

CLIMATE  
CHANGE  
*and* FORESTS

*Emerging Policy  
and Market Opportunities*

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## *Legal Issues and Contractual Solutions for LULUCF Projects under the Clean Development Mechanism*

MONIQUE MILLER, MARTIJN WILDER, AND ERIC KNIGHT

Over the past decade, substantial scientific work has been done to enable the relatively accurate modeling of and accounting for greenhouse gases sequestered by land use, land-use change, and forestry (LULUCF) activities. Recognizing that the sequestration of carbon by forestry activities provides a valuable environmental service toward mitigating climate change, organizations have developed voluntary regulatory schemes to assign values to emission reductions arising from LULUCF projects and enable trading in such “LULUCF credits.” As an example, the Kyoto Protocol recognizes that Annex I Parties to the protocol can use emission reductions from carbon sequestered by certain domestic LULUCF activities when complying with their commitment to limit or reduce their emissions.<sup>1</sup> The Clean Development Mechanism (CDM) also allows Annex I Parties to procure and use emission reductions arising from certain LULUCF projects in developing, non-Annex I countries.

Although it is possible to generate and trade LULUCF credits under the Joint Implementation framework and even outside of Kyoto Protocol rules,<sup>2</sup> the focus of this chapter is the CDM framework. The CDM enables participants in eligible LULUCF projects to have certain LULUCF credits recognized and issued in the form of Certified Emission Reductions (CERs).

The CDM rules provide special treatment for CERs generated from LULUCF projects and enable the creation of two special types of CERs from

reforestation, or the human-induced generation of forest on land that was clear of forest on January 1, 1990, and from afforestation, the human-induced generation of forest on land that has been devoid of forest for at least fifty years. The two types of CERs that can be created from LULUCF projects under the CDM are temporary CERs, commonly referred to as tCERs, and long-term CERs, commonly referred to as ICERs.

LULUCF credits are differentiated from other types of emission reductions in CDM rules because, under the current accounting rules of the Kyoto Protocol, carbon sequestered in a forest is deemed to be released into the atmosphere upon the destruction or removal of the forest. This inherent nonpermanence of sequestered carbon and its vulnerability to events such as bushfires, pests, and uncontrolled harvesting mean that LULUCF credits differ from permanent emission reductions such as those generated by renewable energy projects.

In this chapter we look at the legal issues and risks arising from LULUCF activities and the transaction of tCERs and ICERs generated under the CDM.<sup>3</sup> Specifically, we address whether and how it is possible to establish which entity has legal title to create and sell LULUCF credits, in light of other ownership issues such as legal title to the land and trees, the unique legal risks surrounding the delivery and permanence of LULUCF credits, and the types of legal and contractual solutions that can be employed to clarify ambiguities and minimize risks. We consider these issues in the light of both practical experience and case studies.

## Establishing Legal Title to Sequestered Carbon

When one seeks to develop a LULUCF CDM project or to transact LULUCF credits (specifically tCERs or ICERs) from that project, it is crucial to identify the entity that has legal title to undertake such development and transaction. Unless the entity purporting to sell the LULUCF credits has the right to do so under the laws of the country hosting the CDM project, it will not be authorized to sell the carbon associated with the biomass stored in the project area, and disputes may arise with the rightful owner of the LULUCF credits during the course of the CDM project.

Under the CDM rules, if the carbon underlying a tCER or ICER is released into the atmosphere during the validity of that LULUCF credit, then the country that used the credit for compliance purposes is obligated to replace the credit. It could be exposed to significant market price risk if it is required to purchase replacement credits on the market. Although the Kyoto Protocol obligation is on the *country* that used the LULUCF credit for compliance purposes, each country is likely to pass this obligation through to the individual entities that used the relevant credit for compliance under any national greenhouse policy framework. Purchasers of tCERs and ICERs should be careful to ensure that the initial project

developer has the right and title to develop the CDM project and sell the resultant LULUCF credits. If the project developer does not have such legal title, then the risk profile of the project increases substantially. There is clearly a greater risk that the carbon underlying the tCER or ICER will be released into the atmosphere, through, for example, harvesting of the forest from which the LULUCF credits were generated.

### *Legal Title under the International Rules*

It is useful to differentiate between the legal title to carbon sequestered on a particular portion of land (referred to for the purposes of this chapter as the carbon property right) and the actual volume of carbon sequestered on this land (measured in tonnes of carbon dioxide equivalent, with each tonne referred to here as a LULUCF credit). It is possible to hold a carbon property right over a piece of land on which no LULUCF activity has actually occurred. Alternatively, it is possible that a LULUCF project may have been implemented on a piece of land but that the project developer does not actually have an entitlement to sell LULUCF credits arising from that activity (that is, the project developer does not hold the carbon property right).

Despite specific rules and guidelines within the CDM framework for LULUCF projects,<sup>4</sup> the parties to the United Nations Framework Convention on Climate Change (UNFCCC), when negotiating the modalities for the CDM, did not assume any particular land right or usage regime for land on which LULUCF activities were to be undertaken. That is, the CDM rules do not specify who holds the carbon property right in respect of a CDM project. Moreover, there is no stipulation about the particular relationship between the right to land and the right to the carbon sequestered on that land through afforestation-reforestation (AR) activities.

Instead, the international rules allow the domestic law of the host country to address this legal vacuum, and they require the proponents of a CDM activity to include in their project design document “a description of legal title to the land, right of access to the sequestered carbon, current land tenure and land use.”<sup>5</sup> The host country is required under the international rules to approve the project in accordance with its own criteria.

### *Carbon Property Rights under the Host Country Law*

Because host countries’ domestic laws may not adequately address the requirements of CDM investors in establishing carbon property rights and therefore may not ensure that project participants have the legal right (and obligation) to maintain the sequestered carbon for a long period, contractual arrangements must be

used to mitigate investment risk. These issues are best addressed at the project design and early contract negotiation stages so that the project operates smoothly and disputes do not arise after the sale of CERs.

When one structures the sale of CERs from a LULUCF or any other CDM project, it is important first to identify the entity that holds the initial legal title to the underlying greenhouse gas emission removals and reductions—that is, the carbon property right. In the case of LULUCF projects, identifying which entity holds carbon property rights is particularly complex, for a number of reasons. First, a range of entities may be responsible for sequestering the carbon. For example, contractual arrangements might provide that one person plants and harvests the trees, another has legal title to the land, and a third person owns the timber. These arrangements may not clarify who holds the carbon property rights. Second, the way in which ownership is allocated among entities within the project will depend to a large extent on local property laws. These property laws may be uncertain on the specific issue of legal title to sequestered carbon, particularly in developing countries. And third, there may be countervailing property issues over the land where the forestry project has been developed, such as indigenous land rights.

It is crucial for the party selling the credits arising from the LULUCF project to be able to establish carbon property rights sufficient to exercise long-term control over the land on which the LULUCF activity occurs. Such control will ensure that the forest sinks are maintained for the period required under long-term supply agreements for LULUCF credits, commonly referred to as Emission Reductions Purchase Agreements, or ERPAs.

Resolving the uncertainties surrounding legal title to the sequestered carbon is critical to securing its market value in a CDM transaction. Buyers are wary of purchasing credits from LULUCF projects when there is a risk of a domestic law challenge over legal title. Legal solutions to managing this risk will depend on the legislative framework in the country where the LULUCF project is being developed. Ideally, entitlement to carbon property rights would be clear from the legal system of each host country.

As of the date of writing, few host countries have passed legislation that expressly or implicitly allocates carbon property rights and resolves the relevant legal issues.<sup>6</sup> However, under many host country legal systems it is possible under general legal principles to establish the *prima facie* holder of carbon property rights (for example, on the basis of the existing property law regime). We consider in turn legislative and contractual solutions to address these scenarios.

**SPECIFIC LEGISLATION FOR CARBON PROPERTY RIGHTS.** If a host country implements clear legislation or issues guidance on the creation and sale of carbon property rights, this should resolve any ambiguity over the appropriate entity to create and sell LULUCF credits in that country. To date, however, few jurisdic-

tions have enacted explicit legislation on this issue. In the few examples in which countries have specified the holder of legal title, either of two approaches has been taken: title is vested in the government or title is vested in ownership of the land.

In some countries the government may choose to assume *prima facie* ownership of all sink credits. In this case, transfer of legal title for the sequestered carbon is within the host country government's discretion. For example, in New Zealand the government initially chose to retain all rights and obligations arising out of forest sinks in New Zealand. This position has been modified slightly under the Permanent Forest Sink Initiative, whereby the New Zealand government is prepared to provide credits to certain private sector sink project developers who are investing in permanent reforestation. The details of New Zealand's scheme are set out in chapter 18.

If the host country of a CDM project asserts that carbon property rights (and the resultant LULUCF credits, tCERs and ICERs) are initially vested in the host country government, then a private sector entity wishing to develop a CDM project would need to obtain a concession arrangement or assignment of carbon property rights from the government before it could validly create and sell LULUCF credits. In host countries where more than one level of government is responsible for property and forest management, such as Brazil, national and state governments may disagree over which level of government is vested with carbon property rights.

An alternative approach may be for the host country to pass specific legislation under which carbon property rights can be vested in landholders. For example, this approach has been adopted by the six states in Australia. Each state has enacted legislation developing a basic legal framework for the recognition of carbon property rights. This makes it possible to determine the owner of the sequestered carbon (by a land title search) and to transact this carbon separately from the timber and the land to which it relates. Interestingly, however, although all Australian states recognize carbon property rights, only one state, New South Wales, has to date developed a legislatively recognized LULUCF credit that can be transacted under an emissions trading regime (see chapter 18). With the recent change of government in Australia, it is likely that an emissions trading regime will be introduced on a national level and will include the ability to trade LULUCF credits.

**ESTABLISHING THE HOLDER OF A CARBON PROPERTY RIGHT UNDER HOST COUNTRY LEGAL PRINCIPLES.** If it is impossible to establish the holder of a carbon property right under general host country legal principles, this creates a lack of security with respect to the ownership of the credits generated, which may be reflected in lack of investor confidence in LULUCF project development.

There are a number of ways in which carbon property rights may be seen to fit within existing host country legal regimes. The analysis of legal title in a specific LULUCF project needs to be performed on a case-by-case basis. For one

example, where a host country vests ownership of all land in the state—as is the case in the Philippines—the carbon property right may be regarded as a state-owned natural resource (in the absence of any concession agreements) by virtue of its connection with land. For another example, the existing property law system might enable the registration of a carbon property right as an interest in land. In Ghana, the right to sequestered carbon is potentially registrable in the land title registry and therefore runs with the land. In Indonesia, LULUCF CDM project developers must satisfy the Indonesian government that any forested land from which they are seeking to generate LULUCF credits holds either an environmental service permit or a wood forest product permit from the regional or national government department responsible for forestry.

In some host countries, particularly those with legal systems based on civil codes, a carbon property right might be characterized as a civil or industrial “fruit” and as such would belong to the owner of the source of the fruit in the absence of other contractual arrangements. This is the prevailing interpretation in Argentina.<sup>7</sup> In other jurisdictions it may be possible to characterize sequestered carbon as a “forest resource” and therefore to consider the right to sequestered carbon the right to “immovable property.” Entitlement to sequestered carbon as a forest resource might be freely tradable, and as immovable property the right may be more securely protected under host country law. This is a prevailing interpretation in the Philippines.

If the host country’s existing legal framework does not provide a definitive answer regarding entitlement to carbon property rights, then a buyer and seller may seek to put in place legal arrangements in addition to the LULUCF credits sale contract in an effort to establish a carbon property right and secure the long-term use of the relevant land. One alternative for doing so is to register a *profit a prendre*, or a right to take from the land. Under various legal systems, a *profit a prendre* in respect of sequestered carbon might be granted by a landowner to a third person. This grants the third person a right to enter the land and take something that naturally belongs to the land. Landowners historically granted such property rights to people who wanted to hunt or harvest crops or fruit. Because a carbon property right is intangible, it is difficult to see it as a *profit a prendre* in itself. However, it may be possible to couple the carbon property right with the right to harvest trees on the land and for this to become the *profit a prendre*. In some jurisdictions a *profit a prendre* is a legal interest registrable on title. Several Australian states have specifically deemed a carbon property right to be a *profit a prendre*.

Another alternative for an entity seeking to develop a LULUCF CDM project is to enter into a long-term lease with the landowner, allowing the entity the exclusive right to harvest the trees (and conversely, the legal ability to prevent the trees from being harvested). Depending on the host country’s legal framework, it

may be possible to register such a lease on legal title, granting exclusive possession to the lessee (the CDM project developer).

It may also be possible to grant, by way of a concession agreement, a right to use a certain plot of land in order to generate and sell LULUCF credits. In many legal systems, governments use concession agreements to authorize the private sector to use a natural resource (such as water). In these legal systems it may be possible to adapt such concession agreements to authorize the use of sequestered carbon.

**PRACTICAL RECOMMENDATIONS FOR THE LEGAL TITLE ISSUE.** For any LULUCF project it is important to complete thorough legal due diligence to resolve a number of issues. Any prudent project participant will seek to ensure that legal title to the sequestered carbon (the carbon property right) is clearly allocated in the contractual arrangements between the parties. These contractual arrangements, however, must work within the domestic law arrangements of the host country that are flexible enough to accommodate carbon property rights and the right to sell LULUCF credits in a range of ways.

Within the varying legal landscapes, a range of contractual solutions may be appropriate in addressing the issue of legal title to tCERs and ICERs under LULUCF projects. We are able to consider contractual and property law issues only in a general manner here, because they are likely to be highly dependent on the specific laws and customs of the particular host country.

It is foreseeable that the following legal interests might exist over a carbon sequestration project: (1) landownership (by either an individual or a community); (2) tenancy of the land (for example, leasehold and traditional or indigenous land rights); (3) the right to take from the land (for example, to harvest the forest)—a *profit a prendre* in common law jurisdictions and a usufructuary right in other jurisdictions; (4) ownership of the timber itself (for example, by a forestry company that does not own or lease the land); (5) rights to natural resources (for example, minerals, but potentially also sequestered carbon, depending on the legal regime of the country in question); (6) concession agreements from the government to undertake forestry; (7) the interest of a bank that holds a mortgage on the land; and (8) rights to land (for example, native title rights or government entitlements) under constitutional law.<sup>8</sup>

In practice, in many host countries the two crucial entities to consider are the landowner and any person entitled to plant or harvest the forest on the land on which the LULUCF activity will occur. This is because the LULUCF credits arising from a planting activity are valuable for compliance purposes only so long as the trees that are sequestering the carbon continue to exist. Because the landowner and the harvester exercise physical control over the trees, it is important to determine between them who owns the carbon property right and therefore is entitled to generate and sell LULUCF credits.

It may be that the relevant legal interests just described have been expressly granted between the parties through contract or have been registered on the land title through one of the registrable entitlements discussed earlier. Alternatively, legal interests may have been granted implicitly through a long pattern of allowing others to harvest trees or crops from the land. In the absence of any legal or contractual arrangements (including leases), the general assumption in many countries in the case of sink projects has been that the owner of the land owns the trees and the carbon sequestered by them. It is therefore important to engage in thorough due diligence and stakeholder consultation to clarify the underlying legal title.

Such issues—among others, such as the environmental and social effects of the project—could be a focus of the formal stakeholder consultation required by designated operational entities (DOEs) for CDM projects. The best case scenario is that any potential disputes will be revealed at this consultation stage rather than once the project has been registered and the buyer has purchased the CERs. The community consultation process should also be used to explain to any entities that might use the land that the trees will need to remain there permanently. Importantly, these issues should be clearly addressed contractually by all the potentially relevant entities.

### *Other Interests in the Land*

Another legal issue that should be addressed through the contract is that of competing rights and interests in the land on which the sink project is to be located. Potentially relevant interests in the land might be both formally registered legal rights, encumbrances, and interests and customary or traditional uses of the land. For instance, when a buyer is looking at purchasing carbon credits from land over which indigenous communities exercise certain customary or legal rights, it may be appropriate to consider entering into some type of agreement with the indigenous community for the co-management of carbon credits.

The possibility that indigenous communities may have certain entitlements to carbon credits reflects the growing international recognition of the contribution indigenous communities make to biodiversity. It is reflected in article 8(j) of the 1992 Convention on Biological Diversity, under which the commercial application of traditional knowledge and practice by third parties requires the approval of the holders of this knowledge (usually the indigenous community) and must be tied to equitable sharing of the benefits arising from its use. The convention states that each member state shall, “subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the

approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.” The practicality of such an agreement will depend to a large degree on the particular circumstances of the proposed project.

In developing countries where CDM sink projects are being developed, land property systems can be extremely complex or nonexistent. Often there are no formal records of landownership and no legislative arrangements under which nonlandowners use land. This can create considerable difficulty when multiple claims to carbon property rights or other relevant land rights are made, and it highlights the importance of watertight due diligence and comprehensive contractual provisions. Commonly, developing country property systems rely heavily on long-term leases of land, and therefore it will be imperative to ensure that the lease does not expire within the time frame of the project. Because sink projects rely on maintaining the carbon sequestered, it will also be critical for the project developer (and primary seller) to have continued access and monitoring rights in relation to the maintenance of any forestry rights.

### **Delivery Risk, Permanence, and Liability**

Article 12.1 of the Kyoto Protocol clearly states that an emission reduction can be certified as a CER for the purposes of the CDM only if it is generated by a project that generates emission reductions that are, among other things, “long-term beneficial to the mitigation of climate change.”

LULUCF CERs differ from other types of units under the Kyoto Protocol because much more uncertainty surrounds the “permanence” of LULUCF credits. *Permanence* here refers to the extent to which a relevant carbon sequestration project is able to achieve an absolute and irreversible reduction in the volume of carbon dioxide in the atmosphere.

Delivery risk—the risk that an insufficient volume of emission reductions will be generated to meet contractual obligations—is greater in LULUCF projects than in other CDM projects because of the nature of carbon sequestration and the inherent possibility that trees may not grow as quickly as modeled, for natural reasons such as weather, fire, diseases, and insect plagues. In addition, LULUCF projects manifest a unique permanence risk that does not occur in other types of emission reduction projects. It relates to the fact that the carbon stored in forest biomass can be released into the atmosphere at any time after the LULUCF credits have been issued, thereby reversing the sequestration cycle. Buyers and sellers of LULUCF credits, known as “project participants,” must allocate the liability for these risks through contractual arrangements as well as prudent project management.

*Identifying the Risks*

In carbon sequestration projects, risks exist that the carbon dioxide sequestered in the forest sink may be released back into the atmosphere at any time. For example, part of the forest might be destroyed by fire, pests, or disease, releasing the sequestered carbon back into the atmosphere. Alternatively, trees might be illegally logged, so that all the carbon sequestered in the above-ground biomass is deemed to have been emitted into the atmosphere under Kyoto Protocol carbon accounting rules. This is a particular risk in developing countries that may have no strict regulations addressing these issues. These risks may be referred to generally as permanence risks.

In addition, risks are associated with the extent to which a carbon sequestration project successfully delivers the volume of CERs that were initially predicted. For example, in some circumstances it has turned out that trees planted for a carbon sequestration project were unsuited to the soil or were planted in the wrong season, resulting in lower volumes of carbon sequestration than predicted. Alternatively, a forest's growth in a particular year may be stunted by natural occurrences such as drought. These risks may be referred to as delivery risks.

In both instances it is necessary to determine which entity will bear the delivery risk (that is, the risk of underperformance of forest growth) and which entity will be liable for replacing the sequestered carbon or purchasing equivalent LULUCF credits if the carbon is released back into the atmosphere. This can be addressed through the parties' contractual arrangements. The issue of permanence risk has been addressed under the CDM through the LULUCF decision reached at the ninth session of the Conference of the Parties to the UNFCCC, which adopted the two types of credits, tCERs and ICERs. It also established a maximum duration for LULUCF CDM projects, the crediting period.

At the registration of a LULUCF CDM project, the project proponent must select the length of the crediting period for the project and an accounting approach to address the nonpermanence of an afforestation or reforestation project under the CDM. Specifically, the proponent must decide whether the project will create tCERs or ICERs. Both tCERs and ICERs can be used only to meet the obligations of Kyoto Protocol Annex I Parties for the commitment period in which they were initially issued.<sup>9</sup>

Temporary CERs are initially valid only until the end of the commitment period after the one in which they were first issued (the first commitment period runs from 2008 through 2012). Before their expiry, tCERs must be replaced with another credit (either an Assigned Amount Unit [AAU], an Emission Reduction Unit [ERU], a CER, or another tCER). In the meantime, every five years a verification and certification report must be produced containing a request to the

CDM Executive Board to issue new tCERs equivalent to the total amount of carbon sequestered since the start of the project.<sup>10</sup> As a result, the prior tCERs are still valid at the time the new tCERs (for the same sequestered carbon) are issued.<sup>11</sup> The new tCERs will then be valid until the end of the subsequent commitment period, and further tCERs can be issued at certification every five years, until the end of the project crediting period (sixty years if the project proponent elected the maximum project term including renewals).<sup>12</sup>

Long-term CERs are valid until the end of the project's crediting period, although a verification and certification process must take place every five years to confirm that the carbon is still sequestered by the project.<sup>13</sup> Upon expiration of an ICER, the Kyoto Protocol party that used the ICER for compliance purposes must replace it. Replacement can be made only with an AAU, a CER, an ERU, an RMU, or an ICER from the same project activity, and not with another ICER from a different project activity or a tCER.<sup>14</sup> Replacement of an ICER may be required earlier than the end of the crediting period if the certification report that must be provided every five years indicates that the amount of carbon sequestered by the project has decreased since the last certification report or if no certification report is provided at the five-year verification date.

The rules surrounding the creation and use of tCERs and ICERs place the permanence risk with the entity that wishes to use the tCERs or ICERs for compliance purposes. However, this risk can to some extent be passed contractually back to sink project developers by requiring that they maintain the forest in perpetuity and provide replacement credits upon release of the carbon back into the atmosphere.

The replacement obligation means that tCERs and ICERs carry with them an inherent risk for their ultimate recipient (the Kyoto Protocol party that uses them for compliance purposes). Specifically, assuming that the protocol continues in its current form with future commitment periods, then upon expiry of the relevant tCERs or ICERs or release of the carbon from the forest underlying those units, the Kyoto Protocol party will need to obtain replacement units. This may involve purchasing those units at a substantially higher market price than the price initially paid for the tCERs and ICERs. Parties are likely to pass this risk through, by way of regulation, to the public or private sector entities that initially acquired the tCERs or ICERs or used them for compliance purposes under a domestic scheme.<sup>15</sup> The purchaser of tCERs or ICERs may therefore attempt to pass on this risk by way of contract with the project developer, who ultimately has greater control over retaining the carbon sequestered in the forests.

In contrast, forestry-based credits created under the New South Wales Greenhouse Gas Abatement Scheme, an emissions trading scheme in Australia, do not expire, but the scheme requires the entity that is responsible for creating the credits (that is, the seller) to satisfy the scheme administrator that an amount of abatement

created and sold under the scheme will be sequestered for 100 years. If the carbon is released back into the atmosphere during this 100-year period, then the project developer must provide equivalent replacement credits to the scheme administrator. This was the first functioning emissions trading regime to recognize credits from carbon sequestration (see chapter 18).

### *Contractually Managing the Risks*

There are three approaches that the parties in a LULUCF project contract may consider in order to address the delivery and permanence risks surrounding tCERs and ICERs.

The first strategy is to use a force majeure clause to encompass the permanence risks. This will result in the termination of the contract when an event occurs that is beyond the reasonable control of either party—for example, storms, floods, droughts, frosts, fires, and insect plagues. It is obviously advantageous for the party bearing the ultimate liability for delivering the volumes of sequestered carbon under the contract (ordinarily the seller) to define force majeure events as broadly as possible. But if the seller is absolved by force majeure under the contract, this does not mean that the buyer gets exemption under international rules. The buyer is still required to replace the credit. Therefore, purchasers may seek to define force majeure narrowly and to exclude events that are common in forestry projects, such as forest fires, droughts, and pests.

A second strategy for negotiating permanence risk may be to impose detailed conditions in the contract for forest management. For example, the parties might agree to adequate firebreaks and pest control strategies that would not otherwise be required under the domestic law of the host country. This might mitigate the risk that fire or pests will destroy a substantial portion of the plantation.

The third and most significant contractual solution is to adequately negotiate liability between the parties. Under the CDM rules, the general requirement is that the Kyoto Protocol party that used the ICER or tCER for compliance purposes bears the liability of replacing it in the event that the credit expires or a permanence or delivery risk materializes. Kyoto Protocol parties are likely to seek to pass this risk through to private sector entities that surrender tCERs or ICERs under a domestic scheme that recognizes these units.

Providing replacement tCERs or ICERs might be relatively easy when the holder of the tCER or ICER has a direct contractual relationship with the project developer or owner of the land where the carbon property right originated. In instances where the tCER or ICER has been sold to multiple buyers, however, the ultimate holder of that right will not have a direct contractual relationship with the landowner or project developer and may therefore be unable

to directly enforce any obligations to replace the lost carbon or pay the cash equivalent.

A forward sale agreement for ICERs may seek to impose obligations on the project developer to replace ICERs in the event that the underlying sequestered carbon is lost. Replacement may be satisfied in various ways, such as by replanting the trees, purchasing replacement ICERs, or paying “mark-to-market” damages, which compensate the counterparty for the loss it has suffered because of movements in market price since the forward sale contract was entered into.

In these cases, purchasers of tCERs or ICERs may need to put in place mitigation and hedging strategies that would not otherwise be required for permanent CERs created from other CDM projects such as renewable energy generation. These strategies might include paying a substantially lower price to account for the increased risk. Alternatively, the purchaser might pool a reserve of tCERs or ICERs generated in other projects (“carbon pooling”) that can be drawn on if unexpected losses arise—for example, from disputes over legal ownership or from any of the events affecting delivery or permanence risk discussed earlier. This will allow the purchaser to avoid default of its other contractual obligations in emergency situations without needing to go to the market to purchase permanent credits at a potentially higher price.

## Conclusion

Although the varied jurisdictions in which LULUCF projects are conducted have varying levels of clarity in their domestic legal systems, it is possible for parties to overcome uncertainty in part through strong contractual arrangements. In practice this requires comprehensive legal due diligence and proper consultation with the relevant parties.

Although it is difficult to predict the future course of the emerging market for LULUCF credits, it is likely that growing interest from landowners and investors will encourage local host country lawyers to analyze their existing legal frameworks to determine whether and how rights and benefits from sequestered carbon (that is, carbon property rights) can be assigned. As legal analysis of this issue evolves in host countries, it is likely that contracts for the sale of LULUCF credits will be modified to suit the legal property regimes of individual host countries, depending on how carbon property rights are dealt with in that regime.

Where it is difficult to obtain clarity of entitlement to carbon property rights, host country governments—in order to generate sufficient investor certainty in afforestation and reforestation projects, which can bring many local environmental and social benefits—may well clarify and strengthen their legal regimes around legal title in carbon sequestration activities.

## Notes

1. See, for example, article 3.3 of the Kyoto Protocol.
2. Examples are the voluntary carbon market and particular emissions trading schemes such as the New South Wales Greenhouse Gas Abatement Scheme in Australia.
3. The rules relating to the treatment of LULUCF projects under the Joint Implementation framework are different and beyond the scope of this chapter.
4. LULUCF Decision, ninth Conference of Parties to the UNFCCC, Milan.
5. Decision 19/CP.9, Appendix B, "Project Design Document," paragraph 2(c).
6. The Forestry Rights Registration and Timber Harvest Guarantee Act (FRRTHG Act) of Vanuatu defines a "forestry right" in relation to land to include "a carbon sequestration right in respect of the land."
7. See International Union for the Conservation of Nature, "Legal Aspects in the Implementation of CDM Forestry Projects," IUCN Environmental Policy and Law Papers 59, 2005, p. 50.
8. For further examples, see Australian Greenhouse Office, *Planning Forest Sink Projects: A Guide to Legal, Tax and Accounting Issues* 2005 ([www.greenhouse.gov.au/nrml/publications/forestsinks.html](http://www.greenhouse.gov.au/nrml/publications/forestsinks.html)).
9. Paragraphs 23, 38, 41, and 45 of the LULUCF decision.
10. Paragraphs 32, 42, and 44 of the LULUCF Decision.
11. Because the validity of an initial lot of tCERs can extend beyond the five-year certification and issuance of new tCERs (that is, the end of a subsequent crediting period is often more than five years away), it is possible that two lots of tCERs are created from the same stock of sequestered carbon and are valid at the same time, even though no additional sequestration has taken place and no tCERs have yet been replaced. In effect this allows LULUCF CDM projects to create additional carbon credits in the market despite the fact that no additional emissions have been reduced. This seems to be an unusual result. However, ultimately all tCERs issued must be replaced by other emission reductions and therefore are accounted for despite the "gap" between the expiry and replacement of tCERs and the five-year issuance of new tCERs.
12. Paragraph 36 of the LULUCF decision.
13. Paragraphs 32, 36, and 46 of the LULUCF decision.
14. Paragraph 49(d) of the LULUCF decision. If an ICER needs to be replaced before the end of the crediting period because there has been a net reversal, then the ICER can be replaced by another ICER "from the same project activity."
15. This was proposed by Charlotte Streck and Robert O'Sullivan in "Briefing Note: LULUCF Amendment to the EU ETS" at the BioCarbon Fund's "Technical Workshop on the Role of Forests in the Carbon Market, Focusing on the EU ETS," Brussels, March 2006.