Inputs on modalities and procedures for alternative approaches to addressing the risk of non-permanence under the Clean Development Mechanism (CDM) per the decision 2/CMP.7, paragraph 7

Views submitted by the World Bank

Introduction

World Bank welcomes the opportunity to provide inputs on the above topic. In previous UNFCCC discussions, proposals were made on approaches to address the risk of non-permanence (FCCC/KP/AWG/2009/10/Add.3/Rev.1, page 2). However, detailed analysis on the feasibility and effectiveness of different approaches to non-permanence in protecting the environmental integrity of the offset mechanisms is lacking. To address this gap, the World Bank as a trustee of the BioCarbon Fund commissioned the analytical work.

The inputs in this submission are based on the analytical work conducted by the World Bank and Nicholas Institute for Environmental Policy Solutions, Duke University. It is hoped that this submission provides constructive inputs to the related deliberations of Parties.

Background

Land Use, Land-Use Change and Forestry (LULUCF) activities can generate greenhouse gas (GHG) reduction credits by removing carbon dioxide (CO₂) from the atmosphere through biophysical processes and storing it in terrestrial carbon stocks such as biomass, litter and soils and/or by keeping or enhancing carbon stocks by improved management and/or avoiding their conversion. A feature of LULUCF activities is the possibility of non-permanence, whereby the stored carbon is subsequently released back into the atmosphere as CO₂. This non-permanence risk of biophysical carbon loss can be termed reversal for the purpose of crediting and accounting GHG removals by sinks. The risk may be in the form of unintentional reversal caused by natural factors such as fire, wind, insects, and disease; and/or intentional reversal caused by purposeful actions such as harvests that are not part of the management plan or changes in land use prior to the end of crediting period. These unintentional and intentional reversals may require modification of credit accounts to maintain system integrity.

Adequately accounting for the risk of reversal in LULUCF activities has been a point of ongoing discussion at the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change’s (UNFCCC). In accordance with the decision.2/CMP.7, paragraph 7 (FCCC/KP/CMP/2011/10/Add.1), the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) has requested the Subsidiary Body for Scientific and Technological Advice (SBSTA) to consider and as appropriate develop and recommend modalities and procedures to address the risk of non-permanence under the CDM.
Scope of the analytical work

The analytical work focused on the conceptual foundations of the risk of non-permanence and approaches to address it, including comparison of different approaches utilizing quantitative methods. The analysis examines multiple policies and accounting approaches using observational data and biophysical process models on natural unintentional reversal risks from fire over several decades. It also deploys economic data to explore reversals that could arise from intentional actions to clear the forest before a project ends. The analysis quantitatively and qualitatively assesses different approaches to address non-permanence, including:

- Categorical exclusion or exception, whereby empirical risk assessment is used to classify certain project lands as low-risk, capable of generating permanent credits;
- Temporary credits, as currently used for A/R projects under the CDM requiring credits to expire and be replaced periodically, but may not incentivize A/R projects due to low returns;
- Carbon rental or ton year approach, where permanent credits are issued incrementally over time and it is financially more attractive than the temporary crediting, as the market pays more for permanent credits, however, limited number of credits are realized at any time period of a project;
- Credit reserve buffers, a common method for addressing reversals in voluntary market allow for issuance of permanent credits, wherein credits are set aside in a buffer account across multiple projects at a regional, national, or international scale and can be accessed in case of a reversal;
- Commercial insurance in which a third party contracts to cover credit replacement risk for a fee, allows for permanent credits and could be more refined approach than a buffer, and could be used in combination with other approaches (such as buffer) to create a flexible system for addressing reversals;
- Host country guarantees, wherein a country hosting A/R projects (or its designated third party) agrees to satisfy uncovered reversals at the project or sub-national scale (such as a buffer), the viability of guarantee depends on the value of expected loss, and host country or third-party willingness and ability to devote necessary resources to cover the risk; and
- Combinations of the above, such as modalities agreed upon by the UNFCCC for addressing reversals for carbon capture and storage (CCS) projects using a combination of buffer and government guarantee.

The analysis on approaches to address non-permanence issues in A/R activities outlined above is expected to be published at the following websites by 1 November 2012. [www.carbonfinance.org](http://www.carbonfinance.org) and [www.nicholasinstitute.duke.edu](http://www.nicholasinstitute.duke.edu).

Key messages of the analysis

- The concept of permanence has biophysical and practical foundations. Any subsequent release of stored carbon negates the benefits of storage from an atmospheric standpoint. But practical realities dictate that policy and measures to address the risk of non-permanence are typically for finite periods. Therefore, from a policy and practical standpoint, “permanence” needs to be achievable with reference to a time period.
- Empirical analysis of representative risks from “natural” sources (unforeseen, unintentional, force majeure factors such as fire, wind, pest and disease) highlights the following determinants of risk management:
**Location matters.** Empirical data can reveal where projects are more (less) likely to confront reversals. These data could be employed to customize risk assessment at the project and regional scales.

**Scale matters.** Over time, large projects have less relative risk of catastrophic loss from reversal than small projects. More area in a project means that some part of the project may experience reversal, but it is less likely that the reversal is catastrophically large.

**Diversification matters.** Building on scale effects, pooling together risks from small projects into a larger portfolio of projects can reduce the relative risk of reversal and provide a basis for reversal risk management.

The approaches for addressing unintentional reversal are expected to withstand or lower the impacts of reversal risks from natural sources, whose occurrence could be solitary or in combination (e.g., fire and pest incidence). The tcER approach assumes no residual liability for reversals as all credits issued to the project expire at the end of the project. In ton year approach, a fraction of credits are earned in each year, which equates to a smaller portion of credits earned during project period. As a result, value of credits is insufficient to meet the costs of unintentional reversals. Buffers could be effective in addressing unintentional risks by withholding adequate quantity of credits in buffer. The size of the set aside of a buffer may depend on the likelihood and magnitude of natural risks in a region where projects are implemented. High buffer withholding rate raises the cost of generating credits and could discourage projects and programs in adopting the approach. A buffer could be created across multiple projects at a regional, national, or international scale and can be used to replace credits lost through reversal in participating projects. The buffer could be backed by host country guarantee, or commercial insurance to ensure that all credits reversed are replaced. While commercial insurance transfers liability for unintentional reversal to a third-party provided it is appropriately capitalized to withstand catastrophic loss. So long as a project pays premium and complies with the terms of insurance policy, the value of credits lost to non-permanence could be covered. Buffer, its combinations with guarantee and insurance can potentially address unintentional risks, while temporary crediting and ton year approaches are not likely to be relevant for addressing unintentional risks.

- Intentional reversal represents different kinds of risk than natural risks. These may be dealt with by establishing firm, enforceable “opt out” provisions for project entities to ensure that any carbon credited before it is deemed permanent be replaced upon reversal. Such provisions may not be able to prevent intentional reversals from occurring, but can protect the system from integrity losses if they occur. In the event of intentional reversal, buyers or sellers could be made liable to replace the credits issued thus far. Commercial insurance is not well-suited to cover against these intentional actions, and a system wide buffer could put the entire system at risk if the prevalence of intentional reversals is high relative to the size of the buffer. Alternatively, temporary crediting and ton year approaches could accommodate this form of reversal without bringing the system down. Policies with regard to opt out for projects prior to their end date become relevant. Opt out provisions may increase flexibility and lower risk to investors, however, clear regulatory guidelines are required to reduce the uncertainty in the mitigation activity.
Comparison with approaches to non-permanence in Carbon Capture and Storage (CCS)

Modalities established for carbon capture and storage (CCS) projects under the CDM allow for a mix of buffer and government guarantee either by the host country or by an Annex I country. A workable analog for A/R would need to capture the risk characteristics of forest carbon storage vis-a-vis the geological storage of CO₂ in CCS projects. A host country (or a designated third party) can choose to assume liability for losses over and above the provisions made for covering losses at the level of projects or programs through buffer. The host country needs to develop policies and institutions for implementing guarantees in association with buffers. The viability of the approach depends on the host country or third-party willingness and ability to devote resources to developing policies and implementing functional system of buffer backed by guarantee.

Choice of approaches

The analysis focuses on A/R projects, however, conclusions drawn for A/R projects may be surmised for other types of forest carbon projects (such as REDD+) and other terrestrial mitigation options such as agriculture, wetland restoration or other land use categories. The importance rests not on the project type, but on the proper analysis of risk coupled with modeling of reversal scenarios to enhance the likelihood of the system remaining a net carbon sink.

The analysis shows that one size will not fit all situations. By anticipating reversal risks and pooling such risks across projects, it is feasible to create a mechanism that protects against net carbon loss without sacrificing the viability of mitigation activities involving A/R projects.

From the perspective of project participants, a flexible system with a choice among approaches to dealing with reversals may be advantageous. The menu of approaches can provide incentives to project participants for combining different approaches such as a buffer, host country guarantee, multilateral guarantee or commercial insurance or other innovative financing mechanisms to project participants.

From the perspective of a regulatory agency, clear guidelines need to be evolved to support the implementation of different approaches and/or their combinations to ensure that the approaches are verifiable, are able to ensure the environmental integrity of projects, and are practicable to apply.

We will be glad to provide further information and clarifications as necessary.

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