ART
Architecture for REDD+ Transactions

THE REDD+ ENVIRONMENTAL EXCELLENCY STANDARD (TREES)

Architecture for REDD+ Transactions (ART) Program

JULY 2019

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ABOUT ARCHITECTURE FOR REDD+ TRANSACTIONS (ART) PROGRAM

The Architecture for REDD+ Transactions (ART) has been developed to achieve the environmental integrity needed for REDD+ emission reductions (ERs) at national and jurisdictional scale. ART provides a credible standard and rigorous process to transparently register, verify, and issue REDD+ emission reduction credits that ensure environmental and social integrity. ART aims to unlock new long-term financial flows to protect and restore forests.

ACKNOWLEDGEMENTS

The ART Secretariat would like to thank the ART Interim Steering Committee members who devoted considerable time in their personal capacities to support and guide the development of *The REDD+ Environmental Excellency Standard (TREES):* Lorenzo Bernasconi, Andreas Dahl-Jorgensen, Nat Keohane and Dan Zarin. We also appreciate the indispensable technical advice and input of members of the TREES Standards Committee, the TREES Verification Committee and the TREES Safeguards Committee.

ACRONYMS

ART	Architecture for REDD+ Transactions
COP	Conference of Parties
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CSI	Commercially Sensitive Information
ER	Emission Reduction
ESG	Environmental, Social, and Governance
ESMF	Environmental Social Management Framework
ESMS	Environmental Social Management System
ETS	Emissions Trading Scheme
FCPF	Forest Carbon Partnership Facility
FPIC	Free, Prior, and Informed Consent
GCF	Green Climate Fund
GFOI	Global Forest Observations Initiative
GHG	Greenhouse Gas
GIS	Geographic Information System
GOFC-GOLD	Global Observation for Forest and Land Cover Dynamics
GWP	Global Warming Potential
HFLD	High Forest Cover/Low Deforestation
IAF	International Accreditation Forum
ICAO	International Civil Aviation Organization
IPCC	Intergovernmental Panel on Climate Change
NDC	Nationally Determined Contribution
NFMS	National Forest Monitoring System
NGO	Non-Governmental Organization

QA/QC	Quality Assurance/Quality Control
SIS	Safeguard Information System
SOP	Standard Operating Procedure
TREES	The REDD+ Environmental Excellency Standard
TVR	TREES Verification Report
UNFCCC	United Nations Framework Convention on Climate Change

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1 INTRODUCTION

1.1 DESCRIPTION OF ART PROGRAM AND TREES STANDARD

The purpose of the Architecture for REDD+ Transactions (ART) is to promote the environmental and social integrity and ambition of greenhouse gas (GHG) emission reductions (ERs) and removals from the forest and land use sector to catalyze new, large-scale finance for REDD+ and to recognize forest countries that deliver high-quality REDD+ emissions reductions and removals.

The ART has adopted the following statement of Immutable Principles to govern its operation:

"The ART shall…

1. Recognize countries with quantifiable ERs that result from slowing, halting, and reversing forest cover and carbon loss and maintaining forest carbon stocks;
2. Be consistent with United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) decisions including the Paris Agreement, Warsaw Framework for REDD+, and the Cancun Safeguards, which establish environmental, social, and governance principles countries are expected to uphold when undertaking REDD+ activities, in particular to ensure the recognition, respect, protection, and fulfillment of the rights of indigenous peoples and local communities.
3. Embody high environmental integrity, which includes accounting for the uncertainty of data and the risks of leakage and reversals, the avoidance of double counting, and result in issued units that are interchangeable with ER units from other sectors;
4. Promote national ambition and contribute to Paris Agreement goals including progress toward the fulfillment of Nationally Determined Contributions (NDCs);
5. Credit ERs at the national level or subnational level as a time-bound interim measure only where it represents high ambition and large scale and is recognized as a step toward national-level accounting; and
6. Set crediting baselines for deforestation and degradation that initially reflect historical emission levels and thereafter decline periodically to require higher ambition over time."

The REDD+ Environmental Excellency Standard (TREES) sets out ART requirements for the quantification, monitoring, and reporting of GHG ERs; demonstration of implementation of the Cancun Safeguards; and verification, registration, and issuance of ERs. TREES has been designed to ensure that all ART credits issued are real, measured, permanent, additional, net of leakage, verified by an accredited independent third party, and are not double counted. As a

result, ART credits will represent the highest quality while still allowing flexibility for implementation of REDD+ programs at a national level or subnational as an interim measure.

An Interim Steering Committee (ISC), working with Winrock as Secretariat, guided the initial establishment of ART and the development of TREES. The ISC members served in their individual capacities. A number of expert Technical Committees have provided input to the development of the TREES Standard.

1.2 ART GOVERNANCE

ART will be governed by the ART Board and managed by the ART Secretariat.

THE ART BOARD

The ART Board is responsible for:

- Approving the TREES Standard, TREES Validation and Verification Standard and future Standard version or revisions
- Approving issuance of emission reduction credits
- Making final decisions on disputes

The ART Board is comprised of members serving in their individual capacities and operates in accordance with the ART Board Charter.

THE ART SECRETARIAT

The ART Secretariat is responsible for:

- Drafting, maintaining, and revising Standards for ART Board approval
- Developing documentation templates and guidance documents
- Convening technical committees as deeemed necessary by the ART Board
- Conducting desk reviews to assess eligibility and compliance of Participants requesting admittance into ART and approving admittance into ART
- Overseeing independent verification
- Reviewing Participants' monitoring reports and third-party verification documents
- Making recommendations to the ART Board on issuance of credits
- Developing and maintaining the ART Registry and website

1.2.1 Development Process for the TREES Standard

The TREES Standard and TREES Validation and Verification Standard were developed with support and input from three expert committees:

- The TREES Standards Committee
- The TREES Verification Committee
- The TREES Safeguards Committee

The Committees were composed of appointed independent experts with deep understanding and knowledge of REDD+, each serving in a personal capacity. Committee members provided expert advice and guidance for development of TREES; however, the Standard does not reflect consensus opinions of the committees or necessarily the opinions of individual committee members.

1.2.2 Adoption of and Revisions to the TREES Standard

The ART Secretariat and ART Board will conduct a review of the TREES Standard at a minimum of every three years and update the Standard if deemed necessary, including input from technical expert committees and stakeholders as well as relevant decisions of the UNFCCC.

The ART Secretariat will solicit broad stakeholder input to the TREES Standard and any revisions through a public comment period. The TREES Standard will be posted publicly for stakeholder review and consultation for at least 60 days prior to adoption. The ART Secretariat will prepare responses to submitted comments and post the comments and responses along with the approved version of the Standard.

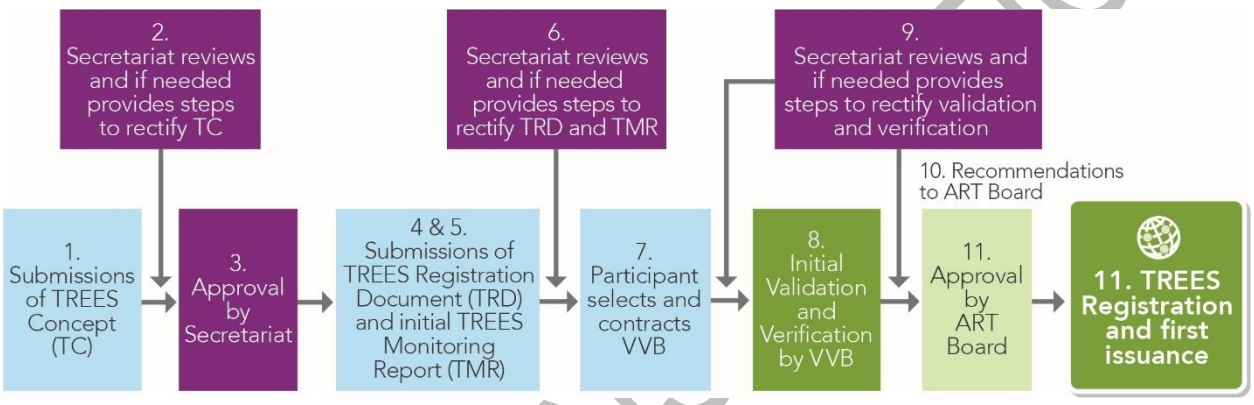
1.3 CONFLICT OF INTEREST

To ensure all ART Board members and the ART Secretariat are held to the highest standards for ethics and professional conduct and for avoidance of conflicts of interest, ART Board members and Secretariat staff shall be subject to the ART Ethical Standards. The ART Secretariat is also subject to the Conflict of Interest policy as detailed in Winrock's Code of Conduct. Each ART Board member and ART Secretariat member are required to regularly affirm in writing that they are in compliance with this policy, that they disclose, avoid and mitigate all Conflicts of Interest, and that they take reasonable action to avoid circumstances that create the appearance of a Conflict of Interest. ART Board and Secretariat members are required to notify the Winrock Chief Ethics and Compliance Officer immediately if any Conflict of Interest situations arise or come to their attention, so the conflict can be appropriately mitigated. The Officer will consider any mitigation proposed and will make a recommendation to the ART Board for the Board's action.

In addition to its internal Conflict of Interest policy, ART requires that all approved Validation and Verification Bodies meet Conflict of Interest requirements described in the TREES Validation and Verification Standard, and that they execute an Attestation of Validation and Verification Body, which includes detailed and comprehensive Conflict of Interest provisions. ART-approved Validation and Verification Bodies must also execute a Participant-specific TREES Validation and Verification Conflict of Interest Document for each reporting period verified, which the ART Secretariat reviews and approves.

2 ART CYCLE

2.1 PROCESS FOR INITIAL REGISTRATION, VALIDATION, VERIFICATION, AND ISSUANCE



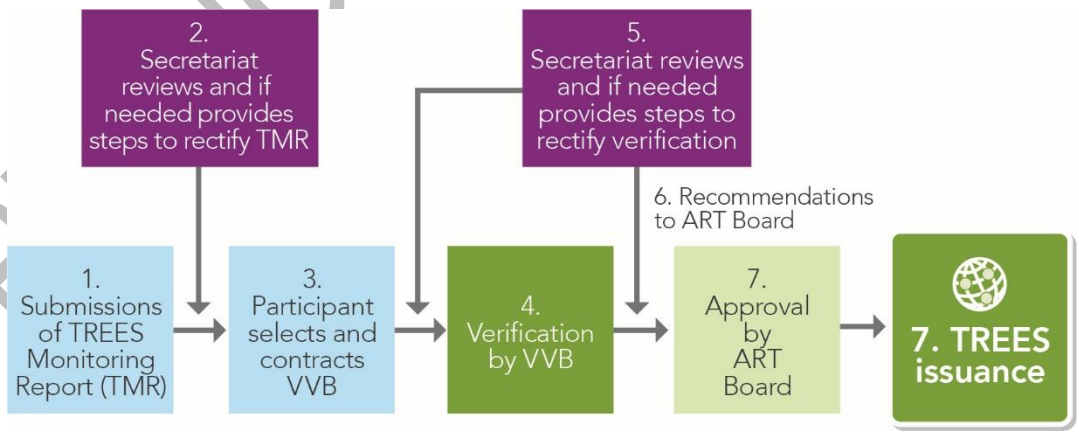
The process to enter TREES requires approval of a TREES Concept, a successful initial Validation and Verification, and TREES Registration. An applicant shall be a national government entity in accordance with the requirements set forth in Section 3 and will hereafter be referred to as a TREES Participant. Each TREES Participant shall complete the following steps prior to receiving credits.

1. The proposed TREES Participant submits a TREES Concept to the Secretariat for review. The TREES Concept includes information listed in Annex A.
2. The Secretariat reviews the TREES Concept for completeness and will request revisions as needed.
3. The Secretariat approves the inclusion of the Participant in ART.
4. Following approval, the proposed TREES Participant is listed in the ART Registry as a Proposed TREES Participant.
5. The Proposed TREES Participant submits the TREES Registration Document and the initial TREES Monitoring Report covering the initial calendar year to the Secretariat for a completeness check. The TREES Registration Document and the TREES Monitoring Report include information listed in Annex A.
6. The Secretariat reviews the TREES Registration Document and TREES Monitoring Report for completeness and will request revisions as needed. The Secretariat then

approves the TREES Registration Document and TREES Monitoring Report for validation and verification.

7. The Proposed TREES Participant selects an approved TREES Validation and Verification Body from the list of approved ART Validation and Verification Bodies maintained on the ART website. The Participant solicits bids and negotiates contracts directly with the selected Validation and Verification Body. The selection process will include a disclosure of conflicts of interest and mitigation measures, if conflicts are identified.
8. The Validation and Verification Body conducts the validation of the TREES Registration Document and the verification of the TREES Monitoring Report in line with the requirements of Section 14 of this Standard and the TREES Validation and Verification Standard.
9. The Validation and Verification Body submits the Validation and Verification Report and Verification Statement to the Secretariat who reviews the documents to ensure completeness. The Secretariat will request revisions as needed.
10. The Secretariat submits the Proposed TREES Participant's final package and a recommendation to the ART Board for approval.
11. Following ART Board approval, the Proposed TREES Participant is listed in the ART Registry as a TREES Participant and ART credits are issued based on the initial verification. If the Participant has demonstrated conformance with the High Forest Cover/Low Deforestation (HFLD) definition, credits issued will be tagged as HFLD credits.

2.2 PROCESS FOR ONGOING VALIDATION, VERIFICATION, AND ISSUANCE



1. The TREES Participant submits a TREES Monitoring Report to the Secretariat for review following calendar years 1, 3, and 5 of each crediting period. A TREES Monitoring Report may optionally be submitted in years 2 and 4 as outlined in Section 14. At the start of each new crediting period, an updated TREES Registration Document must also be completed and submitted by the TREES Participant. The revised TREES Registration Document is then also included in all following steps and is validated rather than verified.
2. The Secretariat reviews the TREES Monitoring Report for completeness. The Secretariat then approves the TREES Monitoring Report for verification.
3. The TREES Participant selects an approved TREES Validation and Verification Body from the list of approved ART Validation and Verification Bodies maintained on the ART website. The Participant solicits bids and negotiates contracts directly with the selected Validation and Verification Body. The selection process will include a disclosure of conflicts of interest and mitigation measures, if conflicts are identified.
4. The Validation and Verification Body conducts the verification of the TREES Monitoring Report in line with the requirements of Section 14 of this Standard and the TREES Validation and Verification Standard. If required, the Validation and Verification Body also conducts a validation of the revised TREES Registration Document in line with the requirements of the TREES Validation and Verification Standard.
5. The Validation and Verification Body submits the Verification Report and Statement and, if required, the Validation Report to the Secretariat who reviews the documents for completeness. The Secretariat will request revisions as needed.
6. The Secretariat submits the TREES Participant's final package and its recommendation to the ART Board for approval.
7. Following ART Board approval, ART credits are issued based on the verification. If the Participant has demonstrated conformance with the HFLD definition, credits issued will be tagged as HFLD credits.

2.3 CREDITING PERIOD AND RENEWAL

The crediting period under TREES shall be five years. The initial crediting period may begin up to four years prior to the TREES Participant's submittal date of the TREES Concept Note but may not overlap with the historical reference period used to determine the initial Crediting Level. All subsequent crediting periods shall begin on the date following the end date of the previous crediting period.

The crediting period renewal process occurs as outlined in Section 2.2. The TREES Participant shall submit a revised TREES Registration Document for validation following the first year of a new crediting period, along with its Year 1 TREES Monitoring Report for verification. The Crediting Level shall be recalculated in accordance with Section 5.

2.4 DOCUMENTATION REQUIREMENTS

TREES Participants shall use the latest version of the template for each of the seven documents listed below when submitting documents to the ART. Revised templates will be published three months prior to their due date and version updates will not be required once a document has been submitted to the Secretariat or Validation and Verification Body.

Templates of all forms are available on the ART website. All sections of the template must be completed. In some instances, an alternative form of reporting may be acceptable for certain portions of the requirements to prevent a TREES Participant from duplicating efforts. Approved exceptions are noted in the templates and when appropriate, a reference to the alternative reporting may be included.

The TREES documents are:

1. TREES Concept
2. TREES Registration Document
3. TREES Monitoring Report
4. TREES Validation and Verification Conflict of Interest Document
5. TREES Validation Report
6. TREES Verification Report
7. TREES Variance Request Form

A summary of the information required in each is provided in Annex A. Instructions and additional information are included in each document template.

2.5 TIMELINE AND DEADLINES

Proposed TREES Participants may submit the TREES Concept at any time. The Secretariat shall acknowledge receipt of the documentation. The Secretariat will then conduct a desktop review of the TREES Concept and either approve the documentation or provide a request for revision within 20 business days of receipt.

Within 15 business days of receiving complete documentation of eligibility, the Secretariat will present the Participant to the ART Board for approval to be admitted to ART. The ART Board will request additional information or approve the Participant at the next possible quarterly Board meeting.

Following ART Board approval, the Proposed TREES Participant may submit the TREES Registration Document and initial TREES Monitoring Report. The initial TREES Monitoring Report may cover multiple years if the Proposed TREES Participant submits a TREES Concept

with a start date prior to the year of submission. In all cases, each TREES Monitoring Report shall document ERs allocated to each calendar year.

Subsequent TREES Monitoring Reports shall be submitted within twelve months following years 1, 3, and 5 of each crediting period and shall document one calendar year or two calendar years. TREES Monitoring Reports may optionally be submitted following years 2 and 4 of the crediting period.

Upon submission of the Participant's documentation, the Secretariat will conduct a desktop review of the TREES Reporting Document or TREES Monitoring Reporting and either approve the documentation as complete or provide a request for revision within 20 business days of receipt.

The TREES Validation and/or Verification Report and TREES Verification Statement must be submitted to the ART Secretariat within 12 months of the kickoff of the validation or verification unless an extension is granted in writing. Validation and verifications will follow the process outlined in Section 14.

Upon receipt of the TREES Validation and/or Verification Report and TREES Verification Statement, the Secretariat will conduct a desktop review of the documents and either approve the documentation as complete or provide a request for revision within 40 business days.

The Secretariat will present a recommendation to the ART Board for issuance of credits to Participants. The ART Board will request additional information or approve the credit issuance at the next possible quarterly Board meeting.

3 ELIGIBILITY/APPLICABILITY/KEY REQUIREMENTS

3.1 ELIGIBLE ENTITIES

TREES Participants shall be national governments.

3.1.1 Subnational accounting area

(Note: Background information regarding this section is provided in Annex C: Secretariat notes for public comment period *to provide context for readers during the public comment period.)*

During an interim period through December 31, 2025, national governments may register subnational accounting areas as a recognized step to national-level accounting. After the interim period, accounting shall be at a national level.[1]

Where subnational accounting areas are registered:

- The boundaries of subnational accounting shall correspond with one or several administrative jurisdictions no more than one level down from national level; AND
- Subnational accounting areas shall
  - Encompass an area of at least 6 million hectares OR
  - Encompass an area of at least 4 million hectares AND represent at least 30% of the national forest area; AND
- The TREES subnational accounting area shall include all forested areas[2] within the boundaries of the participating subnational jurisdiction(s); AND
- Legal responsibility for policy-making specific to forests shall rest with subnational governmental authority(ies) or be shared between such authorities and the national government.

3.1.2 National reporting requirements

TREES Participants shall include forests in their NDCs[3] and submit annual UNFCCC Summary of Information reports.

[1] Defined as ≥90% of all areas in the country qualifying as forest under the national forest definition as described in Section 3.5.
[2] Defined as areas qualifying as forests under the national forest definition as described in Section 3.5.
[3] Forests must be included as part of the overall NDC target. A specific NDC target for forests is not required.

3.2 ELIGIBLE ACTIVITIES

(Note: Background information regarding this section is provided in Annex C: Secretariat notes for public comment period *to provide context for readers during the public comment period.)*

TREES will quantify the GHG ERs below the crediting level associated with the prevention or slowing down of deforestation and emissions associated with forests remaining forests[4]. Emission removals associated with reforestation, afforestation, enhancement of forest carbon stocks, or improved forest management are not eligible for crediting under this version of TREES. Quantification of emission removals may be included in a future version of TREES, consistent with UNFCCC rules, and only for countries that have achieved low levels of deforestation and/or are reducing deforestation such that removals are complementary to and go beyond reducing deforestation and are not a substitute for reduced deforestation. It is anticipated that removals will only be rewarded for results below the crediting level for deforestation and forest degradation.

Each TREES Participant shall submit a REDD+ implementation plan as part of the initial documentation and each subsequent TREES Monitoring Report which outlines the programs or activities including locations planned to achieve the ERs. It is expected that the implementation plan will be the National REDD+ Strategies/Action plan submitted to the UNFCCC in accordance with the Warsaw Framework. If a different implementation plan is submitted under TREES, the Participant must explain any differences between the two plans. In the case when a Participant is using a subnational accounting area, the Participant must specify which REDD+ interventions from its National REDD+ Strategies/Action Plan are relevant to the subnational accounting area.

3.3 HIGH FOREST COVER/LOW DEFORESTATION COUNTRIES

(Note: Background information regarding this section is provided in Annex C: Secretariat notes for public comment period *to provide context for readers during the public comment period.)*

Countries with high forest cover and low rates of deforestation (HFLD) as defined in Section 9 may demonstrate that they meet this criterion and subsequently have all verified ERs tagged with a HFLD label in the ART Registry.

This is an interim approach pending further determination of a robust method to credit HFLDs beyond historic levels, for continued low deforestation. It is the intent of ART to establish a robust approach to explicitly address this category and credit HFLDs in a manner consistent and fungible with credits from other REDD+ activities or other carbon markets.

[4] This IPCC language is used to capture both forest degradation and emissions from forest management and to allow for differences in definitions between countries.

3.4 ADDITIONALITY

Additionality will be ensured by issuing only ERs that are below the TREES Crediting Level. Only reported emission performance that is verifiably better than the TREES Crediting Level will be eligible for receiving emission reduction credits. Further, once countries have emissions accounted under this Standard in their Nationally Determined Contributions (NDCs), transferred GHG reductions from this sector (to another Party for use toward its NDC or to a non-Party, such as a voluntary buyer, an airline or a capped entity, for use toward ER targets) must be adjusted to avoid double claiming between NDC accounting and ART ER transactions per requirements in Section 13.

3.5 FOREST DEFINITION

The forest definition or definitions listed in the TREES Registration Document must be consistent with the most recent definition used by the national government in reporting to the UNFCCC.

3.6 NO EX-ANTE CREDITING

ART will not issue TREES credits for ERs that have not yet occurred or that have not yet been verified by a TREES-approved Validation and Verification Body.

3.7 REGULATORY COMPLIANCE

In each TREES Monitoring Report, TREES Participants must attest that REDD+ activities conducted as part of the Participant's REDD+ implementation plan to achieve ERs are in compliance with applicable laws and regulations. Any known instances of non-compliance or violations with laws, regulations, or other legally binding mandates directly related to REDD+ activities must be disclosed in the TREES Monitoring Report along with corrective or preventive plans or actions.

3.8 EARLIEST CREDITING PERIOD START DATE AND VINTAGE

Participants may claim ART credits for emissions reductions that occurred up to four calendar years prior to the submittal of the TREES Concept, provided all other requirements under TREES are met for each year of crediting.

4 CARBON ACCOUNTING

TREES requires alignment with the most recent Intergovernmental Panel on Climate Change (IPCC) Guidelines endorsed by the Conference of the Parties to the UNFCCC, except where other methods are explicitly allowed under the Standard.

IPCC Guidelines are not specific to the purpose of REDD+ related estimation/reporting and may not systematically provide a necessary level of detail or specification. Therefore, other sources for best practices should be referenced.[5]

Participants must demonstrate that all carbon estimation and quantification approaches conform with best practices for all matters. Details of each method, including an explanation of why the method was selected for use, must be provided in the TREES Registration Document, and any updates to measurements and methods must be detailed in the TREES Monitoring Report.

ART requires TREES Participants to calculate GHG reductions based on the 100-year Global Warming Potentials (GWPs) in the IPCC Fifth Assessment Report.[6]

4.1 ACCOUNTING REQUIREMENTS

Following IPCC guidelines, GHG emissions for a given period shall be the product of activity data multiplied by emission factors, such that

$$\text{Greenhouse Gas Emissions (t } CO_2\text{e)} = \text{Activity Data (units of activity)} \times \text{Emission Factor } \left(\frac{\text{t } CO_2\text{e}}{\text{unit of activity}}\right)$$

Calculations shall use IPCC approach 2/3 for representing land-use areas. Only anthropogenic emissions shall be considered, and IPCC guidance shall be adhered to on separating anthropogenic and non-anthropogenic emissions.

4.1.1 Activity Data

Activity data may be derived from remote sensing data or from verifiable ground-derived data. Activity data must be reported in each TREES Monitoring Report at the intervals specified in Section 2.5. All activity data must be obtained using replicable approaches that are verifiable,

[5] For example, see GOFC-GOLD REDD Sourcebook, The Sourcebook for Land Use, Land Use Change, and Forestry Projects, and The Global Forest Observation Initiative Methods and Guidance.

[6] Pachauri, R. K., L. A. Meyer, et al. 2014. Climate Change Synthesis Report, 151. Contribution of Working Groups I, II, and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva: IPCC.

and all Standard Operating Procedures must be described in the TREES Registration Document and made available to the Validation and Verification Bodies.

Quality assurance shall result from the implementation of hot, cold, and blind checks.[7] Blind checks shall derive measurement and data entry errors.

Where activity data are sourced from remote sensing, there are a number of stipulations, including:

- Activity data should be derived from reference data stratified by a forest area change map using a peer-reviewed method,[8, 9] i.e., area estimates should be obtained through stratified area estimation.
- Resulting area estimates and confidence intervals should be reported, choices made in the sampling, and response design (e.g., sampling design, use of a buffer, sample size, and labeling protocol) should be reported in detail, and the quantity and deviations from the stratified random sampling design should be reported.
- For the reference data, at least three interpreters should be used for the reference data, where majority agreement is used for the final reported data. Interpretation disagreement should be reported, and the locations, map classification and interpreter classification of the sample data should be shared for verification purposes.
- The map used for the stratified area estimation should be created through direct change detection. It should be visually inspected, and obvious errors should be corrected before applying the stratified area estimation.
- The focus under TREES is the GHG associated with land cover changes; however, for deforestation *land use,* change is the emphasis and methods shall demonstrate that recorded deforestation is associated with land use change.
- Remote sensing must consider seasonality, cloud cover, and data gaps for consistency and precision in timing at each reporting period.
- The minimum mapping unit for remote sensing imagery must enable tracking forest and land-use changes at the detail required by the forest definition; deviations will be expected to create systematic errors that must be duly quantified.
- Analyses must identify cyclical systems such as timber or tree crop harvest rotations and shifting cultivation/fallow systems such that deforestation (or emissions following temporary tree clearing for tree harvest systems) from these activities is not counted more than one time. That is, the first conversion in such a cyclical system will be calculated, net of post-harvesting regrowth; any subsequent increases or decreases in canopy cover or tree stocks

[7] During a hot check, auditors observe members of the field crew during data collection (this is primarily for training purposes). Cold checks occur when field crews are not present for the audit. Blind checks represent the complete remeasurement of a plot. Hot checks allow the correction of errors in techniques (Pearson et al., 2007).

[8] See: Global Forest Observations Initiative (GFOI) methods and guidance. www.gfoi.org/method-guidance/.

[9] For example: Olofsson, P. et al., 2014. Good practices for assessing accuracy and estimating area of land change. Remote Sensing of Environment 148

during harvesting cycles—short of permanent reforestation—shall not be accounted in activity data reporting.

- All new approaches must be subjected to review at the verification that follows the update.

Where activity data result from ground-derived data—including official industry or government records and statistics (e.g., harvested volumes)—information used is subject to verification, and a quantified estimate of uncertainty must be derived and reported.

4.1.2 Emission Factors

Emission factors are the GHG emissions per unit of activity data. Emission factors and components of emission factors can be derived from several data sources including on-the-ground plot measurements and inventories, remote sensing-based approaches, use of models and, where allowable, use of Tier 1 and other default factor-based approaches. All methods used shall be justified and sufficiently detailed in the TREES Registration Document to allow replicability during verification.

Under TREES, IPCC Tier 1 methods and defaults may only be used for secondary pools and gases (in Section 4.5), or to estimate post emission carbon stocks[10] and to estimate emissions resulting from *minor* activities (considered to be any activity contributing an equivalent of less than 3% of reported emissions; see Section 4.4).

Models and equations may be used where justified, shall be peer-reviewed, demonstrated to be applicable to the specified use/geographical region, and must adhere to Tier 2 and Tier 3 methods.

The TREES Monitoring Report must provide descriptions of the methods used to establish emission factors, with sufficient details to enable replication by a verifier. This includes:

- SOPs for all measurements, calculations, and sample designs
- Verifiable training procedures
- Quality Assurance/Quality Control (QA/QC) procedures for all measured data (including hot, cold, and blind checks)[11]

Post-emission event removals need not be tracked year-by-year; instead, the average post-emission carbon stock can be used when establishing emission factors. In cases where the post-deforestation land use includes periodic harvest cycles (e.g., timber rotation harvests, crop harvests, or shifting agriculture/fallow systems) the time averaged carbon stock should be used

[10] Post deforestation and non-forest stocks may be derived from literature sources or direct measurements.

[11] During a hot check, auditors observe members of the field crew during data collection (this is primarily for training purposes). Cold checks occur when field crews are not present for the quality control. Blind checks represent the complete remeasurement of a plot. Hot checks allow the correction of errors in techniques (Pearson et al., 2007).

to capture one full rotation. In cases where the national forest inventory uses annualized accounting of post-deforestation carbon stock changes, the same approach shall be used under TREES. In instances where the post-deforestation land use carbon stock is higher than the pre-deforestation carbon stock, there can be no crediting for the net sequestration. Instead the emissions shall be treated as zero.

Except for the case of peat soils, where emissions do not occur immediately but instead occur over time (e.g., decomposition of dead wood), then all emissions can be taken immediately at the time of the activity data for the purpose of simplified accounting.[12] For peat soils registering participants must present a methodology for tracking emissions through time both for the crediting level and during reporting periods.

Emission factors shall be reevaluated and where necessary updated every five years in line with Crediting Level updates.

Inclusion of Errors

- Measurement errors shall be derived from the blind QA/QC checks and reported.
- Sampling errors shall be reported.
- QA/QC procedures shall be applied to data entry with blind checks used to identify and report data entry error.

4.2 STRATIFICATION

When stratification is employed, TREES Participants shall:

- Document the stratification criteria and procedure in the TREES Monitoring Report
- Document the procedure for updating the stratification over time
- Maintain records of stratification work and any changes made over time, including maps and relevant files

4.3 LAND-BASED VERSUS ACTIVITY-BASED ACCOUNTING

Both land-based and activity-based accounting are accepted under TREES.

For activity-based accounting, Participants must demonstrate that no potentially significant source of emissions has been overlooked (see Section 4.4).

For land-based accounting, Participants must have in place the means to add new forest areas (specified in stratification plans) where reforestation is occurring in the country (outside current

[12] For harvested wood products the extracted timber would be considered an immediate.

TREES accounting) in order to capture any future emissions from areas that have regenerated after initial registration.

Uncertainty analyses must be able to determine the uncertainty associated with both activity data and emission factors for both land-based accounting and activity-based accounting.

4.4 SCOPE OF ACTIVITIES

TREES incorporates accounting for emissions from forestland (deforestation, forest degradation and emissions from forest management). As stated in Section 3.2, accounting of removals is planned for a later version of the TREES Standard.

Emissions across activities shall be summed.

Emissions from forests remaining forests must be included unless exclusion can be demonstrated to be conservative. This may occur where it can be demonstrated that annual emissions from forests remaining forests are higher in the prior five years than will occur under the current TREES crediting period. A new analysis shall be conducted at the start of each crediting period.

Emissions from forests remaining forests can also be excluded where emissions total < 10% of reported deforestation emissions (and should remain <10%) for the entire crediting period. In cases where activity-based analysis is conducted, individual forest emission activities (e.g., timber harvest or fuel wood collection) can be excluded where considered minor, such that Tier 1 estimation of emissions are < 3% of reported deforestation emissions during both reference and crediting period as long as the sum of excluded activities remains < 10% of reported deforestation emissions. The estimates used in this justification shall be updated at the beginning of each crediting period to demonstrate leakage is not occurring. If reported emissions indicate an increase in an activity that was excluded in the initial reference level, the activity must be added to the TREES Crediting Level at the next update as described in Section 5.3.

4.5 SCOPE OF POOLS AND GASES

The pools under TREES are:

PRIMARY	Aboveground live tree biomass	*part of IPCC - AGB*
	Soil organic matter (when histosols – e.g., peat)	*part of IPCC - SOM*
SECONDARY	Belowground live tree biomass	*part of IPCC - BGB*
	Standing dead wood	*part of IPCC - DW*
	Down dead wood	*part of IPCC - DW*

	Litter/forest floor	*IPCC - L*
	Non-tree live biomass	*part of IPCC - AGB*
	Soil organic matter (non-histosols)	*part of IPCC - SOM*

IPCC carbon pool categories given for the purpose of cross-walking. AGB – above-ground biomass; BGG – below-ground biomass; DW – dead wood; L – litter; SOM – soil organic matter.

Pools not listed here are excluded, including for example harvested wood products.

The gases under TREES are:

PRIMARY	Carbon dioxide (CO_2)
SECONDARY	Methane (CH_4)
	Nitrous oxide (N_2O)

Estimates of changes/emissions from the primary pools/gas must result from IPCC Tier 2/3 methods. All other pools and gases may be excluded where conservative OR where the associated emission is equivalent to less than 3% of emissions (and the sum of emissions from excluded pools and gases does not exceed 10% of emissions). If included, secondary pools/gases may be calculated using literature or IPCC Tier 1 calculation approaches, but the approach used may not be at a lower tier than that used in the national inventory. The pools included shall remain fixed for each crediting period and once included, pools may not be excluded in future crediting periods.

5 CREDITING LEVEL

5.1 CALCULATING A TREES CREDITING LEVEL

(Note: Background information regarding this section is provided in Annex C: Secretariat notes for public comment period *to provide context for readers during the public comment period.)*

For the initial crediting period TREES Participants shall calculate a Crediting Level from the average of emissions during a historical period. A conservative approach is applied whereby, beyond an allowable uncertainty (15% at the 90% confidence level) the Crediting Level is reduced by the calculated percentage uncertainty.

The reference period for the initial Crediting Level under TREES shall be 10 years. A minimum of three data points must be included from the reference period (a minimum of two calculated periods of emissions), and it must be demonstrated that reference period data have not been excluded for the purpose of influencing the resulting Crediting Level. The reference period may not overlap with and must be immediately adjacent to the start of the TREES crediting period as defined in Section 2.3. The crediting period start date shall not be more than four years prior to the submittal of the TREES Concept.

The TREES Crediting Level shall be updated every five years (starting with the first year of crediting) and, following the initial crediting period, shall be subject to an exogenous fixed decrease at each update. Following the initial crediting period, the TREES Crediting Level shall represent a 20% reduction below the Crediting Level from the prior crediting period.

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Equation 1

$$Ref = \sum_{n} \left(\frac{rE_n}{yr_n} \right)$$

Equation 2

$$CL_1 \text{ or } SCL_1 = \text{Ref} * (1 - UNC_{ref})$$

Equation 3

$$\text{UNC}_{\text{RE}} = \frac{90\%\ \text{CI}_{\text{rEn}}}{\text{rE}_n} \times 100$$

And

IF UNC_{RE} >15%

$$UNC_{ref} = UNC_{RE} - 15$$

IF $UNC_{RE} \leq 15\%$, $UNC_{ref} = 0$

Equation 4

$$CL_{n+1} = CL_n \times 80\% \quad \text{or} \quad SCL_2 = SCL_1 \times 80\%$$

WHERE

Ref	Average of emissions during the historical reference period: $t\ CO_2e/yr$
rE_n	Emissions during period **n** in the historical reference period: $t\ CO_2e/yr$
yr_n	Number of years during period **n** in the historical reference period: $years$
SCL_n	Subnational Crediting Level for crediting period: n; $t\ CO_2e/yr$
CL_n	National Crediting Level for crediting period: n; $t\ CO_2e/yr$
UNC_{ref}	Calculated uncertainty deduction for the Crediting Level: $\%$
UNC_{RE}	Calculated uncertainty for average annual emissions during the historical reference period: $\%$
$90\%\ CI_{rEn}$	Half width of 90% confidence interval of emissions during period **n** of the historical reference period; $t\ CO_2e$

5.2 SUBNATIONAL ACCOUNTING AREA CREDITING LEVELS

If the TREES Participant submits an accounting area that is subnational as defined in Section 3.1, the Participant (and Crediting Level) must transition from a subnational accounting area to a national accounting area in year 2025 regardless of the number of years that have passed in their current crediting period. In 2025, the Participant with a subnational accounting area must calculate the quantity of emissions (Mt CO_2e) that correspond to a 20% reduction of the previous Crediting Level. This calculated quantity of emissions shall be subtracted from the

national scale Crediting Level to establish the Crediting Level for the Participant to be applied going forward.[13]

Where the most recent crediting period of a Participant with a subnational accounting area prior to the 2025 transition is less than five years, the automatic decrease will be proportional to the number of years from the five-year crediting period that have been completed at the end of 2025.[14] Only reported and verified reductions below the TREES Crediting Level are eligible to receive ART credits.

Equation 5

$$SCL_{\mathrm{h}} = \left[100\% - \left(\frac{\mathrm{cSN}}{5} \times 20\%\right)\right] \times SCL_{\mathrm{tr}}$$

Equation 6

$$\mathrm{Ratchet}_{\mathrm{tr}} = SCL_{\mathrm{tr}} - SCL_{\mathrm{h}}$$

Equation 7

$$CL_1 = \mathrm{RP}_{\mathrm{Nat}} - \mathrm{Ratchet}_{\mathrm{tr}}$$

WHERE

SCL_h	Hypothetical post-2025 subnational accounting area Crediting Level: $\mathrm{t\ CO_2e/yr}$
cSN	Length of completed implementation of subnational accounting area Crediting Level at time of transition in 2025: years
SCL_{n}	Subnational accounting area Crediting Level for crediting period: n; $\mathrm{t\ CO_2e/yr}$

[13] Examples of subnational to national accounting area transition—
YEAR 0: Subnational accounting area A in Country B joins ART with a Crediting Level of 1,000 tons per year.
YEAR 5: Subnational accounting area A's Crediting Level is subject to a 20% exogenous ratchet. This results in a 200 ton decrease (1,000 x 0.2 = 200).
YEAR 6: Country B joins at the national level after five years with a historical average of 3,000 tons per year. Due to the prior registration of Subnational accounting area A, this Crediting Level must be reduced by 200 tons, resulting in a Crediting Level of 2,800 units per year (3,000 – 200 = 2,800).
YEAR 10: Country B's Crediting Level updated with automatic 20% decrease resulting in updated Crediting Level of 2,240 (2,800 x 0.8 = 2,240).

[14] For example, a subnational accounting area registered by a country in year 2022 will have a three-year initial crediting period prior to the 2025 transition—3 out of 5 = 0.6, 0.6 x 20% = 12%. Thus, the automatic decrease will be 12% for which a quantity of reduced emissions shall be calculated and subtracted from the national historical average to create the TREES national Crediting Level.

	(SCL_{tr} = subnational accounting area Crediting Level at time of transition from subnational to national accounting area in 2025)
$Ratchet_{tr}$	Subnational scale ratchet at the time of transition from subnational to national: t CO2e
CL_n	National scale Crediting Level for crediting period: n; t CO_2e/yr
RP_{Nat}	Historical average of emissions at the national level during the reference period: t CO_2e/yr

5.3 UPDATING CREDITING LEVELS

New activities and pools may be included at the start of each crediting period depending on the relative significance of their emissions (Section 4). As new pools and activities are added they must also be included into the Crediting Level.

Participants must calculate emissions over the prior ten years both WITH and WITHOUT an addition in scope. From this calculation a percentage difference shall be derived (either an increase or decrease). This percentage shall then be applied to the current ratcheted down crediting level and the new crediting level will be the basis for future ratcheting.[15]

Equation 8

$$CL_{n+1} = CL_n \times \left(\frac{10YrWITH}{10YrWITHOUT}\right)$$

WHERE

CL_n	National Crediting Level for crediting period: n; t CO_2e/yr
$10YrWITH$	Summed emissions over the prior ten years WITH the addition in scope: t CO_2e/yr
$10YrWITHOUT$	Summed emissions over the prior ten years WITHOUT the addition in scope: t CO_2e/yr

[15] As an example, Country X excludes forest degradation for the first ten years of ART participation. The initial crediting level is 10 million t CO_2/yr. After five years this is ratcheted down to 8 million t CO_2/yr and after another five years to 6.4 million t CO_2/yr. At this point it is determined that forest degradation must be included. Over the prior ten years forest degradation emissions were 2 million t CO_2/yr and deforestation emissions were 7.7 million t CO_2/yr. Thus inclusion of forest degradation raises the ten year emissions average by (2 + 7.7) / 7.7 = 25.97%. Thus the new crediting level should be 6.4 * 1.2597 = 8.06 million t CO_2/yr.

Improvements in monitoring methods or approaches may be implemented at any time, as outlined in Section 4. These types of changes must also be reflected in an updated crediting level. To update the Crediting Level during a given crediting period, participants must calculate emissions over the prior one year both WITH and WITHOUT the change(s) in method or approach. From this calculation a percentage difference shall be derived (either an increase or decrease). Where this percentage is greater than or equal to 3%, it shall be applied to the current crediting level to determine the crediting level to be applied for the remainder of the crediting period starting from the beginning of the subsequent calendar year. In cases where more than one change in monitoring methods or approaches has been made, the sum of the percentage differences shall be determined. If the total change is greater than or equal to 3%, the crediting level must be updated as described.

Equation 9

$$CL_{n+1} = CL_n \times \left(\frac{1YrWITH}{1YrWITHOUT}\right)$$

WHERE

CL_n	Crediting Level for crediting period: n; $t\ CO_2e/yr$
$1YrWITH$	Emissions over the prior year WITH the change(s) in method or approach: $t\ CO_2e/yr$
$1YrWITHOUT$	Emissions over the prior year WITHOUT the change(s) in method or approach: $t\ CO_2e/yr$

6 MONITORING

6.1 MONITORING PLAN

Each TREES Participant shall develop a monitoring plan as part of the TREES Registration Document. The plan shall include parameters to be monitored and frequency and method of data collection including responsible Parties. All data reported must have been subjected to quality control checks. Internal data quality checks and other quality control measures shall be documented. Where appropriate, the plan may refer to other plans or documents that provide the information required.

All monitoring data shall be collected in line with the requirements of this Standard.

6.2 MONITORING AND REPORTING FREQUENCY

Following successful validation and verification of the initial TREES Registration Document and TREES Monitoring Report, TREES Participants shall monitor and submit a TREES Monitoring Report following calendar years 1, 3, and 5 of the crediting period. A TREES Participant may optionally submit a TREES Monitoring Report following years 2 and 4 of the crediting period as outlined in Section 14. The TREES Participant shall use the latest approved TREES Monitoring Report template available on the ART website.

7 REVERSALS AND LEAKAGE

7.1 REVERSALS

Under TREES, a reversal is when an ART Participant's annual reported emissions are higher than the Crediting Level at any time after ART ERs are issued to the Participant. Participants in ART are required to report following calendar years 1, 3 and 5 of each crediting period. Monitoring under ART is not required after a Participant exits the program.

To maintain conservativeness under TREES, reversals are reported and a volume of credits from the buffer pool equivalent to the reversed volume is retired to permanently remove the ERs from circulation and negate the reversal. If a Participant exits ART, any unused buffer pool contributions are retired to account for any possible future reversals as outlined in Section 7.1.4.

7.1.1 Reversal Risk Assessment

TREES establishes a starting level of reversal risk for Participants of 25%. The starting risk level may be lowered if Participants can demonstrate that mitigating factors exist. The risk level is associated with a buffer deduction taken from the final verified TREES ER quantity prior to each issuance.

Participants must determine the number of ERs that will be contributed to the buffer at each issuance. Each monitoring report must identify the buffer contribution and all justifications for the contribution for each year reported.

TREES considers two risk mitigating factors (below) that affect the success of the TREES Participant. Each factor shall be assessed and verified for each calendar year reported. They are applied to the buffer pool contribution of a given year only when demonstrated that the mitigating factor was in place, or applicable, for the entire year. Additional guidance on the mitigating factors is provided in the document templates and the TREES Verification Standard.

MITIGATING FACTOR 1 (-5%): Legislation or executive decrees actively implemented and demonstrably supporting REDD+, issued by a relevant government agency, or with leadership from the Presidential or Prime Ministerial Office within the last five years.

MITIGATING FACTOR 2 (-10%): Demonstrated interannual variability of less than 15% in annual forest emissions over the prior 10 data points used in TREES Reporting.

7.1.2 Buffer Pool Contribution

Based on the results of the Risk Assessment, the Participant must contribute to the TREES Buffer Pool, which is managed by the Secretariat.

The buffer contribution % is determined as follows. This % is applied to determined BUF in Equation 10.

Buffer Contribution Assessment Tool

RISK RATING	BUFFER CONTRIBUTION (%)
Fixed rate with no mitigating factors	25
Fixed rate with mitigating factor #1	20
Fixed rate with mitigating factor #2	15
Fixed rate with mitigating factor #1 and #2	10

Equation 10

$$\mathbf{BUF_t = GHG\ ER_t \times Buffer\%}$$

WHERE

$\mathbf{BUF_t}$	TREES buffer withholding: $\mathbf{t\ CO_2e}$
$\mathbf{GHG\ ER_t}$	GHG ERs in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$ (Section 10)
$\mathbf{Buffer\%}$	Buffer contribution (from Table 2) potentially adjusted upwards as a result of prior reversals: $\mathbf{\%}$

7.1.3 Reversal Compensation

When a reversal is identified in a TREES Monitoring Report, ERs shall be retired from the pooled buffer account equal to the lower of I or II:

I. The number of emissions above the Crediting Level
II. The total number of ERs previously issued to the Participant

After a reversal is reported, a Participant must increase its buffer contribution for a period of five years by 5%, added to the buffer contribution assessment scoring for those years.

7.1.4 Buffer Pool Management

The TREES buffer will be managed by the ART Secretariat, with ERs retired where reversals are recorded. If a TREES Participant does not report any reversals for two consecutive crediting periods, starting at the first year of the third crediting period, the buffer contributions made to the buffer pool 10 years prior will be returned to the Participant to be used as the Participant chooses. This shall continue in each subsequent year if no reversals occur. If a Participant leaves ART at any time, all remaining buffer pool contributions are retired to compensate for any future reversals that may occur.

7.2 LEAKAGE

Where TREES Participants submit a subnational Crediting Level, then negative leakage of emissions to outside the accounting area can occur. Participants must apply specified TREES leakage deductions.

TREES establishes three classes of leakage risk for Participants: high, medium, low. Participants must use the TREES Leakage Assessment to determine the proportion of ERs that must be used as “Leakage%” in Equation 11.

7.2.1 Leakage Assessment Tool

The TREES Leakage Assessment shall consider the program boundaries. Both activity-shifting and market leakage are covered in this tool.

Leakage Assessment Tool

LEAKAGE CATEGORY	CRITERIA	DEDUCTION (LEAKAGE%)
HIGH	< 25% of national forest area included in TREES	**20**
MEDIUM	25–60% of national forest area included in TREES	**10**
LOW	60–90% of national forest area included in TREES	**5**
NO LEAKAGE	>90% of national forest area included in TREES	**0**

Equation 11

$$\mathbf{LEAK_t = GHG\ ER_t \times Leakage\%}$$

WHERE

$\mathbf{LEAK_t}$	TREES leakage deduction: $\mathbf{t\ CO_2e}$
$\mathbf{GHG\ ER_t}$	GHG ERs in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$ (Section 10)
$\mathbf{Leakage\%}$	Percentage leakage deduction (from Table 3): $\mathbf{\%}$

8 UNCERTAINTY

(Note: Background information regarding this section is provided in Annex C: Secretariat notes for public comment period *to provide context for readers during the public comment period.)*

The credibility of TREES and ART rest upon the standard's requirement that numbers presented are accurate and precise. TREES requires that estimates of emissions for the crediting level and of emissions during the reporting period be within allowable uncertainty bounds or be adjusted. TREES Participants shall endeavor to minimize all forms of uncertainty. Requirements to track uncertainty and to avoid systematic bias are given in Section 4.

Under TREES, uncertainty shall be quantified in terms of the half-width of the 90% confidence interval as a percentage of the estimated emissions.

The following components of uncertainty shall be estimated:

- Sampling errors
- Measurement errors
- Data entry errors
- Classification errors

Model and allometric errors are excluded, as such errors are considered consistent between emissions in the crediting level and crediting periods, and thus the transaction cost and capacity building needed to include far outweigh any benefit in uncertainty determination.

Uncertainty shall be assessed on both activity data and emission factors. Errors shall be propagated between sources using Approach 2 (Monte Carlo simulation). Monte Carlo simulations shall use the 90% confidence interval and a simulation *n* of 10,000. The simulations will form the basis for estimations both of value and uncertainty at each step, as the simulated sum of components will be more accurate than an arithmetic approach. Thus, simulated values should replace arithmetic values in Section 10.

For the Crediting Level: Beyond the allowable uncertainty (15% at the 90% confidence level), the Crediting Level is *reduced* by the calculated percentage uncertainty (Equations 2 and 3).

For the reporting period: Beyond the allowable uncertainty (15% at the 90% confidence level), the reported emissions shall be increased by the calculated percentage uncertainty (Equations 12 and 13).

Equation 12

$$\mathbf{UNC_t} = \frac{\mathbf{90\%\ CI_t}}{\mathbf{GHG_t}} \times \mathbf{100}$$

And

IF UNC_t >15%

$$\boldsymbol{UNC_{c,t} = UNC_t - 15}$$

IF $UNC_t \leq 15\%$, $UNC_{c,t} = 0$

Equation 13

$$\boldsymbol{GHG_{c,t} = GHG_t * (1 + UNC_{c,t})}$$

WHERE

$\mathbf{UNC_t}$	TREES uncertainty of GHG emission in year: $\mathbf{t}$; $\mathbf{\%}$
$\mathbf{90\%\ CI_t}$	Half width of 90% confidence interval of emissions in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$
$\mathbf{GHG_t}$	GHG emission in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$ (Section 10)
$\mathbf{GHG\ ER_t}$	GHG ERs in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$
$\mathbf{GHG_{c,t}}$	(Conservative) GHG emission in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$ (Section 10)
$\mathbf{UNC_{c,t}}$	(Calculated) TREES uncertainty of GHG emission in year: $\mathbf{t}$; $\mathbf{\%}$

9 HIGH FOREST COVER, LOW DEFORESTATION TAGGING

(Note: Background information regarding this section is provided in Annex C: Secretariat notes for public comment period *to provide context for readers during the public comment period.)*

TREES defines HFLD countries as nations with in excess of 50% forest cover and an annual deforestation rate that does not exceed 0.22%[16].

In order to qualify for the TREES HFLD tag, Participants shall demonstrate that they meet the HFLD definition both during the historical reference period and during each year for which ERs are being claimed. At the initial validation, Participants shall demonstrate they met the HFLD criteria for each of the years in the historical reference period. At each verification, Participants wishing to apply the TREES tag to issued ERs shall demonstrate they met the HFLD criteria specified above for each year for which ERs are being claimed.

[16] Definition used in the Krutu of Paramaribo Joint Declaration on HFLD Climate Finance Mobilization, February 13, 2019

10 CALCULATION OF EMISSIONS REDUCTIONS

Equation 14

$$\mathbf{GHG\ ER_t = CL_n - GHG_t} \text{ or } \mathbf{GHG\ ER_t = SCL_n - GHG_{c,t}}$$

Equation 15

$$\mathbf{TREES\ ER_t = GHG\ ER_t - BUF_t - LEAK_t}$$

WHERE

$\mathbf{TREES\ ER_t}$	TREES ERs in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$
$\mathbf{BUF_t}$	TREES buffer withholding in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$ (Section 7.1)
$\mathbf{LEAK_t}$	TREES leakage deduction in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$ (Section 7.2)
$\mathbf{GHG\ ER_t}$	GHG ERs in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$
$\mathbf{CL_n}$ or $\boldsymbol{SCL_n}$	TREES national (or subnational) Crediting Level for crediting period: $\mathbf{n}$; $\mathbf{t\ CO_2e/yr}$
$\mathbf{GHG_{c,t}}$	(Conservative) GHG emission in year: $\mathbf{t}$; $\mathbf{t\ CO_2e}$ (Section 10)

11 VARIANCE

TREES Participants may propose variances to this Standard where they do not negatively affect the conservativeness of the ER estimate or they improve the accuracy of the data used. Variances may not be proposed regarding eligibility criteria or crediting level determination and may only apply to methodological or monitoring requirements. TREES Participants shall submit proposed variances to the ART Secretariat for review. The ART Secretariat will approve or reject the variance, provided that the ART Board does not object to the Secretariat's recommendation.

Variances apply to a specific TREES Participant and will be published publicly in the Participant's TREES documentation. A full list of approved variances will not be made public as they are not modifications to the Standard and do not serve as precedent. TREES Participants shall provide evidence that the proposed variance is conservative or represents an improvement in data accuracy.

TREES Participants shall request a variance by using the TREES Variance Request Form template.

12 ENVIRONMENTAL, SOCIAL, AND GOVERNANCE SAFEGUARDS

12.1 PURPOSE

The TREES Standard requires Participants to demonstrate they have implemented REDD+ actions defined in the REDD+ implementation plan in consistency with the Cancun Safeguards and that the activities do no harm. It is the goal of this Standard to provide concrete guidance on how a country can demonstrate that it has addressed and respected all the Cancun safeguards. TREES "unpacks" the safeguards in line with relevant international agreements and decisions to provide a step-wise path for Participants to improve safeguard performance over time, to foster transparent and consistent reporting on conformance with the Cancun Safeguards, and to allow for third-party verification of Participant conformance. No additional safeguard requirements beyond those in the Cancun Safeguards or detailed specifications on how the Cancun Safeguards must be met are included in order to respect the autonomy of Participant countries regarding developing and implementing procedures, policies, and programs appropriate to their unique circumstances. As a result, Participants will be able to fully draw upon the design and implementation work conducted to date on national safeguard systems.

12.2 STRUCTURE

This section is structured as follows:

1. **Cancun Safeguards**. Each Cancun Safeguard is listed to set out the environmental, social, and governance principles Participants are expected to uphold when undertaking REDD+ actions.

2. **Themes**. Each safeguard is further broken down into thematic topics which define the conditions that must be met in order to achieve the Cancun Safeguards. We note that as certain Cancun Safeguards encompass human rights obligations, the wording of associated themes is aligned with international human rights laws, which requires countries to "respect," to "protect," and to "fulfill" these obligations.

3. **Indicators.** Each indicator is meant to provide the step-wise process by which Participants can demonstrate continued improvement in meeting the Cancun Safeguards. Verification will occur against the indicators only; as such, applicability and scope conditions are included as appropriate.

   There are three types of indicators:

Structure—linked to demonstrating the relevant governance arrangements (e.g., policies, laws, and institutional arrangements) that are in place in the country for the implementation of REDD+ actions in consistency with the Cancun Safeguards;

Process—linked to demonstrating relevant institutional mandates, as well as processes, procedures, and/or mechanisms that are in place in the country for the implementation of REDD+ actions in consistency with the Cancun Safeguards; and

Outcome—linked to the implementation outcomes, in terms of the respect of rights and fulfillment of duties.

12.3 REPORTING SCOPE

Participants must always report on conformance with all Cancun Safeguards. In the first crediting period, Participants must demonstrate conformance with all structure indicators. In addition, Participants must either demonstrate conformance with the process and outcome indicators or present a plan for achieving conformance by the end of the crediting period. By the beginning of the second crediting period, Participants must demonstrate conformance with all indicators. This step-wise approach ensures Participants adhere to the Cancun Safeguards while allowing flexibility and requiring verifiable improved performance over time.

A TREES Safeguard monitoring report template is provided for use by Participants if desired. However, Participants may utilize their Summary of Information reports being prepared in the context of UNFCCC reporting or similar reports to demonstrate conformance if all required information is included. Safeguard Information Systems may be used to provide data or systems information to demonstrate conformance as well.

12.4 SAFEGUARDS

12.4.1 Cancun Safeguard A

Actions complement or are consistent with the objectives of national forest programs and relevant international conventions and agreements

THEME 1.1 Consistency with the objectives of national forest programs

Structural Indicator: Domestic legal framework for REDD+ actions is clearly defined and designed in consistency with national forest policies/programs.

Process Indicator:

Public institutions have made use of, mandates, procedures and resources to ensure REDD+ actions are integrated into the broader policy framework of the forest sector, and inconsistencies identified and resolved.

Outcome Indicator: Implementation of REDD+ actions has been consistent or complemented the objectives of the national forest policies/programs.

THEME 1.2 Consistency with the objectives of relevant international conventions and agreements

Structural Indicator: Domestic legal framework for REDD+ actions recognize and promote the application of ratified relevant international conventions and agreements in the context of implementation of REDD+ actions.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to ensure REDD+ actions integrate specific measures that recognize and promote the application of ratified relevant international conventions and agreements.

Outcome Indicator: Implementation of REDD+ actions has been consistent or has complemented the objectives of identified, ratified and relevant international conventions and agreements.

12.4.2 Cancun Safeguard B

Transparent and effective national forest governance structures, taking into account national legislation and sovereignty

THEME 2.1 Respect, protect, and fulfill the right of access to information

Structural Indicator: Participants have in place procedures for accessing information in accordance with international human rights standards, and these are anchored in relevant ratified international conventions/agreements and/or domestic legal framework.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions and agreements and/or domestic legal framework, policies, and programs for accessing information.

Outcome Indicator: Public has been aware of and exercised the right to seek and receive official information on the implementation of REDD+ actions, as well as the addressing and respecting of safeguards throughout that implementation.

THEME 2.2 Promote transparency and prevent and implement anti-corruption measures

Structural Indicator: Participants have in place anti-corruption measures reflecting the principles of rule of law, proper management of public affairs and public property, integrity, transparency, and accountability, and these are anchored in relevant ratified international conventions/agreements and/or domestic legal framework.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or

domestic legal frameworks that includes anti-corruption measures reflecting principles of the rule of law, proper management of public affairs and public property, integrity, transparency, and accountability.

Outcome Indicator: The disbursement and allocation of REDD+ finance related to the implementation of the REDD+ actions have been carried out in a fair, transparent, and accountable manner, as per relevant ratified international conventions, agreements, and/or domestic legal framework.

THEME 2.3 Respect, protect, and fulfill land tenure rights

Structural Indicator: Participants have in place procedures for the recognition, inventorying, mapping, and security of customary and statutory land and resource tenure rights where REDD+ actions are implemented, and these are anchored in relevant ratified international conventions/agreements and/or domestic legal framework.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework that includes an effective process to recognize, inventory, map, and secure (statutory and customary) rights to lands and resources relevant to the implementation of REDD+ actions.

Outcome Indicator: Stakeholders had access to, use of, and control over land and resources in conformity with relevant ratified international conventions, agreements, and/or domestic legal framework; and no relocation took place without the free, prior, and informed consent (FPIC) of any indigenous peoples and local communities (or equivalent) concerned.

THEME 2.4 Respect, protect, and fulfill access to justice

Structural Indicator: Participants have in place procedures for guaranteeing non-discriminatory and non-cost prohibitive access to dispute resolution mechanisms at all relevant levels, and these are anchored in relevant ratified international conventions/agreements and/or domestic legal framework.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework that includes judicial and/or administrative procedures for legal redress, which, *inter alia,* provide access for indigenous peoples, local communities, or equivalent stakeholders with a recognized legal interest.

Outcome Indicator: Resolved disputes, competing claims, and effective recourse and remedies have been provided when there was a violation of rights.

12.4.3 Cancun Safeguard C

Respect for the knowledge and rights of indigenous peoples and members of local communities by taking into account relevant international obligations, national circumstances and laws, and

noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples

THEME 3.1 Identify indigenous peoples and local communities, or equivalent.

Structural Indicator: Participants have in place procedures that require the identification of the distinct identity of indigenous peoples, and local communities, or equivalent, and these are anchored in relevant ratified international conventions/agreements and/or domestic legal framework.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework that identify indigenous peoples and local communities, or equivalent.

Outcome Indicator: Indigenous peoples and local communities, or equivalent, have been identified and their interests recognised in the design of REDD+ actions.

THEME 3.2 Respect and protect traditional knowledge

Structural Indicator: Relevant ratified international conventions/agreements, and/or domestic legal framework define, respect, and protect indigenous people's knowledge and local communities' knowledge.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework that aim to protect the rights of indigenous and local communities over their traditional knowledge, innovations, and practices.

Outcome Indicator: Traditional knowledge of indigenous peoples and local communities, or equivalent, has been identified and incorporated in the design and implementation of REDD+ actions.

THEME 3.3 Respect, protect, and fulfill rights of indigenous peoples and local communities, or equivalent

Structural Indicator: Participants have in place processes that recognize, respect, and protect the full measure of human rights and fundamental freedoms for its citizens, recognizing the distinct identity and rights of indigenous peoples in conformity with customary law, institutions, and practices, and these are anchored in relevant ratified international conventions/agreements and/or domestic legal framework.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework to protect and fulfill the rights of indigenous peoples and guarantee respect for their integrity throughout the implementation of the REDD+ actions.

Outcome Indicator: The full measure of human rights and fundamental freedoms of indigenous peoples and local communities, or equivalent, have been identified and incorporated in the design and implementation of REDD+ actions.

12.4.4 Cancun Safeguard D

The full and effective participation of relevant stakeholders—in particular indigenous peoples and local communities—in actions referred to in paragraphs 70 and 72 of decision 1/CP16

THEME 4.1. Respect, protect, and fulfill the right of all relevant stakeholders to participate fully and effectively in the design and implementation of REDD+ actions

Structural Indicator: Participants have in place procedures that recognize, respect, and protect the right of all relevant stakeholders to participate fully and effectively, including timely access and culturally appropriate information prior to consultations, and these are anchored in relevant ratified international conventions/agreements and/or domestic legal framework.; access is established to recourse mechanisms to ensure the participation process is respected.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework in the design and implementation of REDD+ actions.

Outcome Indicator: Relevant stakeholders have participated fully and effectively in the design and implementation of REDD+ actions.

THEME 4.2. Promote adequate participatory procedures for the meaningful participation of indigenous peoples and local communities, or equivalent

Structural Indicator: Relevant ratified international conventions, agreements, and/or domestic legal framework recognizes, respects, and protects the right of participation of indigenous peoples and local communities, or equivalent, through their traditional/community structures for decision-making processes,[17] which requires appropriate procedures take place in a climate of mutual trust.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework to ensure, where relevant, the participation of indigenous peoples and local communities, or equivalent.

[17] If the institutions consulted are not considered representative by the people they claim to represent, the consultation may have no legitimacy. “If an appropriate consultation process is not developed with the indigenous and tribal institutions or organizations that are truly representative of the communities affected, the resulting consultations will not comply with the requirements of the Convention” (ILO Governing Body, 282nd session, 2001, GB.282/14/2).

Outcome Indicator: Planning, coordination, implementation, and evaluation of REDD+ actions were, where relevant, undertaken with the participation of indigenous peoples and local communities, or equivalent, through which FPIC, in accordance with relevant international and/or domestic legal framework, was given.

12.4.5 Cancun Safeguard E

That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 of decision 1/CP16 are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits

THEME 5.1 Non-conversion of natural forests

Structural Indicator: Relevant ratified international conventions, agreements, and/or domestic legal framework consistently define the term natural forests, distinguishing them from plantations and spatial distribution of natural forests is mapped.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework to ensure the design and implementation of REDD+ actions avoids the conversion of natural forests.

Outcome Indicator: REDD+ actions did not result in the conversion of natural forests to plantations or other land uses.

THEME 5.2 Protect natural forests, biological diversity, and ecosystem services

Structural Indicator: Relevant ratified international conventions, agreements, and/or domestic legal framework identifies priorities for the protection and conservation of natural forest areas, biodiversity, and ecosystem services, to which REDD+ actions could contribute.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework to ensure REDD+ actions are designed and implemented with a view to avoiding adverse impacts on natural forest areas, biodiversity, and ecosystem services potentially affected.

Outcome Indicator: REDD+ actions maintain natural forest areas; biodiversity and ecosystem service priorities are identified.

THEME 5.3 Enhancement of social and environmental benefits

Structural Indicator: Relevant ratified international conventions, agreements, and/or domestic legal framework regulate the assessment of social and environmental benefits of interventions in those sectors implicated for REDD+ actions.

Process Indicator: Public institutions have made use of mandates, procedures, and resources to implement relevant ratified international conventions, agreements, and/or domestic legal framework to ensure social and environmental benefits are identified and integrated into the design and implementation of REDD+ actions.

Outcome Indicator: REDD+ actions have contributed to delivering social and environmental benefits.

12.4.6 Cancun Safeguards F and G

Actions to address the risks of reversals

Actions to reduce displacement of emissions

THEME 6.1 Design, prioritization, implementation, and periodic assessments of REDD+ polices and measures that take into account the risks of reversals and displacement

THEME 6.2 National Forest Monitoring System (NFMS) designed, maintained, and implemented with the appropriate frequency to detect and provide information on reversals and displacement events

THEME 6.3 Carbon accounting risk mitigation mechanisms such as buffer pools

No indicators have been developed for these criteria as these issues are addressed by requirements in other sections of the Standard.

13 AVOIDING DOUBLE COUNTING

In the context of climate change mitigation, the term double counting describes situations where a single GHG ER or removal is used towards more than one mitigation target, pledge, obligation or other mitigation commitment or effort. Double counting must be avoided including when ERs are used to meet compliance mitigation obligations, targets, pledges, commitments or efforts. Double counting can occur in a number of different ways, including double issuance, double use/double selling, and double claiming, as described below. The risks related to double issuance and double use can be mitigated through operational processes, tracking systems, and oversight by crediting programs. TREES will incorporate by reference relevant future decisions and guidance on accounting and reporting in the UNFCCC for the Paris Agreement and the International Civil Aviation Organization (ICAO) for its Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Adherence to such decisions and guidance will be *additional* to the requirements laid out in this section, which shall continue to apply regardless of the outcome of those international processes.

13.1 DOUBLE ISSUANCE

Double issuance occurs when more than one unique unit is issued for a single ER or removal, within the same program/registry or when more than one program/registry issues unique units for a single ER or removal. To mitigate the risk of double issuance, TREES requires disclosure of any issued and Participant authorized emissions reductions, which will be deducted from TREES issuance volume, checks of duplicate registration under other programs (including offset programs) and requirements for disclosure of other registrations, as well as for cancellation of the units on one registry prior to re-issuance on another.

13.2 DOUBLE USE

Double use occurs when a unique issued unit is used twice, for example if it is 1) sold to more than one entity at a given time (also referred to as double selling) due to double issuance or fraudulent sales practices, or 2) used by the same owner toward more than one obligation / target. Double use can also occur if the use of a unique issued unit is reported, but the unit is not retired or cancelled.

To prevent double use, TREES requires clear proof of ownership upon registration, tracking of ownership of credits within the registry by serial number and account, and an annual attestation of ownership and use. In addition, double selling will be prohibited through rules in the legal Terms of Use agreement to be executed by all ART Registry account holders, which will expressly prohibit double use of credits and prohibit the transfer of ownership of credits off-registry.

13.3 DOUBLE CLAIMING

Double claiming occurs when the same ER is counted by two or more Parties or entities (e.g. buyers and sellers) towards climate change mitigation obligations, targets, pledges, commitments or efforts. TREES ERs credits have a number of potential uses, including:

I. Credits issued under TREES can be sold and transferred outside of the host country to another Party for use toward achievement of its NDC.

To prevent double claiming of the ERs by the host country and another Party toward Paris Agreement NDC targets, TREES requires that the host country issue a letter to explicitly authorize the use of the specific ERs by another Party and in that letter agree to report the transfer to the UNFCCC and to make an accounting adjustment in the structured summary of its biennial transparency reports[18]. This attestation letter will be posted publicly on the ART Registry. Credits cannot be transferred to another Party's registry account or retired on behalf of another Party until such authorization letter is delivered. When the transfer or retirement is affected, the reason for the transfer (between registry accounts)/retirement will be stated. In the case of a transfer between accounts, the Party reporting the use of the ER toward its NDC must retire the credits noting the reason for retirement for the public record.

II. Credits issued under TREES can be sold and transferred to a non-Party (e.g., an airline toward meeting its CORSIA mitigation obligation or for other ER actions, such as for use in an emissions trading scheme [ETS]).

To prevent double claiming of the ERs by the host country and a non-Party for use toward mitigation obligations (such as under CORSIA or in an ETS), TREES requires that the host country issue a letter to explicitly authorize the use of the specific ERs by the transferee (buyer) and in that letter agree to report the transfer to the UNFCCC and to make an accounting adjustment in the structured summary of its biennial transparency reports[19]. The letter will be posted publicly on the ART registry. Credits will not be designated as eligible for use under the CORSIA and cannot be transferred to another Party's account or retired on behalf of the buyer until such authorization letter is delivered. When the transfer or retirement is affected, the reason for the transfer (between registry accounts) or retirement will be stated. In the case of a transfer between accounts, the entity reporting the use of the ER toward its mitigation obligation under CORSIA or an ETS must retire the credits, noting the specific reason for retirement for the public record.

III. Credits issued under TREES can be retained by the host country and used toward achievement of its NDC.

In the event the ERs are to be used by the host country toward the achievement of its own NDC, there is no double claim. In this case, the host country Party must retire the credits before reporting the use of the ERs toward its NDC, noting the reason for retirement for the public record including that title of the ER was not transferred.

[18] As referred to in paragraph 77, subparagraph (d) of the Annex to decision 18/CMA.1.
[19] Ibid.

14 VALIDATION AND VERIFICATION

(Note: Background information regarding this section is provided in Annex C: Secretariat notes for public comment period *to provide context for readers during the public comment period. This section is subject to change once TREES Validation and Verification Standard is completed.)*

14.1 VALIDATION AND VERIFICATION SCOPE AND FREQUENCY

Validation and Verification is required following year 1 of each crediting period. Verification is required after years 3, and 5 of each crediting period. TREES Participants may elect to have verifications following years 2 and 4 of the crediting period. If these optional verifications are conducted and a positive verification conclusion is reached, a TREES Participant may be able to issue credits annually. If the optional verifications are not conducted, a TREES Participant will only be able to issue credits following years 1, 3, and 5, as no credits will be issued without verification.

Verification Cycle

CREDITING PERIOD YEAR	VERIFICATION SCOPE
End of Year 1	All sections of the TREES Registration Document and TREES Monitoring Report, including eligibility criteria, reference level and Crediting Level data and calculations, monitoring data, ER calculations for year 1; and social/environmental safeguards
End of Year 2 **OPTIONAL**	All sections of the TREES Monitoring Report including monitoring data and ER calculations for the ERs achieved in year 2, and social/environmental safeguards
End of Year 3	All sections of the TREES Monitoring Report including monitoring data and ER calculations for the ERs achieved in either year 3 only or years 2 and 3 (if the optional verification was not performed), and social/environmental safeguards
End of Year 4 **OPTIONAL**	All sections of the TREES Monitoring Report including monitoring data and ER calculations for the ERs achieved in year 4, and social/environmental safeguards

CREDITING PERIOD YEAR	VERIFICATION SCOPE
End of Year 5	All portions of the TREES Monitoring Report, including monitoring data and ER calculations for the ERs achieved in either year 5 only or years 4 and 5 (if the optional verification was not performed), and social/environmental safeguards

14.2 VALIDATION AND VERIFICATION BODY ACCREDITATION

Validation and Verification Bodies shall be accredited for validation and verification by an accreditation body that is a member of the International Accreditation Forum (IAF) as outlined in the TREES Validation and Verification Standard.

Validation and Verification Bodies shall also complete an application and an Attestation of Validation and Verification Body to be an approved TREES Validation and Verification Body. This process serves to ensure the Validation and Verification Body has the technical capabilities, qualifications, and resources to successfully complete a TREES validation and verification. Additional detail regarding the process and required capabilities, qualification, and resources are provided in the TREES Validation and Verification Standard.

The Validation and Verification Body application process and a list of approved TREES Validation and Verification Bodies shall be maintained by the ART Secretariat on the ART website.

14.3 VALIDATION AND VERIFICATION PROCESS

TREES Validations and Verifications shall be conducted in accordance with the TREES Validation and Verification Standard. The Validation and Verification Body shall submit a TREES Validation Report following completion of the validation and a TREES Verification Report and Statement to the Secretariat following completion of the verification. Reports and Verification Statements shall follow the latest templates available on the ART website.

15 REGISTRY REQUIREMENTS

15.1 ACCOUNT REQUIREMENTS

All TREES Participants will have an account in the ART Registry, which will be managed by the ART Secretariat. The ART Registry will contain Participant information, program documentation, Validation and Verification Reports, records of serialized credit issuance, and credit cancellation, transfer, and retirement data. The ART Secretariat will also manage a pooled buffer account in the ART Registry which will be publicly available.

15.2 PUBLICLY AVAILABLE DOCUMENTATION

All approved and final TREES documents listed in Section 2.4 shall be publicly available through the ART Registry. TREES Participants may designate certain parts of the documentation as Commercially Sensitive Information (CSI). In these cases, redacted versions of TREES documentation can be made publicly available. However, this information—as well as any requested supporting documentation—must be available for review by the ART Secretariat and Board and the Validation and Verification Body.

For the sake of transparency, the ART Secretariat shall presume TREES Participant information is available for public scrutiny, and demonstration to the contrary shall be incumbent on the TREES Participant. The Validation and Verification Body shall check that any information requested as “commercially sensitive” meets the TREES definition of CSI.

16 COMPLAINTS AND APPEALS

16.1 COMPLAINTS

All complaints relating to verification should be directed to and resolved through the VB's complaints and appeals procedure.

When a TREES Participant or stakeholder objects to a decision made by ART representatives or the application of the ART program requirements, the following confidential complaint procedure shall be followed:

I. The TREES Participant or stakeholder sends a written complaint via email to *redd@winrock.org*. The complaint must detail the following:
   A. Description of the complaint with specific reference to TREES Standard requirements, as applicable;
   B. Supporting documentation provided for consideration by ART in the complaint resolution process; and
   C. Complainant name, contact details, and organization.

II. The ART Secretariat shall assign a representative to research and further investigate the complaint. The representative assigned to handle the complaint shall not have been involved with the issue that is the subject of the formal complaint.

III. The ART Secretariat will provide a written response via email to the complainant detailing the ART Secretariat's decision on the matter.

16.2 APPEALS

If a complaint remains unresolved after the conclusion of the complaint procedure, a TREES Participant or stakeholder may appeal any such decision or outcome reached. The following confidential appeals procedure shall be followed:

I. The TREES Participant or stakeholder sends a written appeal via email to *redd@winrock.org*. The appeal must detail the following:
   A. Description of the appeal with specific reference to TREES Standard requirements, as applicable;
   B. Supporting documentation provided for consideration by ART in the appeal resolution process, including previous communication on the complaint and all relevant details of the previously implemented complaint procedure; and
   C. Appellant name, contact details, and organization.

II. The ART Secretariat will convene a committee of representatives to review and discuss the matter. The committee will include a member of Winrock Senior Management or Board, a member of the ART Board of Directors, and one external expert selected by the

appellant and approved by the ART Secretariat, all of whom will have equal votes. The committee may also include additional technical and/or subject matter expert or experts as necessary, who will not be able to vote. The committee members selected will depend on the subject matter and nature of the appeal. The appellant will be contacted if any additional information is needed or clarification is required.

III. The decision reached by the committee shall be communicated via written response to the TREES Participant or stakeholder. Any decision reached by the committee shall be final.

DEFINITIONS

Access to Information	Access to information relates to the public's right to access information held by authorities that is relevant to forest-related processes.
Accountability	There are two principle dimensions of accountability considered by safeguard B: vertical and horizontal accountability. **Vertical accountability** refers to the methods by which the State is (or is not) held to account by non-State agents through the relationship between citizens and their political representatives. **Horizontal accountability** refers to the intra-governmental control mechanisms that exist between the legislature, the executive branch, and the judiciary, and between different sub-entities of the executive branch, including the Cabinet, line ministries, and lower-level administrative departments and agencies.
Activity Data	This is the magnitude of a given human-led activity that results in emissions or removals in a specified time period.
Additionality	Additionality ensures that the implemented activity reduces emissions or increases sequestration more than would have occurred in the absence of the intervention.
Addressing Safeguards	This entails identifying and providing information on what a country has (or plans to put) in place, in terms of its governance arrangements, which would seek to guarantee the implementation of the safeguards. Addressing safeguards are linked to "structural" indicators under TREES ESG indicators.
Biological Diversity	In alignment with international law, the term biological diversity refers to the variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.
Buffer Pool	This is an account managed by the ART Secretariat as a reversal risk mitigation mechanism into which Participants contribute a determined

	quantify of ERs to replace unforeseen losses in carbon stocks. The Buffer Contribution is a percentage of the Participant's ERs determined through a Participant-specific reversal risk assessment.
Cancun Safeguards	The term "Cancun Safeguards" refers to the safeguards developed under the UNFCCC in paragraph 2 of Appendix I to decision 1/CP.16 (the Cancun Agreement).
Commercially Sensitive Information	CSI comprises trade secrets, financial, commercial, scientific, technical, or other information whose disclosure could result in a material financial loss or gain, prejudice the outcome of contractual or other negotiations, or otherwise damage or enrich the person or entity to which the information relates.
Conflict Resolution Mechanisms	This is the formal and informal means of settling (through negotiation, mediation, or arbitration) complaints or disputes of groups and individuals whose rights may be affected through the implementation of REDD+ activities.
Crediting Level	A Participant's annual reported GHG emissions must fall below the Crediting Level in order to generate emissions reduction credits. The initial Crediting Level is based on historical emissions data. Subsequent Crediting Levels are calculated based on a 20% reduction below the previous Crediting Level. The Crediting Level is valid for one crediting period after which it must be recalculated and verified.
Crediting Period	This is the finite length of time for which a Crediting Level is valid, and during which a Participant can generate ERs against the Crediting Level. The Crediting Level must be re-calculated and re-evaluated to renew the crediting period. The ART crediting period is five years.
Customary Law	Traditional or customary land laws are the set of legal rules that constitute the traditions of a community or population. Customary law currently coexists with statutory law; in most Latin American countries it is subordinate to statutory law.
Double Counting	In the context of climate change mitigation, double counting consists of situations where a single GHG ER, removal, avoidance, or other mitigation outcome is used more than once to demonstrate achievement of mitigation targets or pledges. Double counting can

	occur in different ways, including double issuance, double use, and double claiming.
Ecosystem Services	These are *provisioning services* such as food, water, timber, fiber, and genetic resources; *regulating services* such as the regulation of climate, floods, disease, and water quality as well as waste treatment; *cultural services* such as recreation, aesthetic enjoyment, and spiritual fulfillment; and *supporting services* such as soil formation, pollination, and nutrient cycling.
Emission/Removal Factor	This is an average emission or removal rate for a given source relative to units of activity data.
Indigenous Peoples	In alignment with international law, the term indigenous peoples refer to peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs at the time of conquest or colonization, or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural, and political institutions.
Institutional Framework	Institutional framework of a country refers to the institutions and institutional arrangements mandated with a responsibility for overseeing the implementation of the legal framework.
Land Cover Change	Land cover reflects how much of a given area is covered by forests or by forests of specific types. This contrasts with land use which shows how people use the landscape. As an example, an area may change from unmanaged forest to forest managed for timber but there is no measurable land cover change. Different types of land cover can be managed or used differently.
Land Tenure Rights or System	The land tenure system in a given jurisdiction comprises the set of possible bases under which land may be used. It may include: a) Formal or statutory land tenure system. This refers to the legislation and state institutions that govern rights to land and natural resources within the borders of a State.b) Customary land tenure system. A series of rules established by custom which define the rights of access for persons in a specific social group to particular natural resources.
Land Use Change	Land use reflects how people use a landscape—for example, conservation, forest management, settlement, and agriculture. This contrasts with land cover which details whether an area does or does

	not have forest cover, or the cover of a specific type of forest. Different types of land cover can be managed or used differently.
Leakage	Leakage refers to the displacement of anthropogenic emissions from within a Participant's registered subnational accounting area to an alternative area within the country not monitored under ART.
Legal Framework (Domestic)	This is comprised primarily of national policies, laws, and regulations (PLRs) relevant to the implementation of the safeguards. Programs and plans contribute to the implementation of the safeguards but rely on the recognition and compliance of the PLRs.
Local Communities	In alignment with international law, this term refers to communities that have a long association with, and depend on, the lands and waters that they have traditionally lived on or used; this also includes "forest dependent communities." Sometimes these communities are also referred to as "traditional communities."
Minimum Mapping Unit	A minimum mapping unit is the specific size of the smallest feature or polygon that is being captured in a map.
National Forest Programs	National forest programs include forest (and forest-related) policies; forest (and forest-related) legislation and strategies, programs, and/or action plans for implementation of the forest policy; and the institutional framework for implementation.
Natural Forests	Natural forests are naturally regenerated by native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
National Level Accounting	A TREES Submittal by a national government, that includes accounting of greater or equal to 90% of a country's forest area (defined as ≥90% of all areas in the country qualifying as forest under the national forest definition).
Ratchet	Under ART, the term ratchet refers to the exogenously defined decrease in a Crediting Level that occurs at the beginning of each crediting period.
REDD+ Actions	The term "REDD+ actions" are the measures through which REDD+ activities are implemented. This can be divided into direct and enabling. These can have a national and/or subnational application. Direct actions are specific, often local activities which result in a direct change in the carbon stock (e.g., reforestation, protected area

	strategies, and agricultural intensification to reduce pressure on forests). Enabling actions are aimed at facilitating the implementation of direct interventions (e.g., improved law enforcement against illegal logging and land tenure regulation).
REDD+ Activities	The term REDD+ activities refers to those included in paragraph 70 of decision 1/CP.16 and Decision 1/CP.16, paragraph 73 as follows: • Reducing emissions from deforestation • Reducing emissions from forest degradation • Enhancement of forest carbon stocks • Conservation of carbon stocks • Sustainable management of forest
REDD+ Countries	There is no official list of REDD+ countries. The term REDD+ country is used to refer to countries that could be eligible, and/or are working toward participation in REDD+ under the UNFCCC.
REDD+ Safeguard Management Plans	These plans allude to the Green Climate Fund (GCF), Environmental Social Management System (ESMS), and the Forest Carbon Partnership Facility (FCPF) Environmental Social Management Framework (ESMF) which determine management plans addressing the requirements of the applicable and triggered safeguards (e.g., Resettlement Action Plans or Biodiversity Action Plans).
Reference Period	This is the period of time for which the mean historical emissions are included to determine the initial Crediting Level. In this document the reference period is 10 years.
Remote Sensing	Remote sensing is the science of obtaining information about objects or areas from a distance, typically from aircraft or satellites.
Reporting Period	The period of 12 months, corresponding to a calendar year, for which TREES Monitoring Reports must be submitted to ART.
Respecting Safeguards	This includes identifying and providing information on how a country has implemented (or plans to implement) its governance arrangements, and what were the implementation outcomes of the country's safeguards framework. Respecting safeguards are linked to "process" and "outcome" indicators under TREES ESG indicators.

Reversal	Under TREES, a reversal occurs where a Participant's emissions in a given crediting period exceed the Crediting Level.
Safeguard Information System	SIS is generally understood to be a domestic institutional arrangement responsible for providing information as to how the country-specific safeguards are being addressed and respected in the context of the implementation of the proposed REDD+ actions.
Start Date	The start date is when the initial TREES crediting period begins. This date shall be no earlier than four years prior to submittal of a TREES Concept Note.
Sustainable Livelihoods	Sustainable livelihoods are defined as the capabilities, assets (including both material and social resources), and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.
Traditional Knowledge	In alignment with international law, the term traditional knowledge refers to cultural heritage, traditional knowledge, and traditional cultural expressions, and can be defined as manifestations of indigenous peoples' sciences, technologies, and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games, and visual and performing arts.
TREES Participant	The TREES Participant shall be a national government.
Uncertainty	Uncertainty is an expression of the degree to which a value is unknown. Under TREES, uncertainty should be expressed quantitatively.
Validation	Validation is the systematic, independent, and documented process for the evaluation of a TREES Registration Document against applicable requirements of the TREES Standard.
Validation/Verification Body	The Validation and Verification Body is a competent and independent firm responsible for performing the validation and/or verification process. A Validation and Verification Body must be ART-approved to conduct verification.
Verification	Verification is the systematic, independent, and documented assessment by a qualified and impartial third party of the ER assertion

for a specific reporting period. The verification process is intended to assess the degree to which a project complies with the TREES Standard and has correctly quantified net GHG reductions. Verification must be conducted by an independent third-party verifier.

ANNEX A: TREES DOCUMENTS

A summary of the information required in each TREES Document is provided below. Instructions and additional information are included in each document template available on the ART website.

1. TREES Concept

The TREES Concept requires information about the proposed Participant and demonstrates how the proposed Participant meets the eligibility criteria. In addition, it requires estimates of the initial Crediting Level. These include:

1. Contact information including country or jurisdiction and primary ART contact
2. Partners in preparing the documentation, if any, including additional government agencies, non-governmental organizations (NGOs), and/or additional technical consultants
3. Crediting period dates and reference period dates
4. Accounting area including georeferenced geographic information system (GIS) shape files of the accounting area (subnational or national) boundaries and percentage of national forests covered by the accounting area
5. Description of how the Participant meets each of the eligibility criteria outlined in Section 3 of this Standard
6. Estimate of Crediting Level for the crediting period including underlying data
7. Description of ownership rights to ERs to be issued by ART
8. Description of legal responsibility for policy making specific to forests and land use decisions regarding forests
9. Description of how the Participant meets the requirements of the Cancun Safeguards (See Section 12, Environmental, Social, and Governance Safeguards)
10. Disclosures about participation in other REDD+ crediting or payment-for-performance programs and/or REDD+ Project(s) within the proposed area regardless of credit ownership
11. Preliminary description of plan and procedures to ensure double counting is avoided (per Section 13)

2. TREES Registration Document

The TREES Registration Document and attachments provide a full description of how the Participant meets and plans to meet the requirements of the TREES Standard. This includes:

1. Contact information including country or jurisdiction and primary TREES contact
2. Partners in preparing the documentation, if any, including additional government agencies, NGOs, and/or additional technical consultants and a description of their roles

3. Crediting period dates and reference period dates (applicable for first crediting period only)
4. Accounting area including georeferenced GIS shape files of the accounting area (subnational or national) boundaries and percentage of national forest area covered by the accounting area
5. Description of how the Participant meets the eligibility criteria outlined in Section 3 of this Standard
6. Description of ownership rights to ERs to be issued by ART
7. Description of legal responsibility for policy making specific to forests and land use decisions regarding forests
8. Disclosures about participation in other REDD+ crediting or payment-for-performance programs and/or REDD+ Project(s) within the proposed area regardless of credit ownership
9. Plan and procedures to ensure double counting is avoided (per Section 13)
10. Crediting Level calculation for the crediting period
11. For the initial crediting period, include a detailed description/justification of the calculated crediting level value along with quantification approach methods, data-sources, and procedures used for data collection and quantification for both activity data and emission factors
12. Standard Operating Procedures (SOPs) for data collection (e.g., field-based, remote-sensing, QA/QC, and other)
13. Stratification map, description, rules, and procedure for updating
14. Description of included pools and gases, and/or justifications for exclusions where applicable
15. Data sources, if from literature or defaults
16. Description of emission factors derived
17. For subsequent crediting periods, include a Calculation of the Crediting Level reduction and new Crediting Level
18. Data storage and sharing plan
19. Uncertainty calculations (Section 8)
20. Emission reduction calculation (description and supporting workbook)
21. Description of monitoring plan in accordance with the requirements of Section 6
22. Description of how the Participant meets the requirements of the Cancun Safeguards (Section 12)
23. Description of the REDD+ activity's contribution to sustainable development
24. Description of the country's REDD+ implementation plan strategy (this may be a single document or a collection of documents as appropriate—the plan itself will not be validated or verified)
25. Description of any changes since the submission of the TREES Concept

3. TREES Monitoring Report

The TREES Monitoring Report is submitted to the ART Registry prior to each verification. Each report must cover a minimum of 12 months representing one calendar year and is required to be submitted within twelve months following the end of calendar years 1, 3, and 5 of each crediting period. A TREES Monitoring Report may be optionally submitted following the end of calendar years 2 and 4. The TREES Monitoring Report outlines the ongoing performance of the TREES Participant including a summary of activities conducted and the data collected and quantified for the ERs over the reporting period. These include:

1. Crediting period start and end date
2. Reporting period start and end date
3. Summary of REDD+ activities (the implementation of activities is to inform progress on the REDD+ implementation plan. Only the inclusion of the summary will be verified.)
4. Description of on-going conformance with the Cancun Safeguards (Section 12)
5. Emissions from deforestation and degradation (if applicable) for the reporting period, including any changes in methodology, stratification, and including a description of the quantification and data collection since the most recently submitted report
6. Data storage and sharing plans
7. Reversal and leakage risk assessment results
8. Report of reversal (if any)
9. Uncertainty calculations (Section 8)
10. Emission reduction calculation description and supporting workbook

4. TREES Validation and Verification Conflict of Interest Document

This form identifies any potential conflict of interest and appropriate mitigation actions if required to ensure an independent validation or verification is conducted. It must be submitted to the ART Registry for review and approval prior to commencing validation or verification services for a given reporting period.

1. List of validation and verification team members
2. List of all validation and verification work conducted for Participant under any program in the past five years
3. List of any additional professional, familial or personal relationships between anyone on the validation and verification team and the Participant or its partners in preparing the documentation as listed in the TREES Concept Note

5. TREES Validation Report

(Section subject to change once TREES Validation and Verification Standard is completed)

The TREES Validation Report provides a summary of the validation process used to evaluate the Participant's assertions and its results in the TREES Registration Document. Validation is only required following Year 1 of each crediting period. The report includes:

1. List of validation team members
2. Overview of validation activities including sampling approaches employed and level of assurance sought
3. List of documents and supporting materials reviewed
4. List of staff and stakeholders interviewed during the process
5. Summary of Participant REDD+ program's conformance to the Standard
6. List of clarification requests and nonconformances identified and how each was addressed by the Participant
7. Validation conclusion

6. TREES Verification Report

(Section subject to change once TREES Validation and Verification Standard is completed)

The TREES Verification Report provides a summary of the verification process used to evaluate the Participant's assertions to a reasonable level of assurance and its results. The report includes:

1. List of verification team members
2. Overview of verification activities including sampling approaches employed
3. Summary of Participant REDD+ program's conformance to the Standard
4. List of opportunities for improvement, clarification requests and nonconformances identified, and as appropriate, how each was addressed by the Participant
5. Verification conclusion including identification of verified emission ERs available for crediting, if applicable

The TREES Verification Statement includes the final verified ER quantity, whether the Participant is an HFLD country, and a short summary of the verification conclusion.

7. TREES Variance Request Form

The TREES Variance Request form allows TREES Participants to seek permission on a case-by-case basis to diverge from the requirements of this Standard as outlined in Section 11. The form includes:

1. Participant information
2. Standard requirement as written
3. Proposed change
4. Justification for the change along with supporting evidence, as appropriate

ANNEX B: REFERENCES

Federici, S., D. Lee, and M. Herold. 2017. *Forest mitigation: A permanent contribution to the Paris Agreement?* Working Paper for CLUA and NICFI, http://www.climateandlandusealliance.org/wp-content/uploads/2017/10/Forest_Mitigation_A_Permanent_Contribution_to_Paris_Agreement.pdf.

Global Observation for Forest and Land Cover Dynamics (GOFC-GOLD) REDD Sourcebook: *The Sourcebook for Land Use, Land Use Change, and Forestry Projects.*

GFOI 2016, Integration of remote-sensing and ground-based observations for estimation of emissions and removals of greenhouse gases in forests. In *Methods and Guidance from the Global Forest Observations Initiative,* Edition 2.0, Food and Agriculture Organization, Rome.

Olofsson, P. et al. 2014. Good practices for assessing accuracy and estimating area of land change. *Remote Sensing of Environment*, 148. http://reddcr.go.cr/sites/default/files/centro-de-documentacion/olofsson_et_al._2014_-_good_practices_for_estimating_area_and_assessing_accuracy_of_land_change.pdf.

Pearson, TRH, S. L. Brown, and R. A. Birdsey. 2007. Measurement guidelines for the sequestration of forest carbon, 42. Prepared by Gen. Tech. Rep. NRS-18. Newtown Square, PA: United States Department of Agriculture, Forest Service, Northern Research Station.

Pearson, T., S. Walker, and S. Brown. 2005. Sourcebook for Land Use, Land-Use Change and Forestry Projects. Prepared for BioCarbon Fund of World Bank.

ANNEX C: SECRETARIAT NOTES FOR PUBLIC COMMENT PERIOD

TREES was developed to operationalize the ART Principles and meet the overall ambition desired for scale and reduced emissions over time. The Secretariat prepared numerous analyses for the Interim Steering Committee (ISC) for review and discussion prior to decisions being taken on key elements. This annex provides additional information on some of the elements to provide context for the reader during the public comment period.

In addition, a summary of the validation and verification process has been provided to provide context on the planned approach for TREES validation and verification.

Section 3.1 – Timing for transition to national accounting
The 2025 date was selected for transition from subnational area accounting to national accounting based on the opinions of consulted experts that most countries could successfully achieve national accounting within the timeframe. It was acknowledged that some countries may not manage to reduce emissions at the national (or jurisdictional) level in that time-frame, and that they may enter ART at a later stage. While other programs may be available for subnational area accounting for longer periods, the intent of ART and TREES is to help accelerate progress toward national scale accounting and implementation.

Section 3.1 – Eligibility criteria
The Secretariat prepared analyses of several options for defining eligibility requirements for subnational areas. Options presented to the ISC included a range of area thresholds, combinations of area thresholds with forest emissions thresholds, and combinations of area thresholds with minimum % of national forest area.

The approach selected allows either land area or land area combined with a % of national forests for a few reasons. First, an emissions threshold was considered and not selected because of concern that it could bias excessively toward participation of high deforestation jurisdictions at the expense of those at an earlier state of frontier development/expansion. Second, the selected approach was deemed to provide some flexibility while remaining relatively simple and highly transparent. Third, because subnational jurisdictions can be combined, the proposed approach could foster regional cooperation.

3.2 – Removals
ART believes it is extremely important to reward countries that have achieved very low deforestation rates by allowing crediting for removals. Establishing a historical reference level for removals has unique technical implementing challenges that need to be further explored. It is the intent of ART to include an approach for crediting removals in the next version of the TREES Standard

noting that removals can only be rewarded when there are results below crediting baseline for deforestation and forest degradation.

Section 5.1 – Establishing the crediting level

The Secretariat prepared analyses of several options for ISC review for establishing and updating the TREES crediting level. The decision was made to base the initial crediting level on a 10-year historical average, as it is consistent with other programs and rewards early actors. The subsequent crediting levels are determined based on an automatic, exogenous 20% ratchet every five years to achieve the desired ambition in emission reductions over time.

Section 8 – Uncertainty

There are multiple approaches for calculating uncertainty and the field is still developing. ART will monitor best practices as they continue to emerge and update the TREES Standard as appropriate. The current uncertainty threshold of 15% was selected based on a review of publicly available uncertainty calculations for national inventory data. This threshold represents an ambitious, but achievable goal to minimize uncertainty in the reported data.

Section 9 – High Forest Cover/Low Deforestation (HFLD) Countries

ART believes it is extremely important to reward HFLD countries that maintain low rates of deforestation by allowing crediting for maintaining or further enhancing the forest carbon stock. It is the intent of ART to establish a robust approach to explicitly address this category and credit HFLDs beyond historical levels, for continued low deforestation, in a manner consistent and fungible with credits from other REDD+ activities or other carbon markets. To allow for fungibility with other emissions in carbon markets, it will be important that crediting levels for HFLDs - as with reduced deforestation/degradation or increased removals – are ambitious and conservative.

TREES will be immediately applicable to all countries, including HFLDs, to credit emissions reductions from reduced deforestation and forest degradation. However, HFLD countries are likely to receive fewer emissions reduction credits under the initial TREES methodology than high deforestation countries. To differentiate HFLD countries under TREES, countries meeting the definition of HFLD will therefore be eligible to have credits tagged as such to allow greater visibility to the market and buyers.

Section 14 - Validation and Verification

The TREES Validation and Verification Standard will outline all the requirements for Validation and Verification Body approval and the validation and verification process.

As defined in the TREES Standard, the validation extends the scope of the initial verification and ensures the eligibility requirements are met and that the crediting level has been appropriately calculated based on a clearly defined methodology. Such validation shall only occur following the first year of each crediting period. The verification ensures that the Participant's Monitoring Report correctly documents the Participant's conformance to the requirements of the

TREES Standard and the country's monitoring procedures including the safeguards and that the calculated number of emission reductions are accurate and free of any omissions.

The validation and verification processes will follow international best practices for third party auditing of greenhouse gas assertions and validation and verification bodies will apply sampling plans that reflect the scale of TREES. The validation and/or verification may include for example a focus on reviewing training and data quality assurance processes within the different organizations of the host country with responsibilities for activity implementation, monitoring and data collection.