Potentials, policies and projects on carbon sequestration at national, local and household levels in Uganda.

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ABSTRACT

The increasing global interest to mitigate climate change by establishing both compliance and voluntary carbon markets is expected to provide incentives for conserving and improving the management of forest and tree resources in both protected and unprotected areas. This presents both new opportunities and new challenges for biodiversity conservation and rural livelihoods. Within this context, this thesis offers an analysis of dominant land use and land cover change processes, changes in carbon stocks, and drivers of land use change. This analysis reveals that the most dominant land use change processes involve the deforestation and degradation of mainly woodlands and the subsequent conversion of bushlands and grasslands to cropland, resulting in a substantial annual net reduction in forest cover. Results indicate an increase in emissions from deforestation and forest degradation and a negligible increase in standing forest carbon stocks. Based on these results, it is argued that in order for Uganda to reduce emissions from its land use and land change sector it will require a multi-pronged strategy that takes a landscape approach that considers both forested and non-forest ecosystems. This approach also has to consider drivers of deforestation and degradation beyond the forestry sector.

The Clean Development Mechanism (CDM) and, more recently, the agreement reached by Parties to the United Nations Framework Convention on Climate Change (UNFCCC) on reducing emissions from deforestation and forest degradation (REDD) in developing countries provide avenues for addressing the complex array of drivers of land use change. To contextualize the study within the broader multifunctional policy debates, it analyzed the drivers of land use change and took stock of Uganda's progress in implementing climate policies, focusing on the CDM. Results revealed that the application of the CDM in Uganda's forestry sector has unfortunately been more or less a failure, both in terms of policy architecture and, not least, the quality of implementation and outcomes.

Considering the increasing interest in and prominence of payments for carbon sequestration services within the payments for environmental services (PES) literature, the study analyzes the effects of carbon payments on rural livelihoods and changes in tree diversity and carbon stocks based on a case study of a community-based carbon sequestration project, Trees for Global Benefits (TFGB). Results reveal both positive and negative impacts on the livelihoods of various groups of people. To date, the role of the forestry sector in climate change mitigation has remained highly controversial and is greatly focused on the carbon value of forest ecosystems, ignoring non-forested landscapes. Conceptualizing carbon sequestration payments as a market-type system aimed at fostering sustainable resource use and management, the study emphasizes that carbon sequestration payments are introduced within pre-existing and continuously evolving institutional environments. Thus, the outcomes depend on the interplay among the different institutions governing resource access, use and management. Motivated by results from the above analysis, the study compares the outcomes in the TFGB project with two other case studies in different institutional contexts: the Green Resources AS project – a private sector initiative – and the Mount Elgon Uganda Wildlife Authority (UWA) Forest Absorbing Carbon-dioxide Emissions project – a public sector initiative. This is done through a comparative institutional analysis emphasizing the interplay among PES, tenure, and property rights to land and tree resources. We analyze the outcomes using the environmental effectiveness and equity criteria, which consider both provisions for community participation and benefit sharing.

The findings reveal that the TFGB project delivers especially on the equity criterion, but it is questionable whether it delivers on the environmental criterion, especially considering the fact that it has displaced some landless people. Most likely, however, this group of people just shift their activities to another area or even to non-carbon farmers' plots. This has implications for managing leakage. Furthermore, we argue that although clear and well-defined property rights are important for securing participation and equitable benefit sharing from carbon sequestration projects, they are not sufficient in situations characterized by legal pluralism and weak institutions. In all cases, we observed that powerful actors with access to resources (financial and human) and information tend to take advantage of the contradictions in the existing policies, laws and institutions to further their own interests. Carbon rights belong to powerful actors with access to resources to invest in the sequestration process rather than the registered landowners.

Less-powerful actors tend to be marginalized. In all three cases, carbon payments tend to reinforce pre-existing inequalities, alienating resource users that have traditionally accessed resources through local informal arrangements.

In terms of participation, with the exception of the community-based TFGB case, to date there has been a rather limited involvement of local resource users in the design and implementation of carbon sequestration projects. Participation also depends on the ability of different actors to form strategic partnerships aimed at achieving specific objectives. The different partnerships are characterized by multiple actors with unequal power relations, asymmetric information and different levels of knowledge about what is actually being traded. We observed a tendency among powerful actors to withhold useful information that could enable participants to make informed decisions. On state land, community participation has remained rhetorical rather than real, especially in forested areas under UWA's jurisdiction. There seems to be a general lack of transparency on carbon trading schemes. Local resource users are skeptical of state actors' intentions due to a general lack of information on carbon trading. In a pilot REDD project in south-western Uganda, resource users were asking for the criteria used in selecting sites and project participants.

Considering the benefit-sharing arrangements, we observed that project developers and intermediaries play a dominant role. They play an important role in connecting service providers to the international carbon market, but also capture a substantial part (over 40%) of the carbon revenues, even when trees are planted on private land. The analysis also shows potential trade-offs between achieving environmental effectiveness and equity. These trade-offs will even be higher under a REDD regime, since the drivers of deforestation and forest degradation are beyond the market realm. The current project approach presents problems in leakage management in all cases. A national approach to REDD implementation will address leakage concerns within national boundaries, but risks recentralizing resource governance. So far, Uganda intends to take a nested approach, thus all three cases analyzed here will be relevant, depending on the production systems and pre-existing land tenure arrangements.