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	**Avoided unplanned deforestation**
Date of final assessment:	**02 July 2024**
Score:	**Project implements no economic activities: 4** **Project implements small-scale economic activities (e.g., harvesting of NTFP) that benefit project developer: 3** **Project implements commercial timber production that benefit project developer: 2**

Assessment

Application of the scoring methodology in the context of this project type

The CCQI methodology assesses the financial attractiveness of an individual project or a project type to estimate the likelihood that economic actors would normally not pursue the respective mitigation activity without carbon market revenues.

The CCQI methodology considers three factors in its assessment: the financial attractiveness without carbon credit revenues, the change in financial attractiveness due to carbon credit revenues, and the financial attractiveness with carbon credit revenues. To implement this approach, the methodology uses three indicators: the internal rate of return (IRR) without carbon credit revenues (indicator 1.1.3.1.), the change in the IRR due to carbon credit revenues (indicator 1.1.3.2.), and the IRR with carbon credit revenues (indicator 1.1.3.3.).

However, this type of analysis is not suitable for the project type 'avoided deforestation' and some subtypes of the project type improved forest management (IFM), as they typically do not involve a major investment at the start of the project. In contrast, they entail that an activity is not pursued (e.g., a forest is not deforested or degraded) or that an ongoing practice is changed (e.g., a change in forest management practice). In these cases, the most relevant consideration for financial attractiveness is what economic activity would be conducted in the absence of the project (baseline scenario).

We therefore deviate from the CCQI methodology to reflect the specific circumstances of these project types. As a first step, we implement a cost comparison analysis to assess the financial attractiveness, which substitutes for the analysis for indicator 1.1.3.1 of the CCQI methodology. This type of assessment takes into account the costs and revenues of the project scenario as well as of the baseline scenario.

As a second step, we further discuss the influence of carbon credit revenues on the financial attractiveness of the project (sub-)type. This analysis substitutes the assessment of indicators 1.1.3.2 and 1.1.3.3 in the CCQI methodology. If the carbon credit revenues have a strong influence on changing the financial attractiveness of an activity, it is more likely that they are critical in making the activity financially viable.

Cost comparison analysis

As a first step, we assess the difference in the financial attractiveness between the project scenario (without carbon credits) and the baseline scenario. We assume that the greater the difference between the two scenarios, the more likely it is that the baseline scenario would have occurred in the absence of carbon revenues. Consequently, a project is more likely to be additional. Our analysis is based on relevant scientific literature.

Since the decision to proceed with a project is made by the project developer, we focus on their costs and revenues. However, in some instances, such as projects reducing deforestation, the costs and revenues of relevant stakeholders (such as landowners and local communities) may be taken into account, since they may influence the decision to proceed with a project.

Project scenario- Costs and revenues while implementing the project

We consider the costs and revenues associated with implementing relevant activities. Implementation costs include capital expenditure (CAPEX) and operational expenditure (OPEX) associated with implementing the project activities. These may include expenses for planning, job training, infrastructure or machinery. Since the analysis compares scenarios without the impact of carbon credits, all transaction costs related to generating carbon credits are not considered.

Revenues include income from timber harvest, sale of other forest products or other economic activities, such as tourism. Other revenues may include subsidies or other financial incentives from policies.

Baseline scenario - Profits that would accrue in the absence of the project (opportunity costs)

The baseline is an 'alternative universe' in which the project activity does not take place. Thus, to evaluate the baseline scenario, we consider the profits that were foregone by employing the project activity, i.e., the foregone revenues minus the forgone costs. Scientific literature refers to these foregone profits as 'opportunity cost'. We adopt this term for this analysis.

The opportunity costs of forest-related projects depend on the land use in the absence of the project. Depending on the type of project, these could include foregone revenues from land conversion, such as for agriculture and/or livestock farming, as well as revenues generated by harvesting the forest, such as the sale of timber or other forest products. We do not consider foregone employment in the region or changes in livelihood for local communities.

Impact of carbon credits

In a second step, we analyse the impact of carbon credits on the financial attractiveness of the project type. To do this, we consider what the typical total costs of the project type are, and how high the average carbon credit price for that project type is in comparison. If it is likely that the revenues from carbon credits are high enough to turn a project of the project type from financially unattractive to attractive, it increases the likelihood that the project type is additional.

Information sources considered

1 Review of project design documents of projects registered under the VCS methodologies VM0006, VM0007, VM0009, VM00015.

2 Calyx Global (2023) Turning REDD into Green – Improving the GHG integrity of avoided deforestation credits.

3 McDermott, C., Vira, B., Walcott, J., Brockhaus, M., Harris, M., Kumeh, E. M., & de Mendonça Gueiros, C. (2022) The evolving governance of REDD+. In: Assessing a Decade of REDD+, Forests, Climate, Biodiversity and People.

4 FAO (2022) The State of the World's Forests 2022. Forest pathways for green recovery and building inclusive, resilient and sustainable economies. Rome, FAO. https://openknowledge.fao.org/items/0c46e9fb-5fec-4738-9db5-65b474f0b9b7

5 Energy Transition Coalition (2023) Financing the Transition: Supplementary Report on the Cost of Avoiding Deforestation.

6 Verified Carbon Standard. VM0007 REDD + Methodology Framework (REDD + MF), Version 1.6.

7 Verified Carbon Standard. VM0009 Methodology for Avoided Ecosystem Conversion, Version 3.0.

8 Verified Carbon Standard. VMD0015 Methods for monitoring of greenhouse gas emissions and removals (M-REDD), v2.3.

9 Verified Carbon Standard. VM0048 Reducing Emissions from Deforestation and Forest Degradation, v1.0

10 Araya, M. M., & Hofstad, O. (2016) Monetary incentives to avoid deforestation under the Reducing emissions from deforestation and degradation (REDD)+ climate change mitigation scheme in Tanzania. Mitigation and Adaptation Strategies for Global Change, 21, 421-443.

11 Olsen, N., & Bishop, J. (2009). The financial costs of REDD: evidence from Brazil and Indonesia. IUCN.

12 Haya, B. K., Alford-Jones, K., Anderegg, W. R., Beymer-Farris, B., Blanchard, L., & Bomfim, B. (2023) Quality Assessment of REDD+ Carbon Credit Projects.

13 Duker, A. E. C., Tadesse, T. M., Soentoro, T., de Fraiture, C., & Kemerink-Seyoum, J. S. (2019) The implications of ignoring smallholder agriculture in climate-financed forestry projects: empirical evidence from two REDD+ pilot projects. Climate Policy, 19, 36-46.

14 Nathan, I., & Pasgaard, M. (2017) Is REDD+ effective, efficient, and equitable? Learning from a REDD+ project in Northern Cambodia. Geoforum, 83, 26-38.

15 Ecosystem Marketplace (2021) A Green Growth Spurt – State of Forest Carbon Finance 2021.

16 Schneider, L. & Haase, I. (2023) Carbon crediting and official development assistance (ODA) – A summary of key issues. https://www.oeko.de/publikation/carbon-crediting-and-official-development-assistance-oda-a-summary-of-key-issues/

Assessment outcome

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

Table 1 Scoring for avoided unplanned deforestation projects

	Score
No economic activities	4
Small-scale economic activities (e.g., harvesting of NTFP) that benefit project developer	3
Commercial timber production that benefits project developer	2

Justification of assessment

Project type

The assessment refers to the following project type:

Avoided unplanned deforestation

"Activities to avoid deforestation that is driven by multiple, mostly local agents. The deforestation occurs as a result of socioeconomic forces, such as subsistence agriculture of local communities, encroaching roads, or illegal logging. In addition, forest degradation may be reduced. Projects usually combine different activities to reduce deforestation, such as improving agricultural practices of local communities, providing alternative livelihoods, instituting patrols or assisting with land tenure reform. The activities are implemented on a dedicated project-level geographical area (not at jurisdictional level). The project type reduces emissions by avoiding the loss of forest carbon stocks."

Cost comparison analysis

a) Cost of implementing project activities

The implemented activities vary greatly between projects. They include creating alternative sources of income for local communities, intensifying agricultural practices, improving land tenure, patrolling, capacity building, forest management measures, improving governance systems, reducing fuelwood consumption, measures to enhance ecosystems, and research (Source 1, Source 2). Moreover, project activities might change during the course of a project, as the most widely used methodologies (VM0006, VM007, VM0009 and VM0015) require no verification that project activities are carried out (Source 6, Source 7, Source 8, Source 9). Thus, on the one hand, some project activities might be very costly, e.g., if there is new infrastructure built to support the establishment of alternative livelihoods, and a lot of activities are carried out. On the other hand, some projects might limit themselves to a few comparatively low-cost activities, such as capacity-building workshops and trainings. We therefore cannot estimate a specific cost range. However, it is likely that the project developer incurs some costs.

a) Opportunity cost: Foregone revenues

For this project type, opportunity costs may occur through the loss of revenues from subsistence agriculture and illegal logging. Research indicates that, due to its low profitability, the opportunity costs of subsistence agriculture is substantially lower than for large-scale industrial agriculture (Source 5, Source 6). For example, Olsen and Bishop estimates that the opportunity costs of subsistence agriculture range between 0 and 1.1 USD per tonne of CO_2 (Brazil) or 0 and 1.53 per tonne of CO_2 (Indonesia) (Source 6). As illegal logging of local communities is done on a small scale and often for their own subsistence, opportunity costs are likely low as well.

However, it is important to note that it is likely that opportunity costs for this project type only have limited impact on the project developer's decision to go ahead with a project, as the project developer is not typically the one foregoing revenues. In most cases, the local communities that live in the project area do not hold any legal title to the land, and they are not necessarily compensated for their loss in income (Source 7, Source 6).

b) Revenues and subsidies

Avoided unplanned deforestation projects may have revenues besides carbon crediting. In fact, it is an aim of many projects to provide alternative livelihoods for local communities in order to reduce deforestation pressures. Projects may implement activities with the aim to produce non-timber forest products (NTFP), such as Brazil nuts, acai, or bamboo; implement agroforestry systems to produce agricultural commodities (e.g., rice or beans), intensify already existing agricultural production, or implement other economic activities such as ecotourism or beekeeping.

Moreover, out of 50 project design documents (PDD) registered under the most frequently used methodologies for this project type (VM0006, VM0007, VM0009, VM00015), 19% reported that timber is still harvested in the project scenario (Source 1). This ranges from small-scale timber extraction, e.g., for local charcoal production, to companies continuing the timber harvesting they already conducted prior to the implementation of the project.

These activities may lead to revenues (Source 2), which may benefit the project developer under some circumstances. We therefore differentiate between three cases:

- **No economic activities that create revenues:** In these cases, the implementation costs cannot be covered by revenues, making it unlikely that a project is financially attractive without carbon credits. Thus, these cases have low additionality risks.
- **Small-scale economic activities that create revenues, such as NTFP or agricultural activities:** In these cases, these revenues may cover a share of project costs. An example would be a community-led project that implements an activity to start açai harvesting, in which case the members of the communities would benefit from the revenues of selling açai berries. However, as this activity is likely not on a large scale, the economic benefit might be smaller and only materialize after some time. Thus, in these cases, there is a medium likelihood that a project is financially attractive without carbon credits and, correspondingly, there is a moderate risk that the project is not additional. It is important to note that the risk is only relevant for cases, in which the project owner is the one profiting from NTFP related activities. If the project owner e.g. funds training and knowledge transfer that enables the community to take up açai harvesting, but the revenues from that activity remain in the community, the non-additionality risks are likely low.
- **Commercial-scale timber harvesting:** In the case that timber is still harvested at a commercial scale, it is likely that the revenues are substantial. For example, if the project developer is a timber company that continues FSC-certified timber logging, it is likely that protecting its forests from unplanned deforestation e.g. through intensified patrols, is in the economic interest and financially attractive for the forest owner without carbon credits. Therefore, there is a high likelihood that a project is financially attractive without carbon credits, and, correspondingly, there is a high additionality risk.

Moreover, activities to reduce deforestation may already be supported through various financing channels besides carbon markets. Next to the policy support by national governments, which is a major source of financing for forest and biodiversity protection, there are other international financing vehicles. Most importantly, avoided unplanned deforestation projects can be implemented under the concept of *Reducing Emissions from Deforestation and Forest Degradation* (REDD+), which was developed under the UNFCCC. Funding sources for REDD+ projects include bilateral

commitments through Official Development Assistance (ODA), as well as multilateral funding through international institutions such as the Green Climate Fund (Source 3, Source 4).

However, there are still significant funding gaps for avoided deforestation activities (Source 5). Thus, while a project could benefit from other financing channels, this is highly dependent on the project's context. As a general principle, additionality is more likely the greater the share of carbon credits in the projects' overall financing (Source 16). If the share is low, it is less likely that they were decisive for implementing the project. In cases in which projects blend ODA and carbon market revenues it is further important to ensure proportionate attribution of emission reductions achieved by the project (i.e. that the share of emission reductions allocated to project developers is proportionate to their share in the investment in the project) (Source 16).

Impact of carbon credits

To assess the impact of carbon credits, we would need to compare the total project cost per ton of CO_2 to the carbon price. The average price of carbon credits from avoided unplanned deforestation projects on the voluntary carbon market in the year 2019 ranged from USD 0.56 to USD 93.84 (Source 15).

Due to the substantial variance in implementation costs (see above), selling carbon credits at the observed price levels may generate revenues that cover the total costs of avoided deforestation projects in some cases, but not in others. Thus, assessing the impact of revenues from carbon credits on the financial attractiveness of the project type does not allow for a definitive conclusion.

Conclusion

The cost comparison analysis showed that there is considerable uncertainty regarding each component of the analysis.

The projects come with some implementation costs, which vary substantially depending on the activities that are implemented. Moreover, project activities may change during the course of the project or are not implemented as planned. Therefore, we cannot specify a cost range.

Opportunity costs for this project type are the foregone income of local populations through subsistence agriculture and illegal logging. They are likely to be low and are not necessarily factored into the project developer's decision to implement a project.

The revenues of the project depend on the economic activities a project implements. The more revenues a project generates for the project developer, the more likely it is that the project would have been financially attractive without carbon credits.

Therefore, we differentiate the scoring in the following way:

Table 2 Scoring for avoided unplanned deforestation projects

	Score
No economic activities	4

Small-scale economic activities (e.g., harvesting of NTFP) that benefit project developer	3
Commercial timber production that benefits project developer	2