Application of the CCQI methodology for assessing the quality of carbon credits

This document presents results from the application of version 3.0 of a methodology, developed by Oeko-Institut, World Wildlife Fund (WWF-US) and Environmental Defense Fund (EDF), for assessing the quality of carbon credits. The methodology is applied by Oeko-Institut with support by Carbon Limits, Greenhouse Gas Management Institute (GHGMI), INFRAS, Stockholm Environment Institute, and individual carbon market experts. This document evaluates one specific criterion or sub-criterion with respect to a specific carbon crediting program, project type, quantification methodology and/or host country, as specified in the below table. Please note that the CCQI website Site terms and Privacy Policy apply with respect to any use of the information provided in this document. Further information on the project and the methodology can be found here: www.carboncreditquality.org

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Sub-criterion:	**1.1.3 Financial attractiveness**
Project Type	**Improved forest management – Reduced impact logging**
Date of final assessment:	**21 February 2024**
Score:	**Projects in the US (with conservation easement that requires the project activity): 1** **Projects in the US (without conservation easement that requires the project activity): 3** **Projects in other countries: 3**

Assessment

Relevant scoring methodology provisions

Some mitigation activities are financially viable but still face other obstacles such as information deficits or capacity constraints that hinder their implementation. In some instances, the institutional set-up of carbon crediting projects and the issuance of carbon credits can help to overcome these barriers. The methodology therefore employs an expert judgment on the likelihood that barriers prevent the implementation of a project type and that these barriers indeed can be overcome through the incentives of carbon credits. In arriving at this judgment, the aspects in the following should be evaluated:

Question
Does the project type face considerable non-financial barriers that can be identified in an objective and verifiable manner?
Is it possible to produce objective and verifiable evidence that the identified barriers are unique to the project type and do not apply to alternatives?
Is the market uptake of the technology underpinning the project type low although it is financially viable/competitive?
Can the barriers for this project type not be mitigated by additional financial means (and hence be assessed through the investment analysis)?
Is it possible to produce objective and verifiable evidence that carbon credits are indeed decisive for overcoming the barrier and does the incentive of carbon credits matches the strength of the barrier? (Note that this criterion can be assessed by analyzing the ΔIRR in the analysis of financial viability. The higher the Delta IRR is in relation, the more likely it may be that the revenues from the carbon credits are help overcoming the barriers.)

The scores are applied as follows:

	Score
It is very likely that barriers prevent the implementation of this project type and that the incentives through carbon credits will overcome these barriers.	5
It is very likely that barriers prevent the implementation of this project type and it is likely that the incentives through carbon credits will overcome these barriers. OR It is likely that barriers prevent the implementation of this project type and it is very likely that the incentives through carbon credits will overcome these barriers.	4
It is likely that barriers prevent the implementation of this project type and that the incentives through carbon credits overcome these barriers.	3
It is likely that barriers prevent the implementation of this project type, but it is uncertain that the incentives through carbon credits will overcome these barriers.	2
It is likely that barriers do not prevent the implementation of this project type and that the incentives through carbon credits do not help the project to overcome these.	1

Note that the application of this sub-criterion is optional. This sub-criterion should be used in combination with the sub-criterion on *financial attractiveness*. It may function as an additional criterion for activities where the assessment of the financial attractiveness has shown a high financial attractiveness even without carbon credits.

Information sources considered

1 Holmes, T. P. (2015). Financial and economic analysis of reduced impact logging. Tropical forestry handbook. Springer-Verlag, Berlin, Heidelberg.

2 Medjibe, V. P., & Putz, F. E. (2012). Cost comparisons of reduced-impact and conventional logging in the tropics. Journal of Forest Economics, 18(3), 242-256.

3 Applegate, G., Putz, F. E., & Snook, L. K. (2004). Who pays for and who benefits from improved timber harvesting practices in the tropics?: lessons learned and information gaps. CIFOR.

4 Mewett, G., Ernst Köller, A., Reinhart, A.-L., Sang, Z., Stephens, A., Strölin, M., & Kunert, N. (2017). An Ecological, Socio-Economic and Silvicultural Assessment of the Sustainability of Reduced Impact Logging in Tropical Forests. Annals of Ecology and Environmental Science. 1(1), 1-15

5 Ndjondo, M., Gourlet-Fleury, S., Manlay, R. J., Engone Obiang, N. L., Ngomanda, A., Romero, C., ... & Picard, N. (2014). Opportunity costs of carbon sequestration in a forest concession in central Africa. Carbon balance and management, 9(1), 1-13.

6 Rockwell, C., Kainer, K. A., Marcondes, N., & Baraloto, C. (2007). Ecological limitations of reduced-impact logging at the smallholder scale. Forest Ecology and Management, 238(1-3), 365-374.

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8 Congressional research service (2022). The Tax Deduction for Conservation Easement Contributions.

9 Brown, S. A., Rotman, R. M., Powell, M. A., & Wilhelm Stanis, S. A. (2023). Conservation easements: a tool for preserving wildlife habitat on private lands. Wildlife Society Bulletin, e1415.

10 American Carbon Registry. The American Carbon Registry Standard, Version 7.0.

11 Climate Action Reserve. Forest Project Protocol, Version 4.0.

Assessment outcome

The scoring for this project type can be taken from the following table:

Table 1 Scoring for IFM – reduced impact logging projects

		Score
Projects in the US	With conservation easement that requires the project activity	1
	Without conservation easement that requires the project activity	3
Projects in other countries		3

Justification of assessment

Project type

The assessment refers to the following project type:

Improved Forest Management

“Changes in forest management that increase forest carbon stocks, and/or avoid the loss of forest carbon stocks.”

Project Subtype - Reduced impact logging

“Improving logging practices to reduce negative impacts on forest stands and soils during timber harvesting in a forest or patch of forest, such as by using directional felling or minimizing the number of skid trails.”

For this project type, both financial considerations as well as non-financial barriers play a substantial role when deciding whether to implement these projects. Therefore, we lay out considerations regarding the financial attractiveness and consider the market uptake before conducting the analysis of non-financial barriers, thereby providing a comprehensive picture of factors that might influence the likelihood of additionality. All three aspects are factored into the overall conclusion on the overall likelihood of additionality.

Financial attractiveness considerations

Reduced impact logging (RIL) was conceptualized in the 1990s in response to the increasing damage of conventional logging (CL) to tropical forests (Source 1). The profitability of RIL compared to CL has been analysed in a variety of studies. While the results are highly dependent on the context and the cost calculation approach, research suggests that RIL can be equally or more profitable than CL, while in other instances it is less profitable. In their meta-analysis of 10 case studies, Medijbe and Putz (2012) found that when comparing the financial attractiveness between RIL and CL, the results differ depending on the basis for comparison. When looking at the profit per hectare, RIL was financially more attractive in four cases, and CL was more attractive in six cases. When considering profit per harvested volume, RIL is also more profitable in four cases, but in two cases the profitability is almost equal, and in four cases CL is more profitable. This is because the harvesting intensity is generally higher for CL, i.e., a higher amount of wood is extracted from the same area when harvesting. This might be a factor that decreases the profitability of RIL, as its harvested area is oftentimes smaller due to the requirement of buffer zones close to streams or steep slopes (Source 2). Furthermore, RIL guidelines oftentimes require shutdowns of logging operations during wet weather, whereas harvesting would be allowed to continue under CL (Source 3).

The literature review of Holmes (2015) comes to a similar conclusion: RIL is cost competitive under certain forest conditions and logging intensities. He notes that there were regional differences: Whereas only one of six studies found RIL not to be competitive with CL in South America, research in Southeast Asia and Africa suggested that carbon payments are needed to make RIL financially attractive (Source 1).

Literature also suggests that the financial attractiveness of RIL increases when considering the long-term perspective. Revenues can increase because harvested volumes from subsequent rounds of

harvesting are likely to be higher than under CL, as RIL reduces the damage to the residual forest stands, lessens the erosion of topsoil, speeds up the recovery of the forest and decreases the fire risk (Source 4).

Existence of non-financial barriers

- *High upfront costs*: Generally, upfront costs are higher for RIL than for CL. In CL, harvesting is commonly conducted by untrained, unsupervised personnel that do not have a pre-established harvest plan. In contrast, RIL requires inventories and mapping of the individual crop trees, pre-harvest vine-cutting, directional felling and cutting stumps to the ground. These activities need up-front capital investments in inventories, training and occasionally new machinery (Source 5). Even though these costs can be compensated through a reduction in wasted wood, skidding savings and the increased revenues from subsequent rounds of harvesting (Source 4), high upfront cost might decrease the likelihood that project developers would choose to invest without having an assured increase in revenues.

- *Perception about the costs of RIL*: Due to the higher investment cost of RIL, loggers often consider RIL to be more costly to implement than CL (Source 3, Source 4). Furthermore, path dependency might hinder the change towards RIL, as prevailing practices might have existed for decades. As a result, loggers might be more reluctant to adopt RIL techniques if they do not perceive them to have a benefit over already existing logging practices.

- *Lack of expertise and lack of capital for small-scale holders:* Small-scale holders of forest can lack the expertise and the access to capital to implement RIL techniques. They operate under different conditions than large-scale timber operations, as they themselves are oftentimes the local inhabitants of the land, rely on local labor, may not have access to start-up capital, and often employ local management practices. This lowers the likelihood that small-scale holders employ RIL practices. Since about 25% of forests in developing countries are community owned, this means the likelihood of additionality may vary depending on the ownership of forests (Source 6).

Market Uptake

RIL has been promoted by several institutions, including the Food and Agriculture Organization (FAO) and the World Wildlife Fund (WWF), is recommended in several national forest regulations, and is a requirement for FSC 'sustainable forest management' certification (Source 4). However, while there is no standardized data on logging practices, available data indicates that RIL is not the common practice. In the large-scale survey 'Status of Tropical Forest Management' (2011) in 33 tropical countries, RIL is subsumed under 'sustainable forest management (SFM)'. Areas under SFM made up 7.6% of permanent forest estates with natural-forest production[1] in 2010 (Source 7). While it is possible that this share increased in the last decade, it is unlikely that RIL is currently the dominant form of logging.

The following table assesses the likelihood of carbon finance to contribute to overcoming each of the barriers identified above:

[1] As opposed to permanent forest estates with planted forest production.

Barrier	Assessment outcome	Justification
High upfront investment costs	Likely	Carbon credits will provide an additional revenue stream that may help overcome this barrier. As research indicates that RIL becomes more profitable in the long term, carbon credits might provide an additional incentive at an earlier point in time (Source 4). They could furthermore help mobilize investment, as there is an additional revenue stream.
Perception of RIL	Unlikely	Carbon credit revenues could provide the resources to implement capacity building, which could increase the understanding of loggers regarding the costs of RIL. However, it is uncertain to what extent capacity building could overcome the perceptions on RIL, if there is a prevailing notion in the forestry community that these practices are costly (Source 3, Source 4). Furthermore, this logic would only apply in cases where the project developer is not at the same time the project owner. This makes it unlikely that carbon credits help to overcome this barrier.
Lack of expertise and lack of capital for small-scale holders	Uncertain	Project developers could introduce and promote RIL techniques to small-scale holders, as well as adjusting RIL guidance to the specific local context (Source 6). Furthermore, the carbon credit revenues might provide an incentive for small-scale holders to switch to RIL, to have access to an additional income stream in the future. However, since carbon revenues come in only years after the project start, they cannot provide the necessary upfront capital. Hence, it is uncertain if carbon credits help to overcome this barrier. It is furthermore important to note that it is possible that RIL techniques are not suitable for every small-scale context (Source 6). Other forest management practices might be more appropriate.

Special circumstances – Conservation easements in the US

'Conservation easements' are incentive mechanisms for ecological objectives in the US, which can increase a project's economic attractiveness substantially. We therefore include them in our analysis of additionality for IFM projects in the US.

A conservation easement is a legal agreement under which private landowners voluntarily transfer certain land use rights to a conservation easement holder, such as a trustee or the government. A conservation easement is concluded with the aim of fulfilling certain conservation objectives, such as protecting trees or geological resources. Each conservation easement has its own specific terms. They can prescribe a variety of activities, from limiting the frequency of harvesting, to requiring certain management practices. In return, private landowners receive a remuneration in the form of substantial income tax reductions of up to 50% (or 100% for ranchers and farmers). These may be spread out over several years and may vary depending on the federal state or jurisdiction (Source 8, Source 9).

Due to the substantial financial benefits of conservation easements, they can make a project financially attractive without carbon credits. They therefore decrease the likelihood that a project activity is additional, if this activity is required by the conservation easement.

It is important to note that the two major carbon crediting programs that offer carbon credits from IFM projects in the United States, American Carbon Registry (ACR) and Climate Action Reserve (CAR), both restrict projects with long-standing conservation easements, as they consider them to be a legal requirement. Projects are not considered additional if the easement was recorded more than one year

prior to the project's start date (Source 10, Source 11). However, they still permit newly concluded conservation easements. Thus, conservation easements are still a relevant consideration when assessing the additionality of IFM projects registered under ACR and CAR.

The Verified Carbon Standard (VCS), which also offers carbon credits from production to conservation projects in the US, has no provisions regarding conservation easements.

Conclusion

Generally, available research suggests that the financial attractiveness of RIL can be similar to CL, in particular from a long-term perspective, depending on the context and region. Some barriers exist for forest owners to switch to RIL, in particular for small-scale holders. Carbon credits could, in some instances, alleviate some of these barriers but may have a limited impact. It is highly dependent on the context if the dissemination of RIL is accelerated through the incentives that carbon credits provide.

Based on the available information, we conclude that it is likely that some barriers prevent the implementation of this project type, and that the incentives through carbon credits can help to overcome some of them. We therefore score the likelihood of additionality for this project type with 3.

Furthermore, we lower the scoring by two points if there is a conservation easement in place. A conservation easement constitutes a *de facto* subsidy for landowners and is therefore a substantial income in the project scenario, which reduces the likelihood of additionality.

Therefore, we differentiate our scoring in the following way:

Table 1 Scoring for IFM – reduced impact logging projects

		Score
Projects in the US	With conservation easement that requires the project activity	1
	Without conservation easement that requires the project activity	3
Projects in other countries		3