. Thus, they sum to zero and global emissions remain the same. Furthermore, the overall cost is reduced.

That is, they remain the same if the reductions are really additional, and there is no leakage. But if this is not totally true – if I sell REDD credits for my 500,000 tons of CO2 reduction, but because of leakage the global reduction is only 200,000 tons – then we have a serious problem. The company that buys my credits, will be able to emit 500,000 tons more of CO_2. Thus my global reduction of 200,000 tons and their increase of 500,000 tons do not offset as they are supposed to -- there is a net increase in emissions of 300,000 tons. By selling my credits in the carbon market, I have actually made the global warming problem worse!

Consider, on the other hand, what would happen if the money to pay me came from a different source. Imagine, for example, that you too had won the lottery, and being even more dedicated to the environment than me, you were willing to pay me voluntarily for my 500,000 tons of credits. In reality, you would be overpaying me, since because of the leakage the global reduction in emissions is less than half of that amount.

So, we would still have a problem, but that problem would not make global warming worse. It would simply be a matter of wasted money; you would have spent 2 ½ times as much as you should have. But you and I would still have used our lottery winnings to reduce the problem of global warming – just not very efficiently.

National Baselines Also Help Solve the Problem

Thus, paying from a non-carbon-market-offset source can reduce the danger of actually aggravating the problem of global warming. Another way to minimize this danger is to make the payments to nations rather than individuals. In other words, instead of paying me, you would pay the government of Brazil, say, for its reductions in emissions. I would need to get the Brazilian government to pass on some of that payment to me (and I would have a valid claim for payment for the 200,000 tons of global reduction that I had really achieved). But Brazil would be paid only for its nationwide reduction, so the 300,000 tons of emissions that "leaked" from my preserve to nearby forests would not be counted. Similarly, if I established my preserve in an isolated area not threatened with deforestation, it would be non-additional and Brazil would not get paid for it.

This approach – using a national baseline rather than sub-national or project baselines to calculate the emissions reductions achieved – partly solves the non-additionality and leakage problems.. But from the point of view of protected areas, it can have a distinct advantage. For Brazil, having been compensated for reducing its emissions compared to its national baseline, could use the money in any of a number of ways. For example, it could:

- Pay those people and organizations who establish new protected areas, but only for the amounts of reductions that they made after subtracting the tons that leaked or were non-additional
- Pay those who manage existing protected areas, to continue their protection and insure that they don't have emissions in the future
- Pay for the establishment of protected areas in isolated regions not currently threatened by deforestation, again as a way to reduce future deforestation
- Use some of the money for national efforts that help reduce deforestation all across the country, for example by strengthening the ability to enforce laws against illegal logging
- Retain some of the money as compensation for the opportunity costs of government actions that indirectly reduce deforestation, such as redirecting plans for road building away from forested regions
- Use some of the money for national priorities that are unrelated to climate change, such as reducing hunger or improving the educational system

The point is that, since additionality and leakage have already measured at the national level, the national government can ignore these issues, at least in part, when it distributes the REDD money among its citizens, states and other entities.

This is both an opportunity and a challenge for protected areas. On the one hand, they do not need to prove additionality or account for leakage, in order to receive funding. The national government deals with those questions. On the other hand, as a matter of national sovereignty, their government will have the right to decide how to distribute the compensation it receives. The rules will not tell any nation how to spend its money, at most they may give guidance and suggestions. Therefore, protected areas will need to fight for their share of the money, within their national political context.

The Likely Rules in Different Regions

The issues of additionality and leakage are why the trend of the REDD systems now being created – globally, nationally, and among states and provinces – is towards national baselines and non-offset funding mechanisms. But for many of these systems, the rules have not been decided. Here are the likely rules for some of the major ones:

- The European Union (E.U.), whose Emissions Trading Scheme (ETS) is the best established and the one paying by far the highest prices, is basing its future REDD payments (after 2012) on national baselines and non-offset funding, although limited experimentation with offsets will be allowed also.
- The U.S. is debating national climate change legislation now; the major proposals have combined offset and non-offset funding, and have established national baselines as a criteria but with provisions for some subnational actions.
- The states of the western U.S., led by California, are developing their rules now; offsets and subnational baselines may be allowed within limits. An agreement signed last December with several Amazon states foresees future cooperation and compensation for REDD, but without any specifics on the rules. It's also possible that U.S. national legislation would override the right of states to allow offsets in their markets.
- Similarly, states and provinces in other countries, such as New South Wales in Australia, are setting up markets with provisions for limited offsets. As in the U.S., these may be absorbed into national programs.
- The international negotiations in the UNFCCC, aimed at a global agreement in December 2009, are emphasizing national baselines but with some allowance for transitional subnational ones. The funding mechanism, and the role of offsets, remains a major area of disagreement.

Overall, then, there are likely to be a range of REDD possibilities for protected areas in the next few years. The additionality and leakage rules may limit their possibilities for getting REDD funding, so that only projects that establish new protected areas in areas currently threatened with deforestation would be eligible. Alternatively, the additionality and leakage issues could be dealt with by national baselines and non-offset-funding.

This would widen the range the range of protected areas that could be funded, but would make it necessary to fight the battle for money in the national political arena.