High Integrity Forest (HIFOR) Units vs. Forest Carbon Credits

Similarities and Differences

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Introduction

Objective

This note seeks to clarify the similarities and differences between High Integrity Forest (HIFOR) Units and carbon credits. While both HIFOR Units and carbon credits share several features, they are fundamentally different in the way they are created and what they represent.

The value of high integrity forests

High integrity forests store and sequester large amounts of carbon and play an essential role in achieving the Paris Agreement’s global temperature goals, in addition to providing local climate, water, biodiversity, and livelihood benefits. They are the largest active sink of atmospheric carbon dioxide (CO₂) and influence the water cycle, atmospheric circulation, and local and global temperature in a range of other ways.

The world’s high integrity forests are essential for a stable climate. Without their active role in removing CO₂ from the atmosphere the world would already be at least 0.5°C hotter than it is today, placing us already well above the goal of the Paris Agreement to keep average global warming below 1.5°C degrees above pre-industrial levels by the end of the century. High integrity tropical forests alone are estimated to remove around 1.8 billion tons of CO₂ per year (net) from the atmosphere and store this carbon in their trunks, branches, and roots. These annual removals represent a critical climate cooling service that is largely overlooked or taken for granted. In addition, high integrity tropical forests play an essential role in regulating climate by exchanging moisture and energy between the land and the atmosphere, leading to a further cooling effect.

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2 Ibid.
High integrity tropical forests are also critical for the conservation of biodiversity. Tropical forests are thought to support the majority of terrestrial species\(^4\), and those forests with high integrity support consistently higher numbers of forest-dependent species, ensure lower extinction risk for the species present, support higher genetic diversity within species and face a lower risk of ecosystem collapse. Loss of integrity has an impact on the many functions (often called services) an ecosystem performs. High integrity forests are also better able to cope with climate change and other stresses.

However, the main blocks of high integrity forests declined by 12% between 2000 and 2020 and are increasingly vulnerable to fragmentation, encroachment, and degradation. Between 2000 and 2013 alone, damage to high integrity tropical forests embedded an increase of approximately 7.7 billion tons of CO\(_2\) to the atmosphere through to 2050, nearly 1.5 times the annual emissions of the United States.\(^5\) If threats continue to advance then the climatic and ecological services that high integrity forests provide will erode further.

Current financing streams and new solutions

Current carbon finance mechanisms are ill-suited to support the management/protection of high integrity forests, which is currently not rewarded by any form of climate finance. Funds under current carbon market and results-based payment schemes flow to areas that can prove an immediate threat of deforestation, for example, by showing a historical baseline of deforestation. Such incentives reward GHG emissions reductions and removals calculated against a short-term reference scenario. This includes REDD+ which so far mostly mobilizes funds for forests for jurisdictions that can show a historic threat of deforestation.

The Wildlife Conservation Society (WCS) has developed the concept of HIFOR Units, environmental certificates that reward the maintenance of the bundle of environmental services provided by high integrity forests, including specific metrics for climate regulation and biodiversity conservation benefits. Financing for HIFOR closes a critical finance and incentive gap by supporting the protection of high integrity forests while promoting forest governance, prosperous livelihoods, and sustainable development in tropical forest countries.

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\(^4\) For example, they support more than 60% of terrestrial vertebrates [https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/fee.2420](https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1002/fee.2420)

\(^5\) [https://www.science.org/doi/10.1126/sciadv.aax2546](https://www.science.org/doi/10.1126/sciadv.aax2546)
### Summary of key differences between HIFOR Units and forest carbon credits

Since HIFOR Units are designed as tradable environmental assets that reflect the climate and other ecosystem service value of high integrity forests, they can easily be mistaken for a variation of carbon credits (or offsets). This note aims to clarify the main similarities and differences.

<table>
<thead>
<tr>
<th>Nature of the unit</th>
<th>Carbon credits</th>
<th>HIFOR Units</th>
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<tr>
<td>Objective</td>
<td>Carbon markets create incentives for interventions that reduce GHG emissions and increase removals. Payment is for the result of an intervention (measured in additional tons of CO₂ either reduced or removed).</td>
<td>HIFOR markets create incentives to proactively manage high integrity forests and safeguard their continued climate and other environmental services. The unit paid for is an area of high integrity tropical forest conserved over an extended period (approximately one decade), with associated metrics for specific environmental services, including climate regulation (see below).</td>
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<tr>
<td>Climate value of the unit</td>
<td>CO₂ emissions reduced or removed in a crediting area, measured against a counterfactual (without intervention) scenario during a specified crediting period.</td>
<td>Each unit has an associated metric showing its climate value, in terms of the net removal of CO₂ from the atmosphere into forest biomass (measured in tons of net CO₂ removal during a specified crediting period).</td>
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<tr>
<td>Additionality</td>
<td>Require an additionality test to demonstrate that there is a direct causal link between carbon finance provided and the result achieved by the project.</td>
<td>HIFOR Units do not include an additionality test and no strict causality between intervention and environmental service is demanded. HIFOR payments incentivize the continued conservation of high integrity forests for their environmental services, including their net carbon uptake.</td>
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<tr>
<td>Leakage</td>
<td>Activity leakage is a risk, must be measured and discounted from GHG emission reductions and removals. Potential spill-over effects and secondary leakage are characterized by high uncertainty and will be hard to quantify.</td>
<td>Since there is no intervention against an immediate driver of deforestation, there is no risk of activity leakage. Potential spill-over effects and secondary leakage are characterized by high uncertainty and will be hard to quantify.</td>
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<tr>
<td>Permanence</td>
<td>Loss of forest is a risk. Reversal of emission reductions and removals is possible and leads to a loss of the environmental value of the respective unit; standards prescribe strategies on how to compensate for reversals and manage risks to permanence, primarily through individual and pooled buffers.</td>
<td>HIFOR rewards ongoing provision of environmental services such as carbon uptake on an ex-post basis for a specific time period. As such, the environmental service included in the unit cannot be reversed. By mobilizing finance for conservation, HIFOR aims to minimize future deforestation and degradation risks, and hence to ensure the continued ability of these forests to deliver environmental services.</td>
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Conservatively estimated emission reductions and removals can compensate for GHGs emitted through other sources. HIFOR Units cannot compensate directly for specific GHG emissions or specific forms of damage to biodiversity, and so they lack offset (compensatory) value.

Use of proceeds

Use of proceeds not prescribed beyond demands for benefit sharing as it is assumed that finance will flow directly to mitigation activities – which are crucial for continued issuance of carbon credits. HIFOR finance helps to manage intact forests and protect against a future threat. Rules on the use of proceeds help to ensure long-term conservation of high integrity forests. This includes benefit sharing provisions.

What are the main differences between forest carbon credits and HIFOR Units?

1. Climate value of the unit

Carbon markets reward a reduction of emissions or increased removals. Carbon markets calculate reduction of emissions or the removal of carbon against a business-as-usual emissions scenario. Emission reductions or removals reflect the change in GHG emissions compared to such a business-as-usual scenario. The BAU emissions scenario is referred to as a GHG baseline (or in the case of jurisdictional programs a forest reference emissions level). In other words, carbon markets reward a change of action and emissions within the boundaries of a project, program or jurisdiction.

The HIFOR approach rewards the ongoing provision of environmental services, including climate regulation. A HIFOR Unit represents a hectare of well-conserved, high integrity tropical forest that is maintained over a defined period of time. Associated with this unit are metrics that quantify specific environmental services, including climate regulation benefits (in terms of the number of tons of net CO₂ removals into forest biomass over the course of a decade, i.e., removed carbon minus any carbon losses). These removals are not compared to a counterfactual or business-as-usual scenario. As such, HIFOR Units reward a continued climate service, and can provide an important, long-term, incentive to countries and forest managers that is complementary to the existing REDD+ mechanism.

2. Additionality of action

The additionality of a carbon project must be established ex-ante. The concept of additionality describes the causal connection between the incentive generated by carbon finance and the generation of GHG emission reductions or removals. Carbon credits reflect GHG emission reductions and removals that would not have happened in the absence of carbon finance. The additionality of action and emission reductions or removals are essential elements of carbon markets.
No additionality test is needed for a HIFOR project. Carbon removals associated with a HIFOR Unit are not a direct result of interventions that protect HIFOR management areas against future threats. HIFOR payments for an ongoing environmental service help counteract future threats of forest loss and ensure good management of high integrity forests. Any CO₂ removal that is measured in association with a HIFOR Unit is not happening solely because of the HIFOR payment – it is a recurrent environmental service that, without payment, may be lost in the future. In a health care analogy, HIFOR unit investments finance “preventive care” for forests, whereas for forest carbon credits finance “emergency care.” Both are needed.

3. Leakage

The benefit of apparent emission reductions or removals under a carbon crediting program may be cancelled out through displacement or spillover events. Leakage describes the displacement of GHG emissions that can be attributed to a carbon investment. Such displaced emissions need to be measured and subtracted from calculated emission reductions or removals. Emissions can be displaced in part through activity or primary leakage. This occurs when a project displaces the source of emissions (e.g. a deforestation driver) rather than avoiding it. In the case of avoided deforestation, primary leakage is in most cases caused by a shifting of activities, i.e. a direct movement of deforestation agents to another area. Secondary, or market leakage, describes leakage that does not directly relate to the same agents of deforestation. Instead, it occurs if the activity creates incentives for third parties to increase emissions, for example by shifts in supply and demand of land, products and services affected by the project or policy. Under carbon market rules activity leakage needs to be accounted for, deducted or replaced in carbon credit registries.

HIFOR areas do not displace direct drivers of deforestation. Since HIFOR areas are not under direct threat of deforestation, activity leakage is not a risk for HIFOR Units. Leakage monitoring for direct displacement effects is not necessary.

Potential spill-over effects through secondary or market leakage are a risk for both carbon crediting and HIFOR projects, but in either case are highly uncertain, hard to manage, and difficult to quantify.

4. Permanence

Emission reductions or removals lost through a reversal event must be accounted for, deducted or replaced in carbon credit registries. Permanence risk describes the risk of reversal of climate benefits, i.e., the cancelling out of an emission reduction or removal at one point in time through a later emission. For example, the benefit of an emission reduction issued for avoided deforestation is cancelled out if the relevant forest – and with it the carbon stored in that forest – is lost at a later point in time. Under most carbon standards, a reversed emission reduction or removal needs to be replaced with another unit of equivalent climate value. Standards prescribe different permanence strategies, including the creation of permanence buffers, temporary crediting, or strong operator liabilities.
The ongoing services that are the basis for a HIFOR Unit are for a specific period of time and so cannot, by definition, be reversed. Significant damage to the forest in the future would reduce its ability to generate further Units and, below certain thresholds of size and ecological integrity, would make it no longer eligible to be treated as a HIFOR site. The aim of the HIFOR approach as a whole is to incentivize the long-term (and ideally permanent) maintenance of high integrity forests, but the future loss of integrity of a given forest would not change the validity of the Units that had been issued from it in earlier periods.

5. **Offsetting**

**Carbon credits can compensate for emissions generated outside of the project boundaries.** Conservatively measured carbon credits represent measurable and additional emission reductions or removals that are often used to compensate for public or private GHG emissions. Offsetting allows the compensation of continued GHG emissions by public or private actors. Actors with climate goals use carbon credits to e.g. claim carbon neutrality or to meet corporate net-zero goals. Corporate climate claims often rely on offsetting through the use of carbon credits.

**HIFOR Units cannot be used for compensatory or offsetting purposes.** The net CO₂ removals associated with HIFOR Units cannot be used as offsets and do not directly compete with carbon offsets. HIFOR Units do not lead to the quantified reduction or removal of GHG emissions that would pass an additionality test required for use as offsets because HIFOR Units are not measured against a business-as-usual scenario. Instead HIFOR Units reflect the ongoing environmental services provided by a forest including the removal of CO₂ from the atmosphere. It is conceivable that HIFOR becomes, in future, eligible for beyond-value-chain mitigation (BVCM) actions from corporates. When retired, a HIFOR Unit, including the net removals associated with it, represents a measurable and verified *contribution* by a non-state or state actor to achieve global net zero and global nature positive goals, because the continued functioning of high integrity forest carbon sinks is an essential underpinning to all such goals.

6. **Use of proceeds**

**Carbon standards do not prescribe the use of proceeds beyond relatively general benefit sharing provisions.** Carbon project developers must mobilize upfront finance for a carbon project. The use of proceeds from the sale of carbon credits can be used to re-pay investors. The ex-post nature of carbon finance does not demand that the proceeds are necessarily re-invested into the project. The only exception is benefit-sharing provisions that ensure that Indigenous peoples and local communities (IP&LCs) receive a portion ongoing proceeds or profits of a carbon project.

**HIFOR finance must be invested, at least in part, into high integrity forest conservation.** To ensure that high integrity forests continue to provide global and local environmental services, they need to be managed and protected. HIFOR payments should in part be used to strengthen the conservation regime of an HIFOR area. Benefit-sharing with IP&LCs would also be a requirement for HIFOR. Beyond these measures the local
or national government can benefit from the proceeds of the sale of HIFOR Units to finance the development of green economies that will help safeguard against future forest loss.

**HIFOR and carbon market investments as complementary forest finance**

While being conceptually different, HIFOR and carbon market investments can complement each other. HIFOR payments can create incentives to enhance the protection status of forests and promote land-use trajectories that prevent deforestation and forest degradation. A successful HIFOR market would ensure protection of forests and might ultimately avoid the need for carbon finance (whether in the form of avoided deforestation projects or REDD jurisdictional programs).

In areas where carbon finance has been successful at reducing emissions to near zero, subsequent HIFOR payments can ensure that forests are conserved after the direct threat has been addressed and forest coverage is stable. In doing so, HIFOR addresses an essential REDD+ shortcoming, i.e. what will happen to forests after REDD+ payments have dried up?