Governance of the Global Carbon Market: Does Scale Matter?

J. Carter Ingram and David Wilkie

TransLinks Program of the Wildlife Conservation Society

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Introduction

The growing carbon market combined with the proposed policy mechanism known as Reducing Emissions from Deforestation and Degradation (REDD) could represent an opportunity to establish a new type of forest protected area that would conserve large blocks of tropical forest through sustainable financing. Although wildlife conservation is not the primary goal of these new forest carbon reserves, the habitat of many species of flora and fauna found in biologically rich tropical forests could be protected through these measures. However, a significant challenge to making the vision of such sustainably financed forest-carbon protected areas a reality involves developing governance systems to manage investors' risks across ecological scales.

Background

Tropical deforestation accounts for approximately 20% of global carbon dioxide emissions (Houghton 2005a). For this reason, considerable international momentum has grown around creating emissions reductions credits from carbon sequestered by forests or stored in forest biomass. Payments for emissions reductions resulting from avoided deforestation, reforestation and afforestation activities are now established and growing primarily through the voluntary market[1]. Through these payment mechanisms, emitters of carbon dioxide pay project developers to plant trees for carbon sequestration or to refrain from deforestation so that carbon stored within forest biomass will be conserved rather than released into the atmosphere as carbon dioxide. Such payments could represent a significant source of funding for forest restoration and

[1] Currently, the trading of emissions credits from forest carbon can already occur through 1) the regulated market by means of the Clean Development Mechanism (CDM), which includes reforestation and afforestation activities but not avoided deforestation and 2) the voluntary market which includes reforestation, afforestation and avoided deforeststaion. Emissions reductions through forestry related activities as permitted within the CDM have not been very successful due to high transaction costs and other complicated restrictions (Luttrell et al. 2007). For this reason, most of the carbon trading associated with forest related projects- such as forest conservation, reforestation and/or afforestation activities- have occurred within the voluntary carbon market. Since there are so few forestry related projects that are operational within the Clean Development Mechanism (CDM), this aspect of the carbon market will not be discussed within this paper.

conservation of vast stretches of tropical forests in poor countries, where resources for forest management are often lacking and/or inconsistent. It is thought that the regulated market for forest carbon will significantly increase if avoided deforestation is accepted as a credible source of emissions reductions through the adoption of a policy resembling REDD in a post-2012 international climate agreement. However, selling forest-based carbon as an emissions reduction is a challenge as the markets are relatively new and the risks to investors are largely unknown. For markets to work, investors must both understand the risks associated with buying forest carbon as a certifiable emissions reduction and feel that those risks can be managed (Peskett and Harkin, 2007). In turn, it is also important for potential sellers of emissions reductions associated with forest carbon to understand these risks so that risk mitigation measures can be incorporated into project design at an early stage of development.

Key investor issues

Typically, a purchaser of emissions reductions is seeking *credible* sources of emissions reductions that have *permanence* and do not cause *leakage* (Peskett and Harkin, 2007). These issues are among key sources of risk in the purchasing of forest carbon credits[2] and are linked to the ecological scale at which carbon is being sold and the governance structures that are in place to manage the forests where carbon is stored or sequestered. These three issues do not comprise an exhaustive list of risks or challenges associated with forest carbon as a tradable emissions reduction unit, but provide a foundation for the examination of how ecological scale and governance structures may interact to influence risks faced by buyers and sellers participating in these nascent markets. This paper will outline ecological scale and governance issues related to these risks and will present three case studies in which emission reductions from forest carbon have been sold at varying spatial and temporal scales and will explore how different governance mechanisms have been put in place to manage risks unique to each project.

[2] Additionality and establishment of baselines are also key issues associated with emissions reductions projects but will not be dealt with here.

Credibility, Leakage and Permanence

Credibility Investors seeking to offset emissions through afforestation, reforestation and/or reduced deforestation want to know that their emissions reductions are credible and, thus, desire a clear sense of the quantity of emissions reductions that have occurred in a particular investment location due to their payments. Generally, the planned planting of a known number of species in afforestation/reforestation activities leads to more precise estimations of biomass/carbon content than estimates of carbon conserved from avoided deforestation activities because it remains difficult to estimate biomass across large forest areas (Hougton 2005).

Leakage : Leakage refers to the risk that payments for forest carbon sequestration and/or conservation succeeds in the target area, but has not altered the underlying drivers of forest clearing, and,so, may simply shift forest loss from the project area to another location. Thus, leakage may undermine the credibility of emissions reductions, if activities in one place displace and/or increase pressures to another landscape, region or country, because net global carbon dioxide emissions have not truly been reduced.

Permanence: Permanence refers to how long emissions reductions resulting from an investment will last. The underlying question is whether lowered emissions rates in one year are likely to result in raised emissions rates in a future year (suggesting an impermanent reduction), or whether the reduction will lead to permanently lower levels of carbon dioxide in the atmosphere (Myers, 2007).

Risks and Spatial Scale

Risks associated with the credibility of emissions reductions, in avoided deforestation projects particularly, are largely associated with the spatial extent of the forest. Mean biomass of a large forest block is typically extrapolated from a few small survey plots using a range of different assessment methods (Houghton et al. 2001), making it difficult to get a representative sample necessary for deriving an accurate estimate of mean forest biomass. Furthermore, often, a variety of assessment methods are used across surveys making it difficult to compare measurements across sites or throughout time. These uncertainties may be amplified at coarser spatial scales where variations in topography, climatic gradients and other variables that influence forest biomass may increase.

Though increasing spatial extent of a natural forest may introduce a certain degree of uncertainty in biomass estimates, the permanence of emissions reductions may be more secure with larger spatial extent due to higher resiliency to certain stressors, such as fire or storm damage, since larger forest blocks may be less likely to be completely destroyed when natural disasters strike. However, regardless of forest size, when selling forest carbon, setting aside a proportion of forest as a buffer for insurance purposes is a useful way to reduce risks.

The spatial configuration of the forest block is also important for promoting the permanence of emissions reductions. For example, Laurance et al. (1997) showed that large trees near the forest edges were much more prone to biomass collapse through dying and falling over than those within the forest interior. Adjacent land-uses are also likely to exert a strong influence on the permanence of woody biomass. Permanence of an investment may be more threatened in a forest that is surrounded by pastures that are burned annually when compared to a landscape dominated by tillage agriculture, where burning is not a threat. Thus, all other things being equal, investors may reduce risk by buying carbon in forest areas with less edge and/or surrounded by a landscape that poses lower degrees of threat.

Leakage management requires understanding the nature and scalar dimensions of the pressures acting upon a forest. For example, landscape scale threats to forest cover such as slash and burn agriculture, may be managed at the landscape scale by supporting alternative agricultural practices locally and, thereby, reducing deforestation without encouraging displacement of people or pressures elsewhere.. At coarser scales, referred to as market-based leakage, leakage may be more difficult to identify and manage. For example, small holders may be paid by carbon investors not to convert their forest lands into oil palm plantations locally, which may simply divert a bio-fuel company to develop a plantation in another region or country,. Such a displacement of emissions is difficult if not impossible to control by forest carbon project developers working at a local scale. Generally, large scale forests may face more risks related to leakage, due to the higher number of people, stakeholders and competing uses that may be affected by the project. Thus, as an investor, it would be important to have a clear understanding of the variety of threats facing forest carbon in a project area and the spatial scale at which they act so it is possible to determine if leakage can/will be managed by proposed project activities. Ultimately, leakage is a very difficult property to define and prove beyond the landscape scale and, thus, risk management may require contracts to relinquish investors or sellers from responsibility for leakage that occurs beyond the scale at which they are able to exert influence.

Risk and temporal scale

Credibility and permanence of emissions reductions of an avoided deforestation, reforestation or afforestation contract are determined largely by the temporal scale at which forest ecosystems are affected by both natural and anthropogenic factors. Like any investment, it is unlikely that the value of carbon in forest biomass will be constant over time even in the absence of human pressures. In fact, understanding of the temporal dynamics of forest biomass is still relatively poor (Houghton 2005b), even though, it is often assumed that total above ground biomass oscillates minimally around a long-term average due to the balancing processes of death, decay and regeneration. Yet, recent studies in the tropics have shown that this is not necessarily the case (Hoshizaki et al. 2004, Chave et al. 2003). In both studies, researchers found more death than recruitment in the largest size classes, the stems with the highest biomass and carbon content. These natural fluctuations in biomass are amplified by potential changes in biomass that may occur due to anthropogenic pressures and/or climate change.

Governance for Managing Risks across Scales

Good governance- a process where groups of actors negotiate decisions and enforce their implementation- plays a central role in managing sellers' and buyers' risks. With a growing number of projects in the voluntary market it is becoming clear that a range of types and combinations of governance mechanisms, structures and actors working across spatial and temporal scales are necessary for markets to function effectively and result in emissions reductions.

One of the first and most fundamental questions to ask when investing in forest carbon as an emissions reduction credit is: who owns or manages the forest and its carbon? In many tropical developing countries, the owner and the manager of the land often are not the same as national governments may own the forest but communities may collectively manage it.

This is problematic for an investor, who may not want to directly pay the national government and, thus, risk that their payments for carbon conservation get lost in government treasuries rather than reaching the stewards of the forest, who more directly affect its management and conservation. Although certain risks may be diminished by directly paying forest stewards, if the "sellers" consist of multiple villages living around community forests, governance risks might increase with increasing spatial extent if this results in a higher number of sellers a buyer must interact with and collective-culpability mechanisms are not in place to promote group compliance with contract conditions.

There clearly are risks of paying national governments, especially in tropical developing countries where capacity, and at times desire, to enforce contract law may be low. However, managing risk associated with permanence and leakage will, in most cases, require national government involvement. Typically, governments have a longer time horizon for decision making than households, indicating that a contract between buyers and sellers with a maturity date of 30 or more years, might be more secure with government enforcement. Additionally, national government involvement may be critical for preventing leakage within the country through the maintenance of a national-scale carbon accounting system. This is particularly important when households or communities may not have the resources or capacity to manage leakage beyond the extent of their villages or districts. Finally, the national policy context of the country will largely determine how viable and secure an investment will be. If carbon finance through forestry activities reinforces the government's existing environment and development objectives, rather than running counter to them, then the investment is likely to be more secure because of government support.

Third parties or intermediaries are also playing an important role in the governance of the voluntary carbon market through monitoring and certifying forest carbon content, brokering deals and supporting activities that decrease pressure on forest resources. For example, many concerns associated with uncertainties surrounding credibility can be diminished by contracting internationally recognized organizations such as WinRock International to conduct forest biomass inventories and assessments of deforestation using a standardized set of methods. Additionally, obtaining internationally recognized certification that verifies certain protocols and standards have been met at various stages of project design may further minimize investor concerns. Groups like the Voluntary Carbon Standard (VCS) and the Climate, Community and Biodiversity Alliance (CCBA) have developed such standards for voluntary carbon projects that can be applied to forestry. The former can be used for any type of voluntary emissions offset project while the latter is designed for land-use projects that support community development and biodiversity conservation while achieving emissions reductions.

As the following case studies demonstrate, the type and combination of governance mechanisms involved in a project will largely be determined by the nature of the emissions reductions activity and the scales at which they are delivered.

Case Studies

"Carbon Farming" in Busheyni, Uganda: Individual Carbon Sales

In June 2003, thirty one small-scale land owners living in and around the town of Busheyni, Uganda entered into an agreement to plant native trees on their land in exchange for payments for the carbon sequestered through afforestation (Orrego, 2005). To qualify for the program, farmers were required to verify ownership of at least 1 ha of land. The contract was between individual landowners and EcoTrust, a Ugandan non-governmental organization (NGO). Each contract stipulated that participating farmers must maintain trees on their land for at least 10 years, but during that time, activities not directly influencing tree carbon content under the forest canopy, such as the grazing of goats, would be allowed. Only 90% of the carbon sequestered on each plot is sold with ten percent set aside for insurance. However, for plots of a few hectares in size, this buffer does not significantly reduce risks from large scale disturbances such as fire or disease outbreak. The project has been certified as a Plan Vivo project which signifies that a particular system and set of standards has been followed for developing the project with respect to creating land-use plans; assessing carbon value; and developing monitoring programs. Sixty percent of the total carbon payments go to the farmer while the remaining 40% go towards project administration and technical support. The payments are based on a carbon value of $8/ton and are distributed over a 10 year period, based on project performance assessed through regular monitoring by EcoTrust. The first payment is equivalent to 30% of the total payment owed to each farmer and occurred once the land was planted; 20% is to be paid a year after the planting; 20% is to be paid in year 3; an additional 10% is to be paid after year 5; and the final 20% is to be paid after year 10. Payments stop if there is tree mortality or the carbon is lost by fire or other unforeseen causes.

Permanence and Leakage

Assuring permanence in the face of natural threats for the life of the contract within such small lots could be a challenge since a fire from an adjacent agricultural field could destroy the whole wood lot and release the carbon it had sequestered. Furthermore, the farmer can cut their trees at the end of the project cycle and sell them for timber or other purposes, thus, emissions reductions resulting from project activities are not permanent. All of the tree species planted for payments are native and were chosen by the community and third party technical advisors. However, many of the trees may not be cut for several years after the project payments stop at year 10 because they will not have reached a size that would generate maximum profits for timber. Beatrice Ahimbisibwe, one of the pioneers of "carbon farming" in Busheyni, is using the trees she planted for carbon as her retirement fund. She is willing to receive modest payments for the carbon stored in her trees in the short-term now through the voluntary market mechanism, with the expectation that she will receive much higher payments from timber sales of the trees when the contract comes to an end, (Bayon, 2005).

Within the Plan Vivo system, projects must demonstrate that they have addressed and managed leakage for a proposal to be certified. Thus, most of the leakage risks have already been resolved when payments begin. In this case as the land where tree plantings occurred is privately owned and can still be used for other activities, the risk of leakage is relatively low.

Governance

The governance structures involved in a Plan Vivo project typically rely on existing structures and policies while emphasizing host-country leadership in the project. Plan Vivo projects provide a guarantee to investors that a project has been developed using a particular protocol and has met a suite of standards and requirements such as land ownership (Orrego, 2005). In the Busheyni example, the Ugandan NGO EcoTrust was chosen as the project administrator and trust fund manager because it was already working on rural environment and development issues in Uganda and in Busheyni specifically. Working with a local, trusted intermediary, such as a host-country NGO, for liaising with communities, organizing training and managing funds has proven to be a critical component in the success of the project. Furthermore, in Busheyni, the 31 farmers who were a part of the first phase of the project were already involved in community agricultural cooperatives and other community groups prior to the Plan Vivo project. These pre-established networks have been especially useful and effective for disseminating information and maintaining communication with farmers engaged in selling of carbon. Another critical element to the success of this project was that project activities were complementary to national policy. In Uganda, Plan Vivo worked with the local forest department to develop a tree nursery because this was already a part of the department's existing mandate. In addition, the project fit within the larger context of a national policy on environment and development activities.

Risk Factors

Certification as a Plan Vivo project helps mitigate investor risks as it signifies that certain measures and standards have been applied to the project related to permanence, leakage and governance. Additional risk reduction strategies in this project included leaving aside 10% of the carbon that could be sold as insurance, even though this may not significantly reduce some potential risks on small farms.

Furthermore, structuring payments throughout time reduces risk as each payment is conditional on continued compliance with the contract (i.e., the presence of trees on the woodlots).

Makira: Carbon Conservation at a Landscape Scale

The Makira forest is located in the north-west portion of Madagascar and, until recently, was the largest unprotected humid forest in the country. The Wildlife Conservation Society and other conservation organizations have been working to explore ways to finance the conservation of these forests over the last decade. In 2001, a USAID funded study explored the feasibility of conserving the Makira forests through payments for carbon stored in the forest's biomass (Meyers, 2001). Several years later, this idea is becoming a reality. To date, the equivalent of 40,000 tons of Makira carbon have already been sold as carbon offsets in the voluntary market. An additional 9,486 ha will be protected from deforestation through conservation and livelihood activities resulting in 9.1 million tons of CO_2 equivalent that can be marketed as emissions reductions in the near future. Payments from an imminent sale would go towards managing the Makira Forest Protected Area Project, supporting rural development activities, monitoring, and establishing a national carbon accounting registry. The total size of the forest that will be protected through carbon financing is 401,000 ha (Holmes, 2008, personal communication).

Permanence and Leakage

In Makira, emissions reductions from avoided deforestation have been calculated for a thirty year period (Martin et al. 2004) and are predicated upon reducing deforestation from a rate of 0.15% per year to 0.70 % per year. Because this is an avoided deforestation project, rather than tree planting, the permanence of these emissions reductions will depend on regulating human pressures to ensure that the estimated amount of forests remain intact throughout the life of the contracts with future investors. Thus, supporting sustainable land management practices that decrease pressure on the forests and create alternatives to forest dependent livelihoods is a primary strategy being pursued by WCS for supporting long-term emissions reductions in parallel with conservation. The large spatial extent and varied topography of Makira provides a natural insurance mechanism against natural disturbances and climate change, which are not a significant risk in an avoided deforestation project of this size.

The large spatial scale of the project could mean, however, that there is a higher variability in biomass across the forest and, thus, potentially less certainty in measurements of total carbon. WCS is managing uncertainty surrounding this issue by contracting WinRock International to conduct assessments of forest carbon content using an internationally recognized suite of methods and by applying for CCBA and VCS certification, which also requires that certain methods have been used for estimating forest carbon content and that leakage management provisions have been developed. The support for sustainable land management activities of communities in the areas immediately surrounding Makira is a primary way that leakage risks are being managed by the project.

Governance

In contrast to the project in Busheyni, the issue of who to pay for emissions reductions is more complicated in Makira, where the forest has historically been used by multiple rural communities surrounding the forests (*de facto* tenure*)* but owned by the national government (*de jure* tenure). Recently, the government pursued a national policy of devolving management authority of forests to local communities. Currently, the newly formed community based governance structures surrounding Makira have a three year contract with the national government to co-manage (with WCS) the landscape that buffers the boundary of the Makira conservation project. At the end of three years, this contract may be renewed depending on how well the communities have managed their resources and upheld their obligations under the contract. WCS has an agreement with the government to manage the Makira protected area and to market the carbon credits generated from avoided deforestation. In turn, the government may use the funds to develop a national strategy for forest carbon, which could support leakage management at a national scale.

Within the proposed contract between WCS and the national government to sell emissions reductions, the distribution of payments has been designed to reduce risk by ensuring that different parties receive appropriate incentives to conserve forest carbon at their different scales of influence: 50 % of the funds will go towards community activities for promoting sustainable natural resource management practices; 25% will go towards protected area management; 2.5 % will go towards 3rd party verification and monitoring; 5% will go towards marketing of forest carbon; 2.5 % will go towards management of the funds; and 15% will go to the national government's Minstry of the Environment for strategic development.

Risk Factors

In many respects, the design of the Makira Forest Protected Are Project based on carbon financing is a low risk project from both the seller and the investor perspective. Although, the estimated amount of carbon stored in forest biomass may be less accurate than was possible with the type of project developed in Busheyni, the high carbon content of an old growth forest combined with verification from WinRock and a pending CCBA certification may temper investors' sense of risk. The large spatial scale helps insure permanence in the face of natural disasters by acting as an effective form of insurance against natural stressors and provides a buffer for low levels of deforestation that can not be completely eliminated. Furthemore, a portion of the avoided deforestation emission reduction credits are not being sold so as to be set aside as a buffer. Leakage risks are minimized by strong government support, as this effort is complementary to a national policy that is aimed at expanding the country's protected area coverage to encompass 10% of the island's land surface and to generate a sustained stream of "green" financing.

Guyana: National Scale Carbon Sales

Recently in an effort to conserve Guyana's 50 million acres of rainforest, the President Bharrat Jagdeo offered management rights of the country's forest to the British government in return for funds to support conservation and sustainable development in the country (Howden, 2007). One of the challenges in attracting forest carbon investors to Guyana has been the low historical rate of deforestation in the country, meaning little additionality would result from the purchase of carbon offsets. Although there have been multiple negotiations on this proposed deal to date, no formal arrangement has been made between the two governments. However, an investment has been made by Canopy Capital, a British company.   This deal is not directly an official part of President Jagdeo's offer, but may be a pre-cursor to how deals envisioned by the President may look in the future.

The investment by Canopy Capital was not an actual purchase of emissions reductions, but a license permitting the company to sell multiple ecosystem services, rather than just carbon, (Canopy Capital, 2008). The partnership is based on an agreement that requires Canopy Capital to make an annual payment to the Iwokrama Institute for Conservation (IIC), which manages approximately 370,000 ha of Guyana's forests on behalf of 700,000 forest dwelling communities. The contract allows Canopy Capital to measure, value and market the ecosystem services of the forest over a five year period. If the forests suffer significant degradation through natural or human induced causes during the life of the contract, Canopy Capital can suspend its payments and, similarly, the IIC can suspend the contract if Canopy Capital does not meet its obligations. Approximately, ninety percent of any ecosystem service sales will go back to the IIC for rural development and forest conservation activities and the remaining 10% will go back to Canopy Capital. Although, Canopy Capital now has the rights to market the ecosystem services provided by the rainforest over the next five years, they do not have rights to the land.

Permanence and Leakage

Loss of the ecosystem services generated by the 370,000 ha of forest leased by Canopy Capital is unlikely because of the large spatial extent of the forest, the short term nature of the contract and the historically low rates of deforestation in Guyana. To deal with possible leakage issues, approximately 50% of the area has been set aside as forest that is to remain strictly conserved. Within the remaining 50% of the forest (approximately 185,000 ha), highly selective timber harvesting is permitted which is estimated to represent a total annual removal of less than 1% of the entire forest area. The degree and nature of selective timber harvesting in this area was certified by the Forestry Stewardship Council (FSC), an internationally recognized certification for sustainable forestry practices.

Governance

The national government is not involved in this sale, although the national policy environment is supportive of the investment. The deal is between Canopy Capital and the IIC, not the local communities. The Makira example also involves a third-party as a broker, however, checks and balances are insured by integrating multiple parties into various contracts associated with managing the forests and developing a payment structure that distributes funds across multiple parties. Due to the bi-lateral nature of this agreement between Canopy Capital and IIC, there may be some risk resulting from the fact that local communities are not involved in the transaction, and, thus, that the selling of services may not be in their cultural interests or contribute to their economic welfare. Integrating the participation of communities who are the stewards of a resource is a key way to reduce investment risk. However, external governance structures and international standards are invoked through the IIC structure, which has an international board of trustees, and through the FSC certification.

Risk Factors

There are several ways in which risk is being managed across this project. First, the selling of multiple ecosystem services hedges risks associated with a decline in any single ecosystem service or changes in unpredictable ecosystem service markets, like the carbon market. The coarse spatial scale, short temporal scale of the contract and low rates of national deforestation significantly reduce risks of impermanence. Leakage is not a considerable risk because there are very low deforestation pressures in the reserve and 50% of the forest can still be used for selective harvesting, as certified by FSC, which confers international standards on the project. The arrangement reflects national level policies, which reduces risk of competing land use practices such as biofuel development. Overall, it is a low risk project for the investor and the seller since it does not require significant changes in the way resources are currently being used and either party can withdraw from the contract, if obligations are not being met. It is an especially low risk agreement for IIC because they are essentially being paid to do what they were doing prior to the deal, managing the forest resources, but for which they did not have sufficient funding.

Conclusions and Summary

Risk mitigation is a key issue for investors purchasing emissions reductions from forestry related activities and will be of heightened concern once emissions reductions from avoided deforestation are accepted within the regulatory market. Like any investment, forest carbon investments are risky, but may be more so than other sources of emissions reduction credits for which it may be more straightforward to quantify and manage risks. Thus, understanding how risk related to credibility, permanence and leakage varies with ecological scales and how governance structures (in the forms of institutions; certification; contracts; partnerships; and local, national and international policy mechanisms) can be put in place for managing those risks will be a critical part of securing investments within the forest carbon sector.

As the case studies have demonstrated, many different types of governance mechanisms are being deployed to sell carbon from forest based activities. Farmers; community groups; governments; third party brokers in the form of NGOs or the private sector; and forestry consultants and project certification programs are working together across spatial and temporal scales to make emissions reductions from forest carbon lucrative investments that achieve the desired objectives of climate change mitigation. Incorporating multiple levels and types of governance may help increase transparency and insure internationally recognized standards are met, but may also decrease the efficiency of deals and reduce payments available for individual stakeholders. Clear ownership of forests and carbon, prior experience in collective governance of natural resources, and supportive national policies are all factors that may help attract investments in voluntary carbon markets. This was the case in Busheyni where project organizers were attracted to the community because of the clear land ownership, well coordinated farmer cooperatives and other community governance structures that could be leveraged for implementing and sustaining the project. In cases where such governance structures are not in place, third parties, such as WCS in Makira and IIC in Guyana, may have to play a more active role in program leadership and designing transactions in a low risk, effective way.

It will be impossible to make forest carbon a risk free investment across all of the spatial and temporal scales at which such deals will be made. However, a range of different governance structures and mechanisms may help manage these risks to make markets related to forest carbon work for the buyers and sellers as wells as climate, conservation and poverty reduction.

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