Voluntary Carbon Standard

Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination

VCS VOLUNTARY CARBON STANDARD

Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination

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I. SCOPE and PARAMETERS

Scope

1. This tool defines the step-wise approach for conducting the non-permanence risk analysis to determine the number of buffer credits that a given AFOLU project shall deposit into the AFOLU Pooled Buffer Account;

2. This tool shall be used in addition to any guidance provided by the most current versions of the Voluntary Carbon Standard and VCS Program Guidelines;

3. Project proponents shall clearly document and substantiate this self risk assessment covering each risk factor applicable to the project. During validation and verification[1] the VCS verifier will evaluate the document; and,

4. In evaluating the application of this tool to a proposed project activity, VCS Verifiers shall assess the credibility of all data, rationales, assumptions, justifications and documentation provided by the project participant to support the non-permanence risk analysis and buffer determination.

Parameters

Parameter	Sign	Description
Buffer Withholding Percentage	%	Based on the project's overall risk classification, the percentage of carbon credits generated by the approved project activity that must be deposited into the AFOLU Pooled Buffer Account to cover non-permanence related project risks.

II. PROCEDURE

The project proponents shall take the following steps:

Step 1: Conduct a risk assessment.

Sub-step 1a: Evaluate the project against the risk factors applicable to all AFOLU project types.

Sub-step 1b: Evaluate the project against the risk factors associated with the specific project type.

Sub-step 1c: Based on the above assessments, determine the overall risk classification for the project.

Step 2: Based on the project's overall risk classification, deposit the appropriate amount of credits into the AFOLU Pooled Buffer Account.

Step 3: Repeat Steps 1 and 2 every time the project seeks VCS verification and adjust the project's buffer withholding as necessary.

1 Projects that are not validated and verified simultaneously must have their initial risk assessment validated at the same time as VCS project validation. The risk assessment must also be reevaluated at the time of credit issuance (i.e., verification).

Step 1: Conduct a risk assessment.

1. Project proponents shall assess both transient and permanent potential losses in carbon stocks and determine the appropriate buffer reserve based on this Tool.

2. The outcome of the risk assessment shall be clearly documented and substantiated and be offered to the VCS verifier for assessment when the project is being validated or verified.

3. The overall risk classification of the project shall be based on risk ratings for generic risk factors and other risk factors associated with the specific AFOLU activity type:

- **Afforestation, Reforestation and Revegetation (ARR);**
- **Agricultural Land Management (ALM);**
- **Improved Forest Management (IFM); or,**
- **Reduced Emissions from Deforestation and Degradation (REDD)**

4. When determining the overall non-permanence risk classification, all the risk factors relevant to the project shall be weighed up together. To assist with this process, the "risk likelihood × significance" risk assessment methodology[2], described in Appendix A, may be used.

5. Before VCUs can be issued, a VCS verifier will need to confirm the overall project risk classification and the buffer withholding percentage as determined by the project proponent in accordance with this Tool.[3]

6. If the verifier feels that the non-permanence risk associated with the project warrants a buffer reserve greater than the highest withholding percentage available for that project type (as indicated in the buffer tables below) then the project is not eligible for crediting under the VCS.

7. The outcome of the risk assessment at the first VCU issuance and at subsequent risk assessments where the project is classified as lower risk compared to the previous assessment will be subjected to the VCS double approval process. If no agreement can be reached by the two VCS verifiers on the percentage of credits the project must withhold, the project can opt to go with the more conservative of the buffer determinations or appeal to the VCS Association.

2 This approach provides assessors with a framework for evaluating both quantitative and qualitative risks in an integrated manner in order to come to a defendable overall risk classification of "low", "medium", "high" or "unacceptably high/fail".

3 While this tool is intended to cover the key factors driving non-permanence risk, validators and verifiers may identify other risks they consider significant for a given project, in which case these additional factors should be included in the overall risk assessment.

Sub-step 1a: Determination of the risk factors applicable to all project types

8. Generic risk factors that shall be assessed for all AFOLU project types are listed in Table 1.

Table 1: Risk factors applicable to all project types

Project risk
Risk of unclear land tenure and potential for disputes
Risk of financial failure
Risk of technical failure
Risk of management failure
Economic risk
Risk of rising land opportunity costs that cause reversal of sequestration and/or protection
Regulatory and social risk
Risk of political instability
Risk of social instability
Natural disturbance risk
Risk of devastating fire
Risk of pest and disease attacks
Risk of extreme weather events (e.g. floods, drought, winds)
Geological risk (e.g. volcanoes, earthquakes, landslides)

Sub-step 1b: Determination of the risk factors associated with the specific project types

I Afforestation, Reforestation and Revegetation (ARR)

9. To assess ARR project risks, the risk ratings listed in Table 2 below shall be assigned, whereby the interaction between rotation period and the level of a project's commitment to replanting across two or more rotation periods shall be expressed as short-term, medium-term or long-term commitment.

    a. Projects with rotation periods of less than 25 years and no commitment to replant after the first harvest are characterized as having a **short-term commitment period.**

    b. Projects with rotation periods of less than 25 years, but with a commitment to replant are characterized as having a **medium-term commitment period.**

    c. Projects with rotation periods of more than 25 years, but no commitment to replant are also characterized as having a **medium-term commitment period.**

    d. Projects with rotation periods of more than 25 years and a commitment to replant, and those with primarily a forest restoration and habitat emphasis, are characterized as having a **long-term commitment period.**

10. When determining the overall non-permanence risk rating for the project, verifiers shall weigh all the risk factors together. However, certain risks may be significant enough that their individual rating determines the project's overall risk rating, no matter what the project scored on other risk dimensions.

Table 2: Risk factors applicable to ARR projects

Risk factor	Risk Rating
Project longevity/ Commitment period	
Long-term commitment (i.e., many decades or unlimited) with no harvesting	Low
Long-term commitment with no harvesting in politically unstable countries	Medium
Long-term commitment with harvesting	Medium
Medium-term commitment with harvesting	High
Medium-term commitment (i.e., a few decades) with no harvesting	High
Short-term commitment with or without harvesting	Fail
Ownership type and user rights	
Established NGO or conservation agency owner; or owner-operated private land	Low
Rented or tenant-operated land	Medium
Clear land tenure but disputed land use rights	High
Uncertain tenure but with established user rights	High
Uncertain land tenure and no established user rights	Fail
Technical capability	
Proven technologies and ready access to relevant expertise	Low
Technologies proven to be effective in other regions under similar soil and climate conditions, but lacking local experimental results and having limited access to relevant expertise	Medium
Financial capacity	
Financial backing from established financial institutions, NGOs and/or governments	Low
Long-term project funding not secured	Medium
Management capacity of project developer	
Substantial previous project experience (≥ 5 projects) with on-site management team	Low
Limited project experience (<5 projects) with on-site management team	Medium
Limited project experience (<5 projects) without on-site management team	High
Future income	
Appropriate management plan, and financial analysis demonstrates that likely income stream(s) will finance future management activities (e.g., carbon finance to be used for project management, tending operations, etc.)	Low
Future costs and revenue stream(s) not documented	High
Future/current opportunity costs	
Alternative land uses are unlikely to become attractive in the future	Low
Project is competing with other land uses likely to become more attractive in the future	High
Endorsement of project or land-use activity by local population and local/ national political establishment	
Endorsement given and not likely to change in the future	Low
Endorsement given but may be subject to change in the future	Medium
No endorsement given	High

11. Table 3 below provides the default buffer withholding ranges for ARR projects associated with low, medium and high non-permanence risk classes. Verifiers must use their expert judgment to determine the appropriate withholding percentage within each range based on whether the project is deemed to be at the low, medium or high end of a given risk class.

Table 3: Default buffer withholding percentages for ARR projects

ARR Risk Class	Buffer Range
High	40-60%
Medium	20-40%
Low	10-20%

II Agricultural Land Management (ALM)

12. To assess ALM project risks the risk ratings listed in Table 4 shall be assigned.

13. Permanence risk assessment applies only to emission reductions or removals (through sinks) of CO_2. Activities generating emissions reductions of N_2O, CH_4 or fossil-derived CO_2 are not subject to buffer withholding, since these GHG benefits cannot be reversed.

14. When determining the overall non-permanence risk rating for the project, verifiers shall weigh all the risk factors together. However, certain risks may be significant enough that their individual rating determines the project's overall risk rating, no matter what the project scored on other risk dimensions.

Table 4: Risk factors applicable to ALM projects

Risk factor	Improved cropland management	Improved grassland management	Cropland & grassland conversions
Ownership type and land tenure			
Established NGO or conservation agency owner; owner-operated private land	Low	Low	Low
Rented or tenant-operated land	Medium	Medium	Medium
Uncertain land tenure	High	High	High
Unproven technologies and practices			
Use of proven practices verified for local conditions	Low	Low	Low
Use of proven technology shown to be effective elsewhere, but not verified locally	Medium	Medium	Medium
Use of technologies with minimal previous application in similar environments to project	High	High	High
Use of technologies without any scientific basis for application to C storage or greenhouse gas mitigation	Unacceptable	Unacceptable	Unacceptable

Table continued overleaf.

Change in net financial returns from displaced/ avoided commodity production, or from increased costs[4] due to project			
< 10% reduction	Low	Low	Low
10-20% reduction	Medium	Medium	Low
> 20% reduction	High	High	Low
Competitive land uses in immediate vicinity (within 100 km radius)[5]			
Negligible net losses of agricultural land (e.g., conversion to settlement/ urban, other land uses)	Low	Low	Low
Discernible but limited (1-2%/ yr) net loss of agricultural land	Low-Medium	Low-Medium	Low-Medium
Significant (>2%/yr) net loss of agricultural land	Low-High	Low-High	Low-High
Incidence of crop failure from severe drought or insects/diseases			
Infrequent (< 1 in 10 yrs)	Low	Low	Low
Frequent (> 1 in 10 yrs)	Medium	Medium	Low
Project longevity			
Project plan and demonstrated commitment to long-term project maintenance (>40 yr)	Low	Low	Low
Short-term project commitment (20 to 40 years)	Low	Low	High

15. Table 5 below provides the default buffer withholding ranges associated with low, medium and high non-permanence risk classes for different ALM activities. Verifiers must use their expert judgement to determine the appropriate withholding percentage within each range based on whether the project is deemed to be at the low, medium or high end of a given risk class.

Table 5: Default buffer withholding percentages for ALM projects

ALM Risk Class	Improved cropland management	Improved grassland management	Cropland & grassland conversions
High	30-60%	25-50%	25-50%
Medium	15-30%	15-25%	15-25%
Low	10-15%	10-15%	10-15%

4 This risk factor only applies to activities whose financial viability is largely dependent on continued production of agricultural commodities. For example, land restoration activities or conservation set-asides in conjunction with NGOs or governmental entities may not be subject to these financial risks.

5 Relative risk ratings for competitive land uses will depend, in part, on ownership attributes, where commercial agricultural operations are likely to have higher risk in areas with competitive land uses and increasing land values, whereas land conservation activities (e.g., by NGOs, government) may have a low risk in spite of facing strong competition from other land uses. Other factors, e.g., proximity to urban development and landscape attributes, will also impact this risk factor, such that the risk analysis should consider competitive land uses in the context of project-specific circumstances.

III Improved Forest Management (IFM)

16. To assess IFM project risks the risk ratings listed in Table 6 shall be assigned.

17. In the case of IFM projects, the factor with the highest rank determines the project's overall risk rating and shall be used to determine the required buffer.

Table 6: Risk factors applicable to IFM projects

Risk factors	Conventional to Reduced Impact Logging (RIL)	Convert logged to protected forest (LtPF)	Extend rotation age (ERA)	Conversion of low-productive forests to high-productive forests (LtHP)
Devastating fire potential				
Low to medium fire return interval (> 50 years)	Very low	Low to Medium	Very low to Low	Low
High fire return interval (< 50 years)…	Low	Low to Medium	Low to Medium	Low to Medium
…with fire prevention measures such as fuel removal, fire breaks, fire towers, fire fighting equipment				
…with NO significant fire prevention measures in place	High	High	High	High
High timber value				
Highly valuable species on site, with strong likelihood that the timber value increases over time and…				
…there is no forest certification	Low	Medium	Very low to Low (if extend rotation ≤5 yrs)	Medium
…the project is certified by a recognized forest certification company	Very low	N/A	Very low for any extension period	Low
Illegal logging potential				
Presence of illegal logging in area (location and intensity in relation to the project area affects actual risk value)…				
…with forest guards	Zero[6]	Low	Very low	Low
…without forest guards	Low with no change in harvest intensity* and medium with change in harvest intensity (as potentially more timber to harvest illegally)	High	Low	Medium
Unemployment potential				
Alternative livelihood opportunities for local workforce to mitigate risk of unemployment:				
Few	Very low to Low -because expect no change in labor needs	Medium to High	Low (extend rotation ≤5 yr or >5 yr), because expect no change in labor needs	Very low to Low -because expect no change in labor needs
Many	Very low	Low	Very low	Very low

6 "Zero" risk does not indicate there is "no effect" but rather that there is no difference between the baseline and project scenario.

18. Table 7 below provides the default buffer withholding ranges associated with low, medium and high non-permanence risk classes for different IFM activities. Verifiers must use their expert judgement to determine the appropriate withholding percentage within each range based on whether the project is deemed to be at the low, medium or high end of a given risk class.

Table 7: Default buffer withholding percentages for IFM projects

IFM Risk Class	Conventional to RIL	Convert logged to protected forest	Extend rotation age	Conversion of low-productive forests to high-productive forests
High	40-60%	40-60%	40-60%	40-60%
Medium	15-40%	15-40%	15-40%	15-40%
Low	10-15%	10-15%	10-15%	10-15%

IV Reducing Emissions from Deforestation and Degradation (REDD)

19. To assess REDD project risks the risk ratings listed in Table 8 shall be assigned.

20. When determining the overall non-permanence risk rating for the project, verifiers shall weigh all the risk factors together. However, certain risks may be significant enough that their individual rating determines the project's overall risk rating, no matter what the project scored on other risk dimensions.

21. Projects rated "high risk" across three or more of the most significant risk criteria (shown in bold in the table below) are not considered acceptable from an overall risk perspective, and are not eligible for VCS crediting.

Table 8: Risk factors and risk ratings applicable to REDD projects

Risk factor	Risk rating for APD	Risk rating for AFUDD and AUMDD
Land ownership / land management type		
Land owned by private or public forest conservation organization with a good track record in forest conservation activities and able to obtain and enforce nationally recognized legal protection of the land	Very low	Very low
Privately owned land	Low-Medium	Low-Medium
Uncertain land tenure	Not applicable	Medium-High
Land legally protected	Not applicable	Low-Medium
Land not protected by laws or protected with weak enforcement	Medium	Medium-High
Technical capability of project developer/implementer		
Proven capacity to design and successfully implement activities that are likely to ensure the longevity of carbon benefits (e.g., creating sustainable livelihood alternatives and/or effectively managing protected areas)	Very low	Very low
No previous experience in the design and implementation of activities that may ensure the longevity of carbon benefits	Medium	Medium-High

Table continued overleaf.

Net revenues/financial returns from the project to ALL relevant stakeholders (e.g., project developer, deforestation agents, national to local governments)		
Lower than pre-project or lower than alternative land-uses	• Low if project developer a conservation group • Medium to **high** for other developer types	• Low if project developer a conservation group • Medium to **high** for other developer types
Similar to pre-project or similar to alternative land-uses	• Low if project developer a conservation group • Medium for other developer types	• Low if project developer a conservation group • Medium for other developer types
Higher than pre-project or higher than alternative land-uses	Very low	Very low
Infrastructure and natural resources		
High likelihood of new road(s)/rails being built near the REDD project boundary	Low-Medium	Medium-**High**
Low likelihood of new road(s)/rails being built near the REDD project boundary	Very low	Low
High-value non-forest related natural resources (oil, minerals, etc.) known to exist within REDD project area	Low to High depending on who owns the project lands and their mission (private company or conservation organization) and who owns (or is likely to own in the future) the mining right if separate from land ownership	Low to High depending on who the project developer is and their mission (private company, indigenous group, conservation organization) and who owns (or is likely to own in the future) the mining rights
High hydroelectric potential within REDD project area?	Same as above	Same as above
Population surrounding the project area		
Decreasing or increasing, but with low population density (e.g., <50 people/km^2)	Very low	Low
Stable and medium-high population density (e.g., 50-150 people/km^2)	Very low	Low
Increasing and high population density (e.g., >150 people/km^2)	Low to medium	Medium to High
Incidence of crop failure on surrounding lands from severe droughts, flooding and/or pests/diseases		
Infrequent (<1 in 10 years)	Very low	Low
Frequent (>1 in 10 years)	Low	Medium-High
Project financial plan		
Credible long-term financial strategy in place (e.g., endowment, annuity-paying investments, and the like)	Low	Low
Credible long-term financial strategy absent	Medium	High
Legal easement for ongoing protection tied to land title in place	Very low	Very low

22. Table 9 below provides guidance for verifiers to use when determining the appropriate buffer size for any given REDD project based on its risk class. Specifically, the ranges listed indicate the percentage of a project's carbon credits that are to be withheld as a buffer reserve.

Table 9: Default buffer withholding percentages for REDD projects

Risk Class	Avoided Planned Deforestation (APD)	Avoided Unplanned Frontier Deforestation & Degradation (AUFDD)	Avoided Unplanned Mosaic Deforestation & Degradation (AUMDD)
High	20-30%	25-35%	30-40%
Medium	10-20%	10-25%	10-30%
Low	10%	10%	10%

Step 2: Deposit the appropriate amount of credits into the AFOLU Pooled Buffer Account[7]

23. According to this risk rating, the appropriate percentage of carbon credits shall be withheld. Such credits cannot be traded and will be held in the AFOLU Pooled Buffer Account.

24. Future verification of AFOLU projects that have generated VCUs in the past is optional. However, any subsequent verification of a VCS AFOLU project must take place prior to the expiration of its crediting period. As a result of such future verification a percentage of the carbon held in the buffer may be released if a project has demonstrated, over its longevity, the project's sustainability and ability to effectively mitigate risks.

25. The remaining credit balance of a project's buffer is automatically cancelled at the end of the project.

Step 3: Repeat the previous steps each time a project seeks VCS verification and adjust the project's buffer withholding accordingly.

26. If during a subsequent verification total to-date project emissions are shown to exceed the baseline emissions, or total to-date project emissions removals (from sequestration) are less than in the baseline scenario, then no future VCUs are issued to the project until the deficit is remedied. If VCUs were issued in previous verifications, an amount of buffer credits equivalent to the excess emissions or reduced sequestration shall be cancelled from the AFOLU Pooled Buffer Account. This necessity shall be indicated in the verification statement within the verification report.

27. If a project's overall risk rating remains the same or decreases from one verification event to the next, then every five years upon verification 15% of its total buffer reserve (including newly deposited credits from the current verification) shall be released[8] and made available for trading. If a project's risk rating increases from one verification event to the next, the total buffer reserve shall not be reduced.

28. If the project's risk rating decreases from one verification event to the next, then the new (lower) buffer withholding percentage shall apply to all credits generated to date by the project[9].

29. The remaining buffer credit balance associated with the project is automatically cancelled from the AFOLU Pooled Buffer Account at the end of the project.

7 For an entire description of the AFOLU Pooled Buffer Account methodology, see Program Guidelines.

8 When released, buffer credits will be cancelled and converted into VCUs and deposited into the registry account of the project and made available for trading.

9 In such cases, the project's buffer shall be reduced to reflect the lower "risk-assessed" withholding requirement in addition to the 15% "time-related" release (i.e., these two kinds of buffer reductions should be applied cumulatively).

APPENDIX A

Likelihood × Significance Methodology for Assessing AFOLU Project Risk

Both quantitative and qualitative risks can be calculated based on a systematic prediction of the likelihood and significance of a given impact (absolute risk). Certain management practices may help to reduce the absolute impact of a potential event. Therefore, a well-designed and implemented project may be able to reduce the project's overall risk classification.

This "risk likelihood × significance" approach provides project proponents and verifiers (together referred to as "assessors") with a consistent and holistic framework for assessing both quantitative and qualitative risk in an integrated manner and coming to a single overall risk classification of "low", "medium", "high" or "unacceptably high/fail".

If relevant expertise and sufficient project information exists, project risk ratings can be defined more directly based on the risk guidelines defined in the individual AFOLU project category sections found in the main body of this document. These aforementioned risk ratings integrate information on the above components of total risk (i.e., likelihood, significance and counter measures). This appendix outlines a project risk evaluation framework that assessors can use in those instances when direct assessment is not feasible/credible. The following approach can be used as an alternative or to supplement a more direct risk assessment.

Steps to apply risk likelihood × significance approach:

1. Projects using the "risk likelihood x significance" approach shall, at a minimum, be assessed against each risk factor listed for their respective project category, outlined in this document, to ensure that no key risk factors have been overlooked.

2. List any potential risks identified and classify them as quantitative or qualitative.

3. Assess the likelihood (that the risk occurs) and significance of the impact (the impact when it occurs) without management interference. This is referred to as an **absolute risk**.

4. The likelihood is the inverse of the average number of times the event has occurred over a period equivalent to the life span of the project (see box 1).

5. The significance of quantitative and qualitative risks are determined differently:

    a. The significance of quantitative risk is determined by the damage that the project would sustain if the event occurred and is expressed as a percentage of total carbon benefits (see box 2);

    b. The significance of qualitative risk is determined by assigning a relative rating of 0-3 (see box 3).

6. Identify and list strategies being employed by the project to mitigate identified risks and assess the quality of the management system to effectively implement the counter-measures (see box 4).

7. Calculate project-specific total quantitative and qualitative risks (see box 5).

8. Convert the calculated risk into one of the following risk classes: low, medium, high or unacceptably high/fail (see section 6).

9. The highest risk from the quantitative and qualitative assessment determines the buffer applied. For example, if a total quantitative risk is high and a total qualitative risk is medium, or vice versa, the project is considered overall high risk. The buffer withholding percentage is obtained from the guidance provided within each project category section of this document. Since this is a range for each risk class, the assessor has freedom to apply a higher or a lower buffer within this range, depending on the circumstances.

If available, steps 2 through 4 above can be replaced by a direct rating of risk according to the tables and guidelines provided under each of the AFOLU project category sections.

Box 1: Determination of LIKELIHOOD

If historical data are available, the likelihood is defined as the inverse of the average number of times the event has occurred over a period equivalent to the life span of the project.

If the frequency can only be "guestimated", the following guidelines can be used:

Frequency	**Likelihood**
[General rule	1/(frequency of event)]
Less than once during the life of the project	tends to 0.00
Once every 100 years	0.0100
Once every 50 to <100 years (1/75)	0.0133
Once every 20 to <50 years (1/35)	0.0286
Once every 10 to <20 years (1/15)	0.0667
Once every 5 to <10 years (1/7.5)	0.1333
Once every 1 and <5 years (1/3)	0.3333
Once per year	1.0000

Where the frequency of events cannot be predicted based on historical records or probabilities, the following scoring system is used:

Frequency	**Likelihood**
Zero likelihood of occurring or not applicable	0
An event likely to occur less than once during the project	0.05
An event likely to occur once or twice during the project	0.1
An event likely to occur several times during the project	0.25
An event likely to occur at least once a year	1

Box 2: SIGNIFICANCE: QUANTITATIVE RISK

The significance of a quantitative risk is determined by the damage that the project would sustain if the event occurred. This is calculated as the quantity of carbon benefits that would be lost (i.e., the reduction in the ability of the project to sequester or store carbon).

The impact is calculated as:

tonnes of carbon lost × likelihood × number of years that loss continues

For destructive events, the carbon benefits generated by the destroyed part of the project are assumed to be completely lost. In this case, the number of years that loss continues equates to the remaining lifespan of the project:

tonnes of carbon lost × likelihood × life span of the project

Box 3: SIGNIFICANCE: QUALITATIVE RISK

Where the risks relate to the project as a whole and the damage that the project would sustain cannot be expressed as a quantity of carbon benefits that would be lost, the significance is scored using the following guidelines:

Degree of impact	**Score**
Negligible impact	0
Damaging (a part of) one year's work programme	1
Damaging several year's work	2
Damage possibly leading to (almost) complete failure	3

The assessor has freedom to deviate from these guidelines if significance cannot be expressed in these terms. Example:

Shortage of labour	1 (low)
Shortage of income	3 (high)
Political instability	2 (medium)

Box 4: Scoring of RISK MITIGATION STRATEGY

The risk mitigation strategy includes the risk response and the adequacy of the system in which it is implemented. The approach to the assessment is shown in the following tables.

RATING OF RISK MITIGATION

Quality of mitigation efforts	**Score**
Failure to recognise potential risks and/or absence of countermeasures	0
Countermeasures developed but not implemented	1
Countermeasures implemented but inadequate for the situation	2
Countermeasures implemented and adequate for the situation	3
Countermeasures using best-practices and adapted to the specific risk	4

RATING OF RISK MITIGATION MANAGEMENT SYSTEM

Guidelines	**Score**
No evidence of systematic structure in identification of risk or in controlling implementation of countermeasures	0
Control activities implemented irregularly but no documentation or corrective actions	1
Controls for most countermeasures in place but poorly documented management system and no internal auditing	2
System for controlling countermeasures is in place and documented. Internal audits performed but no structures for review and feedback.	3
Documented management system in place with risks identified, targets for reducing them established, procedures and assigned responsibility, internal auditing, reviews, training	4
ISO or EMAS registered management system, (ISO 9000, 14001, EMAS) or equivalent	4

Box 5: Calculation of a TOTAL RISK

$R = L \times S \times (1 - (C \times M)/16)$[10]

Where:
R = Total risk,
L = Likelihood of occurrence,
S = Significance of impact,
C = Adequacy of countermeasures to avert or minimize risk,
M = Adequacy of management system.

Example: A risk factor is highly likely to occur once a year (likelihood 1) and is destructive (with a permanent loss of carbon, e.g., due to fire, without means to replant); $L \times S = 1$. If, however, the project has measures and good management practices in place to counter this risk, the total risk will be less than 1.

Section 6: Conversion of total risk into RISK CLASSES

Translating the risk assessment into a general risk class is based on a combination of quantitative risks (as a total percentage) and qualitative risks (as a set of scores).

1. The sum of the quantitative risks is converted into one of four risk classes.

Score (example[11])	**Risk Classification**
> 6.0	Fail
4.0 – 6.0	High
2.0 – 3.9	Medium
0 – 1.9	Low

If the indicated quantitative risk percentage exceeds the highest buffer withholding value available for the project type being assessed as indicated in the tables in Step 1 of Risk Tool, then the project is considered of unacceptably high risk and is not eligible for crediting under the VCS.

2. All individual qualitative risk calculations are converted into one of four risk classes.

Score	**Risk Classification**
2.8 – 3.0	Fail
2.0 – <2.8	High
1.0 – <2.0	Medium
0 – <1.0	Low

10 The product C × M is divided by 16 because the maximum scores for C and M are 4 and 4 respectively, and their product is 16.

11 Ranges (but converted to %) specific to individual project categories are provided in Step 1 of the Risk Tool.

Cover: Harvesting shade grown coffee near San Vito, Costa Rica.