Publication Date:
25/11/2026

Methodology:
M002

Version:
v1.1

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Core Document

Methodology for Terrestrial Forest Conservation

Summary

This methodology sets out the criteria, requirements, and procedures for certifying terrestrial forest conservation projects that avoid unplanned deforestation and degradation. It includes the principles and methods for assessing project eligibility, demonstrating additionality, addressing permanence, baseline setting, quantifying net greenhouse gas (GHG) emission reductions, and establishing monitoring and reporting requirements.

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1 Introduction

1.1 Normative References

This document must be read in conjunction with the latest versions of the following documents, available on the Equitable Earth website:

- Equitable Earth Standard
- Programme Manual
- Validation and Verification Procedure
- Registry Procedures
- Standard Setting and Methodology Development Procedure
- Terms & Definitions
- Baseline Setting Module
- Future Improvements & Limitations

1.2 Reading Notes

Several sections in this document are divided into Principles and Methods as follows:

- Principles set out the requirements applying to each of the three pillars.
- Methods elaborate on how developers and Equitable Earth must apply these requirements.

See the *Reading Notes* section in the Programme Manual for additional information.

1.3 Effective Dates

1.3.1 This version of the methodology becomes applicable on November 25, 2026. All developers submitting a Project Design Document on or after this date must conform to this version.

2 Eligibility Criteria

This methodology includes requirements and procedures for Avoided Unplanned Deforestation and Degradation (AUDD) activities. Projects are eligible to apply this methodology if they meet the criteria set out in this section.

2.1 Scope

2.1.1 Developers must implement targeted activities to address the drivers of deforestation[1] and degradation.[2] These activities include but are not limited to:

1) **Exclusion of deforestation and degrading practices:** prohibition of activities such as harvesting and logging of timber within the project area, and, where feasible, implementation of controls to reduce access

2) **Community-based sustainable practices:** collaboration with communities to encourage sustainable resource use and alternative livelihoods.[3]

2.1.2 Developers may implement project activities that support the Livelihoods, Ecological Condition, and/or Carbon pillars anywhere within the project area, including in areas excluded from the project crediting area. ECUs are generated only for avoided emissions in the project crediting area.

2.2 Geographic Boundaries

2.2.1 Developers must delimit and document the geographic boundaries of the project, including the project area and the project crediting area. Refer to the *Geography and Project Boundaries* section in the Equitable Earth Standard for more details.

2.2.2 The project area must be located within at least one jurisdiction for which Equitable Earth has developed a risk map.[4]

[1] *Deforestation* is defined in the Terms & Definitions document.

[2] Under this methodology, Equitable Earth uses a forest degradation definition adapted from the IPCC, under which forest degradation is interpreted as a long-term loss of forest carbon stocks on land that remains forest (forest remaining forest). Adapted from IPCC, 2003, "Definitions and Methodological Options to Inventory Emissions from Direct Human-induced Degradation of Forests and Devegetation of Other Vegetation Types".

[3] Refer to the *Ecosystem Services* section for more details on sustainable resource use and alternative livelihoods in scope for this methodology.

[4] Refer to Equitable Earth's website for a list of jurisdictions with available risk maps.

2.2.3 The project area may be located on any combination of public, private, communal, or mixed lands and territories, including those owned and/or managed by Indigenous Peoples (IPs) and Local Communities (LCs).

2.2.3.1 Public lands that are contested by IPs and/or LCs, have rights-of-way, or hold cultural significance for IPs and LCs are subject to the Free, Prior, and Informed Consent (FPIC) requirements set out in the Equitable Earth Standard.

2.2.4 The project area may be located within a protected area, including areas classified under any IUCN management category (Ia–VI) and governed under any recognised governance type (e.g., government, shared, private, by IPs and/or LCs) as established by the International Union for Conservation of Nature (IUCN),[5] provided additionality requirements are met.

2.2.5 The size of the project area and/or the project crediting area may be expanded in conformance with the requirements and procedures established by Equitable Earth. Refer to the *Project Expansion* section in the Programme Manual for more details.

2.2.6 Projects of any size are eligible to apply this methodology. There are no restrictions based on land area or estimated GHG emission reductions.

2.3 Temporal Boundaries

2.3.1 Developers must define the temporal boundaries for the project area, specifying the period during which deforestation and degradation impacts are mitigated by project activities and eligible carbon stocks are monitored for reversals.

Refer to the *Key Project Dates and Crediting Period* section in the Equitable Earth Standard for more details on core requirements related to the project start date, project registration date, submission deadline, and crediting period. Specific requirements for monitoring periods and their frequency are set out in the *Monitoring* section of this methodology.

2.4 Land Cover

2.4.1 To be eligible for Equitable Carbon Unit (ECU) crediting, at least 90% of the project crediting area must have met the Equitable Earth definition of forest[6]

[5] Dudley, N. (Ed.) (2013). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN.
[6] Under this methodology, Equitable Earth applies a forest definition for each jurisdiction using a defined hierarchy that prioritises official governmental definitions, such as those submitted to the UNFCCC, followed by definitions or data sources used in official forest inventories, and definitions supported by relevant scientific and technical

at the project start date and for the 10 years prior. Forest and non-forest areas are identified in accordance with the procedures set out in the Baseline Setting Module.

2.4.2 The project crediting area must exclude the following areas:

1) Any area(s) of mangrove, peat-dominated organic soils,[7] and/or permanently inundated water bodies.

2) Any monoculture and/or forest plantations intensively managed for timber products, food, or fibre, even if classified as forest.[8]

3) Any area that is already registered under an existing forest carbon project of another carbon crediting programme.

These areas are identified and excluded in accordance with the procedures set out in the Baseline Setting Module. Refer to the *Procedures for Spatial Exclusions* section in the Baseline Setting Module for more details.

2.4.3 The project area may include any combination of forest and non-forest land, including converted native ecosystems, plantations, and other areas that do not meet the eligibility criteria for the project crediting area, provided such areas are excluded from the project crediting area in accordance with the requirements in this section.

literature. If none is suitable, Equitable Earth uses an FAO-adapted definition. Refer to the Baseline Setting Module for further details on the forest definition.

[7] Areas where peat occurs in a mosaic with mineral soils are not excluded under this version of the methodology.

[8] Equitable Earth's approach to forest plantation eligibility is informed by the concept of plantation forest reflected in the Regulation (EU) 2023/1115.

3 Livelihoods

3.1.1 Developers applying this methodology must demonstrate that their project meets all requirements under the Livelihoods Pillar in the Equitable Earth Standard. This includes requirements related to livelihoods baseline assessment, stakeholder engagement, social safeguards, and engagement with IPs and LCs (e.g., FPIC, social additionality).

4 Ecological Condition

4.1 Principles

Project Activities

4.1.1 Developers must plan and implement project activities to achieve positive ecological impacts, minimise risks, and mitigate negative socio-environmental impacts in line with the requirements in the Equitable Earth Standard and this methodology.

4.1.2 Developers must develop project activities that conserve areas identified as high risk of deforestation and/or degradation and those identified as high conservation values (HCVs) within the project area.

4.1.3 Developers must promote local ownership by involving IPs and LCs identified as core and direct project stakeholders in the design and monitoring of ecological condition and project activities, and in data collection processes.

Ecosystem Extent and Connectivity

4.1.4 Developers must demonstrate concrete actions to maintain and increase ecosystem extent and connectivity and mitigate human-made barriers that fragment or hinder connectivity. Actions may include, but are not limited to:

1) Maintaining minimum corridor widths
2) Establishing new corridors (e.g., installation of wildlife crossings, overpasses, underpasses)
3) Establishing or maintaining buffer zones
4) Demonstrating no net habitat loss
5) Removing barriers (e.g., roads, fences)

4.1.5 Developers must assess the impact of and justify the need for project activities that create new barriers.

4.1.6 Developers must strive to limit and mitigate the impacts of infrastructure (e.g., roads, hydroelectric dams) development or land-use changes that reduce connectivity within the project area.

Ecosystem Services

4.1.7 Where IPs and LCs depend on ecosystem services for their livelihoods, developers must ensure access is maintained.

4.1.8 Developers must ensure that access to Non-Timber Forest Products (NTFPs) and their derived benefits is fair, transparent, and non-discriminatory. Particular attention should be paid to vulnerable project stakeholders and IPs and LCs who depend on these resources for their livelihoods.

4.1.9 If NTFPs are generated within the project area, developers must identify any ongoing unsustainable practices. Where such practices are identified, developers must work with project stakeholders to encourage sustainable management of NTFPs, including through capacity development and training for core and direct stakeholders, as needed.

4.1.10 IPs and LCs may selectively harvest wood, including timber and fuelwood (e.g., wood collected for cooking or sustainable charcoal production) in harvest areas within the project area for subsistence and as community-based sustainable practices (i.e., 'permitted uses'), provided that:

1) Harvesting is undertaken to meet household and community subsistence needs of IPs and LCs

2) Resources are harvested for the community's own consumption only. Production for sale or trade beyond the producing community is prohibited.

3) Resources are harvested within documented regeneration rates

4) Natural recovery of the harvest areas is facilitated through:

    a) Selection of species based on the local ecological context

    b) Rotation between harvest areas, with recovery periods based on species growth rates

    c) Management of fire and other threats to regeneration relevant to the local ecological context

5) Felling of live standing trees is prohibited.

4.1.11 Developers must:

1) Co-design a harvesting plan[9] with IPs and LCs that:

[9] Where Equitable Earth determines the emissions resulting from the activities set out in the harvesting plan may be significant, Equitable Earth may account for their associated GHG impacts in line with the

a) Identifies participating communities

b) Details permitted uses by establishing how many resources are needed for subsistence

c) Provides estimates of quantities of each resource needed to meet the subsistence needs

d) Delimits harvest areas within the project area

e) Specifies the species to be harvested, their growth rates, harvesting cycles and how ecosystem threats to regeneration will be managed

The harvesting plan must be supported by robust evidence prioritising local data sources and community knowledge.

2) Describe, justify, and monitor permitted uses as part of the theory of change.

Ecosystem Threats

4.1.12 Developers must locate where each identified threat poses risks to the project area.

Anthropogenic Threats

4.1.13 Developers must identify and analyse past and/or current drivers of anthropogenic deforestation and degradation (e.g., anthropogenic fires, logging, agricultural expansion), and the stakeholders involved (e.g., local farmers, logging operators).

4.1.14 Developers must strive to reduce deforestation and degradation drivers affecting the project area, including but not limited to land conversion for agriculture and ranching, infrastructure development, browsing, overgrazing, illegal or unsustainable harvesting, hunting practices, nutrients and chemical runoffs, and proliferation of invasive species.

Natural and Climatic Threats

4.1.15 Developers must identify and strive to manage emergent and recurring natural threats to ecosystem conditions in the project area. This may include, but is not limited to, invasive species, grazing, uncontrolled fire, soil erosion, flooding, pests, disease, drought, and smothering.

methods set out in the *Materiality Assessment* and *Quantifying Emissions from Project Activities* sections. Equitable Earth documents this information in the GHG Baseline Report and the GHG Monitoring Report.

4.1.16 If developers or project stakeholders identify invasive species in the project area, developers must implement control measures and prevent further spread.

4.1.17 If invasive species are to be removed, developers must detail plans for the proper disposal, focusing on minimising carbon emissions linked to their disposal.

4.2 Methods

Baseline Assessment

4.2.1 Developers must conduct a comprehensive baseline assessment to describe the ecological condition of the project area. The baseline assessment must be used to inform the design of project activities, and is supported by:

1) Desktop research and assessments
2) Field observations (refer to the *Field Assessment* section for more details)
3) Stakeholder engagement

4.2.2 Developers must establish an ecological condition baseline for the project area using each of the categories below (Table 1).

4.2.2.1 Developers should monitor multiple indicators and metrics.

4.2.2.2 Developers must justify the selection of each metric and state why it is representative.

4.2.2.3 Developers must justify the data sources used to inform the baseline assessment.

Table 1: Ecological condition baseline requirements.

Category	Requirement	
Ecosystem extent	Developers must provide	Extent of core forest area
	Developers must provide	Map of roads, settlements, infrastructure and other barriers

Category	Requirement	
	Developers must measure and monitor at least one metric	Example metrics may include, but are not limited to, canopy cover, crown visibility, relative distance between crowns, and canopy height
Ecosystem function	Developers must document	Vegetation strata
	Developers must document	Disturbance type, if observed
	Developers must document	Regeneration, if observed
	Developers must document	Identification and abundance of invasive species
	Developers must measure and monitor at least one metric	Indicator species. Example metrics may include, but are not limited to, population and occupancy.
	Developers must provide	HCVs in the project area
	Developers must measure and monitor at least one metric	Hydrology and water quality. Example metrics may include, but are not limited to, turbidity, suspended sediment, nutrients, and contaminants.
	Developers must measure and monitor at least one metric	Soil health. Example metrics may include, but are not limited to, bulk density, soil texture, soil moisture, contaminants, microbial activity, and fauna.
Ecosystem threats	Developers must	Provide information on the existing and historic prevalence and scope of identified ecosystem threats (e.g., incidence and severity of fires, invasive species)
	Developers must	Identify and comment on the effectiveness of past and/or ongoing efforts to mitigate or reduce identified threats

Category	Requirement	
Ecosystem services	Developers must	Determine the main ecosystem services derived by core and direct project stakeholders, and describe how they contribute to their land use.

Field Assessment

4.2.3 Developers must design and conduct a field assessment to gather observations of the ecological condition of the project area.

4.2.4 Developers must assign geolocated field assessment plots that will remain fixed throughout the crediting period. Additional field assessment plots can be added over time.

4.2.5 Developers must justify the selection of field plots and provide evidence that the plots are representative of the variation in the project area with respect to:

1) Physical conditions (e.g., topography, water regime, substrate)
2) Ecosystem state (e.g., canopy metrics, land cover and land use, history)
3) Threats and accessibility (e.g., type and frequency of disturbance, distance to habitat edge, distance to roads, rivers, and settlements)

4.2.6 Developers must georeference all field data and georeference and describe all field assessment plots according to the categories in 4.2.5.

Intervention Plan

4.2.7 Developers must design interventions in line with the *Theory of Change* section of the Equitable Earth Standard.

4.2.8 The interventions must be based on the ecological condition of the project area. This plan must adhere to the specific requirements set out in the *Theory of Change* section of the Equitable Earth Standard.

4.2.9 Each indicator should be monitored at least annually and must be monitored and reported on at each verification. Monitoring approaches may include

remote satellite imagery, field inventories, community-based monitoring, and sensors for continuous monitoring.

4.2.10 Developers must provide details of the monitoring and methods used, such as remote sensing, field assessment, and surveys, in addition to the number, distribution, and location of samples.

4.2.11 The monitoring plan should strive to control for seasonality.

Measurement and Reporting

For more details, refer to the *Monitoring, Reporting, and Verification (MRV)* section of the methodology, and the *Monitoring, Reporting, and Verification (MRV)* and *Theory of Change* sections of the Equitable Earth Standard.

5 Carbon

5.1 Baseline Scenario

Principles

5.1.1 Developers must establish the baseline scenario representing the most plausible land-use trajectory in the absence of project activities, consistent with historical trends, applicable legal and policy frameworks, and jurisdictional REDD+ strategies.

5.1.2 Developers must re-evaluate the baseline scenario at the end of the baseline validity period (BVP) to reflect updated deforestation dynamics, changes in relevant government policies, and advances in available data. Refer to the *Baseline Validity and Re-Evaluation* section for more details. Validation of the baseline scenario re-evaluation occurs at the subsequent verification.

Methods

5.1.3 Developers must establish the baseline scenario by identifying and analysing alternative land use scenarios to the proposed project activities in a qualitative assessment.[10]

5.1.4 Developers must re-evaluate the original baseline scenario at the end of the BVP by assessing the impact of any potential changes to policies or regulations. If no changes affecting the baseline scenario occurred, and the original baseline scenario remains valid, developers must demonstrate this.

5.2 Additionality

Principles

5.2.1 Developers must demonstrate additionality following a three-step process:

1) **Regulatory surplus.** Developers must demonstrate that there is no enforced legal obligation to implement forest conservation activities.

[10] This methodology requires developers establish a qualitative baseline scenario, while Equitable Earth sets the quantitative project baseline. Refer to the *Project Baseline* and *Carbon Quantification* sections for more details on project baseline setting and calculation of baseline emissions, respectively.

2) **Barrier analysis.** Developers must identify existing barriers that would prevent the implementation of project activities and demonstrate that ECU revenues are the decisive element in overcoming the barrier(s). Developers must, at a minimum, include a financial barrier in the analysis, and may also include other relevant barriers from, but not limited to, the list below:

    a) **Financial barriers:** challenges related to, for example, insufficient funding, high upfront costs, and difficulty accessing finance. This includes existing policies and requirements other than legal obligations to lower GHG emissions (e.g., non-mandatory policy incentives and enablers).

    b) **Technical barriers:** challenges related to the application of technology, methodologies, and technical expertise. Barriers may include difficulties in applying established methodologies, managing complex technical tasks, and ensuring accurate measurement and monitoring of key indicators and outcomes, such as carbon sequestration.

    c) **Capacity barriers:** challenges related to education, technical training, and human resources. Barriers may include a lack of skilled personnel or insufficient training in conservation techniques, monitoring protocols, and carbon accounting.

    d) **Logistical barriers:** challenges related to the infrastructure, operational aspects of a project, and labour shortages. Barriers can include poor accessibility to key sites, limited transportation options, inadequate facilities, and the unavailability of necessary materials.

    e) **Cultural and social barriers:** challenges in the collective movement of communities towards implementing, maintaining and monitoring conservation projects due to, for example, lack of information, threats to the safety of community members, and existing social structures and norms.

    f) **Regulatory and institutional barriers:** limitations within the regulatory framework and its relevant institutions, such as limited staff capacity, lack of necessary skills, local regulations, complex permitting processes, ineffective bureaucratic processes, or challenges in meeting specific compliance standards.

3) **Common practice assessment:** Developers must demonstrate that activities similar to the project activities are not common practice in the

project's jurisdiction, following the steps set out in the *Methods* section below.

Methods

5.2.2 Both Equitable Earth and the Validation and Verification Body (VVB) must assess the demonstration of additionality and all supporting evidence provided.

Regulatory Surplus

5.2.3 Developers must identify all applicable local, regional, or national legislation, policies, or agreements in force in the project's jurisdiction.

5.2.3.1 For high-income countries, all legal requirements are deemed enforceable.[11]

5.2.3.2 For countries other than high-income countries, legal requirements are only deemed non-enforceable based on legal and documented sources relevant to the project activity.

5.2.3.3 Where a legal obligation to undertake conservation activities applies to the project crediting area, developers must indicate and prove exactly where and in what context it applies.

5.2.3.4 Where a legal obligation to implement conservation measures applies to the project crediting area but cannot be fulfilled without the project's funds or technology, developers must prove that barriers exist to establish additionality.

Barrier Analysis

5.2.4 Developers must provide verifiable supporting evidence to identify and demonstrate the presence of existing barriers to the implementation of project activities. Evidence may include, but is not limited to, the examples outlined below:

1) **Financial barriers:** statements of account, notice of refusal of subsidies, and evidence that alternative land uses are more profitable without carbon credits.

2) **Technical barriers:** lack of tools, records of failed pilot trials.

[11] Refer to the Terms & Definitions document for a full list of high-income countries.

3) **Capacity barriers:** list of staff, job descriptions, expertise and relevant knowledge, access to training and capacity-building resources, training records (or lack thereof).

4) **Logistical barriers:** maps showing remoteness or poor access, transport cost estimates or invoices, and photos of terrain and access routes.

5) **Cultural and social barriers:** stakeholder engagement reports, evidence of past opposition or failed conservation attempts, and records of traditional land use patterns.

6) **Regulatory and institutional barriers:** unclear or restrictive legal frameworks for land use or carbon rights, evidence of policy gaps or lack of institutional support, land tenure records or land registry status, legal reviews of land or forestry laws, and correspondence with authorities showing regulatory delays.

5.2.5 Developers must demonstrate and provide verifiable evidence that ECU revenue is the decisive element enabling the project to overcome the financial barrier. This means developers must show that ECU revenue is sufficient to cover the difference between the project's financial performance without ECU revenue and the threshold needed to overcome the barrier. To do this, developers must conduct either a simple cost analysis, benchmark analysis, investment comparison analysis, or another comparable test suited to the type, scale, and context of the project.[12]

The financial analysis must:

1) Cover project operations for at least 10 years from the project start date, but should preferably cover the entire crediting period, where feasible.

2) Include all relevant costs, revenues, and cost savings (e.g., subsidies) other than ECU revenue.

3) Include the source, rationale, and any assumptions associated with input data and values. Developers should use data from records of the decision to implement the project (e.g., business plan, feasibility study, loan or grant application, board approval), or, where no such records exist, the earliest documented project planning step.

Developers must provide the entire analysis and supporting evidence for assessment by Equitable Earth and the VVB. Refer to the *Financing and*

[12] Developers must name the financial indicator (e.g., return on investment, discounted cash flow value, cost-benefit ratio) when applying a benchmark or investment comparison analysis, and apply it consistently to the scenarios both with and without ECU revenue. If a cost-benefit ratio is used, benefits must be limited to monetisable revenue and cost savings, excluding non-market, social, or environmental values. Developers may only use a simple cost analysis when there is no reasonably available alternative land use (e.g., grazing, agriculture, or timber production) capable of generating revenue or cost savings.

Project Budget section in the Equitable Earth Standard for more information about reporting commercially sensitive and/or confidential information.

5.2.6 Developers must demonstrate that at least one alternative to the project (e.g., business-as-usual scenario) does not face the same identified barrier(s) as the project.[13]

Common Practice Assessment

5.2.7 Developers must demonstrate that the project would not be common practice using the following steps:

1) Define the project activity type(s) in accordance with the *Scope* section of this methodology.[14]

2) Define the geographic region for the assessment. The geographic region should have a similar policy environment as the project area, and should, at most, align with the national jurisdiction. Where there are sub-national (e.g., regional, local) programmes providing incentives for conservation activities, then the geographic region for assessment should align with them.

3) Identify in the defined geographic region any activities of the same project activity type that are currently active or underway at the time of the assessment, or that were active at any time during the ten years prior to the project start date, excluding any projects that are under certification or registered with a carbon crediting programme.

4) Compare the project activity type to the identified activities by selecting relevant comparison attributes, and assessing whether the activities are similar and whether any similar activities present distinctions:

    a) Comparison attributes are conditions or circumstances used to assess whether activities are similar or present distinctions, and may include, but are not limited to, scale, land use, ecological characteristics, degradation status, land tenure, policy

[13] For the purposes of this requirement, an alternative to the project is a land-use or management practice that would plausibly continue in the absence of the project (e.g., continued grazing, continued degradation). The identified alternative is used to assess whether the same barrier(s) identified for the project apply to that scenario, and is independent of the baseline used to quantify emission reductions, which is established using the Baseline Setting Module.

[14] For the common practice assessment under this methodology, 'project activity type' is an adaptation of the programme-level definition of 'project activity' set out in the Terms & Definitions, and refers to the REDD+ activity type(s) defined under the UNFCCC and permitted under the *Scope* section of this methodology, rather than the individual project activities implemented by the project. Under this version of the methodology, there is a single project activity type: avoided emissions from deforestation and degradation. REDD+ activity types are defined under Decision 1/CP.16 (The Cancun Agreements), paragraph 70 (UNFCCC, 2011).

environment, funding or access to resources, and economic or socioeconomic conditions.

b) Developers must justify the relevance of the comparison attributes selected, define the qualitative or quantitative criteria used to assess comparability (e.g., the same land-use category or a defined quantitative range for scale), and apply the criteria consistently to all identified activities. The classifications or values used for each comparison attribute must be supported by documented evidence. Quantitative information should be used where available and relevant.

c) Similar activities are those that share comparable conditions or circumstances that affect the implementation of the project activity type, as demonstrated using the selected comparison attributes and criteria.

d) A distinction must represent a verifiable difference in circumstances that affects whether the project activity type would be implemented under business-as-usual conditions (e.g., similar activities had access to non-carbon funding or subsidies that are unavailable to the project, benefited from a policy that has since ended, or did not face a material site-specific constraint faced by the project). Minor operational differences that do not fundamentally affect the implementation of the project activity type under business-as-usual conditions do not constitute distinctions.

5) For each of the project types, calculate the adoption rate (%) of any similar activities identified using the following equation (E.1):

$$A_i = [1 - (\frac{Ndist,i}{Nsim,i})] \times 100 \quad \textbf{(E.1)}$$

Where:

- A_i = Adoption rate for each project activity type *i*; percentage (%)
- $N_{sim,i}$ = number of activities identified in the defined geographic region similar to project activity type *i*

- $N_{dist,i}$ = number of similar activities with distinctions from the project activity type *i*; $N_{dist,i}$ must not exceed $N_{sim,i}$

6) Using the calculation results, determine whether or not each of the project activity types is common practice, based on the following:

   a) Where the adoption rate A_i is below 20%, the project activity type is not common practice and is therefore additional.[15]

   b) Where the adoption rate A_i is equal to or above 20%, the project activity type is common practice and is not additional.

   c) Where no similar activities exist in the defined geographic region (i.e., $N_{sim,i}$ = 0) for project activity type *i*, the adoption rate A_i must be set to 0%, and the project activity type is deemed not common practice.

   d) Project activity types determined to be common practice are not additional and are not eligible for crediting.

5.3 Leakage

Activity-shifting Leakage

Principles

5.3.1 Equitable Earth quantifies activity-shifting leakage emissions resulting from deforestation and degradation activities displaced by the implementation of project activities, and deducts the corresponding emissions from the project's gross emission reductions.

5.3.2 Developers must identify and, where applicable, mitigate activity-shifting leakage risks through targeted strategies and activities, designed and implemented throughout the crediting period.

5.3.3 Equitable Earth may apply additional adjustments in cases where activity-shifting leakage risks are deemed material or not adequately mitigated.

[15] Equitable Earth established a 20% adoption rate threshold in alignment with the CDM tool to assess common practice.

Methods

5.3.4 Equitable Earth pre-defines potential activity-shifting leakage risks to support developers in identifying and mitigating risks.

5.3.5 Developers must review the activity-shifting leakage risks pre-defined by Equitable Earth, indicate for each risk whether it applies to the project activities, and identify any additional activity-shifting leakage risks not captured in the pre-defined list.

5.3.6 Developers must develop a mitigation plan, including indicators and monitoring methods and frequency, for each identified risk, and report on risk mitigation during each monitoring period.

5.3.7 Equitable Earth applies a fixed leakage deduction of 10% to avoided forest-loss emissions to account for CO_2 and non-CO_2 emissions from activity-shifting leakage at each monitoring period.[16] Refer to the *Quantifying Emissions from Activity-Shifting Leakage* section for more details.

5.3.8 Equitable Earth may apply a higher activity-shifting leakage deduction of up to 100% upon request from the developer or if the main driver of deforestation and degradation is local supply.

Market Leakage

Principles

5.3.9 Equitable Earth conducts a market leakage assessment to quantify market leakage emissions and deducts them from the project's gross emission reductions. Market leakage emissions result from the avoided production of marketable commodities that, in the baseline scenario, would have been supplied as a result of deforestation and degradation within the project crediting area.

5.3.10 Equitable Earth attributes market leakage based on the production of a marketable commodity supply that would have occurred under the baseline scenario, but is foregone in the project scenario. Commodities produced or increased as a result of project activities are excluded from market leakage deductions and not considered market-linked drivers.

5.3.11 Equitable Earth applies market leakage deductions in proportion to the baseline emissions attributed to each marketable commodity, the assigned market leakage risk class and its respective market leakage factor.

[16] The 10% factor is a conservative default supported by Equitable Earth's global analysis of REDD+ projects (76 projects; 532 monitoring years, 2003–2023), which found typical activity-shifting leakage well below 10% across regions and methodologies.

5.3.12 For each driver of deforestation and degradation in the project crediting area in the baseline scenario, developers must: [17,18,19]

1) Identify whether each identified driver is associated with a marketable commodity.

   a) **Market-linked drivers:** Where marketable commodities are identified, developers must specify the commodities and provide evidence for the expected market destination and alternative supply.

   b) **Non-market-linked drivers:** Where no marketable commodity is identified, developers must state and provide evidence for the motive of the activity (e.g., settlement expansion).

2) Provide evidence and local context to justify the driver identification and market linkage, prioritising local data sources and community knowledge, before relying on sub-national, regional, or global data.

5.3.13 Equitable Earth defines market leakage risk classes, their respective default market leakage factors, and assigns them to all marketable commodities.

5.3.13.1 Equitable Earth uses predefined market leakage risk classes for each marketable commodity.

5.3.13.2 Equitable Earth may increase or decrease the assigned risk class where project-specific circumstances indicate a higher or lower risk of market leakage.

5.3.13.3 Equitable Earth documents and makes available the evidence and rationale supporting each market leakage risk class assignment.

5.3.13.4 Equitable Earth applies a market leakage factor of 100% to the share of baseline emissions for which developers have not provided the inputs required to complete the market leakage assessment.

5.3.14 Developers may lower, for a given marketable commodity, the assigned market leakage risk class and respective market leakage factor by implementing and monitoring mitigation actions (e.g., increasing production of the displaced commodity on non-forest land to replace supply forgone as a result of project activities).

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[17] Refer to the *Anthropogenic Threats* sub-section of the Ecological Condition pillar in this methodology for requirements to identify baseline drivers of deforestation of degradation.

[18] For the market leakage assessment, Equitable Earth considers baseline drivers within the project crediting area only. Equitable Earth reserves the right to request additional information on activities related to market-linked drivers located outside the project crediting area but within the project area, where those activities may have a high risk of generating market leakage emissions.

[19] Refer to the *Theory of Change* section of the Equitable Earth Standard for more information on the connection between the baseline scenario, theory of change, and the design of project interventions.

5.3.15 Equitable Earth determines the default allocation of baseline emissions to each market-linked driver.

5.3.16 Developers may estimate, for each marketable commodity, the shares of baseline emissions attributable to the identified market-linked drivers and respective marketable commodities to adjust the attribution of baseline emissions.

Methods

Market Leakage Assessment – Framework

5.3.17 Equitable Earth applies a framework to conduct the market leakage assessment. The framework consists of the following elements:[20]

1) **Market leakage risk class:** Determined as the combination of displacement risk, deforestation risk per marketable commodity, and adjustments based on local context (*Appendix A*, Fig. 1):

   a) **Displacement risk**: Determined as the combination of market destination and alternative supply.

   b) **Commodity-level deforestation risk:** Determined as land use and land-change baseline emissions attributed to a marketable commodity.

2) **Area-based attribution of emissions**: Determined as a share of baseline emissions attributed to each baseline driver, or, where specified by the developer, to each marketable commodity (*Appendix A*, Fig 2).

Market Leakage Assessment – Risk class determination

5.3.18 Equitable Earth predefines the baseline driver list, the market destination categories, the alternative supply categories, the default deforestation risk per commodity, the market leakage risk classes, and the respective default market leakage factor for each risk class.

5.3.18.1 Equitable Earth reviews all predefined market leakage parameters at least every five years, in line with the BVP and adaptive management requirements, and may update them sooner if new data become available, errors are identified, or improvements are warranted (Tables 2–6, *Appendix A*).

5.3.19 Developers must select the baseline drivers present in the project crediting area using the predefined list maintained by Equitable Earth and identify any corresponding project activities that mitigate each driver (Table 2).

[20] Production volumes, commodity prices, and market elasticities are not required in the current version of the methodology, but may be required in future versions.

5.3.19.1 Developers must notify Equitable Earth if a driver present in the project crediting area in the baseline scenario is not included in the predefined list.

Table 2: Baseline drivers of deforestation and degradation in the project crediting area.

Baseline Driver	
Logging	Commercial timber extraction
	Illegal or informal logging
	Fuelwood collection
	Charcoal production
Permanent Agriculture	Commercial agriculture
	Illegal or informal commercial agriculture
Shifting Agriculture	Subsistence agriculture and shifting cultivation
Cattle ranching	Commercial cattle ranching
	Subsistence pastoralism
	Illegal or informal ranching
Speculative land tenure clearing	
Mining	

5.3.20 Developers must identify, for each market-linked driver, the relevant marketable commodities from the list predefined by Equitable Earth (*Appendix A*, Table A1).

5.3.20.1 Developers must notify Equitable Earth if a marketable commodity present in the project crediting area in the baseline scenario is not included in the pre-defined list.

5.3.21 Developers must assess, for each identified market-linked driver, whether the marketable commodity is sold beyond the producing community, and select its relevant market destination category from the list pre-defined by Equitable Earth (Table 3).

5.3.21.1 Where the commodity is sold exclusively to the producing household or community, developers must provide evidence justifying why production is for local consumption only.

5.3.21.2 Where a marketable commodity reaches more than one market destination, the largest-scale applicable destination category applies.

Developers must provide the documented evidence and rationale supporting the assessment. Evidence may include, but is not limited to, stakeholder engagement and community consultation records.

Table 3: Market destination categories.

Market Destination	Description
On-site	Products are consumed or used within the producing household or community. Products are not sold beyond the producing household or community.
Local	Products are traded within the local area, including through local informal markets.
Regional or national	Products are supplied to markets beyond the local area within the producing country, including through traders, aggregators or processors.
International	Products are exported directly or supplied through a supply chain serving international markets.

5.3.22 Developers must assess, for each identified marketable commodity, whether it would likely be replaced by an alternative supply beyond the project crediting area, and select its relevant alternative supply category from the list pre-defined by Equitable Earth (Table 4).

Table 4: Alternative supply categories.

Alternative Supply	Description
Low	Limited potential of a marketable commodity produced in the baseline scenario to be replaced by an alternative supply beyond the project crediting area.

Alternative Supply	Description
High	Greater potential of a marketable commodity produced in the baseline scenario to be replaced by an alternative supply beyond the project crediting area.

Refer to *Appendix A* (Table A2) for the matrix used to assess commodity displacement risk based on the market destination and alternative supply of a marketable commodity.

5.3.23 Equitable Earth assigns the default deforestation risk category to each marketable commodity identified by the developer (Table 5, *Appendix A*, Table A1).

Table 5: Deforestation risk category definitions.

Deforestation Risk	Description
Low	Replacement production is unlikely to involve forest clearing or persistent degradation. Additional supply is expected to come predominantly from existing production areas, increased productivity or land that is already cleared.
Medium	Replacement production may involve forest clearing or persistent degradation. Additional supply is expected to come from a combination of existing production areas and expansion onto new land, with some potential for that expansion to affect forests.
High	Replacement production is likely to involve forest clearing or persistent degradation. Expansion into forested areas is an important expected pathway for supplying the displaced commodity.

5.3.24 Equitable Earth assigns the default market leakage risk class and its respective market leakage factor to each marketable commodity identified, which consists of discrete values representing 10%, 40%, 70%, and 90% (Table 6).

5.3.24.1 Equitable Earth applies a market leakage factor of 100% to the share of baseline emissions for which developers have not provided the inputs required to complete the market leakage assessment.

Table 6: Market leakage risk classes and respective market leakage default factors.

Market Leakage Risk Class	Default Market Leakage Factor
Class 1	10%
Class 2	40%
Class 3	70%
Class 4	90%

Refer to *Appendix A* (Table A3) for the matrix used to assess market leakage risk classes based on the displacement risk and commodity-level deforestation risk.

5.3.25 Equitable Earth may assign a lower market leakage risk class and its respective market leakage factors if market leakage risks are mitigated by the developer as follows:

1) Where market leakage risks are mitigated, Equitable Earth calculates a market leakage mitigation factor for each mitigation action.

2) Where market leakage risks are fully mitigated, Equitable Earth may assign the lowest market leakage risk class.[21]

3) Where market leakage risks are partially mitigated, Equitable Earth may either retain the assigned default market leakage risk class or assign a lower risk class.

4) Where a lower class is assigned, Equitable Earth rounds up the market leakage mitigation factor to the nearest market leakage factor and corresponding risk class (e.g., if the assigned default market leakage factor is 70%, and after implementing mitigation actions the resulting market leakage mitigation factor is 35%, the final market leakage factor assigned is 40%).

[21] Equitable Earth sets 10% as the default market leakage factor for the lowest market leakage risk class. Risk levels below 10% are accounted for under the applicable activity-shifting leakage deduction. Where market leakage is not applicable, no additional deductions are applied.

5.3.26 For each market leakage risk that will be mitigated, developers must:

1) Develop a mitigation plan, including indicators and monitoring methods and frequency for each market-linked driver and underlying market leakage risk.

2) Implement and monitor mitigation actions according to the mitigation plan.

3) Provide the mitigation plan at validation and report the relevant indicators at the next baseline scenario re-evaluation. Additional qualitative and/or quantitative evidence may be provided based on local context.

5.3.27 Equitable Earth determines the final market leakage factor per commodity by considering the impact of associated mitigation actions implemented by the project.

Market Leakage Assessment – Area-based Attribution of Emissions

5.3.28 Equitable Earth assigns the default attribution of baseline emissions to deforestation and degradation drivers in the baseline scenario within the project crediting area using a spatial attribution map (e.g., 40% of the forest within the project crediting area is at risk of biomass loss due to permanent agriculture). Refer to *Appendix A* (Fig. 2) for additional details.

Equitable Earth documents the specific datasets and versions applied to each project in the GHG Baseline Report.

5.3.29 Equitable Earth may adjust the spatial attribution map based on inputs from developers. Developers seeking adjustments must:

1) Request an adjustment of the spatial attribution map.

2) Provide area-based shares of baseline emissions across the drivers represented in the project crediting area per marketable commodity (e.g., within the area at risk of biomass loss due to permanent agriculture, 40% corresponds to oil palm, and 60% corresponds to nut trees).

3) Specify the method, or combination of methods, and data sources used to attribute the share of baseline emissions among the identified drivers, justifying the relevance, applicability, and limitations of the selected method(s) and data source(s) in the context of the project.

4) Provide the evidence and analysis supporting the resulting attribution for each baseline driver. Evidence may include, but is not limited to, local data including local observations documented through stakeholder

engagement and community consultation records, national or subnational data, traditional knowledge, peer-reviewed literature, or other publicly available, scientifically credible sources.

5.3.30 Equitable Earth determines the final share of baseline emissions attributed to each driver and commodity. Where two or more drivers could have caused the same baseline emissions, Equitable Earth attributes the baseline emissions from that area to the marketable commodity associated with the highest risk class.

5.3.31 Equitable Earth and the VVB must assess the data, context, and assumptions underlying the market leakage assessment and supporting information provided by the developer.

5.3.32 The predefined baseline driver list, baseline emissions attribution, associated marketable commodities, market destination categories, alternative supply categories, assigned market leakage risk classes, and market leakage factors are determined during the design stage and validated by a VVB. These variables are confirmed or adjusted at verification based on evidence of implemented mitigation activities. The market leakage assessment is re-evaluated during each adaptive management phase.

Market Leakage Emissions

5.3.33 Equitable Earth quantifies market leakage emissions for each monitoring period as the sum of the corresponding baseline emissions associated with each marketable commodity multiplied by the market leakage factor of the assigned market leakage risk class.

5.3.33.1 Market leakage emissions cover the same GHGs as the baseline emissions from which they are attributed.

5.3.33.2 Market leakage emissions are deducted from avoided forest-loss emissions before the uncertainty deduction and the buffer pool contribution.

Refer to the *Quantifying Emissions from Market Leakage* section for additional details.

5.4 Permanence

Principles

Safeguards

5.4.1 Developers must ensure the permanence of emission reductions by implementing mitigation strategies to minimise reversal risks inherent to the project. Refer to the *Risk Management* section of the Equitable Earth Standard for more details.

5.4.2 Developers must contribute to a shared buffer pool managed by Equitable Earth to address the risk of non-permanence of emission reductions.

5.4.3 Developers must notify Equitable Earth of any loss events within the project crediting area. Refer to the Terms & Definitions and the Equitable Earth Standard for additional details on loss events.

5.4.4 Developers must mitigate the risk of unintended fires by preparing a fire prevention and management strategy for the project area. Refer to the *Ecosystem Threats* section of the Equitable Earth Standard for more details.

5.4.5 If prescribed fires are included in project activities, developers must mitigate the risk of biomass burning beyond the area designated for the prescribed fire by preparing a fire management strategy for the project crediting area. This strategy must indicate the location of the expected burnt area, the reason for burning, and its frequency.

Reversals

5.4.6 All reversal risks must be assessed, monitored, and, when applicable, mitigated. Refer to the *Compensation of Reversals* section in the Programme Manual and the *Risk Management* section in the Equitable Earth Standard for more details.

Methods

Risk Assessment & Buffer Pool

5.4.7 Equitable Earth identifies delivery and reversal risks and assesses their likelihood and the severity of their consequences. Refer to the *Risk Assessment* section of the Programme Manual for more details.

5.4.8 Equitable Earth allocates 20% of the verified GHG reductions achieved by each project to the buffer pool at the time of ECU issuance. Refer to the *Buffer Pool* section of the Programme Manual for more details about how buffer pool contributions are managed. Additional details on project-level deductions are in the *Quantifying Net Emission Reductions (NERs)* section of this methodology.

Loss Events

5.4.9 Loss events must be monitored, reported, quantified, and accounted for. Refer to the *Permanence* section of the Equitable Earth Standard for more details.

5.4.9.1 Developers must monitor and report on loss events during the project lifetime. Refer to the *Permanence* section of the Equitable Earth Standard for more details.

5.4.9.2 In case of a loss event, Equitable Earth quantifies the net GHG impact associated with the area that experienced the loss event using the following equation (E.2):

$$GHG_{loss-event} = GHG_{post-event} - GHG_{pre-event} \quad \textbf{(E.2)}$$

Where:

- $GHG_{loss-event}$ = Net GHG impact attributable to the loss event; tCO_2e
- $GHG_{post-event}$ = Total GHG equivalent attributable to the affected area after the loss event; tCO_2e
- $GHG_{pre-event}$ = Total GHG equivalent attributable to the affected area before the loss event; tCO_2e

Reversals

5.4.10 If reversals occur during the project lifetime, ECUs must be compensated through the buffer pool mechanism. Refer to the *Compensation of Reversals* section in the Programme Manual for more details.

6 Project Boundary

The project boundary delimits all carbon pools, emission sinks, and emission sources considered in this methodology.

6.1 Emission Sinks & Sources

6.1.1 Equitable Earth must quantify emissions of GHGs relevant to the project's emission sinks and sources, unless they are shown to be *de minimis*. Equitable Earth only accounts for the GHGs and corresponding potential emission sources specified below (Table 7).

Table 7: GHGs and potential emission sources.

Gas	Potential Emission Sources
CO_2 (carbon dioxide)	• Flux in carbon pools • Fossil fuel
CH_4 (methane)	• Burning of biomass • Livestock
N_2O (nitrous oxide)	• Burning of biomass • Livestock • Synthetic fertiliser

6.2 Carbon Pools

6.2.1 Relevant carbon pools included in this methodology are listed below (Table 8).

Table 8: Carbon pools included and excluded in this version of the methodology.

Carbon Pool	Type	Inclusion	Justification
Woody biomass	**Above-Ground Biomass (AGB)**	Yes	• Significant carbon pool in REDD+ projects • The primary source of emissions from deforestation and degradation • Estimated with high accuracy using remote sensing
	Below-Ground Biomass (BGB)	Yes	• Significant carbon pool in REDD+ projects, directly related to AGB • Can be robustly estimated using established root-to-shoot ratios • Inclusion ensures a more complete accounting of tree biomass emissions
Non-woody biomass	**AGB**	No	• Generally, a minor carbon pool in forest ecosystems relative to woody biomass • High temporal variability and limited impact on overall emission estimates
	BGB	No	• Typically, a small and variable carbon pool

Carbon Pool	Type	Inclusion	Justification
			• Limited data availability and high measurement uncertainty
Soil organic carbon (SOC)		No	• Material in some ecosystems, but high measurement uncertainty and monitoring complexity
Dead wood		No	• Can be significant after disturbance events, but variable over time • Monitoring requires additional field data
Litter		No	• Minor pool in most tropical and subtropical forests • High turnover rate and low overall carbon stock

7 Monte Carlo Simulation

Principles

Equitable Earth applies a Monte Carlo simulation to propagate pixel-level estimates and uncertainty to project- or jurisdiction-level estimations of the parameters of interest. This method propagates uncertainties from each component and reflects their interactions accurately, providing a robust and comprehensive probabilistic representation of both jurisdictional baselines and emission reduction estimates, along with their corresponding uncertainties.

The Monte Carlo approach used by Equitable Earth involves sampling values at the pixel level from the best-fitting probability density function for the parameter of interest. These sampled values are then aggregated to calculate the overall values for the area of interest.

Methods

Through iterative sampling, Equitable Earth constructs a comprehensive probability density function, capturing site-level uncertainty with precision.

For each pixel, the value is sampled based on the best-fitting probability density function and associated uncertainty. The determined pixel-level values obtained are aggregated to estimate the total value in the specific iteration. These steps are iterated to build a comprehensive probability distribution of values at the project level. During the iterations, the value stabilises as the simulation progresses. The number of iterations is determined dynamically by monitoring the convergence of predefined summary statistics appropriate to the parameter of interest. Simulations continue until the statistics stabilise within predefined tolerances.

The resulting distribution represents the range of potential values in the area. The Monte Carlo simulation is used at multiple stages of this methodology, including:

1) Estimation of project activity emissions in the project area
2) Quantification of carbon stock losses for reversal assessment

8 Carbon Stock and Baseline Estimation

8.1 Project Baseline

8.1.1 Projects must use a centrally defined and model-derived baseline for AUDD activities, assigned by Equitable Earth. Project-specific baselines selected or calculated by developers cannot be applied under this version of the methodology.[22]

8.1.2 Equitable Earth estimates baselines using a spatial risk-modelling approach to generate jurisdictional risk maps, which are used to allocate baselines at the project level. Refer to the Baseline Setting Module for the procedures to establish project baselines.

Baseline Validity and Re-Evaluation

8.1.3 Equitable Earth must prepare the initial baseline estimation at the feasibility phase.

8.1.4 Equitable Earth establishes new baselines every five years at the end of the BVP to reflect updated deforestation dynamics, model uncertainty, baseline stability, and overall procedural efficiency. The BVP begins on the project start date. When a new baseline is established, the historical reference period (HRP) is extended to incorporate the most recent historical period.

8.1.5 Equitable Earth may develop revised risk maps to allocate baselines based on newly available data, identified errors, and model performance improvements.

8.2 Project Emissions

Project emissions represent GHG emissions that occur within the project boundary as a result of forest biomass loss and project activities.

8.2.1 Project emissions are quantified by Equitable Earth, with some input from developers, and are deducted from the project's gross emission reductions (GERs) in accordance with the requirements outlined in this section.

[22] Baselines are centrally determined by Equitable Earth using a standardised model, and quality-controlled data to ensure conservativeness and avoid perverse incentives.

Monitoring and reporting procedures are detailed in the *Monitoring, Reporting, and Verification (MRV)* section.

This methodology distinguishes between:

1) **Emissions from Forest Biomass Loss**: emissions from carbon stock changes attributed to deforestation and forest degradation within the project crediting area, including forest fires, grass fires, anthropogenic clearing, logging, or natural events. These emissions are centrally quantified by Equitable Earth using remote sensing methods and are included in the baseline and project carbon stock change estimates. Calculations do not require additional input from developers.

2) **Emissions from Project Activities**: emissions from project activities related to project implementation that are not captured through forest biomass changes.[23] These include, but are not limited to:

    a) Biomass burning (e.g., prescribed fires)

    b) Livestock grazing

    c) Use of synthetic fertilisers

    d) Use of fossil fuel

    Emissions from project activities are assessed and quantified by Equitable Earth with inputs from developers based on the materiality assessment defined in this methodology below. For additional details on data inputs, refer to the *Quantifying Emissions from Project Activities* and *Monitoring, Reporting, and Verification (MRV)* sections.

Materiality Assessment

8.2.2 Equitable Earth must conduct a materiality assessment for each of the project activity emission sources.

8.2.3 Equitable Earth applies a materiality threshold of 1% of the estimated total gross emission reductions for the BVP and establishes the following requirements based on the materiality of emissions:

1) **Material emissions**: if any of the project activity emission sources equal or exceed the materiality threshold, developers should report data

[23] It is assumed by default that emissions resulting from project operations, including fossil fuel combustion, staff and use of construction materials in infrastructure development are *de minimis* and are not required. These emissions must be accounted for and reported if they are material.

inputs annually in the Annual Report and must report data inputs periodically in the Monitoring Report. Equitable Earth makes the corresponding deductions from the project's GERs for the BVP. Refer to the *Carbon Quantification* and *Monitoring, Reporting, and Verification (MRV)* sections for additional details on deductions, data and reporting requirements.

2) **Non-material emissions**: if any of the project activity emission sources fall below the materiality threshold, such emissions are considered *de minimis* and are excluded from quantification and reporting for the BVP.

8.2.4 Equitable Earth conducts the materiality assessment during the design stage and reassesses it every five years from the project start date, aligning with the BVP and adaptive management frequency requirements.

8.2.5 During the materiality reassessment, developers must disclose any changes to project activities that occurred during the previous BVP or are expected for the next BVP and that impact emissions. Refer to the section *Reporting by Developers* in this methodology for additional details.

8.2.6 If developers deviate from planned project activities during the BVP in a manner that impacts emissions (e.g., increase the number of prescribed fires), developers must notify Equitable Earth following the procedures for design deviations set out in the Programme Manual. In such cases, Equitable Earth may reassess materiality and/or require developers to monitor and report on emissions throughout the remainder of the BVP.

9 Carbon Quantification

This section guides the quantification of GHG emission reductions for projects using this methodology. Emission reductions are based on the monitored reduction of emissions from deforestation and degradation from the project baseline during the crediting period.

9.1 Quantifying Carbon Stocks

9.1.1 Equitable Earth defines a pixel-level AGB consensus estimate for a given jurisdiction as the unweighted mean of the estimates from all AGB providers included in the consensus. Equitable Earth uses the AGB consensus to estimate AGB changes across all areas of interest associated with the project, including, but not limited to, the project crediting area. Refer to the Baseline Setting Module for more details on the AGB consensus.

9.1.2 Equitable Earth estimates corresponding BGB at the pixel level using AGB and the IPCC default root-to-shoot ratios (RS) (*Appendix B*). The relationship between BGB and AGB is represented by equation E.3:

$$\mathbf{BGB}_i = \mathbf{AGB}_i \times \mathbf{RS} \quad \textbf{(E.3)}$$

Where:

- $\mathbf{BGB}_i$ = Below-ground biomass of the pixel i in the area of interest; tDM
- $\mathbf{AGB}_i$ = Above-ground biomass of the pixel i in the area of interest; tDM
- **RS** = Root-to-shoot ratio of biomass; dimensionless

9.1.3 Equitable Earth estimates total biomass by aggregating AGB and BGB (E.4) and converts to tCO_2e by applying multiple default factors (E.5).

$$\mathbf{B}_i = \mathbf{AGB}_i + \mathbf{BGB}_i \quad \textbf{(E.4)}$$

Where:

- $\mathbf{B}_i$ = Total biomass of the pixel i in the area of interest; tDM
- $\mathbf{AGB}_i$ = Above-ground biomass of the pixel i in the area of interest; tDM
- $\mathbf{BGB}_i$ = Below-ground biomass of the pixel i in the area of interest; tDM

$$\mathbf{C}_i = \mathbf{B}_i \times \mathbf{CF} \times \frac{44}{12} \quad \textbf{(E.5)}$$

Where:

- $\mathbf{C}_i$ = Carbon stock of the pixel i in the area of interest; tCO_2e
- $\mathbf{B}_i$ = Total biomass of the pixel i in the area of interest; tDM
- **CF** = Carbon fraction of tree biomass; tC/tDM
- $\frac{44}{12}$ = Molecular weight ratio of CO_2 to carbon; dimensionless

9.2 Quantifying Project Baseline Emissions

9.2.1 Equitable Earth quantifies project baseline emissions for the relevant carbon pools ($E^{[m]}_{B\,AUDD}$), and for each monitoring period using jurisdictional AGB loss data and model-based projections of deforestation risk.[24]

9.2.2 Equitable Earth forecasts AGB stock loss using multi-provider estimates of cumulative relative loss and quantifies baseline emissions based on a project-level distribution of baseline emissions prediction, calibrated using historical data and incorporating the spatial and temporal uncertainty observed in comparable project-sized areas. Refer to the Baseline Setting Module for more details on the risk model development and baseline allocation.

[24] Equitable Earth uses a risk model to calculate project baselines based on forecasted biomass stock changes. The model is trained on historical data, and the earliest data available for training results in some limitations for projects with a start date on or before December 31, 2024. Projects with start dates on or before December 31, 2024 are eligible, but will be reviewed by Equitable Earth on a case-by-case basis. Note that certification times may be longer for projects with earlier start dates. Refer to the Future Improvements and Limitations document for more details.

9.2.3 Equitable Earth divides the baseline emissions of the BVP into five equal amounts for each vintage and assigns to each monitoring period the proportional amount corresponding to the vintage year covered by that monitoring period.

9.3 Quantifying Project Emissions

9.3.1 Equitable Earth quantifies project emissions for a given monitoring period ($E_{PE}^{[m]}$) following equation (E.6). Refer to the section *Monitoring, Reporting, and Verification (MRV)* in this methodology for project monitoring requirements.

Total project emissions for the current monitoring period can be greater than the project baseline if a major disturbance event occurs. Refer to the *Permanence* section in this methodology for additional details on reversals.

$$E_{PE}^{[m]} = E_{P\,for}^{[m]} + E_{P\,act}^{[m]} \quad \textbf{(E.6)}$$

Where:

- $E_{PE}^{[m]}$ = Total project emissions for the monitoring period $[m]$; tCO_2e
- $E_{P\,for}^{[m]}$ = Total emissions from forest biomass loss for the monitoring period $[m]$; tCO_2e
- $E_{P\,act}^{[m]}$ = Total emissions from project activities for the monitoring period $[m]$; tCO_2e

Quantifying Emissions from Forest Biomass Loss

Equitable Earth quantifies emissions from forest biomass loss at the end of each monitoring period $[m]$.

9.3.2 Equitable Earth determines forest biomass loss of the monitoring period $[m]$ for a given pixel by comparing the carbon stock observed at the end of monitoring period $[m]$ with the carbon stock observed at the project start date and any biomass loss already accounted for in previous monitoring periods, following equation (E.7).

$$R_i^{[m]} = max(0; C_i^{[0]} - C_i^{[m]}) - R_i^{[m-1]} \quad \textbf{(E.7)}$$

Where:

- $R_i^{[m]}$= Relative carbon-stock loss of pixel i at the end of monitoring period $[m]$; tCO_2e
- $C_i^{[m]}$= Carbon stock of pixel i at the end of monitoring period $[m]$; tCO_2e
- $C_i^{[0]}$= Carbon stock of pixel i at project start date; tCO_2e

9.3.3 For the first 4 years after the project start date, Equitable Earth applies a noise adjustment to the relative loss determined for each pixel with an additional observed relative carbon stock loss.

1) Equitable Earth uses the minimum reportable relative-loss threshold (RLT_{min}) established for baseline setting to define the range over which observed partial losses may contain both genuine biomass-loss signal and historical variability in the carbon stock data.

2) The interval between zero and RLT_{min} is divided into relative-loss bands. For each band, Equitable Earth determines a ratio to estimate the proportion of observed loss attributable to genuine biomass loss rather than noise leveraging historical data.

3) Equitable Earth adjusts the relative forest biomass loss for each pixel by multiplying the relative observed carbon stock loss by the calculated signal applicable to its relative-loss band. Losses equal to or greater than the minimum reportable relative-loss threshold established for baseline setting are accounted for in full, while no loss is accounted for where no additional carbon stock loss is observed.

9.3.4 Equitable Earth calculates the total emissions from forest biomass loss for monitoring period $[m]$ by summing the accounted losses from all eligible pixels within the project crediting area.

$$E_{P\,for}^{[m]} = \sum_i R_i^{[m]} \times \alpha_{BR}^{[m]} \quad \textbf{(E.8)}$$

Where:

- $E_{P\,for}^{[m]}$ = Total emissions from forest biomass loss for the monitoring period $[m]$; tCO_2e
- $R_i^{[m]}$ = Relative carbon stock loss of pixel i at the end of monitoring period $[m]$; tCO_2e
- $\alpha_{BR}^{[m]}$ = Biomass loss signal in relative-loss band BR at the end of monitoring period $[m]$; dimensionless

Quantifying Emissions from Project Activities

9.3.5 Equitable Earth, with some data inputs from developers, quantifies emissions from project activities within the project area when determined to be material. The total emissions for each monitoring period are calculated as the sum of all relevant emission sources, as specified in equation (E.9).

$$E_{P\,act}^{[m]} = E_{P\,act\,B}^{[m]} + E_{P\,act\,LS}^{[m]} + E_{P\,act\,SF}^{[m]} + E_{P\,act\,FF}^{[m]} \quad \textbf{(E.9)}$$

Where:

- $E_{P\,act}^{[m]}$ = Total emissions from project activities for the monitoring period $[m]$. Sum of emissions from biomass burning, livestock grazing, and synthetic fertiliser use; tCO_2e
- $E_{P\,act\,B}^{[m]}$ = Total non-CO_2 emissions from AGB burning in project activities during the monitoring period $[m]$; tCO_2e
- $E_{P\,act\,LS}^{[m]}$ = Total emissions from livestock grazing in project activities during the monitoring period $[m]$; tCO_2e
- $E_{P\,act\,SF}^{[m]}$ = Total emissions from synthetic N fertiliser application in project activities during the monitoring period $[m]$; tCO_2e
- $E_{P\,act\,FF}^{[m]}$ = Total emissions from fossil fuel use in project activities during the monitoring period $[m]$; tCO_2e

Quantifying Emissions from Biomass Burning

9.3.6 Equitable Earth quantifies non-CO_2 emissions from biomass burning (e.g., prescribed fires) within the project area, if included in the project activities and emissions are material. CO_2 emissions from biomass burning are not accounted for, as they are already encompassed in the emissions from forest biomass loss ($E^{[m]}_{P\,for}$).

9.3.7 Equitable Earth quantifies biomass burning emissions as the sum of all burning events based on the following method, using data inputs from developers:

1) **Quantification method**: Equitable Earth detects fires using remote sensing and quantifies total non-CO_2 emissions from AGB burning for a given monitoring period ($E^{[m]}_{P\,act\,B}$) based on stock changes between fire events and data inputs from developers (E.10-E.11).

2) **Data inputs from developers**: developers must provide, annually, for all fire events occurring within the monitoring period, the following inputs for each fire event within the project area:

    a) Unique identifier
    b) Burnt area
    c) Start and end dates

$$AGB_{burn,\,i} = A_{burn,\,i} \times \Delta AGB_{i} \quad \textbf{(E.10)}$$

Where:

- $AGB_{burn,\,i}$ = AGB burnt for fire event *i*; tDM[25]
- $A_{burn,\,i}$ = Burnt area for fire event *i*; ha
- ΔAGB_{i} = Mean AGB loss due to fire event *i*; tDM/ha

[25] Equitable Earth applies the IPCC Tier 1 method to estimate emissions from prescribed fires. BGB is not assumed to be combusted and is therefore excluded from this calculation.

$$E_{P\ act\ B}^{[m]} = \sum_{i=1}^{n[m]} \sum_{g \in \{CH_4, N_2O\}} AGB_{burn,i} \times G_{ef,g} \times GWP_g \quad \textbf{(E.11)}$$

Where:

- $E_{P\ act\ B}^{[m]}$ = Total non-CO_2 emissions from AGB burning in project activities during monitoring period $[m]$; tCO_2e
- $n[m]$= Total number of fire events that occurred in the monitoring period $[m]$; dimensionless
- $AGB_{burn,i}$ = AGB burnt for fire event i; tDM
- $G_{ef,g}$ = Emission factor of dry matter burnt per GHG g; tGHG/tDM
- GWP_g = Global warming potential per GHG g; dimensionless

Quantifying Emissions from Livestock Grazing

9.3.8 Equitable Earth quantifies emissions from livestock grazing within the project area, if included in the project activities and emissions are material.

9.3.9 Equitable Earth quantifies livestock grazing emissions based on the following method, using data inputs from developers:

1) **Quantification method**: Equitable Earth quantifies livestock-related CH_4 emissions from enteric fermentation for a given monitoring period ($E_{P\ act\ LS}^{[m]}$) (E.12) using default factors by livestock species/category and country development status (*Appendix C*). Other livestock-related emission sources are excluded from quantification based on the applicability assumption that livestock management is limited to extensive pasture, range, and grazing paddock systems, in which excreta is deposited directly on land and remains predominantly under aerobic conditions, thereby limiting CH_4 generation from manure relative to anaerobic manure-management systems. Where manure is collected or stored, or livestock is managed under other or more intensive systems, Equitable Earth may assess and apply additional deductions for material CH_4 and N_2O emissions using the applicable IPCC methods.

2) **Data inputs from developers**: developers must determine, within the project area, the annual average number of head of livestock

species/category ($n_{LS,i}$), and report the parameter at the end of each monitoring period $[m]$ (E.12).

$$E_{P\ act\ LS}^{[m]} = \sum_{i} f_{LS,i,r,c} \times 10^{-3} \times n_{LS,i}^{[m]} \times GWP_{CH_4} \quad \textbf{(E.12)}$$

Where:

- $E_{P\ act\ LS}^{[m]}$ = Total emissions from livestock grazing in project activities during the monitoring period $[m]$; tCO_2e
- $f_{LS,i,r,,c}$ = Enteric fermentation emission factor for livestock species/category i in country c and region r; kg CH_4/(head*yr) (*Appendix C*)
- $n_{LS,i}^{[m]}$ = Annual average number of head of livestock species/category i within the monitoring period $[m]$; dimensionless
- GWP_{CH_4} = CH_4 Global Warming Potential; dimensionless

Quantifying Emissions from the Application of Synthetic Fertilisers

9.3.10 Equitable Earth quantifies emissions from synthetic nitrogen fertiliser application within the project area, if included in the project activities, and emissions are material.

9.3.11 Equitable Earth quantifies emissions from synthetic nitrogen fertiliser use based on the following method, using data inputs from developers:

1) **Quantification method**: Equitable Earth quantifies total emissions from the use of synthetic nitrogen fertilisers for a given monitoring period ($E^{[m]}_{P\ act\ SF}$) (E.13), and distinguishes between direct (E.14, E.15) and indirect (E.16-E.18) emission sources.

2) **Data inputs from developers**: developers must provide, either as mass or liquid volume, the quantity of synthetic nitrogen fertiliser applied within the project area during the monitoring period ($\mathbf{M}^{[m]}_{SF,i,c}$), along with its nitrogen content ($\mathbf{C}_{SF,i}$) (E.14, E.15).

$$E^{[m]}_{P\ act\ SF} = E^{[m]}_{Ndirect} + E^{[m]}_{Nindirect} \quad \textbf{(E.13)}$$

Where:

- $E^{[m]}_{P\ act\ SF}$ = Total emissions from synthetic N fertiliser application in project activities during monitoring period $[m]$; tCO_2e
- $E^{[m]}_{Ndirect}$= Total direct emissions from synthetic N fertiliser application during monitoring period $[m]$; tCO_2e
- $E^{[m]}_{Nindirect}$= Total indirect emissions from synthetic N fertiliser application during monitoring period $[m]$; tCO_2e

$$E_{Ndirect}^{[m]} = \sum_{i,c}(\mathbf{SF}_{i,c}^{[m]} \times \mathbf{EF}_{Ndirect,c} \times \frac{44}{28} \times \mathbf{GWP}_{N_2O}) \quad \textbf{(E.14)}$$

Where:

- $E_{Ndirect}^{[m]}$= Total direct emissions from synthetic N fertiliser application during monitoring period $[m]$; tCO_2e
- $\mathbf{SF}_{i,c}^{[m]}$ = Amount of nitrogen applied as synthetic fertiliser *i* under condition c in the project area in the monitoring period $[m]$; tN
- $\mathbf{EF}_{Ndirect,c}$ = Emission factor for direct N_2O emissions from synthetic N fertiliser application under condition *c*; tN_2O-N/tN applied
- $\frac{44}{28}$ = Molecular weight ratio of N_2O to nitrogen; dimensionless
- $\mathbf{GWP}_{N_2O}$ = N_2O Global Warming Potential; dimensionless

$$\mathbf{SF}_{i,c}^{[m]} = \mathbf{M}_{SF,i,c}^{[m]} \times \mathbf{C}_{SF,i} \quad \textbf{(E.15)}$$

Where:

- $\mathbf{SF}_{i,c}^{[m]}$ = Amount of nitrogen applied due to synthetic fertiliser *i* under condition c in the project area in the monitoring period $[m]$; tN
- $\mathbf{M}_{SF,i,c}^{[m]}$ = Mass of N-containing synthetic fertiliser *i* applied under condition c in the project area in the monitoring period $[m]$; t fertiliser[26]
- $\mathbf{C}_{SF,i}$ = N content of synthetic fertiliser *i* applied in the project area; tN/t fertiliser

[26] Where the variable is provided as liquid volume, Equitable Earth converts the reported volume to mass using either a product-specific density value reported by the developer, or standardised conservative conversion factors if no such value is available.

$$E_{Nindirect}^{[m]} = \sum_{i,c}(\mathbf{V}_{N,i,c}^{[m]} + \mathbf{L}_{N,i,c}^{[m]}) \quad \textbf{(E.16)}$$

Where:

- $E_{Nindirect}^{[m]}$ = Total indirect emissions from synthetic N fertiliser application during monitoring period $[m]$; tCO_2e
- $\mathbf{V}_{N,i,c}^{[m]}$ = Emissions from atmospheric deposition of N volatilised due to nitrogen fertiliser *i* under condition *c* in the project area in the monitoring period $[m]$; tCO_2e
- $\mathbf{L}_{N,i,c}^{[m]}$ = Emissions from leaching and runoff of N due to nitrogen fertiliser *i* under condition *c* in the project area in the monitoring period $[m]$; tCO_2e

$$\mathbf{V}_{N,i,c}^{[m]} = \mathbf{SF}_{i,c}^{[m]} \times \mathbf{F}_{SFvol,c} \times \mathbf{EF}_{Nv,c} \times \frac{44}{28} \times \mathbf{GWP}_{N_2O} \quad \textbf{(E.17)}$$

Where:

- $\mathbf{V}_{N,i,c}^{[m]}$ = Emissions from atmospheric deposition of N volatilised due to nitrogen fertiliser *i* under condition *c* in the project area in the monitoring period $[m]$; tCO_2e
- $\mathbf{SF}_{i,c}^{[m]}$ = Amount of nitrogen applied due to synthetic fertiliser *i* under condition *c* in the project area in the monitoring period $[m]$; tN
- $\mathbf{F}_{SFvol,c}$ = Fraction of all synthetic nitrogen added to soils, volatilising as NH_3 and NO_x under condition *c* (kg NH_3–N + NO_x–N)/(kgN applied)
- $\mathbf{EF}_{Nv,c}$ = Emission factor for N_2O emissions from atmospheric deposition of N on soils and water surfaces under condition *c*; kg N_2O–N/(kg NH_3–N + NO_x–N volatilised)
- $\frac{44}{28}$ = Molecular weight ratio of N_2O to nitrogen; dimensionless
- $\mathbf{GWP}_{N_2O}$ = N_2O Global Warming Potential; dimensionless

$$\mathbf{L}_{N,i,c}^{[m]} = \mathbf{SF}_{i,c}^{[m]} \times \mathbf{F}_{Fleach} \times \mathbf{EF}_{Nl} \times \frac{44}{28} \times \mathbf{GWP}_{N_2O} \quad \textbf{(E.18)}$$

Where:

- $\mathbf{L}_{N,i,c}^{[m]}$ = Emissions from leaching and runoff of N due to nitrogen fertiliser application in the project area in the monitoring period $[m]$; tCO_2e
- $\mathbf{SF}_{i,c}^{[m]}$ = Amount of nitrogen applied due to synthetic fertiliser *i* under condition *c* in the project area in the monitoring period $[m]$; tN
- $\mathbf{F}_{Fleach}$ = Fraction of synthetic nitrogen added to soil lost through leaching and/or runoff; kgN/(kg of N additions)
- $\mathbf{EF}_{Nl}$ = Emission factor for N_2O emissions from N leaching and/or runoff; kg N_2O–N/(kg N leaching/runoff)
- $\frac{44}{28}$ = Molecular weight ratio of N_2O to nitrogen; dimensionless
- $\mathbf{GWP}_{N_2O}$ = N_2O Global Warming Potential; dimensionless

Quantifying Emissions from Fossil Fuel

9.3.12 Equitable Earth quantifies emissions from fossil fuel use within the project area, if included in the project activities, and emissions are material.

9.3.13 Equitable Earth quantifies emissions from fossil fuel use with data inputs from developers.

9.3.14 Equitable Earth applies a standardised conservative emission factor by default to convert fuel consumption into total GHG emissions.

1) Developers may submit, for each type of fuel used, an alternative emission factor, provided that the emission factor is sourced from peer-reviewed literature, national inventory reports, or other publicly available, scientifically credible sources, and is accompanied by a justification of its applicability to the fuel type and context.

2) Equitable Earth reserves the right to accept or reject the proposed value based on the demonstration provided by the developer.

9.3.15 Equitable Earth calculates the total GHG emissions from fossil fuel use for a given monitoring period as follows (E.19):

$$E_{P\ act\ FF}^{[m]} = \sum_{i} FC_{i}^{[m]} \times EF_{fuel\ i} \quad \textbf{(E.19)}$$

Where:

- $E_{P\ act\ FF}^{[m]}$ = Total emissions from fossil fuel use in project activities during the monitoring period $[m]$; tCO_2e
- $FC_{i}^{[m]}$ = Volume of fuel type i consumed in the monitoring period $[m]$; L
- $EF_{fuel\ i}$ = Emission factor for the fuel type i; tCO_2e/L

9.4 Quantifying Emissions from Activity-Shifting Leakage

9.4.1 Equitable Earth calculates total CO_2 and non-CO_2 emissions from activity-shifting leakage for the monitoring period $[m]$ by multiplying the avoided forest-loss emissions by the activity-shifting leakage value, which is 10% unless otherwise stated (E.20).

$$E_{L\ AS}^{[m]} = (E_{B\ AUDD}^{[m]} - E_{P\ for}^{[m]}) \times LF_{AS} \quad \textbf{(E.20)}$$

Where:

- $E_{L\ AS}^{[m]}$ = Total CO_2 and non-CO_2 emissions from activity-shifting leakage for the monitoring period $[m]$; tCO_2e
- $E_{B\ AUDD}^{[m]}$ = Project baseline emissions for the monitoring period $[m]$; tCO_2e
- $E_{P\ for}^{[m]}$ = Total emissions from forest biomass loss for the monitoring period $[m]$; tCO_2e
- LF_{AS} = Activity-shifting leakage default factor applied to total avoided forest-loss emissions; dimensionless

9.5 Quantifying Emissions from Market Leakage

9.5.1 Equitable Earth quantifies total emissions from market leakage for the monitoring period $[m]$ by multiplying the avoided forest-loss emissions by a fixed deduction in proportion to the emission reductions attributed to each market-linked baseline driver and to the market leakage risk class of its associated commodity (E.21).

$$E_{L\,M}^{[m]} = \sum_{com} (E_{B\,AUDD}^{[m]} - E_{P\,for}^{[m]}) \times E_{B,com}^{[m]} \times LF_{M,r(com)} \quad \textbf{(E.21)}$$

Where:

- $E_{L\,M}^{[m]}$ = Total emissions from market leakage for the monitoring period $[m]$; tCO_2e
- $E_{B\,AUDD}^{[m]}$ = Project baseline emissions for the monitoring period $[m]$; tCO_2e
- $E_{P\,for}^{[m]}$ = Total emissions from forest biomass loss for the monitoring period $[m]$; tCO_2e
- $E_{B,com}^{[m]}$ = Project baseline emissions attributed to the marketable commodity com for the monitoring period $[m]$; dimensionless
- $LF_{M,r(com)}$ = Market leakage factor for the market leakage class risk r applicable to the marketable commodity com; dimensionless

9.6 Quantifying Uncertainty Deduction

9.6.1 Equitable Earth quantifies an uncertainty deduction for a given monitoring period to account for uncertainty associated with baseline emissions, project emissions from forest biomass loss and project activities, and activity-shifting leakage emissions (E.22). The uncertainty deduction is derived from the Monte Carlo simulation.

$$E_{D}^{[m]} = U_{40}\,(E_{B\,AUDD}^{[m]} - E_{PE}^{[m]} - E_{L\,AS}^{[m]} - E_{L\,M}^{[m]}) \quad \textbf{(E.22)}$$

Where:

- $E_{D}^{[m]}$ = Uncertainty deduction for the monitoring period $[m]$; tCO_2e
- U_{40} = Uncertainty deduction factor expressed as the difference between the mean of variable X and the 40th percentile value of the Monte Carlo distribution; dimensionless
- $E_{B\,AUDD}^{[m]}$ = Project baseline emissions for the monitoring period $[m]$; tCO_2e
- $E_{PE}^{[m]}$ = Total project emissions for the monitoring period $[m]$; tCO_2e
- $E_{L\,AS}^{[m]}$ = Total emissions from activity-shifting leakage for the monitoring period $[m]$; tCO_2e
- $E_{L\,M}^{[m]}$ = Total emissions from market leakage for the monitoring period $[m]$; tCO_2e

9.7 Quantifying Gross Emission Reductions (GERs)

9.7.1 Equitable Earth quantifies gross emission reductions (GERs) for a given monitoring period using equation (E.23).

Quantified GERs must be rounded down to the nearest whole number as a conservative measure.

$$E_{GER\,ER}^{[m]} = P_{40}\,(E_{B\,AUDD}^{[m]} - E_{PE}^{[m]} - E_{L\,AS}^{[m]} - E_{L\,M}^{[m]}) \quad \textbf{(E.23)}$$

Where:

- $E_{GER\,ER}^{[m]}$ = Total gross emission reductions for the monitoring period $[m]$; tCO_2e
- $E_{B\,AUDD}^{[m]}$ = Project baseline emissions for the monitoring period $[m]$; tCO_2e
- P_{40} = indicates the 40th percentile (i.e., the value that is surpassed by 60% of the observations in the distribution)
- $E_{PE}^{[m]}$ = Total project emissions for the monitoring period $[m]$; tCO_2e
- $E_{L\,AS}^{[m]}$ = Total emissions from activity-shifting leakage for the monitoring period $[m]$; tCO_2e

- $E_{LM}^{[m]}$ = Total emissions from market leakage for the monitoring period $[m]$; tCO_2e

9.8 Quantifying Net Emission Reductions (NERs)

9.8.1 Equitable Earth quantifies total net emission reductions (NERs) from AUDD activities for a given monitoring period by subtracting the buffer pool contribution from the GERs, in accordance with equation (E.24).

In the context of this methodology, ECUs represent NERs from AUDD activities after all deductions.

$$E_{NER\,ER}^{[m]} = E_{GER\,ER}^{[m]} - E_{BA\,ER}^{[m]} \quad \textbf{(E.24)}$$

Where:

- $E_{NER\,ER}^{[m]}$ = Total net emission reductions for the monitoring period $[m]$; tCO_2e
- $E_{GER\,ER}^{[m]}$ = Total gross emission reductions for the monitoring period $[m]$; tCO_2e
- $E_{BA\,ER}^{[m]}$ = Buffer pool contribution for the monitoring period $[m]$; tCO_2e

10 Monitoring, Reporting, and Verification (MRV)

10.1 Monitoring

Monitoring by Equitable Earth

10.1.1 Equitable Earth monitors and periodically re-evaluates the project baseline for each project at the end of each BVP.

10.1.2 Equitable Earth monitors biomass carbon stock losses within the project crediting area for each monitoring period using remote sensing. These calculations account for emissions from deforestation and degradation.

10.1.3 Equitable Earth monitors project activity emissions within the project area, if emissions are material.

Monitoring by Developers

10.1.4 Developers must establish a monitoring plan and are responsible for monitoring all applicable parameters defined in *Appendix D* of this methodology and in conformance to requirements established in the Equitable Earth Standard and the Programme Manual.

10.1.5 In addition, developers must annually and/or periodically monitor all relevant metrics, parameters, and indicators related to:

1) Material project activity emissions, as specified in the sections *Materiality Assessment* and *Quantifying Emissions from Project Activities* in this methodology.

2) Project activities and interventions, as set out in the sections *Ecological Condition* and *Livelihoods* of this methodology, and adhering to the *Theory of Change* requirements defined in the Equitable Earth Standard.

10.2 Reporting

Reporting by Equitable Earth

10.2.1 Equitable Earth uses the parameters in *Appendix D* to compile a GHG Monitoring Report that consolidates the results of the net GHG reductions achieved during the verification period. Refer to the *Monitoring, Reporting, and Verification (MRV) Requirements* section in the Equitable Earth Standard for more details.

Reporting by Developers

10.2.2 Developers must complete the Annual Report, reporting on all relevant metrics, parameters, and indicators and consolidating the activities undertaken over the last 12 months.

10.2.3 Developers must report required data inputs for planned project activities during the feasibility and/or design phases for Equitable Earth to determine the materiality of emissions. Refer to the *Materiality Assessment* section in this methodology for more details.

10.2.4 If emissions from project activities are material, developers should report the required data inputs in the Annual Report and must report them in the Monitoring Report. Refer to the *Materiality Assessment* section in this methodology for more details.

10.2.5 Developers must complete the Monitoring Report, reporting on all relevant metrics, parameters, and indicators and the implementation status of project interventions and activities, before each verification. Refer to the Equitable Earth Standard and the Programme Manual for more details.

Adaptive Management

10.2.6 Developers must update the Project Design Document every five years after the registration date. Refer to the *Adaptive Management* section in the Programme Manual for more details.

Appendix A: Market Leakage Risk

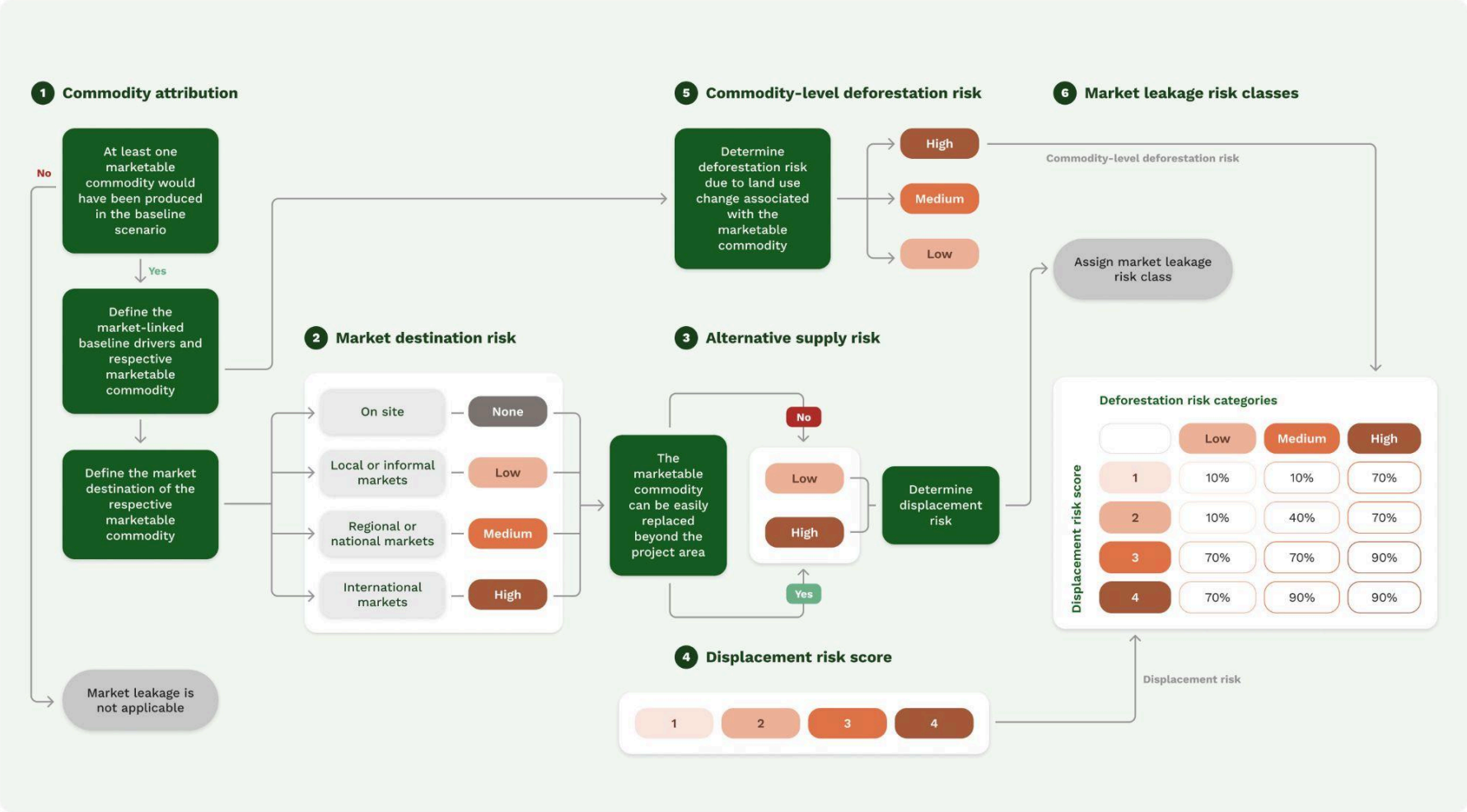

Fig. 1: Market leakage risk class determination

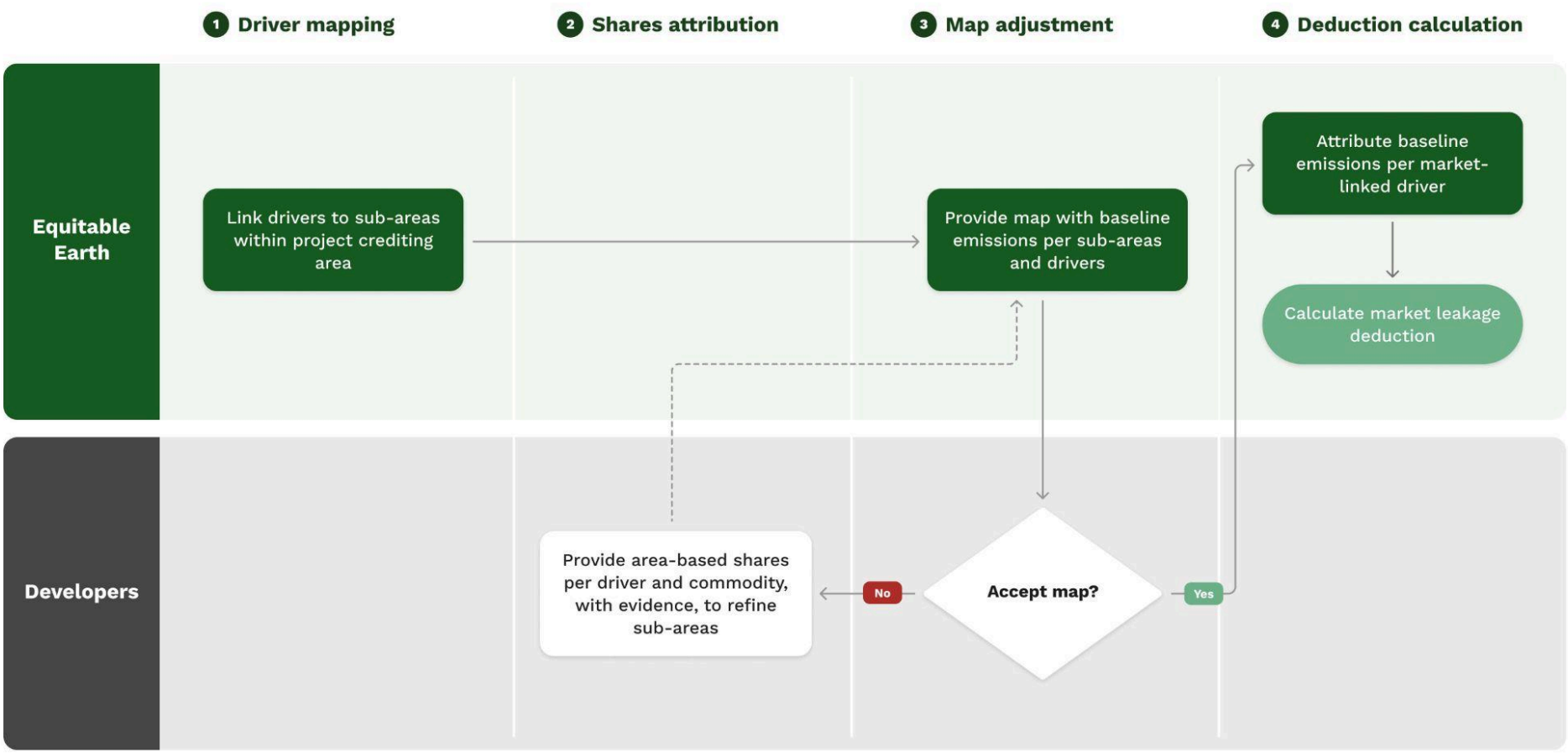

Fig. 2: Area-based attribution of market leakage emissions

Table A1: Marketable commodities and default deforestation risk categories based on land use and land-change emissions associated with each commodity.

Marketable Commodity	Deforestation Risk
Cocoa	High
Coffee	High
Palm oil	High
Rubber	High
Soy	High
Charcoal	High
Cattle and beef	High
Cashew	Medium
Corn	Medium
Timber	Medium
Fuelwood	Medium
Sugar cane	Low
Gold	High
Coal	High
Nickel	High
Tin	High

Marketable Commodity	Deforestation Risk
Iron ore	Medium
Other	High

Table A2: Matrix of displacement risk, resulting from combining alternative supply and market destination.

Market Destination	Low Alternative Supply	High Alternative Supply
On-site	1	2
Local	1	3
Regional or national	2	3
International	3	4

Table A3: Matrix of market leakage risk, resulting from combining displacement risk and commodity-level deforestation risk.

	Deforestation Risk Categories		
Displacement Risk Score	Low	Medium	High
1	10%	10%	70%
2	10%	40%	70%
3	70%	70%	90%
4	70%	90%	90%

Appendix B: Default AGB/BGB Ratios

This appendix provides a summary table of the default AGB/BGB ratios from Table 4.4 of the 2019 IPCC Guidelines for National GHG Inventories (Table B). For domains, ecological zones, or continents not shown here, refer to the IPCC document for the complete table of values.[27]

Table B: Summary of default AGB/BGB ratios.

Domain	**Ecological zone**	**Continent**	**Origin** (Natural/ Plantation)	**Above-ground biomass** (tonnes/ha)	**R** [tonne root d.m./(tonne shoot d.m.)]
Tropical	Tropical Rainforest	Africa	Natural	≤ 125	0.825
			Natural	>125	0.532
		North and South America	Natural	≤ 125	0.221
			Planted	≤ 125	0.170
			Natural	>125	0.221
			Planted	>125	0.170
		Asia	Natural	≤ 125	0.207
			Planted	≤ 125	0.325
			Natural	>125	0.212
	Tropical Moist	Africa	Natural	>125	0.232
			Natural	≤ 125	0.232
		North and South America	Natural	>125	0.2845
			Natural	≤ 125	0.284
		Asia	Natural	>125	0.323
			Natural	≤ 125	0.246
	Tropical Dry	Africa	Natural	>125	0.332
			Natural	≤ 125	0.379

[27] Domke, G., Brandon, A., Diaz-Lasco, R., Federici, S., Garcia-Apaza, E., Grassi, G., Gschwantner, T., Herold, M., Hirata, Y., Kasimir, Å., Kinyanjui, M. J., Krisnawati, H., Lehtonen, A., Malimbwi, R. E., Niinistö, S., Ogle, S. M., Paul, T., Ravindranath, N. H., Rock, J., Sanquetta, C. R., Sanz Sanchez, M. J., Vitullo, M., Wakelin, S. J., and Zhu, J. (2019) '2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.' Volume 4: Agriculture, Forestry and Other Land Use, Chapter 4: Forest Land, Table 4.4, pp. 4.18–4.21. Available at: URL (Accessed 12/11/2025).

Domain	**Ecological zone**	**Continent**	**Origin** (Natural/ Plantation)	**Above-ground biomass** (tonnes/ha)	**R** [tonne root d.m./(tonne shoot d.m.)]
		North and South America	Natural	>125	0.334
			Natural	≤ 125	0.379
		Asia	Natural	>125	0.440
			Natural	≤ 125	0.379
	Tropical Mountain	North and South America	Natural	≤ 125	0.348
			Planted	≤ 125	0.205
			Natural	>125	0.283
		Asia	Natural	≤ 125	0.322
			Natural	>125	0.345

Appendix C: Livestock Grazing Emissions

This appendix describes methods for collecting and using data required for quantifying emissions from livestock grazing.

Emissions from livestock grazing are calculated by:

1) Determining the livestock population present; and
2) Applying the relevant default emission factors from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

C1.1 Livestock Sampling

C1.1.1 To determine the average number of livestock heads being grazed, developers must:

1) Conduct a direct headcount of each livestock species, where possible
2) Ensure that population numbers reflect any changes over 12 months, including births and deaths
3) Where direct counting is not feasible, developers may use sampling methods that can be reliably extrapolated to the entire population.

C1.1.2 Once livestock numbers are established, Equitable Earth applies the relevant emission factors provided in the following tables to estimate annual CH_4 emissions.

C1.2 Livestock Emission Factors

Enteric fermentation emission factors used to quantify emissions from livestock grazing are presented below (Tables C1–C2).

Table C1: IPCC default enteric fermentation emission factors for livestock by country development status; kg CH_4 /(head *yr).[28]

Livestock	Developed countries	Developing countries
Buffalo	55	55
Sheep	8	5
Goats	5	5
Camels	46	46
Horses	18	18
Mules and Donkeys	10	10
Deer	20	20
Alpacas	8	8
Swine	1.5	1

[28] Eggleston, H. S., Buendia, L., Miwa, K., Ngara, T., and Tanabe, K. (2006) 'IPCC Guidelines for National Greenhouse Gas Inventories.' Volume 4: Agriculture, Forestry and Other Land Use, Chapter 10: Emissions from Livestock and Manure Management, Table 10.10, p. 10.28. Available at: URL (Accessed 17/12/2025).

Table C2: IPCC default enteric fermentation emission factors for cattle by region and category; kg CH_4 /(head*yr).[29]

Region	Cattle Category	Emission factor
North America	Dairy	128
	Other cattle	53
Western Europe	Dairy	117
	Other cattle	57
Eastern Europe	Dairy	99
	Other cattle	58
Oceania	Dairy	100
	Other cattle	60
Latin America	Dairy	72
	Other cattle	56
Asia	Dairy	68
	Other cattle	47
Africa and the Middle East	Dairy	46
	Other cattle	31
Indian subcontinent	Dairy	58
	Other cattle	27

[29] Eggleston, H. S., Buendia, L., Miwa, K., Ngara, T., and Tanabe, K. (2006) 'IPCC Guidelines for National Greenhouse Gas Inventories.' Volume 4: Agriculture, Forestry and Other Land Use, Chapter 10: Emissions from Livestock and Manure Management, Table 10.11, p. 10.29. Available at: URL (Accessed 17/12/2025).

Appendix D: GHG Parameters

Parameters Available at Validation

Table D1: GHG parameters available at validation for Equitable Earth and developers.

Data/Parameter	**AGB**
Unit	tDM/ha
Description	Above-ground biomass in the project crediting area
Equation(s)	E.3, E.4, E.10
Source of data	Consensus of AGB provider(s) selected for the jurisdiction
Value(s) applied	Project-specific
QA/QC	Equitable Earth conducted a comprehensive benchmark exercise to select the highest-performing AGB provider. Data performance tests are continuously conducted by both Equitable Earth and the provider to ensure high data accuracy. Equitable Earth continues to evaluate alternative, fit-for-purpose providers. In addition, Equitable Earth performs a series of automated tests within the pipeline that detect anomalies (e.g., impossible values)

Data/Parameter	$\mathbf{SE}_{pixel}$
Unit	tDM
Description	Standard error of the AGB density for each pixel
Equation(s)	N/A
Source of data	Consensus of AGB provider(s) selected for the jurisdiction
Value(s) applied	Project-specific
QA/QC	Refer to *QA/QC* for parameter **AGB**

Data/Parameter	**RS**
Unit	Dimensionless
Description	Root-to-shoot ratio
Equation(s)	E.3

Source of data	IPCC 2019 Refinement to the 2006 Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 4, Table 4.4
Value(s) applied	Region-specific and AGB-dependent (Appendix B) When no data is available, a conservative value of 0.25 is applied
QA/QC	Reputable source approved by Equitable Earth. Equitable Earth performs an automated check at each iteration of the Monte Carlo simulation to ensure all RS values fall within [0,1]. Any value outside this range is automatically flagged and must be corrected before proceeding.

Data/Parameter	**CF**
Unit	tC/tDM
Description	Carbon fraction default value used to convert dry biomass into carbon mass
Equation(s)	E.5
Source of data	IPCC 2019 Refinement to the 2006 Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 4, Table 4.3
Value(s) applied	0.47
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated into new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	**CO_2 conversion factor**
Unit	Dimensionless
Description	Ratio of the molecular mass of CO_2 (44) to the atomic mass of carbon (12)
Equation(s)	E.5
Source of data	IPCC 2021 AR6 WGIII Annex II (Definitions, Units and Conventions)
Value(s) applied	$\frac{44}{12}$
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated into new

	versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	$AGB_{burn,\,i}$
Unit	tDM
Description	Mass of AGB burnt for fire event *i* as part of project activities
Equation(s)	E.10, E.11
Source of data	Equitable Earth
Value(s) applied	Refer to *Value(s) applied* for parameter **AGB**
QA/QC	Equitable Earth attributes the mass of AGB burnt to project activities by matching the developer's prescribed fire events (as per their fire management strategy) with both the burnt area boundaries provided by developers and the remotely-sensed AGB data provided by the AGB provider(s).

Data/Parameter	$A_{burn,\,i}$
Unit	ha
Description	Estimated burnt area for the fire event *i* as part of project activities in the baseline validity period. Equitable Earth uses the inputs reported by the developer to quantify emissions from project activities and assess their materiality
Equation(s)	E.10
Source of data	Developer
Value(s) applied	Project-specific
QA/QC	Equitable Earth visually validates the burnt area(s) using GIS tools and satellite data.

Data/Parameter	$n[m]$
Unit	Dimensionless
Description	Estimated number of fire events occurring in the baseline validity period. Equitable Earth uses the inputs reported by the developer (i.e., start and end dates for each expected fire event) to quantify emissions from project activities and assess their materiality

Equation(s)	E.11
Source of data	Developer
Value(s) applied	Project-specific
QA/QC	Equitable Earth validates the reported number of prescribed fire events against the fire management strategy.

Data/Parameter	$\mathbf{G}_{ef,g}$
Unit	gGHG/kgDM
Description	Emission factor of dry matter burnt per gas g
Equation(s)	E.11
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 2, Table 2.5
Value(s) applied	GHG-dependent (see table in the IPCC document)
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated into new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	$f_{LS,i,r,c}$
Unit	tCH_4/(head *yr)
Description	Enteric fermentation Emission factor for livestock species/category i in country c and region r
Equation(s)	E.12
Source of data	IPCC 2006 Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 10, Tables 10.10 and Table 10.11
Value(s) applied	Dependent on livestock category, country development status, and region (for cattle)
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated into new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	$\mathbf{GWP}_g$
Unit	Dimensionless

Description	Global warming potential per GHG *g* for a 100-year time horizon
Equation(s)	E.11, E.12, E.14, E.17, E.18
Source of data	IPCC's Sixth Assessment Report (AR6)
Value(s) applied	GHG-dependent. Default values applied by Equitable Earth are defined under the *Principles and General Requirements* section of the Equitable Earth Standard
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated in new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	$\mathbf{EF}_{Ndirect,c}$
Unit	tN_2O-N/tN applied
Description	Emission factor for direct N_2O emissions from N inputs, applied under this methodology to synthetic N fertiliser N inputs only under condition *c*
Equation(s)	E.14
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11, Table 11.1
Value(s) applied	Ecosystem-dependent (see table in the IPCC document) Uncertainty ranges are based on the 2.5th to 97.5th percentile interval, from which the standard deviation of the parameter is derived to construct the probability distribution of parameter values
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated in new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	**N_2O conversion factor (N_2O–N to N_2O)**
Unit	Dimensionless
Description	Ratio of the molecular mass of N_2O (44) to the mass of nitrogen in N_2O (28). Converts N_2O–N to N_2O.
Equation(s)	E.14, E.17, E.18
Source of data	2019 IPCC Refinement to the 2006 Guidelines, Volume 4, Chapter 11
Value(s) applied	$\frac{44}{28}$

QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated into new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	$C_{SF,i}$
Unit	tN/t fertiliser
Description	N content of synthetic fertiliser *i*
Equation(s)	E.15
Source of data	Developer
Value(s) applied	Product-specific
QA/QC	The developer indicates the N-content of the mass of chemical/fertiliser applied, which is cross-referenced with the name, brand, and content of said chemical/fertiliser.

Data/Parameter	$F_{SFvol,c}$
Unit	(kg NH_3–N + NO_x–N)/(kgN applied)
Description	Fraction of all synthetic nitrogen added to soils, volatilising as NH_3 and NO_x under condition *c*
Equation(s)	E.17
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11, Table 11.3
Value(s) applied	Product-dependent (see table in the IPCC document) Uncertainty ranges are based on the 2.5th to 97.5th percentile interval, from which the standard deviation of the parameter is derived to construct the probability distribution of parameter values
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated in new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	$EF_{Nv,c}$
Unit	kg N_2O–N/(kg NH_3–N + NO_x–N volatilised)

Description	Emission factor for N_2O emissions from atmospheric deposition of N on soils and water surfaces
Equation(s)	E.17
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11, Table 11.3
Value(s) applied	Ecosystem-dependent (see table in the IPCC document) Uncertainty ranges are based on the 2.5th to 97.5th percentile interval, from which the standard deviation of the parameter is derived to construct the probability distribution of parameter values.
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated in new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	F_{Fleach}
Unit	kgN/(kg of N additions)
Description	Fraction of synthetic nitrogen added to soil lost through leaching and/or runoff
Equation(s)	E.18
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11, Table 11.3
Value(s) applied	0.24 Uncertainty ranges are based on the 2.5th to 97.5th percentile interval, from which the standard deviation of the parameter is derived to construct the probability distribution of parameter values
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated in new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	EF_{Nl}
Unit	kg N_2O–N/(kg N leaching/runoff)
Description	Emission factor for N_2O emissions from N leaching and/or runoff
Equation(s)	E.18
Source of data	2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 11, Table 11.3

Value(s) applied	0.011 Uncertainty ranges are based on the 2.5th to 97.5th percentile interval, from which the standard deviation of the parameter is derived to construct the probability distribution of parameter values
QA/QC	Reputable source approved by Equitable Earth. IPCC updates are regularly checked, and applicable changes are integrated in new versions of the Equitable Earth Programme and/or relevant methodologies

Data/Parameter	LF_{AS}
Unit	Dimensionless
Description	Activity-shifting leakage default factor. It is applied as a fixed proportion of the estimated avoided forest-loss emissions to be generated during the baseline validity period
Equation(s)	E.20
Source of data	Equitable Earth
Value(s) applied	0.1
QA/QC	The value applied is a conservative default supported by Equitable Earth's global analysis of REDD+ projects (76 projects; 532 monitoring-years, 2003–2023), which found typical activity-shifting leakage well below 10% across regions and methodologies

Data/Parameter	$LF_{M,r(com)}$
Unit	Dimensionless
Description	Market leakage factor for the market leakage class risk r applicable to the commodity com; dimensionless
Equation(s)	E.21
Source of data	Equitable Earth
Value(s) applied	Project-specific
QA/QC	The applied values are conservative fixed default rates, informed by Equitable Earth's review of the relevant literature and adjusted to reflect the impact of mitigation activities implemented by the project.

Data/Parameter	$\mathbf{EF}_{fuel\ i}$
Unit	tCO_2e/L

Description	Emission factor for the fuel type i
Equation(s)	E.19
Source of data	Equitable Earth's standardised conservative conversion factors or the developer
Value(s) applied	Fuel-specific
QA/QC	N/A

Data/Parameter	RLT_{min}
Unit	tDM
Description	Minimum reportable relative loss for the jurisdiction
Equation(s)	N/A
Source of data	Equitable Earth
Value(s) applied	Jurisdiction-specific
QA/QC	Refer to the *Minimum Reportable Relative Loss* section in the Baseline Setting Module.

Data/Parameter	$p_{i,k}$
Unit	Dimensionless
Description	Probability of the pixel i to experience relative-loss level k
Equation(s)	N/A
Source of data	Equitable Earth
Value(s) applied	Project-specific
QA/QC	Refer to the *Risk Model Development & Outputs* section in the Baseline Setting Module.

Monitored Parameters

Table D2: Monitored GHG parameters for Equitable Earth and developers.

Data/Parameter	$\mathbf{AGB}^{[m]}$
Unit	tDM/ha
Description	Above-ground biomass at the end of the monitoring period $[m]$
Equation(s)	E.3, E.4, E.10
Source of data	Consensus of AGB provider(s) selected for the jurisdiction
Monitoring procedures	Above-ground woody biomass is measured by the AGB provider(s) using their models based on satellite imagery. Their results will be accessed and computed to generate detailed reports.
Monitoring frequency	Prior to verification, at least every five years, unless a significant loss event is identified
QA/QC	A series of automated tests within the pipeline that detect anomalies (e.g., impossible values).

Data/Parameter	$\mathbf{SE}_{pixel}^{[m]}$
Unit	tDM
Description	Standard error from the AGB provider for each pixel at the end of the monitoring period $[m]$
Equation(s)	N/A
Source of data	Consensus AGB provider(s) selected for the jurisdiction
Monitoring procedures	Standard error is provided by the AGB provider(s) from their models based on satellite imagery. Their results will be accessed and computed to generate detailed reports.
Monitoring frequency	Prior to verification, at least every five years, unless a significant loss event is identified
QA/QC	Refer to QA/QC of $\mathbf{AGB}^{[m]}$

Data/Parameter	$AGB_{burn,\,i}$
Unit	tDM
Description	Mass of AGB burnt for fire event *i* as part of project activities that occurred in the monitoring period $[m]$
Equation(s)	E.10
Source of data	Consensus of AGB provider(s) selected for the jurisdiction
Monitoring procedures	Above-ground woody biomass is measured by the AGB provider(s) using their models based on satellite imagery. Their results will be accessed and computed to generate detailed reports.
Monitoring frequency	Prior to verification, at least every five years
QA/QC	Equitable Earth attributes the mass of AGB burnt to project activities by matching the developer's prescribed fire events (as per their fire management strategy) with both the burnt area boundaries provided by developers and the remotely-sensed AGB data provided by the AGB provider.

Data/Parameter	$A_{burn,\,i}$
Unit	ha
Description	Burnt area for fire event *i* as part of project activities that occurred in the monitoring period $[m]$. Equitable Earth uses the inputs reported by the developer to quantify emissions from project activities. This parameter is only reported where project activity emissions are material.
Equation(s)	E.10
Source of data	Developer
Value(s) applied	Project-specific
QA/QC	Equitable Earth visually validates the burnt area(s) using GIS tools and satellite data.

Data/Parameter	$n[m]$
Unit	Dimensionless
Description	Total number of fire events that occurred in the monitoring period $[m]$

Equation(s)	E.11
Source of data	Developer
Monitoring procedures	Developers determine the total number of fire events in accordance with the project's intervention plan and fire-management records
Monitoring frequency	Prior to verification, at least every five years
QA/QC	Equitable Earth validates the reported number of prescribed fire events against the fire management strategy.

Data/Parameter	$n_{LS,i}^{[m]}$
Unit	Dimensionless
Description	Annual average number of head of livestock species/category *i* in the monitoring period $[m]$
Equation(s)	E.12
Source of data	Developer
Monitoring procedures	Developers must conduct annually a direct headcount of each livestock species, where possible, ensuring that population numbers reflect any changes over 12 months, including births and deaths. Where direct counting is not feasible, developers may use sampling methods that can be reliably extrapolated to the entire population.
Monitoring frequency	Annually
QA/QC	Equitable Earth applies evidence and plausibility screens by validating reported headcounts against annual records provided by the developer and requiring additional supporting documentation for large year-to-year changes.

Data/Parameter	$\mathbf{M}_{SF,i,c}^{[m]}$
Unit	t fertiliser
Description	Mass of N-containing synthetic fertiliser i applied in the project area within the monitoring period $[m]$

Equation(s)	E.15
Source of data	Developer
Monitoring procedures	Developers monitor the mass or volume applied for each chemical, as well as the method and time of application
Monitoring frequency	Prior to verification, at least every five years
QA/QC	The developer confirms the veracity of all information stated in the PDD and provides documentation (e.g., invoices, application details) for the purchase and planned application of fertilisers.

Data/Parameter	$FC_i^{[m]}$
Unit	L
Description	Volume of fuel type i consumed in the monitoring period $[m]$
Equation(s)	E.19
Source of data	Developer
Monitoring Procedure	Recorded from fuel purchase invoices, or equivalent fuel tracking records maintained for each item of equipment or vehicle
Monitoring Frequency	Prior to each verification, where fossil fuel emissions were considered material
QA/QC	Cross-checked against the equipment/vehicle list provided by the developer and fuel purchase receipts

Data/Parameter	$E_{B\ AUDD}^{[m]}$
Unit	tCO_2e
Description	Project baseline emissions in the monitoring period $[m]$
Equation(s)	E.20, E.21, E.22, E.23
Source of data	Equitable Earth
Monitoring Procedure	Equitable Earth assigns to each monitoring period the proportional amount corresponding to the vintage year covered by that monitoring period

Monitoring Frequency	Prior to each verification
QA/QC	Refer to the Baseline Setting Module for more details on baseline-setting

Data/Parameter	$\alpha_{BR}^{[m]}$
Unit	Dimensionless
Description	Biomass loss signal in relative-loss band BR at the end of the monitoring period $[m]$
Equation(s)	E.8
Source of data	Equitable Earth
Monitoring Procedure	Equitable Earth calculates the historical ratio of observed loss attributable to genuine biomass loss compared to noise for the relative-loss band BR
Monitoring Frequency	Prior to each verification in the first four years of the project
QA/QC	N/A

Appendix E: Documentation History

Table E: Methodology version history.

Version	Date	Description
v0.1	21/08/2025	Version for public consultation
v1.0	13/11/2025	Public release of version 1.0 of M002 - Methodology for Terrestrial Forest Conservation
v1.0.1	18/12/2025	Minor corrections and revisions to align with the Baseline Setting Module published on 18/12/2025
v1.0.2	31/03/2026	Minor corrections and revisions to Eligibility, Additionality, and Quantification of Project Activity Emissions sections
v1.1	25/11/2026	Addition of market leakage principles and methods, revisions to eligibility, ecosystem services, and baseline-setting requirements and procedures, and other minor corrections


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