Ecological Economics 70 (2011) 571–576

Contents lists available at ScienceDirect

Ecological Economics

journal homepage: www.elsevier.com/locate/ecolecon

Commentary

Property rights and liability for deforestation under REDD+: Implications for 'permanence' in policy design

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ARTICLE INFO

Article history:
Received 22 April 2010
Received in revised form 29 October 2010
Accepted 31 October 2010
Available online 6 December 2010

Keywords:
Climate change
Liability
Permanence
Policy design
Property rights
Reducing Emissions from Deforestation and Degradation (REDD+)

ABSTRACT

Reducing Emissions from Deforestation and forest Degradation (REDD+) is critical in efforts to mitigate the effects of anthropogenic climate change. Despite uncertainty about the exact form of a future, international REDD+ system, REDD+ carbon property rights would need to be created and allocated with liability assigned for the potential loss of climate benefits in the event of carbon reversal from deforestation. This commentary explores the links between forest property rights and liability, to different REDD+ policy options and their implications for permanence. Should national governments retain liability for permanence then project-level activities that have individually-assigned REDD+ carbon rights may have a higher risk of carbon reversal than policies where rights are assigned to the state. Knowledge of pre-existing forest rights is necessary for some policies implemented with government-assigned REDD+ rights in order to compensate for potential income losses from policy implementation.

1. Introduction

With deforestation and forest degradation accounting for up to a fifth of global greenhouse gas emissions, Reducing Emissions from Deforestation and Degradation—'REDD+'—has been positioned as an important and potentially cost-effective climate change mitigation strategy (Eliasch, 2008; Stern, 2008; Palmer and Engel, 2009).[1] Despite exclusion from the Kyoto Protocol, a global REDD+ system is emerging and may yet be included in a post-2012 climate agreement. Inclusion of REDD+ in a global compliance system will, however, necessitate clearly-defined and allocated forest carbon property rights, in the form of carbon credits or certified emissions reductions, with liability assigned for possible future carbon release into the atmosphere.[2]

Assigning liability is not only a precondition for credit fungibility, but is also a key issue for 'permanence' (Sedjo and Marland, 2003). Carbon sequestered in the terrestrial biosphere is not permanently removed from the atmosphere and is at constant risk of being returned through deforestation, whether intentional or not. Reductions in emissions thus do not represent a permanent change in the cumulative flux of carbon dioxide to the atmosphere, and this applies also to industrial emissions sources (Herzog et al., 2003; Dutschke and Angelsen, 2008). In this commentary, I adopt the viewpoint of Watson et al. (2000) that reductions in fossil fuel emissions can be regarded as leading to more permanent reductions in cumulative flows to the atmosphere in contrast to reductions in deforestation. Forests as carbon sinks face a wider range of economic, political, and natural factors, which contribute to a higher risk of carbon reversal, than other sources.

Liability can simply be defined as having a high probability of being held responsible and potentially penalised for carbon release from deforestation of a particular area. But under a national approach to reducing greenhouse gas emissions the concern is less about permanence of specific forest areas but instead whether a particular country continues to maintain changes in emissions below an established reference level, e.g. one defined as 'business-as-usual' (Dutschke and Angelsen, 2008). This is the definition used in this commentary with important implications for the design of incentives in more individual-specific contracts for ensuring permanent REDD+. Such contracts are more likely in a project-based REDD+ approach or one that combines projects with a national framework.

The forerunner to any future REDD+ system is Kyoto's Clean Development Mechanism in which a limited number of afforestation/reforestation projects have been implemented. Carbon credits created in such projects, located in non-Annex I, i.e. developing, countries, can be used to offset emissions in Annex I, i.e. 'industrialised', countries.

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[1] REDD+ is defined as a set of policies and activities to prevent or slow deforestation and degradation, and increase forest carbon stocks.

[2] More precisely, carbon credits describe the right to exploit an activity's climate benefits, and can be defined through private legal contracts as in the voluntary carbon market or through national and international law as in the Clean Development Mechanism of the Kyoto Protocol (Wemaere et al., 2009). In general, a property right is a claim to a benefit stream that the state agrees to protect through the assignment of duty to others who may interfere with the benefit stream (Bromley, 1991).

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doi:10.1016/j.ecolecon.2010.10.011

Liability for the loss of climate benefits in these projects is transferred to those purchasing carbon credits from project developers or owners once the credits have been created (UNFCCC, 2005). Since liability for maintaining emissions below the 1990 reference levels agreed in Kyoto rests with Annex I countries, they remain liable should carbon credits prove to be non-permanent as a result of deforestation by other actors. In other words, should a project developer decide to deforest after selling its credits, it can no longer be held liable for any potential losses.[3] Instead, the credit-buying country would be held liable for losses and would need to buy replacement credits elsewhere.[4] If it fails to do so, and is unable to meet its emissions reduction commitment in a given compliance period, it can be penalised. Sanctions include the imposition of stricter emissions targets in successive compliance periods or exclusion from Kyoto's trading mechanisms. Since non-Annex I countries did not sign up to emissions reductions targets they cannot be held liable and hence, punished in case of carbon reversal from CDM projects on their territories.

This commentary first explores the likely shape and form of a future REDD+ system and its implications for liability in the event of future deforestation. While it is unlikely to copy the project-based nature of the CDM and its associated liability regime, the latter has implications for some of the policy options currently being considered for implementing REDD+. These options are discussed according to whether REDD+ carbon rights are defined at the government or individual level before the final section concludes.

2. REDD+ Property Rights, Liability and Permanence

Despite current uncertainty about the precise form of the future REDD+ regime(s), some basic institutional features have emerged both in the literature and in ongoing international discussions among researchers, practitioners and other stakeholders (see Wertz-Kanaounnikoff and Angelsen, 2009), revolving around the idea of a two-tier or 'nested' accounting framework (Pedroni et al., 2009).

First, industrialised countries such as, but not necessarily exclusively, those grouped under Annex I in the Kyoto Protocol, will pay countries such as Brazil, Guyana and Indonesia for REDD+. Finance continues to be a matter of discussion (political and otherwise) but it is likely to be initially based on voluntary funding mechanisms, utilising monies provided by both public and private sectors. In the long-run, there may be opportunities to tap into nascent carbon markets, which could potentially involve the creation of fully fungible REDD+ credits.[5] Second, policy frameworks within individual REDD+ host countries can either be utilised (if existing already) or would need to be created in order to effect changes in deforestation and land-use patterns on the ground. This could involve the purchase of REDD+ credits by REDD+ host governments from landowners or farmers participating in REDD+ activities. These could then be sold by REDD+ host governments to other countries either in voluntary transactions or via regulated carbon markets.

While an international system has yet to emerge, there are a number of bilateral transactions occurring at that level, for example, between Norway and respectively, Brazil, Guyana, and Indonesia[6], along with numerous project-level pilot programmes (see Sills et al., 2009). However, irrespective of the level at which transactions and policy take place, REDD+ credits require the creation of property rights that relate to the reduction of emissions and sequestration potential of a particular activity (Streck, 2009). As noted rights holders could be national governments at the first tier but could also be individual landowners, farmers, communities or concessionaires (hereafter termed 'individuals') at the second tier who can then trade these rights as carbon credits.

And what of liability for carbon reversal from deforestation? As noted in the Introduction, carbon credit buyer liability (and hence the possibility of being sanctioned) under the CDM resulted from the constraint of only buyers having national commitments in emissions reductions. In a future international REDD+ system, liability could potentially be shared between REDD+ host governments and government buyers, which is more likely if the former assume emissions targets say in a post-2012 cap-and-trade system (Eliasch, 2008). While this is by no means certain to happen, liability could also be assigned to REDD+ host governments more implicitly, for example, within bilateral contracts, or with the adoption of approaches such as 'compensated reductions'. Developed by the Environmental Defense Fund and the Instituto de Pesquisa Ambiental da Amazônia (IPAM), it proposes that non-permanence in one period, i.e. the inability of a REDD+ host country to meet an agreed emissions target against a historical reference point, could be punished by being rolled into the next as an additional commitment (see Santilli et al., 2005). Thus, liability for non-permanence would rest, at least partially, with a country such as Brazil or Indonesia.

At the national level, it should therefore be possible to bring REDD+ host countries on board with regards to sharing liability for non-permanence. At this level, particularly if countries adopt a nested approach, there is a wide range of policy options which REDD+ host countries could potentially adopt in order to operationalise REDD+.

3. Policy Options Under REDD+

Policies for REDD+ could be designed on the basis of maintaining changes in emissions or carbon stocks against some agreed reference level. Broadly speaking, policies either address the drivers of deforestation, e.g. by reducing agricultural profitability, increase carbon values of standing forest and enable forest users to capture these, e.g. using payments for environmental services (PES), or regulate land use (Angelsen, 2009). Some of these policies, e.g. regulation, could, if effective, lead to the creation of REDD+ credits to be held by governments. Others such as PES, involving ground-level activities or projects could involve the creation of REDD+ credits to be held by individuals.[7]

Cross-sectoral policies, including institutional reforms, are also necessary, first to ensure that the forest sector is not targeted in isolation and second, to complement other policies.[8] For example, corruption and rent-seeking are widespread in the natural-resource sectors of many tropical forest countries (see Palmer, 2005). Indeed,

[3] Given that project developers or owners may continue to hold other forest ownership and use rights after selling their carbon credits they could continue to influence the probability of future carbon release. In principle, carbon credit sellers need not be the right holder to forestland and resources, although separating these rights may complicate already complex and often insecure, i.e. *de facto* open access, property rights arrangements in many tropical forest areas (Sunderlin et al., 2009).

[4] Under the CDM temporary credits are issued, which must be renewed or replaced by permanent credits after their expiry. Temporary crediting, however, limits fungibility because credits need to be replaced when they expire unlike normal, permanent carbon credits (Neeff and Ascui, 2009).

[5] Neeff and Ascui (2009) assess the potential availability of funding for REDD+ according to a range of proposed institutional frameworks. They conclude that a regulatory (as opposed to voluntary) commitment at the global scale and with some involvement of carbon markets (thus potentially creating fungible credits and not just relying on funds alone), would be needed for a REDD+ mechanism to achieve emissions reductions on a globally-significant scale. There is also the possibility for the domestic trading of REDD+ credits in countries such as Brazil (I thank one of the reviewers for highlighting this point).

[6] For example, the Norwegian government has committed to providing almost US$ 1 billion to Brazil's Amazon Fund over 10 years (Moutinho et al., 2009; Tollefson, 2009). Note that Norway is not using this contract to offset its own emissions, although if it were then Norway would have to bear losses in case of Brazilian non-compliance with the contract and obtain compensatory credits elsewhere.

[7] While defined as a 'project-based' approach, this refers to scale of activity rather than level of governance since many PES schemes are in fact established at the national level, e.g. *pagos por servicios ambientales* (PSA) in Costa Rica (see Pagiola, 2008).

[8] Note that cross-sectoral policies do not tackle the underlying demand for agricultural and forest products except where they, in the absence of leakage, might lead to output price increases thus dampening demand.