

Assessing Biodiversity in LULUCF-CDM Projects: Towards Synergizing UNFCCC and CBD

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Abstract

The ultimate goal of the United Nations Framework Convention on Climate Change (UNFCCC) is to stabilize the concentrations of greenhouse gas in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. From a sustainable development point of view the implementation of Clean Development Mechanism (CDM) in forestry sector, under the Kyoto Protocol to the UNFCCC, has been viewed as reducing the opportunity to promote clean energy technology. It is also considered to promote clearing of the existing natural forests while introducing large-scale mono-species plantations which will threaten the biodiversity conservation. Hence, it may conflict with the objectives of the Convention on Biological Diversity (CBD).

Synergizing the UNFCCC and the CBD require linking their provisions on sustainable forestry, adaptation measures, monitoring and environmental impact assessment. These steps would eventually lead to joint efforts between the two conventions to (1) analyze the impacts of climate change on biological diversity and (2) integrate biodiversity consideration in the implementation of land-use and land-use change (LULUCF) activities under CDM to mitigate climate change or adaptation measures. It is extremely important that the reporting systems under the two conventions facilitate such effort prior to the first commitment period of the Kyoto Protocol. Subsidiary bodies of the conventions should be able to provide technical advices to the Conference of Parties, especially that serves as meeting of the Parties to the UNFCCC. The instruments and tools to address and resolve the conflicts under both conventions have to be developed and applied in the implementation of LULUCF-CDM projects.

There are several on-going international processes on criteria and indicators for sustainable forest management. These are implemented at various level and forest types through multilateral processes. Single and multiple criteria and numerous indicators ranging from seven to 65 have been adopted with main challenges in accommodating local concerns in multilateral processes. The Center for International Forestry Research (CIFOR) developed a generic template of criteria and indicators (C&I) which can be used to assess the sustainability of forest management. Maintenance of biodiversity and ecosystem function in management units are among the criteria used with seven and five indicators respectively. In addition, maintenance of genetic variation is also introduced as criteria with four indicators. CIFOR's C&I was tested at various management units across tropical ecosystem sites to determine their suitability. This experience can potentially be useful in LULUCF-CDM projects.

Keywords

conflicts, project design, transaction costs, monitoring, criteria and indicators

1. Introduction

There is an increasing interest to manage forests as ecosystems that provide services including carbon sequestration and biodiversity conservation. Promotion of market-based activities and policy instruments to capture the value of these services, nationally and internationally are undergoing. However, there are also potential conflicts and serious concerns

about transaction costs. Synergizing the international conventions concerned should be considered as the strategic way to take in order to address not only global agenda but also local agenda regarding livelihood requirements. The challenge is that most of the institutions at national level, which deal with the international agreements, do not always communicate. This is also a reflection that there are also difficulties found at the international level.

The importance of facilitating local actions is realized but market-based mechanisms are yet to be explored. Win-win approaches have to be considered to promote the objectives of sustainable development. Therefore, careful projects design and implementation are necessary to ensure equitable benefits. National Forestry Program may be used as an entry point, from which public or private enterprises could be engaged in real projects. National level action plans, namely National Biodiversity Strategy & Action Plans (NBSAPs) under the CBD may be integrated with National Adaptation Plan of Actions (NAPAs) under the UNFCCC. Monitoring and reporting in implementing synergies among the conventions, particularly in forests and forest ecosystems related issues should be made possible. The Joint Liaison Group (JLG) of the conventions should be encouraged to discuss a mechanisms aimed at facilitating the sharing of information. This could cover the issues related to methodologies, case studies, success stories, and lessons learned by countries at national and local level. The subsidiary bodies to the conventions should be informed especially on issues related to conflict resolutions, by which parties of the conventions could make decisions.

The capacity of parties to monitor, report, and communicate the implemented projects, however, is relatively low. In addition, the methods or tools to assess the impacts of the individual or synergized projects are not readily available. It is suggested that Global Environment Facility (GEF) should take the challenges of building the capacity and sorting out the methodological issues. This paper suggests that criteria and indicators (C&I) of sustainability should be imposed. GEF could also facilitate the use of C&I developed and tested by a number of organizations.

2. Why Synergy?

Forests and forest ecosystems may be seen as entry point to synergize activities under UNFCCC and CBD. There are strong interfaces between the two regarding sustainable development; monitoring, reporting and information exchange; environmental impact assessment; and financial mechanisms. However, CBD is legally non binding, therefore biodiversity conservation hardly receives attention as far as the mobilization of public funding is concerned. On the other hand private engagement on bio-prospecting leading to financial benefits and property rights ownership often neglects local community who often being the conservation agents on their own costs (Balmford and Whitten, 2003). The situation is getting more complicated when LULUCF or carbon offset projects are involved where afforestation and reforestation are eligible under CDM and legally binding under the Kyoto Protocol. Synergizing the two conventions is apparently unavoidable and increasingly becomes important national agenda to be implemented at local level. Innovative actions with proper guidance from the subsidiary bodies through the secretariats would encourage national governments to facilitate and implement projects with multiple objectives. Leverage from biodiversity values will improve the interests from the perspective of local livelihoods and inevitably enhance the public images of the investors.

Simplified procedures should be encouraged and devised since they will not only encourage the participants but also attract potential investors. It is important to note that synergies should

be demand-driven rather than generalized undertaking, as this would allow for a greater alignment of national development agendas with global priorities. More voluntary markets are expected to emerge and compete with the existing CDM market mandated by the Kyoto Protocol.

Transaction costs for project development and monitoring in carbon sequestration projects could be very high. It is one of the reasons why developing countries are rather reluctant to host the projects since it will reduce the benefits. Experiences from the Activities Implemented Jointly (AIJ) - Pilot Phase of CDM projects, indicate that the costs were as high as 45 percent of the project costs (Milne, 2001). Synergetic targets combined with simplified procedures described above could possibly reduce transaction costs and attract project developers and investors.

When carbon benefits and biodiversity values are aimed, trade-off between global and local objectives should be demonstrated. This may be ensured during the development of project design at which approval will be given by the Designated National Authority after going through various review processes including that by the stakeholders concerned. Lessons from AIJ and most recent pilot project in anticipation of the Kyoto Protocol (Secretariat of CBD, 2003) may be learned.

3. Impacts Assessments

Table 1 Possible impacts of LULUCF-CDM activities on biodiversity

Activities	Positive impacts	Negative impacts
Afforestation	<ul style="list-style-type: none"> • Improve degraded forest and pasture • Extend fallow period • Enhance roles of corridors 	<ul style="list-style-type: none"> • Disturb natural ecosystems • Intensify land-use
Reforestation	<ul style="list-style-type: none"> • Reintroduce native species • Establish mixed species and age-classes • Practice selective felling • Form habitat for forest-dependent species 	<ul style="list-style-type: none"> • Establish large-scale exotic species plantation • Promote mono-species and single age-class • Perform clear felling

There are two LULUCF activities which are eligible under the CDM. They are afforestation (replanting lands which before 1950 were not forested) and reforestation (reforesting lands which were forested before 1990). These activities may potentially give both positive and negative impacts as summarized in Table 1.

In order to avoid such negative impacts and promote positive impacts, criteria and indicators (C&I) of sustainability may be imposed. CIFOR has developed C&I for industrial tropical tree plantations (Poulsen and Applegate, 2001) which is combined with Code of Practice of plantation development (Applegate and Raymond, 2001). Similar tool was developed earlier for community-managed forest landscape (Ritchie et al., 2000). Table 2 shows the simplified C&I in forest carbon projects that may be developed for specific purposes to meet the objectives of biodiversity conservation.

The threats of genetically modified organisms and invasive species when new plantation is introduced have raised considerable concerns. In general, it is expected that forest carbon projects should ideally maintain species diversity while gaining carbon stocks. Figure 1 shows land-use practices dominated by complex agroecosystem in tropical ecosystems across the

Table 2 Simplified criteria and indicators (C&I) may be imposed in CDM projects

Criteria	Indicators
Maintenance of genetic variation	<ul style="list-style-type: none"> • Use of genetically modified organism are cautioned
Maintenance of species diversity	<ul style="list-style-type: none"> • Species richness are maintained • Invasive species are controlled • Endangered flora and fauna are protected
Maintenance of ecosystem function	<ul style="list-style-type: none"> • Functioning buffer zone exist • Conservation zones are not disturbed • Habitat diversity is retained

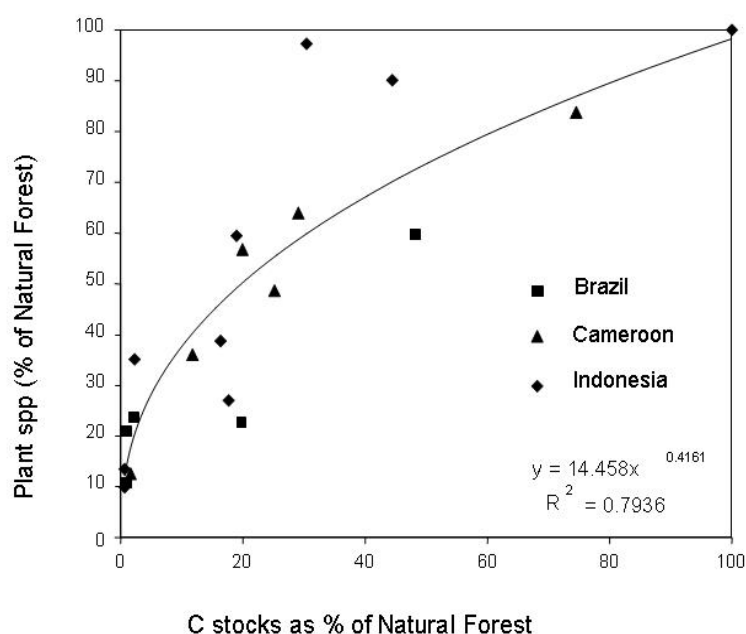


Fig. 1 Typical land-use practice in the tropics that may be promoted to synergize carbon benefits and biodiversity values (Source: Tomich et al. 1998)

tropics. Maintenance of species richness can be combined with carbon stock in agronomically sustainable systems.

4. The Way Forward

It is widely recognized that financial resources will always be limiting, and would not be sufficient to meet the increasing demand for mitigating the effects of loss of biodiversity and climate changes. Besides the stringent rules that are imposed to LULUCF-CDM, the carbon market will be quickly oversupplied. It means that investing in forest carbon projects is less attractive or perhaps even risky. Financial mechanisms to protect and utilized biodiversity values are currently being explored by various intermediaries and certifiers who will later ply key roles in the implementation phase. Figure 2 represents pathways that allow project developers to design and redesign the proposed activities with regards to the potential markets.

It is important to increase project cost-effectiveness by addressing the synergized objectives of the conventions. Leverage from the Official Development Assistance (ODA) may be optimized

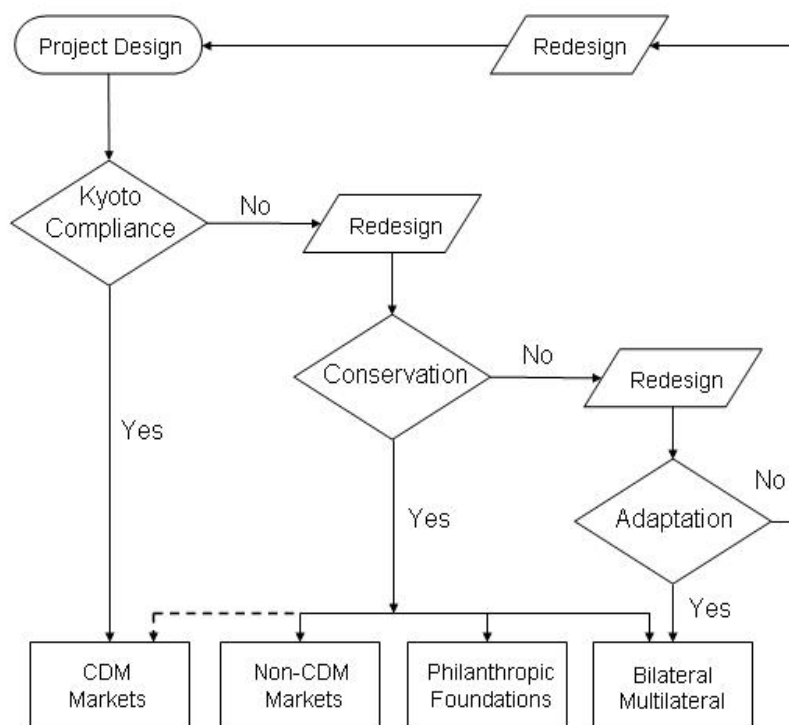


Fig. 2 Possible pathways to attract potential markets. Project developers may need to be innovative to anticipate the emerging market opportunities.

without breaking the agreement, such as that approved in the seventh session of Conference of Parties (COP7) in Marrakesh, at the same time, the private sector will be more and more involved in the support to the implementation of the environmental and sustainable development agreements.

National capacity in negotiating at international level and in facilitating stakeholders interaction at local level should be strengthened. The National Forest Program may be used as platform to exercise the activities in both directions. Initiatives under other United Nations auspices, such as Food and Agriculture Organization (FAO), United Nations Forum on Forests (UNFF), and Collaborative Partnership on Forests (CPF) may be utilized.

An efficient communication between the conventions, national focal points and other relevant stakeholders (particularly UNFF and GEF) through a suitable operational institutional arrangements, which could ensure harmonized planning and implementation of the conventions (i.e. effective consultation and mutual cooperation between NBSAPs under the CBD and NAPAs under the UNFCCC. Analysis and reporting of National Forest Programs on their impacts on

implementation at national level should be made to enrich the preparation of technical works for COPs.

It is very likely that isolated biodiversity conservation projects will not receive so much attention from the perspectives of the buyers, especially when the private sector engagement is expected. Likewise straight-forward carbon sequestration projects may be less favorable from the perspectives of the sellers since they will bear the high transaction costs with the embedded market uncertainties and long-term engagements. Small scale carbon projects which address local livelihoods and implemented at community level are likely to survive. Confidence will be built, gaps identified and more lessons learned allowing better design for future projects.

It is anticipated that from the lessons learned, gaps of information will emerge and research agenda has to be accommodating. This is particularly important when the benefits of biodiversity values are optimized to achieve climate change mitigation and adaptation in the long run. Among other items, research support needed would include development of guidelines to participate in the projects, analytical tools for analyzing impacts, and methodologies for monitoring synergized projects.

5. Concluding Remarks

Very little private fund if not none is made available for capacity building activities. Therefore, GEF and its implementing and executing agencies should be appealed and encouraged to actively promote coordination and investment in the context of capacity building initiatives.

National reporting to the COPs of the conventions on case studies is of important for the future project development. Success stories and lesson learned in implementing synergies among the conventions, particularly in forests and forest ecosystems related issues would improve the confidence of both buyers and sellers. The JLG should be encouraged to discuss a mechanism aimed at facilitating the sharing of information.

Research agenda has to be anticipative and accommodative for the emerging new issues when the implementation of conventions is synergized. This should not strictly address mitigation measures but also adaptation which is more challenging for forest ecosystems, especially those sensitive ecosystems in the tropics. Criteria and indicators are among the tools urgently needed to measure sustainability achievement.

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