|  |  |
| --- | --- |
| **Forest Carbon Partnership Facility (FCPF)**  **Carbon Fund**  **ER Monitoring Report (ER-MR)** | |
| **ER Program Name and Country:** |  |
| **Reporting Period covered in this report:** | DD-MM-YYYY to DD-MM-YYYY |
| **Number of FCPF ERs:** |  |
| **Quantity of ERs allocated to the Uncertainty Buffer:** |  |
| **Quantity of ERs to allocated to the Pooled Reversal Buffer:** |  |
| **Number of FCPF ERs from enhanced removals through afforestation/ reforestation** | [Optional if the country wishes to label FCPF ER credits as being sourced from enhanced removals] |
| **Date of Submission:** | DD-MM-YYYY |
| **Version** |  |

|  |
| --- |
| **WORLD BANK DISCLAIMER**  The boundaries, colors, denominations, and other information shown on any map in ER-MR does not imply on the part of the World Bank any legal judgment on the legal status of the territory or the endorsement or acceptance of such boundaries.  The Facility Management Team and the REDD Country Participant shall make this document publicly available, in accordance with the World Bank Access to Information Policy and the FCPF Disclosure Guidance. |

General guidelines on completing the ER-MR. Guidance text within the ER Monitoring template shall be considered as requirements and shall be met by the ER Program.

ER Programs shall comply with the requirements of the FCPF Methodological Framework’s version available at the time of ERPA signature and the latest version of other FCPF requirements such as the Buffer Guidelines, Process Guidelines, Validation and Verification Guidelines, and the Guidelines on the application of the Methodological Framework. These versions may be found in here: <https://www.forestcarbonpartnership.org/requirements-and-templates>

**Purpose of the ER-MR**

ER Programs that have been included in the portfolio of the FCPF Carbon Fund shall implement the ER Program and report on performance, in particular ERs generated. By completing and submitting the ER Monitoring Report, a REDD Country Participant or its authorized entity officially reports on its performance to the Carbon Fund.

The FCPF Glossary of Terms provides definitions of specific terms used in the Methodological Framework, Buffer Guidelines and other requirements. Unless otherwise defined in this ER-MR template, any capitalized term used in this ER-MR template shall have the same meaning ascribed to such term in the FCPF Glossary of Terms.

**Guidance on completing the ER-MR**

All sections of the ER-MR shall be completed. If sections of the ER-MR are not applicable, explicitly state that the section is “Intentionally left blank” and provide an explanation why this section is not applicable. All instructions, including this section, should be deleted when submitting the ER-MR to the Facility Management Team of the FCPF.

Font of the body text shall be Calibri 10 black font.

Provide definitions of key terms that are used and use these key terms, as well as variables etc, consistently using the same abbreviations, formats, subscripts, etc. If the ER –MR contains equations, please number all equations and define all variables used in these equations, with units indicated.

The presentation of values in the ER-MR, including those used for the calculation of emission reductions, should be in international standard format e.g 1,000 representing one thousand and 1.0 representing one. Please use International System Units (SI units – refer to <http://www.bipm.fr/enus/3_SI/si.html>) unless the MF or the IPCC Guidelines indicate otherwise (e.g. tonnes vs Mg).

REDD Country Participants should note that if the Reporting Period does not coincide with the beginning and end of a natural year it shall apply the Guidelines on the application of the MF Number 3 on reporting periods. In this case, net ERs shall be estimated for the Monitoring Period and they shall be allocated to the Reporting Period pro-rata on the number of months. In the template Monitoring Report refers to the period used for monitoring ERs, while Reporting period refers to the period defined in the ERPA and for which ERs are paid for.

REDD Country Participants should also note that if Technical Corrections to the Reference Level have been applied in accordance with the Guidelines on the application of the methodological framework number 2 on technical corrections, then the technically corrected RL shall be reported in Annex 4 and will be subject to Validation by the Validation and Verification Body.

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**LIST OF ACRONYMS**

# Implementation and operation of the ER Program during the Reporting Period

## Implementation status of the ER Program and changes compared to the ER-PD

|  |
| --- |
| *Provide a short description of the implementation of the ER Program, including:*   * *Progress on the actions and interventions under the ER Program (including key dates and milestones);* * *Update on the strategy to mitigate and/or minimize potential Displacement.* * *Effectiveness of the organizational arrangements and involvement of partner agencies* * *Updates on the assumptions in the financial plan and any changes in circumstances that positively or negatively affect the financial plan and the implementation of the ER Program.*   *Highlight any key changes or deviations in the ER Program’s design and key assumptions compared to the description of the ER Program in the ER-PD.*  *Refer to* ***criterion 17.3 and 27*** *of the Methodological Framework* |

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## Update on major drivers and lessons learned

|  |
| --- |
| *Provide an update on the major drivers of deforestation and forest degradation in the ER Accounting Area. Discuss changes in major drivers and how these might affect the Displacement risks associated with the ER Program and any lessons from the ER Program’s efforts to mitigate potential Displacement.*  *Refer to* ***indicator 17.4 and 27*** *of the Methodological Framework* |

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# System for measurement, monitoring and reporting emissions and removals occurring within the monitoring period

## Forest Monitoring System

|  |
| --- |
| *Describe the Forest Monitoring System including:*   * *Organizational structure, responsibilities and competencies, linking these to the diagram shown in the next section;* * *The selection and management of GHG related data and information;* * *Processes for collecting, processing, consolidating and reporting GHG data and information;* * *Systems and processes that ensure the accuracy of the data and information;* * *Design and maintenance of the Forest Monitoring System;* * *Systems and processes that support the Forest Monitoring System, including Standard Operating Procedures and QA/QC procedures;* * *Role of communities in the forest monitoring system;* * *Use of and consistency with standard technical procedures in the country and the National Forest Monitoring System.*   *Highlight any changes compared to the description that was provided in the ER-PD.*  *Refer to* ***criterion 15 and 16*** *of the Methodological Framework* |

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## Updates to the monitoring approach

|  |
| --- |
| *If the monitoring approach has been updated, highlight any changes compared to the description of the monitoring plan that was provided in the validated version of annex 4 of the first Monitoring Report. This section is only applicable to ER Programs that have already concluded the Validation assessment.*  *Refer to* ***indicator 14.1*** *of the Methodological Framework* |

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## Measurement, monitoring and reporting approach

|  |
| --- |
| *Provide a systematic and step-by-step description of the measurement and monitoring approach applied for establishment of the Reference Level and estimating Emissions and Emissions reductions during the Monitoring / Reporting Period for estimating the emissions and removals from the Sources/Sinks, Carbon Pools and greenhouse gases selected in the ER-PD. Provide line diagrams showing all relevant monitoring points, parameters that are monitored and the integration of data until reporting in a schematic way.*  *Include equations that show the calculation steps of GHG emissions and removals and that show the parameters that will be listed in Section 3 following the example below. These equations shall show all steps from the input of measured and default parameters to the aggregation into final reported values. Discuss the choice and the source of all the equations used. Highlight any changes compared to the description that was provided in the ER-PD.*  *Refer to* ***criterion 5, 6, 7, 8, 9, 14 and 16*** *of the Methodological Framework* |

### Line Diagram

### Calculation

*>>Example*

*Emission reduction calculation*

|  |  |
| --- | --- |
|  | ***Equation 1*** |

*Where:*

|  |  |  |
| --- | --- | --- |
|  | *=* | *Emission Reductions under the ER Program in year t; tCO2e\*year-1.* |
|  | *=* | *Gross emissions of the RL from deforestation over the Reference Period; tCO2e\*year-1. This is sourced from Annex 4 to the ER Monitoring Report and equations are provided below.* |
|  | *=* | *Monitored gross emissions from deforestation at year t; tCO2e\*year-1;* |
|  | *=* | *Number of years during the monitoring period; dimensionless.* |

***Reference Level ()***

*The RL estimation may be found in Annex 4, yet a description of the equations is provided below.*

*Gross emissions of the RL from deforestation over the Reference Period () are estimated as the sum of annual change in total biomass carbon stocks () during the reference period.*

|  |  |
| --- | --- |
|  | ***Equation 2*** |

*Where:*

|  |  |  |
| --- | --- | --- |
|  | *=* | *Annual change in total biomass carbon stocks at year t; tC\*year-1;* |
| *RP* | *=* | *Reference period; years.* |

*Following the 2006 IPCC Guidelines, the annual change in total biomass carbon stocks forest land converted to other land-use category () would be estimated through the following equation:*

|  |  |
| --- | --- |
|  | ***Equation 3*** |

*Where:*

|  |  |
| --- | --- |
|  | *Annual change of total biomass carbon stocks during the period, in tC per year;* |
|  | *Annual increase in carbon stocks in biomass due to growth on land converted to another land-use category, in tC per hectare and year;* |
|  | *Initial change in carbon stocks in biomass on land converted to other land-use category, in tC per hectare and year; and* |
|  | *Annual decrease in biomass carbon stocks due to losses from harvesting, fuel wood gathering and disturbances on land converted to other land-use category, in tC per hectare and year.* |

*Following the recommendations set in chapter 2.2.1 of the GFOI Methods Guidance Document for applying IPCC Guidelines and guidance in the context of REDD+[[1]](#footnote-2), the above equation will be simplified and it will be assumed that:*

* *The annual change in total biomass carbon stocks () is equal to the initial change in carbon stocks ();*

*Considering equation 2.16 of the 2006 IPCC GL for estimating () the change of biomass carbon stocks could be expressed with the following equation:*

|  |  |
| --- | --- |
|  | ***Equation 4*** |

*Where:*

|  |  |
| --- | --- |
|  | *Area converted/transited from forest type j to non-forest type i during the Reference Period, in hectares per year. In this case, three forest land conversions are possible:*   * *(Semi-)deciduous forest to Non-forest type i;* * *(Semi-)evergreen forest to Non-forest type i; and* * *Mangrove forest to Non-forest type i.*   *Five types of non-forest land are considered:*   * *Cropland (C);* * *Grassland (P);* * *Wetland (A);* * *Settlement (U); and* * *Other lands (O).*   *Some of the technical corrections applied pertain this parameter:*   * *….*   *The description of this parameter may be found in* ***Annex 4*** *– Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period* ***Error! Reference source not found.*** |
|  | *Total biomass of forest type j before conversion/transition, in tons of dry matter per ha. This is equal to the sum of aboveground () and belowground biomass () and it is defined for each forest type.*  *This parameter was technically corrected so as to…..*  *Description of this parameter may be found in* ***Annex 4*** *- Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period.* |
|  | *Total biomass of non-forest type i after conversion, in tons dry matter per ha. This is equal to the sum of aboveground () and belowground biomass () and it is defined for each of the five non-forest IPCC Land Use categories.*  *This parameter was technically corrected so as to replace the estimates sourced from research by estimates given by the IPCC Guidelines.*  *Description of this parameter may be found in* ***Annex 4*** *-Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period.* |
|  | *Carbon fraction of dry matter in tC per ton dry matter. The value used is:*   * ***0.47*** *is the default for (sub)tropical forest as per IPCC AFOLU guidelines 2006, Table 4.3.* |
|  | *Conversion of C to CO2* |

***Monitored emissions ()***

*Annual gross GHG emissions over the monitoring period in the Accounting Area () are estimated as the sum of annual change in total biomass carbon stocks ().*

|  |  |
| --- | --- |
|  | ***Equation 5*** |

*Where:*

|  |  |  |
| --- | --- | --- |
|  | *=* | *Annual change in total biomass carbon stocks at year t; tC\*year-1* |
|  | *=* | *Number of years during the monitoring period; dimensionless.* |

*Changes in total biomass carbon stocks*

*Following the 2006 IPCC Guidelines, the annual change in total biomass carbon stocks forest land converted to other land-use category () would be estimated through* ***Equation 3*** *above. Making the same assumptions as described above for the RL the change of biomass carbon stocks could be expressed with the following equation:*

|  |  |
| --- | --- |
|  | ***Equation 6*** |

*Where:*

|  |  |
| --- | --- |
|  | *Area converted/transited from forest type j to non-forest type i during the Monitoring Period, in hectare per year. In this case, three forest land conversions are possible:*   * *(Semi-)deciduous forest to Non-forest type i;* * *(Semi-)evergreen forest to Non-forest type i; and* * *Mangrove forest to Non-forest type i.*   *Five types of non-forest land are considered:*   * *Cropland (C);* * *Grassland (P);* * *Wetland (A);* * *Settlement (U); and* * *Other lands (O).*   *These parameters may be found in* ***Annex 4*** *Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period.* |
|  | *Total biomass of forest type j before conversion/transition, in tons of dry matter per ha. This is equal to the sum of aboveground () and belowground biomass () and it is defined for each forest type.*  *This was defined ex-ante and is described in* ***Annex 4*** *Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period****.*** |
|  | *Total biomass of non-forest type i after conversion, in tons dry matter per ha. This is equal to the sum of aboveground () and belowground biomass () and it is defined for each of the five non-forest IPCC Land Use categories.*  *This was defined ex-ante and is described in Annex 4 Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period* |
|  | *Carbon fraction of dry matter in tC per ton dry matter. The value used is:*   * ***0.47*** *is the default for….* |
|  | *Conversion of C to CO2* |

>>

# Data and parameters

## Fixed Data and Parameters

|  |
| --- |
| *Please provide an overview of all data and parameters that remain fixed throughout the Crediting Period. These parameters should link to the equations provided in section 2.2.2*  *This shall include parameters that have been measured or estimated but will not be updated during the Crediting Period, such as:*   * *Biomass and carbon densities (e.g. , , ) that were measured at the time of the ERPD and that will remain fixed during the Crediting period.* * *Biomass and carbon densities (e.g. , , ) that are measured prior to this monitoring event and will remain fixed during the Crediting period. In this case, it shall be demonstrated that these are equivalent to the ones used for the establishment of the Reference Level as required by Indicator 14.3 of the MF. “equivalent” means that are equal or are comparable so that the difference is not linked to a methodological difference. Differences in the Emission Factor shall not lead to an overestimation of Emission Reductions. If this is the case, the ER Program shall apply technical corrections to the RL and update the Emission Factor by the most recent one.* * *Activity Data estimated during the Reference Period.*   *Default values, such as Carbon Fractions, root-to-shoot ratios or other parameters that are generically sourced from the IPCC values, shall be reported together with the relevant equations in Section 2.2.2, not in this section.*  *Data and parameters monitored during the Crediting Period shall be included in section 3.2 below (Data and Parameters monitored). Use the table provided and copy table for each parameter, not for each value (multiple values may be reported per parameter, for instance may include the estimates of the different forest types obtained with a same inventory ). Where relevant, attach any spreadsheets, spatial information, maps and/or synthesized data used to derive the parameter.*  *Regarding the Reporting Period, if ER Programs decide to use the Guidelines on the application of the MF Number 3 on reporting periods and use a Monitoring Period for monitoring, this section should reflect the value monitored during the monitoring period instead of the Reporting Period. In this case the Monitoring Report should clearly indicate the start and end date of the monitoring period.*  *Refer to* ***criterion 5, 6, 7, 8, 9, 14 and 16*** *of the Methodological Framework* |

|  |  |
| --- | --- |
| **Parameter:** | *Example:* |
| **Description:** | *Example: Aboveground biomass of land-use category j before conversion,* |
| **Data unit:** | *Example: tonne of dry matter per ha* |
| **Source of data or description of the method for developing the data including the spatial level of the data (local, regional, national, international):** |  |
| **Value applied:** |  |
| **QA/QC procedures applied** |  |
| **Uncertainty associated with this parameter:** | Quantify the residual uncertainty for this parameter propagating the main sources of uncertainty. For example, propagate the main sources of error for the estimation of EF and quantify the resulting uncertainty.  Refer to criterion 7 and indicator 9.1 of the Methodological Framework |
| **Any comment:** |  |

## Monitored Data and Parameters

|  |
| --- |
| *Please provide an overview of all data and parameters that are monitored during the Crediting Period and their values for this Monitoring/Reporting Period. Use the table provided and copy table for each parameter, not for each value (multiple values may be reported per parameter, for instance may include the estimates of the different forest types obtained with a same survey).*  *Include all the relevant information within the boxes, not outside.*  *Where relevant, attach any spreadsheets, spatial information, maps and/or synthesized data used to derive the parameter. These parameters should link to the equations that are presented in section 2.2.2.*  *Refer to* ***criterion 5, 6, 7, 8, 9, 14 and 16*** *of the Methodological Framework* |

|  |  |
| --- | --- |
| **Parameter:** | Example: |
| **Description:** | Example: Area of forest converted from land-use category j to land-use category i during the Monitoring Period. |
| **Data unit:** | Example: hectare per year. |
| **Value monitored during this Monitoring / Reporting Period:** | Example:   |  |  | | --- | --- | | Dense forest to non-forest | 1,000 | | Open forest to non-forest | 1,000 | | Dense forest to open forest | 1,000 | | Non-forest to open forest | 200 | |
| **Source of data and description of measurement/calculation methods and procedures applied:** | This shall include a detailed description of the estimation methods of the relevant parameter. |
| **QA/QC procedures applied:** |  |
| **Uncertainty for this parameter:** | Quantify the residual uncertainty for this parameter propagating the main sources of uncertainty. For example, propagate the main sources of error for the estimation of EF and quantify the resulting uncertainty.  Refer to criterion 7 and indicator 9.1 of the Methodological Framework |
| **Any comment:** |  |

# Quantification of emission reductions

## ER Program Reference level for the Monitoring / Reporting Period covered in this report

|  |
| --- |
| *Please provide the Reference Level for the ER Program for the Reporting Period covered in this report as provided in the most recent version of the ER Program Document and/or Annex 4 of the MR. If there are differences, explain these differences and whether Technical Corrections have been applied.*  *If Guidelines on the application of the MF Number 3 on reporting periods is applied, the years should reflect the years of the Monitoring Period.*  *Refer to* ***criterion 10, indicator 10.1*** *of the Methodological Framework* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year of Monitoring/Reporting period *t*** | **Average annual historical emissions from deforestation over the Reference Period (tCO2-e/yr)** | **If applicable, average annual historical emissions from forest degradation over the Reference Period (tCO2-e/yr)** | **If applicable, average annual historical removals by sinks over the Reference Period (tCO2-e/yr)** | **Adjustment, if applicable (tCO2-e/yr)** | **Reference level (tCO2-e/yr)** |
| 20xx |  |  |  |  |  |
| 20xx |  |  |  |  |  |
| … |  |  |  |  |  |
| **Total** |  |  |  |  |  |

## Estimation of emissions by sources and removals by sinks included in the ER Program’s scope

|  |
| --- |
| *Quantify the emissions by sources and removals by sinks from the ER Program during the Monitoring / Reporting Period following the formulae shown in Section 2.2.2and linked to the parameters in Section 3. Provide sample calculations using the actual values from section 3 above with sufficient information to allow others to reproduce the calculation. Attach electronic spreadsheets, spatial information, maps and/or synthesized data as an appendix or separate file.*  *At the end of the description, summarize the results in the table below.*  *Regarding the reporting period, (step-by-step description of the calculation) should clearly describe the steps through which the pro-rata allocation has occurred and how the ERs for the Reporting Period have been calculated.*  *Refer to* ***criterion 5, 6, 7, 8, 9, 14 and 16*** *of the Methodological Framework* |

>>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year of Monitoring/Reporting Period** | **Emissions from deforestation (tCO2-e/yr)** | **If applicable, emissions from forest degradation (tCO2-e/yr)\*** | **If applicable, removals by sinks (tCO2-e/yr)** | **Net emissions and removals (tCO2-e/yr)** |
| 20xx |  |  |  |  |
| 20xx |  |  |  |  |
| … |  |  |  |  |
| **Total** |  |  |  |  |

## Calculation of emission reductions

|  |
| --- |
| *Quantify the Emission Reductions for the Monitoring / Reporting Period and summarize the result using the table below. Negative values represent removals while positive values represent emissions.*  *The first table may be used in the case the Reporting Period coincides with the Monitoring Period. The second table may be use when the Reporting Period is shorter than the Monitoring Period and a pro-rata allocation is needed by multiplying the net ERs during the Monitoring Period by the ratio of the Length of the Reporting Period and the Length of the Monitoring Period.*  *The two last sets of tables may be only used if cumulative quantity of Total ERs estimated for prior reporting periods is negative, and the cumulative considering the current reporting period is positive. In this case, this negative performance or reversals shall be compensated with the Total Emission Reductions of the current period.*  *Refer to* ***criterion 22*** *of the Methodological Framework* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Deforestation** | **If applicable, forest degradation** | **If applicable, enhanced removals from afforestation/ reforestation (A/R)** | **If applicable, enhanced removals from other activities besides A/R\*** | **Total (tCO2-e)** |
| **Emission or removals in the Reference Level (tCO2-e)** |  |  |  |  |  |
| **Emission or removals under the ER Program during the Reporting Period (tCO2-e)** |  |  |  |  |  |
| **Emission Reductions during the Reporting Period (tCO2-e)** |  |  |  |  |  |

\* Please list below which of the ER Program measures other than A/R that are being considered to generate enhanced removals:

>>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Deforestation** | **If applicable, forest degradation** | **If applicable, enhanced removals from afforestation/ reforestation (A/R)** | **If applicable, enhanced removals from other activities besides A/R** | **Total (tCO2-e)** |
| **Emission or removals in the Reference Level (tCO2-e)** |  |  |  |  |  |
| **Emissions or removals under the ER Program during the Monitoring Period (tCO2-e)** |  |  |  |  |  |
| **Emission Reductions during the Monitoring Period (tCO2-e)** |  |  |  |  |  |
| **Length of the Reporting period / Length of the Monitoring Period (# days/# days)** |  | | | | |
| **Emission Reductions during the Reporting Period (tCO2-e)** |  |  |  |  |  |

***Optional calculation:*** *If the emission reductions from both deforestation and forest degradation are more than zero, ER Programs can optionally estimate the emission reductions from enhanced removals from afforestation/reforestation as a percentage of the total FCPF ERs in step N of section 8.*

|  |  |
| --- | --- |
| **Emission reductions from enhanced removals from afforestation/reforestation as a percentage of the total FCPF ERs (%)** |  |

>> In case of non-performance or reversals in previous period

|  |
| --- |
| This table is only applicable when the monitoring and reporting periods are the same (they are multiple of full calendar years). If not applicable, please remove it. |

|  |  |  |
| --- | --- | --- |
| **A** | **Total Reference Level emissions during the Reporting Period (tCO2-e)** |  |
| **B** | **Net emissions and removals under the ER Program during the Reporting Period (tCO2-e)** |  |
| **C** | **Cumulative quantity of Total ERs estimated for prior reporting periods (tCO2-e, only use if negative)** |  |
| **D** | **Emission Reductions during the Reporting Period (tCO2-e) (A-B+C)** |  |

>>

|  |
| --- |
| This table is only applicable when the monitoring and reporting periods are different and a pro-rata is applied. If not applicable, please remove it. |

|  |  |  |
| --- | --- | --- |
| **A** | **Total Reference Level emissions during the Monitoring Period (tCO2-e)** |  |
| **B** | **Net emissions and removals under the ER Program during the Monitoring Period (tCO2-e)** |  |
| **C** | **Emission Reductions during the Monitoring Period (tCO2-e) (A-B)** |  |
| **D** | **Length of the Reporting period / Length of the Monitoring Period (# days/# days)** |  |
| **E** | **Emission Reductions during the Reporting Period (tCO2-e) (C\*D)** |  |
| **F** | **Cumulative quantity of Total ERs estimated for prior reporting periods (tCO2-e, only use if negative)** |  |
| **G** | **Cumulative Emission Reductions during the Reporting Period (tCO2-e) (E+F)** |  |

# Uncertainty of the estimate of Emission Reductions

*Regarding the reporting period, if applicable, it should be indicated how the pro-rata approach has impacted the uncertainty in each case.*

## Identification, assessment and addressing sources of uncertainty

|  |
| --- |
| *As part of the first step of the Uncertainty Analysis, REDD Country Participants shall identify and discuss in qualitative terms the main source(s) of uncertainty and shall conclude whether its contribution to total uncertainty of Emission Reductions[[2]](#footnote-3) is high or low. Table 1 of the Guideline on uncertainty analysis of emission reductions provides a list of the main source(s) of uncertainty that shall be discussed by REDD Country Participants together with an indication on whether their contribution to overall uncertainty is high or low and whether they are systematic or random in nature. This analysis should reflect the situation at the beginning of the Monitoring Cycle.*  *This discussion on the main source(s) of uncertainty the REDD Country Participant shall discuss the measures that have been implemented to address these sources of uncertainty as part of the Monitoring Cycle. Source(s) of uncertainty that are deemed high should be addressed by the REDD Country Participant. The strategy to address these varies depending on the type of error as explained below . Table 1 of the Guideline on uncertainty analysis of emission reductions provides the proposed strategy to address the different sources of uncertainty.*  *It is important to note that the importance is the contribution of sources of error to total uncertainty of ERs, which is not necessarily the same as emissions. Since Emission Factors are the same for RL setting and GHG monitoring, Emission Reductions can be expressed as the difference in the activity data in the Reference Period and the Monitoring Period multiplied by the Emission Factor (i.e. )). This is important to keep in mind.*  *Systematic errors shall be reduced as far as practical. Although systematic errors (bias) should be removed, in the FCPF accounting framework these are allowed if it leads to the underestimation of Emission Reductions. REDD Country Participants may use conservative approaches in order to address systematic errors that are not practical to be solved. Systematic Errors that may cause an overestimation of Emission Reductions shall be addressed by the REDD Country Participant.*  *The text within the table of the guidance shall be replaced by the assessment of the country.*  *Refer to* ***criterion 7*** *of the Methodological Framework and the* ***Guideline on the application of the Methodological Framework Number 4 On Uncertainty Analysis of Emission Reductions*** |

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## Uncertainty of the estimate of Emission Reductions

### Parameters and assumptions used in the Monte Carlo method

|  |
| --- |
| *ER Programs shall apply Monte Carlo methods (IPCC Approach 2) for quantifying the Uncertainty of the RL and Emission Reductions. The sources of uncertainty that shall be propagated are provided in the right column of Table 1 of the Guideline on uncertainty analysis of emission reductions.*  *ER Programs shall report transparently the parameters that are subject to the Monte Carlo simulation, the type of Probability Distribution Function (PDF) including its parameters, the source of assumptions made, as shown in the applicable table of the MR. The PDF shall be well justified and shall adhere to the guidance provided in Section 3.2.2.4 of* [*Chapter 3, Volume 1 of the 2006 IPCC Guidelines*](https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/1_Volume1/V1_3_Ch3_Uncertainties.pdf) *(and its 2019 refinement). When the parameter is based on sample data, Bootstrap methods may be applied in substitution of the PDF definition.*  *Refer to* ***criterion 7 and indicators 9.2 and 9.3*** *of the Methodological Framework* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter included in the model** | **Parameter values** | **Error sources quantified in the model (e.g. measurement error, model error, etc.)** | **Probability distribution function** | **Assumptions** |
|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

### Quantification of the uncertainty of the estimate of Emission Reductions

|  |
| --- |
| *All ER Programs shall report the uncertainty of aggregated Emission Reductions at the 90% confidence level, except for those that use proxies[[3]](#footnote-4) to estimate GHG emissions from forest degradation. In these cases, uncertainty of ERs shall be reported for forest degradation and for the aggregate of the other activities.*  *Uncertainty will be reported for both the Reporting Period and for the period since the Crediting Period Start date. Uncertainty discount applicable is based on the highest of both uncertainties. The cumulative uncertainty during the crediting period may be estimated through propagation of errors approach using the values of the different reporting periods.*  *Refer to* ***criterion 7, indicators 9.2 and 9.3, and criterion 22*** *of the Methodological Framework* |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Reporting Period** | | | **Crediting Period** | | | |
| **Total Emission Reductions\*** | **Forest degradation\*\*** | | **Total Emission Reductions\*** | | **Forest degradation\*\*** | |
| **A** | **Median** |  |  |  | |  | |
| **B** | **Upper bound 90% CI** (Percentile 0.95) |  |  |  | |  | |
| **C** | **Lower bound 90% CI** (Percentile 0.05) |  |  |  | |  | |
| **D** | **Half Width Confidence Interval at 90% (B – C )/ 2** |  |  |  | |  | |
| **E** | **Relative margin (D / A)** | % | % | % | | % | |
| **F** | **Uncertainty discount** | % | % | % | | % | |

\*Remove forest degradation from the estimate if forest degradation has been estimated with proxy data. \*\*Remove the column if forest degradation has not been estimated using proxy data.

## Sensitivity analysis and identification of areas of improvement of MRV system

|  |
| --- |
| *ER Programs shall follow the guideline on uncertainty analysis of Emission Reductions to carry out a sensitivity analysis to identify the relative contribution of each parameter to the overall uncertainty.*  *ER Programs shall report this transparently and completely so that it provides enough information for improvements in future Monitoring Cycles.*  *Refer to* ***criterion 7 and indicators 9.2 and 9.3*** *of the Methodological Framework and the* ***Guideline on the application of the Methodological Framework Number 4 On Uncertainty Analysis of Emission Reductions*** |

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# Transfer of Title to ERs

## Ability to transfer title

|  |
| --- |
| *Describe the arrangement in place to demonstrate the Program Entity’s ability to transfer title to ERs.*  *If the ability to transfer Title to ERs is unclear or contested during the Reporting Period:*   * *identify the Contesting Party;* * *describe the nature of the challenge;* * *detail the area in the ER Program Accounting Area that is affected by such challenge, and* * *describe how and to which extent the Program Entity resolved such inability or Title Contest during the Reporting Period.* * *If applicable, add a statement indicating if the Program Entity has intentions of increasing the ability to transfer the title over ERs covered in this monitoring report, and indicate a proposed date for requesting such increase.*   *Refer to* ***criterion 28, indicator 28.3 and criterion 36, indicator 36.2 and indicator 36.3*** *of the Methodological Framework* |

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## Implementation and operation of Program and Projects Data Management System

|  |
| --- |
| *Please describe the design and operation by the ER Program and/or the host country of an appropriate arrangement to avoid having multiple claims to an ER Title. Discuss the design and provide evidence of the implementation and operation of a Program and Projects Data Management System in accordance with the requirements of the Methodological Framework. If applicable, highlight any changes compared to what was anticipated in the ER-PD and explain why these changes were made.*  *Refer to* ***criterion 37*** *of the Methodological Framework* |

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## Implementation and operation of ER transaction registry

|  |
| --- |
| *Please describe the design and implementation by the host country of an appropriate arrangement to ensure that any ERs from REDD+ activities under the ER Program are not generated more than once; and that any ERs from REDD+ activities under the ER Program sold and transferred to the Carbon Fund are not used again by any entity for sale, public relations, compliance or any other purpose. Discuss the design and provide evidence of the implementation and operation of an ER transaction registry in accordance with the requirements of the Methodological Framework. If applicable, highlight any changes compared to what was anticipated in the ER-PD and explain why these changes were made.*  *Beyond the use and operation of the WB Emission Reduction Transaction Registry (CATS – Carbon Assets Tracking System) to issue and transfer the ER units generated under the current Program, discuss, if that’s the case, the design and provide evidence of the implementation and operation of a national ER transaction registry*  *Refer to* ***criterion 38*** *of the Methodological Framework* |

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## ERs transferred to other entities or other schemes

|  |
| --- |
| *Please identify the quantity and use of any ERs from the ER Program sold, assigned or otherwise used by any other entity for sale, public relations, compliance or any other purpose including ERs that have been set-aside to meet Reversal management requirements under other GHG accounting schemes.*  *In the case the REDD Country is planning to separately account Emission Reductions from the ER Program under a different GHG Program or Standard, resulting in a percentage of units generated in the applicable Reporting Period not being issued as FCPF ERs, this shall be described in this section so that the FMT ensures that no FCPF ERs are generated to avoid double counting or claiming. The REDD Country shall provide enough information regarding the other GHG program:*   * *Name of the GHG Program* * *Status of registration and validation under the GHG Program* * *Vintages that will be affected* * *Reference level used under the alternative GHG Program or Standard* * *Amount of Emission Reductions that are planned to be generated under the alternative GHG Program or Standard*   *If the REDD Country does not provide this information, the FMT will assume that there are no plans to use the units generated under other Programs and will request the Transaction registry administrator to issue all net ERs as FCPF ERs. If the REDD Country has an accurate estimation of the Emission Reductions that would be generated under the other GHG Program (as credits or buffer units) and that would not be sold as FCPF ERs (considering the ERPA conditions) it shall consider under Section 8 that these units as ERs transferred to other entities or other schemes so that the FCPF non-permanence buffer would not apply to these units.*  *Refer to* ***Criterion 23*** *and* ***Criterion 38*** *of the Methodological Framework* |

# Reversals

## Occurrence of major events or changes in ER Program circumstances that might have led to the Reversals during the Reporting Period compared to the previous Reporting Period(s)

|  |
| --- |
| *Please identify the major events or changes in ER Program circumstances during the Reporting Period that might have led to a Reversal or impact the risk of Reversals. Indicate if these events have previously been reported to the Trustee. Highlight any non-human induced Force* *Majeure event, impacting at least 25% of the ER Program Accounting Area.*  *Please confirm if any Reversals have occurred during the Reporting Period.*  *Refer to* ***indicator 21.1*** *of the Methodological Framework* |

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## Quantification of Reversals during the Reporting Period

|  |
| --- |
| *Using the table below, please confirm and quantify any Reversals of ERs that might have occurred during the Reporting Period.*  *Refer to* ***indicator 19.1*** *of the Methodological Framework and the FCPF ER Program Buffer Guidelines.* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| **A.** | **ER Program Reference level for this Reporting Period (tCO2-e)** | *from section 4.1* |  |  |  |
|  |  |  |  |  |  |
| **B.** | **ER Program Reference level for all previous Reporting Periods in the ERPA (tCO2-e).** | *from section 4.1 of previous ER Monitoring Reports* |  |  | **+** |
|  |  |  |  |  |  |
| **C.** | **Cumulative Reference Level Emissions for all Reporting Periods [A + B]** |  |  |  |  |
|  |  |  |  |  |  |
| **D.** | **Estimation of emissions by sources and removals by sinks for this Reporting Period (tCO2-e)** | *from section 4.2* |  |  |  |
|  |  |  |  |  |  |
| **E.** | **Estimation of emissions by sources and removals by sinks for all previous Reporting Periods in the ERPA (tCO2-e)** | *From section 4.2 of previous ER Monitoring Reports* |  |  |  |
|  |  |  |  |  |  |
| **F.** | **Cumulative emissions by sources and removals by sinks including the current reporting period (as an aggregate accumulated since the Crediting Period Start Date) [D + E]** |  |  |  | **\_** |
|  |  |  |  |  |  |
| **G.** | **Cumulative quantity of Total ERs estimated including the current reporting period (as an aggregate of ERs accumulated since the Crediting Period Start Date) [C – F]** |  |  |  |  |
|  |  |  |  |  |  |
| **H.** | **Cumulative quantity of Total ERs estimated for prior reporting periods (as an aggregate of ERs accumulated since the Crediting Period Start Date)** | *from previous ER Monitoring Reports* |  |  | **\_** |
|  |  |  |  |  |  |
| **I.** | **[G – H], negative number indicates Reversals** |  |  |  |  |
|  |  |  |  |  |  |
| **If I. above is negative and reversals have occurred complete the following:** | | |  |  |  |
|  |  |  |  |  |  |
| **J.** | **Cumulative quantity FCPF ERs (as an aggregate of FCPF ERs accumulated since the Crediting Period Start Date)** | *from previous ER monitoring reports, section 8* |  |  |  |
|  |  |  |  |  |  |
| **K.** | **Cumulative ER Program´s Pooled Reversal Buffer contributions (as an aggregate of Pooled Reversal Buffer ERs accumulated since the Crediting Period Start Date)** | *from previous ER monitoring reports, section 8* |  |  |  |
|  |  |  |  |  |  |
| **L.** | **Cumulative ER Program´s Uncertainty Buffer contributions (as an aggregate of Uncertainty Buffer ERs accumulated since the Crediting Period Start Date)** | *from previous ER monitoring reports, section 8* |  |  |  |
|  |  |  |  |  |  |
| **M.** | **Cumulative ER Program´s Pooled Reversal Buffer replenishments (as an aggregate of Reversal Buffer ERs replenished since the Crediting Period Start Date)** | *from previous ER monitoring reports, section 7.3* |  |  |  |
|  |  |  |  |  |  |
| **N.** | **Cumulative amount of FCPF ERs , Uncertainty and Pooled Reversal Buffer contributions and replenishments (as an aggregate since the Crediting Period Start Date) [J + K + L + M ]** |  |  |  |  |
|  |  |  |  |  |  |
| **O.** | **Quantity of Buffer ERs to be canceled from the Pooled Reversal Buffer account [If I < N, report the value of I; if I > N, report the value of N]** |  |  |  |  |
|  |  |  |  |  |  |

## Quantification of pooled reversal buffer replenishments

|  |
| --- |
| This section is only applicable if reversals have occurred in previous reporting periods. |

|  |
| --- |
| *Using the table below, please confirm and quantify the amount of Pooled Reversal Buffer replenishments applicable in the current reporting period.*  *Refer to* ***indicator 19*** *of the Methodological Framework and the FCPF ER Program Buffer Guidelines section 10.8.* |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | |
| **A.** | **Emission Reductions during the Reporting period (tCO2-e)** | *from section 4.3* |  |  |  | |
|  |  |  |  |  |  | |
| **B.** | **If applicable, number of Emission Reductions from reducing forest degradation that have been estimated using proxy-based estimation approaches (use zero if not applicable)** |  |  |  |  | |
|  |  |  |  |  |  | |
| **C.** | **Number of Emission Reductions estimated using measurement approaches (A-B)** |  |  | - |  | |
|  |  |  |  |  |  | |
| **D.** | **Percentage of ERs (A) for which the ability to transfer Title to ERs is clear or uncontested** | *from section 6.1* |  |  |  | |
|  |  |  |  |  |  | |
| **E.** | **ERs sold, assigned or otherwise used by any other entity for sale, public relations, compliance or any other purpose including ERs accounted separately under other GHG accounting schemes or ERs that have been set-aside to meet Reversal management requirements under other GHG accounting schemes** | *from section 6.4* |  |  |  | |
|  |  |  |  |  |  | |
| **F.** | **Cumulative Pooled Reversal Buffer cancellations (as an aggregate since the Crediting Period Start Date)** | *from previous ER monitoring reports section 7.2, O* |  |  |  | |
|  |  |  |  |  |  | |
| **G.** | **Cumulative ER Program´s Pooled Reversal Buffer contributions (as an aggregate of Pooled Reversal Buffer ERs accumulated since the Crediting Period Start Date)** | *from previous ER monitoring reports, section 8* |  |  |  | |
|  |  |  |  |  |  | |
| **H.** | **Proportion of cumulative Pooled Reversal Buffer cancellations/cumulative Pooled Reversal Buffer contributions [F / G]** |  |  |  |  | |
|  |  |  |  |  |  | |
| **I.** | **Year of the Crediting Period where the latest reversal took place (e.g., 1,2,3…)** | *from previous ER monitoring reports* |  |  |  | |
|  |  |  |  |  |  | |
| **J.** | **Cumulative Pooled Reversal Buffer cancellations (as an aggregate since the Crediting Period Start Date)** | *from previous ER monitoring reports and section 7.2, O* |  |  |  | |
|  |  |  |  |  |  | |
| **K.** | **Cumulative previous Pooled Reversal Buffer replenishments (as an aggregate since the Crediting Period Start Date)** | *from previous ER monitoring reports, section 7.3 Q* |  |  |  | |
|  |  |  |  |  |  | |
| **L.** | **Proportion of cumulative previous Pooled Reversal Buffer replenishments/cumulative Pooled Reversal Buffer cancellations [K / J]** |  |  |  |  | |
|  |  |  |  |  |  | |
| **Complete either a), b) or c) below, depending on the situation, to estimate the amount of the replenishment:** | | | | | |
|  |  |  |  |  |  | |
| **M.** | **a)       If L < 0.5, Pooled Buffer replenishments equal (B+C)\*D-E, noting that the replenishment should not be larger than the value of J-K** |  |  |  |  | |
|  |  |  |  |  |  | |
| **N.** | **b)       If L> 0.5, indicate the percentage of ERs generated that you wish to convert to Total ERs [0 to 0.3]** |  |  |  |  | |
|  |  |  |  |  |  | |
| **O.** | **Pooled Buffer replenishments [(B+C)\*(D-E)\*N], noting that the replenishment should not be larger than the absolute value of J-K** |  |  |  |  | |
|  |  |  |  |  |  | |
| **P.** | **c)       If the latest reversal has taken place from the third year of the Crediting Period on (as per L above) or if it represents more than 50% of the current net Pooled Reversal Buffer contributions (as per H above), Pooled Buffer replenishments equal (B+C)\*D-E, noting that the replenishment should not be larger than the absolute value of J-K** |  |  |  |  | |
|  |  |  |  |  |  | |
| **Q.** | **Total Pooled Reversal Buffer replenishment for the reporting period** |  |  |  |  | |
|  |  |  |  |  |  | |

## Reversal risk assessment

|  |
| --- |
| *Provide a summary of the Reversal risk assessment for this Reporting Period based on the ER Program Buffer Guidelines.*  *Please report using the table shown below and compare with the previous risk assessment.*  *Provide the full details of the application of the Reversal Risk Assessment Tool in Annex 5.*  *Refer to* ***criterion 19*** *of the Methodological Framework and the FCPF ER Program Buffer Guidelines* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk Factor** | **Risk indicators** | **Default Reversal Risk Set- Aside Percentage** | **Discount** | **Resulting reversal risk set-aside percentage** |
| **Default risk** | *N/A* | **10%** | *N/A* | *10%* |
| **Lack of broad and sustained stakeholder support** |  | **10%** |  |  |
| **Lack of institutional capacities and/or ineffective vertical/cross sectorial coordination** |  | **10%** |  |  |
| **Lack of long term effectiveness in addressing underlying drivers** |  | **5%** |  |  |
| **Exposure and vulnerability to natural disturbances** |  | **5%** |  |  |
|  |  | **Total reversal risk set-aside percentage** | |  |
|  |  |  | | |
|  |  | **Total reversal risk set-aside percentage from ER-PD or previous monitoring report (whichever is more recent)** | |  |

# Emission Reductions available for transfer to the Carbon Fund

|  |
| --- |
| *Quantify the emission reductions available for transfer to the Carbon Fund by completing the white cells in the table below. Additional columns may be added if the country wishes to report in separate calendar years. If it does not wish to report per calendar years, the FCPF units will be distributed per calendar years pro-rata to the number of years at the time of issuance. Separation in calendar years is only applicable if the Emission Reductions in all the years of the Reporting Period are positive.* |

|  |  |  |  |
| --- | --- | --- | --- |
| **A.** | **Emission Reductions during the Reporting period (tCO2-e)** | *from section 4.3* |  |
|  | | | |
| **B.** | **If applicable, number of Emission Reductions from reducing forest degradation that have been estimated using proxy-based estimation approaches (use zero if not applicable)** |  |  |
|  | | | |
| **C.** | **Number of Emission Reductions estimated using measurement approaches (A-B)** |  |  |
|  | | | |
| **D.** | **Percentage of ERs (A) for which the ability to transfer Title to ERs is clear or uncontested** | *from section 6.1* |  |
|  | | | |
| **E.** | **ERs sold, assigned or otherwise used by any other entity for sale, public relations, compliance or any other purpose including ERs accounted separately under other GHG accounting schemes or ERs that have been set-aside to meet Reversal management requirements under other GHG accounting schemes** | *from section 6.4* |  |
|  | | | |
|  | **If applicable, any buffer replenishments** | *section 7.3 P* |  |
|  | | | |
| **F.** | **Total ERs [(B+C)\*D-E] minus, if applicable, any replenishments as per section 7.3, Q** |  |  |
|  | | | |
| **G.** | **Conservativeness Factor to reflect the level of uncertainty from non-proxy based approaches associated with the estimation of ERs during the Crediting Period** | *from section 5.2* |  |
|  | | | |
| **H.** | **Quantity of ERs to be allocated to the Uncertainty Reversal Buffer (0.15\*B/A\*F)+(G\*C/A\*F)** |  |  |
|  | | | |
| **I.** | **Total reversal risk set-aside percentage applied to the ER program** | *from section 7.4* |  |
|  | | | |
| **J.** | **Quantity of ERs to be allocated to the Pooled Reversal Buffer (F-H)\*I** |  |  |
|  | | | |
| **K.** | **Number of FCPF ERs (F- H – J)** |  |  |
|  | | | |
| **L.** | **Percentage of Emission reductions from enhanced removals from afforestation/reforestation as a percentage of the total FCPF ERs [Optional if the country wishes to generate enhanced removals]** | *From section 4.3* |  |
|  |  |  |  |
| **M** | **Number of FCPF ERs from enhanced removals from afforestation/reforestation (L \* K) [Optional if the country wishes to generate enhanced removals]** |  |  |
|  |  |  |  |

# Annex 1: Information on the implementation of the Safeguards Plans

1. **Requirements of FCPF on Managing the Environmental and Social Aspects of ER Programs**

**“Programmatic Element 3: Safeguards**

*The ER Program meets World Bank social and environmental safeguards, promotes and supports the safeguards included in UNFCCC guidance related to REDD+, and provides information on how these safeguards are addressed and respected, including through the application of appropriate grievance mechanisms."*

**“Programmatic Element 4: Stakeholder participation**

*The design and implementation of ER Programs is based on and utilizes transparent stakeholder information sharing and consultation mechanisms that ensure broad community support and the full and effective participation of relevant stakeholders, in particular affected Indigenous Peoples and local communities.”*

*See Criterion 24 and 25 of FCPF Methodological Framework*

* The General Conditions Applicable to Emission Reductions Payment Agreements (EPRAs), Section 5.01(b)(i), requires the Program Entity to “*provide evidence satisfactory to the Trustee that the ER Program Measure(s) are being implemented in accordance with the Safeguards Plans*” as an annex to the ER Monitoring Report.
* The General Conditions Applicable to ERPAs, Section 16.01(vii), also provides that “*failure to observe, implement and meet all requirements contained in . . . a Safeguards Plan provided for under the ERPA (including any feedback and grievance redress mechanism provided for under the ER program, the Benefit Sharing Plan and/or a Safeguards Plan)*” is considered an Event of Default on the part of the Program Entity.
* The ERPAs include an additional covenant requiring the Program Entity to “monitor and report to the Trustee on the implementation of the Safeguards Plans (…) during Reporting Periods. The Program Entity shall monitor and report to the Trustee on the implementation of the Safeguards Plans annually after the date of this [ERPA]. (…) The Trustee reserves the right to initiate a separate monitoring of the implementation of the Safeguards Plans (…) annually after the date of this [ERPA] by an independent Third Party monitor.”
* Annex 1 is the primary tool for the Program Entity to provide evidence on whether the ER Program has been implemented in accordance with the Safeguard Plans. The World Bank, in its capacity as Trustee of FCPF, will review information provided in this Annex to confirm whether the Safeguards Plans have been complied with and whether the management of the environmental and social aspects of the ER Program warrants any corrective actions.
* The specific content of Annex 1 should be based on the specific requirements in the Safeguards Plans of the ER Program. In general, information for Annex 1 should be collected from desk review of relevant documentation,[[4]](#footnote-5) interviews with staff and program stakeholders, and field visits.
* The status of the implementation of the Safeguards Plans often cannot be measured by quantitative indicators. Therefore, the content in Annex 1 should be mostly presented in a narrative form and, where relevant and illustrative, supporting quantitative information could be included
* Reporting should focus on the overall performance of the management measures to implement the Safeguards Plans, supplemented by examples of good practice or non-compliance with the Safeguards Plans.

1. **Monitoring and Reporting Requirements**
2. **Entities that are responsible for implementing the Safeguards Plans are adequately resourced to carry out their assigned duties and responsibilities as defined in the Safeguards Plans.**

1.1 Summarize the key institutional arrangements, such as decision procedures, institutional responsibilities, budgets, and monitoring arrangements that are required under the Safeguards Plans.

1.2 Confirm whether the institutional arrangements summarized above have been put in place.

1.3 Confirm that the implementing entities and stakeholders understand their respective roles; have the technical capacity to execute their responsibilities; and have adequate human and financial resources.

1.4 Where specific capacity building measures (e.g., training and professional development) have been required by the ER Program or Safeguards Plans, describe the extent to which these measures have been carried out.

1. **ER Program activities are implemented in accordance with management and mitigation measures specified in the Safeguards Plans.**

2.1 Confirm that environmental and social documents prepared during Program implementation are based on the Safeguards Plans. Provide information on their scope, main mitigation measures specified in the plans, whether the plans are prepared in a timely manner, and whether disclosure and consultation on the plans are carried out in accordance with agreed measures.

* 1. Confirm if entities responsible for implementing the Safeguards Plans maintain consistent and comprehensive records of ER Program activities such as records of administrative approvals, licenses, permits, documentation of public consultation, documentation of agreements reached with communities, records of screening process, due diligence assessments, and records of handling complaints and feedbacks under the Feedback and Grievance Redress Mechanism (FGRM).
  2. Summarize the extent to which environmental and social management measures set out in the Safeguards Plans and any subsequent plans prepared during Program implementation are implemented in practice, the quality of stakeholder engagement, as well as whether field monitoring and supervision arrangements are in place.

2.4 Confirm that the FGRM is functional, supported with evidence that the FGRM tracks and documents grievances, is responsive to concerns, complaints or grievances.

**3. The objectives and expected outcomes in the Safeguards Plans have been achieved.**

3.1 Assess the overall effectiveness of the management and mitigation measures set out in the Safeguards Plans.

3.2 Are the arrangements for quality assurance, monitoring, and supervision effective at identifying and correcting shortcomings in cases when ER Program activities are not implemented in accordance with the Safeguards Plans?

3.3 Describe the supervision and oversight arrangements to ensure that the Safeguards Plans and, if any, subsequent environmental and social documents prepared during Program implementation are implemented. Are these supervision and oversight arrangements effective (e.g., provide meaningful feedback mechanism to implementing entities to allow for corrective actions)?

1. **Program activities present emerging environmental and social risks and impacts not identified or anticipated in the Safeguard Plans prepared prior to ERPA signature.**

4.1 Is the scope of potential risks and impacts identified during the SESA process continue to be relevant to ER Program activities?

4.2 During implementation, has any ER Program activities led to risks or impacts that were not previously identified in those Safeguard Plans prepared prior to ERPA signature? If so, what are the proposed actions to manage such risks and impacts that were not anticipated previously?

1. **Corrective actions and improvements needed to enhance the effectiveness of the Safeguards Plans.**
   1. Provide a self-assessment of the overall implementation of the Safeguards Plans

5.2 List any corrective actions and areas for improvements. Take care to distinguish between: (i) corrective actions to ensure compliance with the Safeguards Plans; and (ii) improvements needed in response to unanticipated risks and impacts

5.3 Describe the timeline to carry out the corrective actions and improves identified above.

# Annex 2: Information on the implementation of the Benefit-Sharing Plan

1. **Requirements of FCPF on Benefit Sharing Plans**

**Programmatic Element 5: Benefit sharing**

The ER Program uses clear, effective and transparent benefit-sharing mechanisms with broad community support and support from other relevant stakeholders.

See Criterion 29; 30; 31; 32; 33 of FCPF Methodological Framework

* The General Conditions Applicable to Emission Reductions Payment Agreements (EPRAs), Section 5.01(b)(i), requires the Program Entity to “*provide evidence satisfactory to the Trustee . . . that the Benefit Sharing Plan has been implemented in accordance with its terms*” as an annex to the ER Monitoring Report.
* The General Conditions Applicable to ERPAs, Section 16.01(vii), also provides that “*failure to observe, implement and meet all requirements contained in . . . the Benefit Sharing Plan . . . provided for under the ERPA (including any feedback and grievance redress mechanism provided for under the ER program, the Benefit Sharing Plan and/or a Safeguards Plan)*” is considered an Event of Default on the part of the Program Entity.
* The Methodological Framework, Criterion 32, requires that information on the implementation of the BSP is disclosed publicly.
* The ERPAs include an additional covenant requiring the Program Entity to “*monitor and report to the Trustee on the implementation of (…) the Benefit Sharing Plan during Reporting Periods (…) The Program Entity shall first monitor and report to the Trustee on the implementation of the Benefit Sharing Plan six (6) months after receipt of the first Periodic Payment and annually thereafter. The Program Entity may coordinate the annual monitoring and reporting of the Safeguards Plans and the Benefit Sharing Plan, provided that the Program Entity notifies the Trustee and the Trustee accepts such coordinated timelines. The Trustee reserves the right to initiate a separate monitoring of the implementation of (…) the Benefit Sharing Plan annually after the date of this [ERPA] by an independent Third Party monitor.*”
* Annex 2 is the primary tool for the Program Entity to provide evidence on whether the BSP has been implemented in accordance with the terms of the BSP.
* The specific content of Annex 2 should be determined based on the terms of the BSP. In general, Annex 2 should address: (i) what the agreed commitments in the BSP are; (ii) To what extent have these commitments been met; (iii) whether the agreed benefit sharing arrangements in the BSP are effective; and (iv) whether any aspects of the BSP should be changed to ensure that the agreed commitments will be achieved.
* Annex 2 should provide a synthesis of existing monitoring data collected as part of the implementation of the BSP. It is based on regular self-reporting of the Program Entity as supplemented from time to time by findings of World Bank supervision missions and independent third party monitoring initiatives including field visits, key informant interviews or periodic performance audits.

**II. Monitoring and Reporting Requirements**

1. **Benefit Sharing Plan Readiness**

1.1 Confirm that the BSP has been completed and endorsed by all relevant parties. Are there any aspects of the BSP which remain unclear or require further review of endorsement by beneficiaries or other stakeholders? Has the BSP been made publicly available?

1.2 In cases where capacity building initiatives have been included as part of the BSP, confirm whether the Program Entity has completed required capacity building measures to ensure system effectiveness. What other measures are still outstanding?

1.3 Where relevant, confirm whether any agreed changes to the benefit sharing arrangement identified during the previous reporting period have been completed.

1. **Institutional Arrangements**

2.1 Confirm that the agreed institutional arrangements under the BSP are in place and that implementing entities are appropriately resourced to carry out their respective responsibilities.

2.2 Confirm that any regulatory or administrative approvals required for implementing the BSP have been obtained.

2.3 Assess whether all BSP stakeholders (beneficiaries and administrators) clearly understand their obligations, roles and responsibilities associated with the BSP. This assessment could be based on, for example, findings and feedback received during field implementation support missions, during interviews with beneficiaries, issues raised through public consultation meetings, beneficiary monitoring or grievance mechanisms.

2.4 Confirm that a system is in place for recording the distribution of benefits and associated obligations to eligible beneficiaries. For example, are payment information systems, payment tracking and monitoring systems, bank accounts, accounting and financial control mechanisms, and payment modalities in place and functional?

2.5 Confirm that agreed accountability mechanisms are in place and functional (e.g., stakeholder participation arrangements; agreed public information disclosure procedures; independent third party monitoring and or performance audit mechanisms; dispute resolution and grievance redress mechanisms.)

2.6 Confirm that the Feedback and Grievance Redress Mechanisms (FGRM) is functional to record and address feedback and grievances related to the implementation of the BSP. Confirm the number and types of grievance received and submitted to the FGRM and how and whether they were addressed.

2.7 Confirm that adequate human and financial resources have been allocated or maintained for implementing the BSP.

1. **Status of Benefit Distribution**

3.1 Summarize the distribution of all monetary and non-monetary benefits during the reporting period.

3.2 Indicate in a table format the number and type of beneficiaries who received benefits during the reporting period (examples of tables to be used and expanded upon below). The tables should include information on:

* the type of benefits distributed, including monetary or non-monetary benefits
* the criteria for distributing the benefits
* the processes and timeline for distributing the benefits (e.g., whether the benefits are distributed one-time or continuous/periodic)
* who the beneficiaries are, including a break-down of the beneficiaries by gender, civil society organizations (CSOs), Indigenous Peoples, and local communities.
* any specific agreements signed with the beneficiaries for them to receive the benefits, and the key terms of such agreements

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Number of people** | | |
|  | **Monetary** | **Non-monetary** | **TOTAL** |
| **Men** |  |  |  |
| **Women** |  |  |  |
| **TOTAL** |  |  |  |

|  |  |
| --- | --- |
|  | **% of monetary benefits shared** |
| **Men** |  |
| **Women** |  |
| **TOTAL** |  |

|  |  |
| --- | --- |
|  | **% of monetary benefits shared** |
| **CSOs** |  |
| **IPs** |  |
| **Local Communities** |  |
| **TOTAL** |  |

3.3 Do beneficiaries receive adequate implementation support to assist in the management and use of benefits distributed to them?

3.4 Describe and assess the effectiveness of the mechanisms for ensuring transparency and accountability during the implementation of the BSP, such as participatory monitoring by beneficiaries.

3.5 Assess whether Benefit Sharing distributions continue to be relevant to core objectives and legitimacy of the ER Program objectives (e.g., benefit sharing is considered equitable and effective; seeks active participation of recipients; is respectful of customary land rights; enjoys broad community support of Indigenous People; benefit distributions incentivize adoption of emission reduction measures, among others).

3.6 Describe the mechanisms that are in place to verify how benefits are used and whether those payments provide sufficient incentive or compensation to participate in program activities to change land use or reduce carbon emissions. To what extent are distribution mechanisms viewed as credible and trusted by beneficiaries?

3.7 Do beneficiaries understand their continued obligations once benefit distribution has taken place? Is there any evidence that there is a mismatch of expectations among beneficiaries regarding the nature and value of benefits accruing to them? What mechanisms are in place to manage such risks?

1. **Implementation of the Environmental and Social Management Measures for the BSP**

4.1 Assess to what extent the measures for managing the environmental and social aspects of BSP activities have been implemented. Refer to applicable sections in the Safeguards Plans where relevant.

1. **Recommendations for BSP Improvement or Modifications.**

5.1 Based on experience during the current reporting period as well as feedback from recipients, identify any specific recommendations for modifying the procedural or substantive content of the BSP, if necessary. Substantive changes may include modifications to eligible beneficiaries; rationale or justification for benefits sharing; form or modality of benefit distribution; structure of dedicated funds established to distribute benefits; obligations of recipient among others.

5.2 Are there procedural or administrative obstacles to timely distribution of benefits (e.g., adequacy of financial channels, ability to use funds)? Are benefits distributed in a timely manner?

5.3 Is there evidence of other emerging risks that may affect the sustainability or effectiveness of the BSP?

5.4 Provide a suggested timeline and an outline of administrative arrangements to introduce any recommended changes.

# Annex 3: Information on the generation and/or enhancement of priority Non-Carbon Benefits

*ER programs should review potential Non-Carbon Benefits, identifying a set of priority Non-Carbon Benefits and report on the generation or enhancement of such priority Non-Carbon Benefits. The priority Non-Carbon Benefits should culturally appropriate, and gender and inter-generationally inclusive, as relevant.*

*Refer to* ***criterion 34 and 35*** *of the Methodological Framework*

**Priority Non-Carbon benefits**

1. List the **identified set of priority Non-Carbon benefits** and provide necessary details on activities for generation and enhancement of these Non-Carbon benefits. (See questions in sections 2 and 3 below for examples of details on potential specific non-carbon benefits identified)

|  |  |
| --- | --- |
| **Priority Non-Carbon Benefit** | * **Details on activities for generation and enhancement**    + **Approach (as defined in ERPD including relevant indicators)** |
|  |  |
|  |  |
| … | … |

**Other Non-Carbon benefits and additional information as linked to Monitoring and Evaluation Framework**

*The following indicators are to meet the monitoring requirements within the revised M&E Framework as endorsed at PC25 to be measured through the ER-Monitoring template.*

*Refer to* ***Annex 4*** *of the FCPF Monitoring and Evaluation Framework March 2018*

1. If applicable linked to **any other (non-priority identified) Non-Carbon benefits**, or if not already covered above linked to Priority Non-Carbon benefits, provide the following additional details:

Livelihood enhancement and sustainability

* 1. Is your CF program testing ways to sustain and enhance livelihoods (e.g. one of your program objective/s is explicitly targeted at livelihoods; your approach to non-carbon benefits explicitly incorporates livelihoods)?

Biodiversity

* 1. Is your CF program testing ways to conserve biodiversity (e.g. one of your program objective/s is explicitly targeted at biodiversity conservation; your approach to non-carbon benefits explicitly incorporates biodiversity conservation)?

Protected/conserved areas

* 1. What amount (in ha) of protected or conserved areas are included in your CF program area?

Has this amount increased or decreased in the last year? If so, by how much?

Re/afforestation and restoration

* 1. Total forest area re/afforested or restored through program

Finance and Private Sector partnerships

* 1. Update on CF program budget (as originally presented in ERPD), with updated detail on secured (i.e. fully committed) finance, in US$
     1. Detail the amount of finance received (including ER payments) in support of development and delivery of your CF program. Figures should only include secured finance (i.e. fully committed): ex ante (unconfirmed) finance or in-kind contributions should not be included:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Amount**  (US$) | **Source**  (e.g. FCPF, FIP, name of gov’t department) | **Date committed**  (MM/YY) | **Public or private finance?**  (Delete as appropriate) | **ERP, grant, loan, equity or other?**  (Delete as appropriate) |
| $ |  |  | Public / Private | ERP / Grant / Loan / Equity / Other |
| $ |  |  | Public / Private | ERP / Grant / Loan / Equity / Other |
| $ |  |  | Public / Private | ERP / Grant / Loan / Equity / Other |
| $ |  |  | Public / Private | ERP / Grant / Loan / Equity / Other |
| $ |  |  | Public / Private | ERP / Grant / Loan / Equity / Other |
| $ |  |  | Public / Private | ERP / Grant / Loan / Equity / Other |

* + 1. Not including ER payments from the FCPF Carbon Fund, what is the value of REDD+ ER payments that your CF projects have received, and that your country has received overall?

|  |  |
| --- | --- |
|  | **Total REDD+ ER payments received to date ($US)** |
| **Carbon Fund project/s**  (i.e. ER payments from sources other than the Carbon Fund) | $ |
| **All other national REDD+ projects** | $ |

* + 1. How many formal partnerships have been established between your CF program and private sector entities? Formal partnerships are defined as:
* The partnership is based on a written MoU (or equivalent), and/or
* The partnership involves tangible financial exchange/s, and/or
* The partnership involves tangible non-financial exchange/s (e.g. in-kind contributions)

|  |  |  |
| --- | --- | --- |
|  | **Established in the last year**  (Jul-Jun) | **Total to date** |
| **Number of private sector partnerships involving financial exchange** |  |  |
| **Number of private sector partnerships involving non-financial exchange** |  |  |

1. **Other Non-Carbon benefits and additional information**

*Any other activities that generate or enhance non-carbon benefits in addition to those listed as earlier priority or those that are required for the Monitoring and Evaluation Framework*

Policy development

* 1. Is your CF program involved in the development, reform and/or implementation of policies to help institutions/people/systems/sectors? Please provide information on the approach and any other relevant or related indicators/results.

Capacity building

* 1. Is your CF program involved in training, education or provision of capacity building opportunities to increase the capacity of institutions/people/systems? Please provide information on the approach and any other relevant or related indicators/results.

Other

* 1. Is your CF program involved in generation or enhancement of any non-carbon benefits not already covered in this annex? Please provide information on the approach and any other relevant or related indicators/results.

# Annex 4: CARBON ACCOUNTING - Addendum to the ERPD

|  |
| --- |
| *All sections in Annex 4 shall be completed by all ER Programs so as to update information on the ER-PD based on:*   1. *Technical corrections applied to the reference level;* 2. *Updates of the monitoring plan based on the latest available information;* 3. *Updates of any other aspect with latest information (policy and design decisions shall not be updated).*   *This annex will serve as an addendum to the ER-PD, replacing mutatis mutandis the relevant sections of the ER-PD.*  *The annex will be subject to validation in the following cases:*   1. *If the REDD Country has applied technical corrections, in this case section 8 and 12 will be subject to a “partial validation”* 2. *If the REDD Country wishes to be subject to a full validation to generate CORSIA compliant units, all sections will be subject to validation.* |

## Technical corrections

|  |
| --- |
| *Provide a summary of the technical corrections applied clearly indicating where parameters have changed compared to the original Reference Level.*  *Please indicate the changes applied and whether these are included in paragraph 3 of Guideline on the application of the Methodological Framework Number 2 – Technical corrections* |

## Start Date of the Crediting Period

|  |
| --- |
| *Please indicate the proposed Start of the Crediting Period together with a justification and evidence to demonstrate compliance with the definition of the Start Date of the Crediting Period provided in the FCPF Glossary of Terms.* |

>>

# 7. Carbon pools, sources and sinks

## Description of Sources and Sinks selected

|  |
| --- |
| *Use the table below to state all sources and sinks that were included in the ER Program Reference Level.*  *Also state sources or sink , that have been excluded, and justify their exclusion by making conservative assumptions for example on the magnitude of the sources and sinks omitted. At a minimum, ER Programs must account for emissions from deforestation. Emissions from forest degradation also should be accounted for where such emissions are significant (more than 10% of total forest-related emissions in the Accounting Area, during the Reference Period and during the Term of the ERPA). Emissions from forest degradation are estimated using the best available data (including proxy activities or data).*  *.*  *Refer to* ***criterion 3*** *of the Methodological Framework* |

| **Sources/Sinks** | **Included?** | **Justification/Explanation** |
| --- | --- | --- |
| *Emissions from deforestation* | *Yes* | At a minimum, ER Programs must account for emissions from deforestation. |
| *Emissions from forest degradation* | *Yes/no* |  |
| *…* |  |  |

## Description of carbon pools and greenhouse gases selected

|  |
| --- |
| *Use the tables below to state all Carbon Pools and greenhouse gases that will be accounted as part of the ER Program (add rows as necessary). The ER Program should account for significant Carbon Pools and greenhouse gases except where their exclusion would underestimate total emission reductions. For the purpose of the FCPF Carbon Fund, significant Carbon Pools and greenhouse gases are those that contribute to more than 10% of total forest-related emissions in the Accounting Area during the Reference Period).*  *Explain whether any Carbon Pools and greenhouse gases have been excluded, and if so, justify their exclusion by making conservative assumptions for example on the magnitude of the Carbon Pools and greenhouse gases omitted*  *Refer to* ***criterion 4*** *of the Methodological Framework* |

|  |  |  |
| --- | --- | --- |
| **Carbon Pools** | **Selected?** | **Justification/Explanation** |
| *Above Ground Biomass (AGB)* |  |  |
| *Below Ground Biomass (BGB)* |  |  |
| *Dead Wood* |  |  |
| *Litter* |  |  |
| *Soil Organic Carbon (SOC)* |  |  |
| *…* |  |  |

|  |  |  |
| --- | --- | --- |
| **GHG** | **Selected?** | **Justification/Explanation** |
| *CO2* | *Yes* | The ER Program shall always account for CO2 emissions and removals |
| *CH4* |  |  |
| *N2O* |  |  |
| *…* |  |  |

# Reference Level

## 8.1 Reference Period

|  |
| --- |
| *Provide the Reference Period used in the construction of the Reference Level by indicating the start-date and the end-date for the Reference Period. If these dates are different from the guidance provided in the FCPF Carbon Fund Methodological Framework, please provide justification for the alternatives date(s).*  *Refer to* ***criterion 11*** *of the Methodological Framework* |

## 8.2 Forest definition used in the construction of the Reference Level

|  |
| --- |
| *Describe the forest definition used in the construction of the Reference Level and how this definition follows the guidance from UNFCCC decision 12/CP.17. If there is a difference between the definition of forest used in the national greenhouse gas inventory or in reporting to other international organizations (including an FREL/FRL to the UNFCCC) and the definition used in the construction of the Reference Level, then explain how and why the forest definition used in the Reference Level was chosen. If applicable, describe the operational definition of any sub-classes of forests, (e.g., degraded forest; natural forest; plantation) used.*  *Refer to* ***criterion 12*** *of the Methodological Framework* |

## Average annual historical emissions over the Reference Period

###### Description of method used for calculating the average annual historical emissions over the Reference Period

|  |
| --- |
| *Provide a transparent, complete, consistent and accurate description of the approaches, methods, and assumptions used for calculating the average annual historical emissions over the Reference Period, including, an explanation how the most recent Intergovernmental Panel on Climate Change (IPCC) guidance and guidelines, have been applied as a basis for estimating forest-related greenhouse gas emissions by sources and removals by sinks.*  *Refer to* ***criterion 5,6 and 13*** *of the Methodological Framework* |

>>

Example:

*Emission reduction calculation*

*Annual GHG emissions or removals over the reference period in the Accounting Area () are estimated as the sum of annual change in total living biomass, dead organic matter and Soil Organic Carbon and the non-CO2 GHG emissions ().*

*Changes in carbon stocks in the AGB and BGB pools*

|  |  |
| --- | --- |
|  | ***Equation 7*** |

*Where:*

|  |  |
| --- | --- |
|  | *Area converted/transited from old land-use category j to new land use category i during the [] period, in hectare per year. See Section 3.2.* |
|  | *Aboveground biomass of land-use category j before conversion/transition, in tonne of dry matter per ha. This was obtained through terrestrial inventory and defined at the time of RL establishment. See Section 3.1* |
|  | *ratio of below-ground biomass to above-ground biomass for land-use category j, in tonne d.m. below-ground biomass (tonne d.m. above-ground biomass)-1. This is equal to:*   * ***x*** *is the default for xxxxxxx when aboveground biomass is xxx t.d.m./ha according to 2006 IPCC GL, TABLE 4.4, Volume 4, Chapter 4. This is the case for land-use category j1.* * ***x*** *is the default for xxxxx, xxx t.d.m./ha according to 2006 IPCC GL, TABLE 4.4, Volume 4, Chapter 4. This is the case for land-use category j2.* |
|  | *Aboveground biomass of land-use category i after conversion/transition, in tonnes dry matter per ha. This was obtained through literature review and defined at the time of RL establishment. See Section 3.1.* |
|  | *ratio of below-ground biomass to above-ground biomass for land-use category i, in tonne d.m. below-ground biomass (tonne d.m. above-ground biomass)-1. This is equal to:*   * ***x*** *is the default for xxxxx when aboveground biomass is <xxx t.d.m./ha according to 2006 IPCC GL, TABLE 4.4, Volume 4, Chapter 4. This is the case for land-use category i1.* |
|  | *Carbon fraction of dry matter in tC per ton dry matter. The value used is:*   * ***xxx*** *is the default for tropical forest as per IPCC AFOLU guidelines 2006, table 4.3.* |
|  | *Conversion of C to CO2* |

*Changes in carbon stocks in Dead wood and Litter*

|  |  |
| --- | --- |
|  | ***Equation 8*** |

*Where:*

|  |  |
| --- | --- |
|  | *area undergoing conversion from old to new land-use category, ha. This is the same as parameter above.* |
|  | *dead wood/litter stock, under land-use category j, tonnes C ha-1. For Litter, a default value for xxxx of* ***x*** *tC/ha has been used. This has been sourced from 2006 IPCC GL, TABLE 2.2, Volume 4, Chapter 4.* |
|  | *dead wood/litter stock, under land-use category i, tonnes C ha-1. It has been assumed that this is* ***zero****.* |
|  | *time period of the transition from land-use category j to landuse category i, yr. The Tier 1 default is* ***1 year*** *for carbon losses, so it has been assumed one year.* |
|  | *Conversion of C to CO2* |

*Changes in Soil Organic Carbon*

|  |  |
| --- | --- |
|  | ***Equation 9*** |

*Where:*

|  |  |
| --- | --- |
|  | *area undergoing conversion from old to new land-use category, ha.. This is the same as parameter above.* |
|  | *the reference carbon stock, tonnes C ha-1 for land-use category j. This was obtained through terrestrial inventory and defined at the time of RL establishment. See Section 3.1.* |
|  | *the carbon stock, tonnes C ha-1 for land-use category i This was obtained through terrestrial inventory and defined at the time of RL establishment. See Section 3.1.* |
|  | *time period of the transition from land-use category j to landuse category i, yr. The Tier 1 default is 20**years.* |
|  | *Conversion of C to CO2* |

*Non-CO2 emissions from deforestation*

|  |  |
| --- | --- |
|  | ***Equation 10*** |

*Where*

|  |  |
| --- | --- |
|  | *area burnt, ha, which may be equivalent to .* |
|  | *mass of fuel available for combustion, tonnes ha-1. This is equivalent to the biomass prior to conversion* ***.*** |
|  | *combustion factor, dimensionless. This is equal to:*   * ***xx*** *for xxxx, as it is the value for primary tropical forest (slash and burn) according to 2006 IPCC GL Table 2.6* * ***xxx*** *for xxxx, as it is the value for secondary tropical forest (slash and burn) according to 2006 IPCC GL Table 2.6* |
|  | *emission factor, g kg-1 dry matter burnt. This is equal to:*   * ***xx*** *for CH4 as it is the value for xxx according to 2006 IPCC GL Table 2.6* * ***xx*** *for N2O as it is the value for xxx according to 2006 IPCC GL Table 2.6* |
|  | *Global Warming Potential of CH4, = 25* |
|  | *Global Warming Potential of N2O, = 298* |

###### Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period

**Activity data**

|  |
| --- |
| *Provide an overview of the* ***activity data*** *that are available and of those that were used in calculating the average annual historical emissions over the Reference Period in a way that is sufficiently detailed to enable the reconstruction of the average annual historical emissions over the Reference Period. Use the table provided (copy table for each parameter). Attach any spreadsheets, spatial information, maps and/or synthesized data.*  *If different data sources exist for the same parameter, please list these under the ‘Sources of data’. In this case, discuss the differences and provide justification why one specific dataset has been selected over the others.*  *Refer to* ***criterion 6, 7, 8 and 9*** *of the Methodological Framework* |

|  |  |
| --- | --- |
| **Parameter:** | Example: |
| **Description:** | Example: Area of forest converted from land-use category j to land-use category i during the Monitoring Period. |
| **Data unit:** | Example: hectare per year. |
| **Source of data and description of measurement/calculation methods and procedures applied:** | This shall include a detailed description of the estimation methods of the relevant parameter. |
| **Value applied** | Example:   |  |  | | --- | --- | | Dense forest to non-forest | 1,000 | | Open forest to non-forest | 1,000 | | Dense forest to open forest | 1,000 | | Non-forest to open forest | 200 | |
| **QA/QC procedures applied:** |  |
| **Uncertainty associated with this parameter:** | Quantify the residual uncertainty for this parameter propagating the main sources of uncertainty. For example, propagate the main sources of error for the estimation of EF and quantify the resulting uncertainty.  Refer to criterion 7 and indicator 9.1 of the Methodological Framework |
| **Any comment:** |  |

**Emission factors**

|  |
| --- |
| *Please provide an overview of the emission factors that are available and of those that were used in calculating the average annual historical emissions over the Reference Period in a way that is sufficiently detailed to enable the reconstruction of the average annual historical emissions over the Reference Period. Use the table provided (copy table for each parameter). Attach any spreadsheets, spatial information, maps and/or synthesized data used in the development of the parameter and if applicable, a summary of assumptions, methods and results of any underlying studies.*  *If different data sources exist for the same parameter, please list these under the ‘Sources of data’. In this case, discuss the differences and provide justification why one specific dataset has been selected over the others.*  *Refer to* ***criterion 6, 7, 8 and 9*** *of the Methodological Framework* |

|  |  |
| --- | --- |
| **Parameter:** | Example: |
| **Description:** | Example: Aboveground biomass of land-use category j before conversion, |
| **Data unit:** | Example: tonne of dry matter per ha |
| **Source of data or description of the method for developing the data including the spatial level of the data (local, regional, national, international):** |  |
| **Value applied:** |  |
| **QA/QC procedures applied** |  |
| **Uncertainty associated with this parameter:** | Quantify the residual uncertainty for this parameter propagating the main sources of uncertainty. For example, propagate the main sources of error for the estimation of EF and quantify the resulting uncertainty.  Refer to criterion 7 and indicator 9.1 of the Methodological Framework |
| **Any comment:** |  |

## Estimated Reference Level

|  |
| --- |
| *Please use the table below to state the original or corrected estimated Reference Level for the ER Program.*  *Refer to* ***criterion 10, indicator 10.1*** *of the Methodological Framework* |

***ER Program Reference level***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Crediting Period year *t*** | **Average annual historical emissions from deforestation over the Reference Period (tCO2-e/yr)** | **If applicable, average annual historical emissions from forest degradation over the Reference Period (tCO2-e/yr)** | **If applicable, average annual historical removals by sinks over the Reference Period (tCO2-e/yr)** | **Adjustment, if applicable (tCO2-e/yr)** | **Reference level (tCO2-e/yr)** |
| 20xx |  |  |  |  |  |
| 20xx |  |  |  |  |  |
| 20xx |  |  |  |  |  |
| … |  |  |  |  |  |
| … |  |  |  |  |  |
| *T* |  |  |  |  |  |

###### Calculation of the average annual historical emissions over the Reference Period

>>

|  |
| --- |
| *Based on the method, activity data and emission factors described above; please provide a step-by-step calculation of the average annual historical emissions over the Reference Period. Attach any spreadsheets used in the calculation.* |

## Upward or downward adjustments to the average annual historical emissions over the Reference Period (if applicable)

###### Explanation and justification of proposed upward or downward adjustment to the average annual historical emissions over the Reference Period

|  |
| --- |
| *If applicable, please provide a transparent and complete explanation and justification of any proposed upward or downward adjustment to the average annual historical emissions over the Reference Period. This should include an executive summary of assumptions, methods and results of any underlying studies that have been used to determine the adjustment.*  *If an upward adjustment above the average annual historical emissions is proposed, please describe:*  *a) How the ER Program meets the eligibility requirements for these type of adjustments as described in the FCPF Carbon Fund Methodological Framework;*  *b) Provide a credible justification for the upward adjustment on the basis of expected emissions that would result from documented changes in ER Program circumstances, evident before the end-date of the Reference Period, but the effects of which were not fully reflected in the average annual historical emissions during the Reference Period. Please attach or provide reference to the documentation that supports the justification.*  *If the available data from the National Forest Monitoring System used in the construction of the Reference*  *Level shows a clear downward trend, this should be taken into account in the construction of the*  *Reference Level.*  *Refer to* ***criterion 13*** *of the Methodological Framework.* |

###### Quantification of the proposed upward or downward adjustment to the average annual historical emissions over the Reference Period

|  |
| --- |
| *If applicable, please provide a transparent and complete calculation for the quantification of the proposed upward or downward adjustment to the average annual historical emissions over the Reference Period. Provide a step-by-step estimation of the expected emissions that would result from documented changes in ER Program circumstances. Attach any documents or spreadsheets used in the calculation.*  *Refer to* ***criterion 13*** *of the Methodological Framework* |

## Relation between the Reference Level, the development of a FREL/FRL for the UNFCCC and the country’s existing or emerging greenhouse gas inventory

|  |
| --- |
| *Please explain how the development of the Reference Level can inform or is informed by the development of a national FREL/FRL, and explains the relationship between the Reference Level and any intended submission of a FREL/FRL to the UNFCCC. In addition, please explain what steps are intended for the Reference Level to achieve consistency with the country’s existing or emerging greenhouse gas inventory.*  *Refer to* ***criterion 10, indicators 10.2 and 10.3*** *of the Methodological Framework* |

# approach for Measurement, Monitoring and reporting

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| --- |
| *Provide the details of the original Monitoring Plan, or in case revisions have been applied provide a summary of changes made.* |

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## Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area

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|  |
| --- |
| *Provide a systematic and step-by-step description of the measurement and monitoring approach applied for establishment of the Reference Level and estimating Emissions and Emissions reductions during the Monitoring / Reporting Period for estimating the emissions and removals from the Sources/Sinks, Carbon Pools and greenhouse gases selected in the ER-PD. Provide line diagrams showing all relevant monitoring points, parameters that are monitored and the integration of data until reporting in a schematic way.*  *Include equations that show the calculation steps of GHG emissions and removals and that show the parameters that will be listed below and Section 8.3 following the example below. These equations shall show all steps from the input of measured and default parameters to the aggregation into final reported values. Discuss the choice and the source of all the equations used. Highlight any changes compared to the description that was provided in the ER-PD.*  *As part of the description, provide an explanation how the proposed measurement, monitoring and reporting approach is consistent with the most recent Intergovernmental Panel on Climate Change guidance and guidelines. Where appropriate, describe in the “Source of data or measurement/ calculation methods” the role of communities in monitoring and reporting of the parameter.*  *Describe how the proposed measurement, monitoring and reporting approach is consistent with the method for establishing the Reference Level as described in section 8.*  *Please provide an overview of all data and parameters that are monitored during the Crediting Period and their values for this Monitoring/Reporting Period. Use the table provided and copy table for each parameter, not for each value (multiple values may be reported per parameter, for instance may include the estimates of the different forest types obtained with a same survey). Include all the relevant information within the boxes, not outside. Where relevant, attach any spreadsheets, spatial information, maps and/or synthesized data used to derive the parameter. These parameters should link to the equations that are referred to below.*  *Refer to* ***criterion 5, 6, 7, 8, 9, 14 and 16*** *of the Methodological Framework* |

### Line diagrams

### Calculation steps

*>>Example*

*Emission reduction calculation*

|  |  |
| --- | --- |
|  | *Equation 11* |

*Where:*

|  |  |  |
| --- | --- | --- |
|  | *=* | *Total Emission Reductions; tCO2e year-1.* |
|  | *=* | *Net emissions of the RL in REDD+ activity i in year t; tCO2e year-1. This is sourced from Annex 4 to the ER Monitoring Report.* |
|  |  | *Monitored Net emissions in REDD+ activity i in year t; tCO2e year-1.* |
|  | *=* | *Years in monitoring period, year* |

*[The below equations may apply to both the Reference Level and the Monitored GHG emissions]*

*Annual GHG emissions or removals over the [] period in the Accounting Area () are estimated as the sum of annual change in total living biomass, dead organic matter and Soil Organic Carbon and the non-CO2 GHG emissions ().*

*Changes in carbon stocks in the AGB and BGB pools*

|  |  |
| --- | --- |
|  | ***Equation 12*** |

*Where:*

|  |  |
| --- | --- |
|  | *Area converted/transited from old land-use category j to new land use category i during the [] period, in hectare per year. See Section 3.2.* |
|  | *Aboveground biomass of land-use category j before conversion/transition, in tonne of dry matter per ha. This was obtained through terrestrial inventory and defined at the time of RL establishment. See Section 3.1* |
|  | *ratio of below-ground biomass to above-ground biomass for land-use category j, in tonne d.m. below-ground biomass (tonne d.m. above-ground biomass)-1. This is equal to:*   * ***x*** *is the default for xxxxxxx when aboveground biomass is xxx t.d.m./ha according to 2006 IPCC GL, TABLE 4.4, Volume 4, Chapter 4. This is the case for land-use category j1.* * ***x*** *is the default for xxxxx, xxx t.d.m./ha according to 2006 IPCC GL, TABLE 4.4, Volume 4, Chapter 4. This is the case for land-use category j2.* |
|  | *Aboveground biomass of land-use category i after conversion/transition, in tonnes dry matter per ha. This was obtained through literature review and defined at the time of RL establishment. See Section 3.1.* |
|  | *ratio of below-ground biomass to above-ground biomass for land-use category i, in tonne d.m. below-ground biomass (tonne d.m. above-ground biomass)-1. This is equal to:*   * ***x*** *is the default for xxxxx when aboveground biomass is <xxx t.d.m./ha according to 2006 IPCC GL, TABLE 4.4, Volume 4, Chapter 4. This is the case for land-use category i1.* |
|  | *Carbon fraction of dry matter in tC per ton dry matter. The value used is:*   * ***xxx*** *is the default for tropical forest as per IPCC AFOLU guidelines 2006, table 4.3.* |
|  | *Conversion of C to CO2* |

*Changes in carbon stocks in Dead wood and Litter*

|  |  |
| --- | --- |
|  | ***Equation 13*** |

*Where:*

|  |  |
| --- | --- |
|  | *area undergoing conversion from old to new land-use category, ha. This is the same as parameter above.* |
|  | *dead wood/litter stock, under land-use category j, tonnes C ha-1. For Litter, a default value for xxxx of* ***x*** *tC/ha has been used. This has been sourced from 2006 IPCC GL, TABLE 2.2, Volume 4, Chapter 4.* |
|  | *dead wood/litter stock, under land-use category i, tonnes C ha-1. It has been assumed that this is* ***zero****.* |
|  | *time period of the transition from land-use category j to landuse category i, yr. The Tier 1 default is* ***1 year*** *for carbon losses, so it has been assumed one year.* |
|  | *Conversion of C to CO2* |

*Changes in Soil Organic Carbon*

|  |  |
| --- | --- |
|  | ***Equation 14*** |

*Where:*

|  |  |
| --- | --- |
|  | *area undergoing conversion from old to new land-use category, ha.. This is the same as parameter above.* |
|  | *the reference carbon stock, tonnes C ha-1 for land-use category j. This was obtained through terrestrial inventory and defined at the time of RL establishment. See Section 3.1.* |
|  | *the carbon stock, tonnes C ha-1 for land-use category i This was obtained through terrestrial inventory and defined at the time of RL establishment. See Section 3.1.* |
|  | *time period of the transition from land-use category j to landuse category i, yr. The Tier 1 default is 20**years.* |
|  | *Conversion of C to CO2* |

*Non-CO2 emissions from deforestation*

|  |  |
| --- | --- |
|  | ***Equation 15*** |

*Where*

|  |  |
| --- | --- |
|  | *area burnt, ha, which may be equivalent to .* |
|  | *mass of fuel available for combustion, tonnes ha-1. This is equivalent to the biomass prior to conversion* ***.*** |
|  | *combustion factor, dimensionless. This is equal to:*   * ***xx*** *for xxxx, as it is the value for primary tropical forest (slash and burn) according to 2006 IPCC GL Table 2.6* * ***xxx*** *for xxxx, as it is the value for secondary tropical forest (slash and burn) according to 2006 IPCC GL Table 2.6* |
|  | *emission factor, g kg-1 dry matter burnt. This is equal to:*   * ***xx*** *for CH4 as it is the value for xxx according to 2006 IPCC GL Table 2.6* * ***xx*** *for N2O as it is the value for xxx according to 2006 IPCC GL Table 2.6* |
|  | *Global Warming Potential of CH4, = 25* |
|  | *Global Warming Potential of N2O, = 298* |

### Parameters to be monitored

|  |  |
| --- | --- |
| **Parameter:** | Example: |
| **Description:** | Example: Area of forest converted from land-use category j to land-use category i during the Monitoring Period. |
| **Data unit:** | Example: hectare per year. |
| **Value monitored during this Monitoring / Reporting Period:** | Example:   |  |  | | --- | --- | | Dense forest to non-forest | 1,000 | | Open forest to non-forest | 1,000 | | Dense forest to open forest | 1,000 | | Non-forest to open forest | 200 | |
| **Source of data and description of measurement/calculation methods and procedures applied:** | This shall include a detailed description of the estimation methods of the relevant parameter. |
| **QA/QC procedures applied:** |  |
| **Uncertainty for this parameter:** | Quantify the residual uncertainty for this parameter propagating the main sources of uncertainty. For example, propagate the main sources of error for the estimation of EF and quantify the resulting uncertainty.  Refer to criterion 7 and indicator 9.1 of the Methodological Framework |
| **Any comment:** |  |

## Organizational structure for measurement, monitoring and reporting

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|  |
| --- |
| *Please describe the organization of the measurement, monitoring and reporting including:*   * *Organizational structure, responsibilities and competencies, linking these to the diagram shown in the next section;* * *The selection and management of GHG related data and information;* * *Processes for collecting, processing, consolidating and reporting GHG data and information;* * *Systems and processes that ensure the accuracy of the data and information;* * *Design and maintenance of the Forest Monitoring System;* * *Systems and processes that support the Forest Monitoring System, including Standard Operating Procedures and QA/QC procedures;* * *Role of communities in the forest monitoring system;* |

## Relation and consistency with the National Forest Monitoring System

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| *Please discuss if the approach for measurement, monitoring and reporting is consistent with standard technical procedures in the country and how the approach fits into the existing or emerging National Forest Monitoring System. If applicable, provide a rationale for alternative technical design.*  *Refer to* ***criterion 15*** *of the Methodological Framework* |

# Uncertainties of the calculation of emission reductions

## Identification and assessment of sources of uncertainty

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| *Table below shall be filled-out with the analysis from the ER Program. For guidance on how to fill the table, please follow the guidelines on uncertainty analysis of emission reductions. ER Programs shall indicate clearly how systematic and random errors have been addressed in accordance with the guidelines.*  *Refer to* ***criterion 7*** *of the Methodological Framework and the* ***Guideline on Uncertainty Analysis of Emission Reductions*** |

>>

| **Sources of uncertainty** | **Analysis of contribution to overall uncertainty** |
| --- | --- |
| **Activity Data** | |
| *Measurement* |  |
| *Representativeness* |  |
| *Sampling* |  |
| *Extrapolation* |  |
| *Approach 3* |  |
| **Emission factor** | |
| *DBH measurement* |  |
| *H measurement* |
| *Plot delineation* |
| *Wood density estimation* |  |
| *Biomass allometric model* |  |
| *Sampling* |  |
| *Other parameters (e.g. Carbon Fraction, root-to-shoot ratios)* |  |
| *Representativeness* |  |
| **Integration** | |
| *Model* |  |
| *Integration* |  |

## Quantification of uncertainty in Reference Level Setting

### Parameters and assumptions used in the Monte Carlo method

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| *All ER Programs shall report transparently the parameters used for the Monte Carlo method using the table below.*  *Refer to* ***criterion 7 and indicators 9.2 and 9.3*** *of the Methodological Framework and the guidelines on uncertainty analysis of emission reductions.* |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Parameter included in the model** | **Parameter values** | **Range or standard deviations** | | **Error sources quantified in the model (e.g. measurement error, model error, etc.)** | **Probability distribution function** | **Source of assumptions made** |
| **Lower** | **Upper** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

### Quantification of the uncertainty of the estimate of the Reference level

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| *All ER Programs shall report the uncertainty of the Reference Level at the 90% confidence level.*  *Refer to* ***criterion 7, indicators 9.2 and 9.3, and criterion 22*** *of the Methodological Framework* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Deforestation** | **Forest degradation** | **Enhancement of carbon stocks** | |
| **A** | **Median** |  |  |  |
| **B** | **Upper bound 90% CI** (Percentile 0.95) |  |  |  |
| **C** | **Lower bound 90% CI** (Percentile 0.05) |  |  |  |
| **D** | **Half Width Confidence Interval at 90% (B – C / 2)** |  |  |  |
| **E** | **Relative margin (D / A)** | % |  | % |
| **F** | **Uncertainty discount** | % |  | % |

### Sensitivity analysis and identification of areas of improvement of MRV system

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| --- |
| *ER Programs shall follow the guideline on uncertainty analysis of Emission Reductions to carry out a sensitivity analysis to identify the relative contribution of each parameter to the overall uncertainty.*  *ER Programs shall report this transparently and completely so that it provides enough information for improvements in future Monitoring Cycles.*  *Refer to* ***criterion 7 and indicators 9.2 and 9.3*** *of the Methodological Framework and the* ***Guideline on the application of the Methodological Framework Number 4 On Uncertainty Analysis of Emission Reductions*** |

# AnNex 5: DETAILED DESCRIPTION of the application of the Reversal risk assessment tool

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| *Please include here the detailed description of the assessment conducted to estimate the reversal risk reported in section 7.3 of the Monitoring Report. ER Programs shall follow the guideline on the application of the Reversal Risk Assessment Tool and the validation and verification of its outcomes and present the background information and results in this annex.*  *Refer to* ***criterion 19*** *of the Methodological Framework and the FCPF ER Program Buffer Guidelines* |

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**Document history**

|  |  |  |
| --- | --- | --- |
| **Version** | **Date** | **Description** |
| **3.1** | July 2024 | * The frontpage table and Sections 7 and 8 have been revised to reflect the provisions of the Buffer Guidelines version 4.2, namely:   + The changes made to the equation applied to estimate the amount of Pooled Reversal Buffer ERs that should be cancelled in case of a reversal;   + The merge of Reversal Buffers and the Pooled Reversal Buffer; and   + The recognition that not only the ERs transferred to the Carbon Fund may suffer reversals.   + Section 2.2 has been included to allow ER Programs report any updates to the validated monitoring plan. |
| **3** | February 2024 | Version approved virtually by Carbon Fund Participants. Changes made:   * Sections 4.3 and section 8 were adjusted to be able to report ERs from removals separately * Annex 5 was included to provide a detailed report on the application of the Reversal Risk Assessment Tool |
| **2.5** | May 2023 | * Section 4.3 has been revised to provide guidance on how to consider non-performance or reversals from previous periods * Section 5.2 has been revised to clarify that the cumulative uncertainty during the crediting period may be calculated based on propagation of errors, not montecarlo |
| **2.4** | May 2022 | * Page 1 and section 8 have been adjusted to reflect the definition of Total ERs |
| **2.3** | December 2021 | * Section 5.2 was adjusted to allow the reporting of the uncertainty estimates for both the reporting period and the crediting period. * Section 8 has been adjusted to clarify that countries can also report ERs jointly and not only in separate calendar years. |
| **2.2** | August 2021 | * Cross-references have been corrected * Information about the start date of the crediting period has been requested in annex 4. |
| **2.1** | November 2020 | Aspects on uncertainty analysis were revised based on the guidelines on uncertainty analysis. |
| **2** | June 2020 | Version approved virtually by Carbon Fund Participants. Changes made:   * Update to consider the changes made to the Methodological Framework (Version 3.0) and Buffer Guidelines (Version 2.0) * Update to consider the changes made to the Validation and Verification Guidelines |
| **1** | January 2019 | The initial version approved by Carbon Fund Participants during a three-week non-objection period. |

1. <https://www.reddcompass.org/mgd/resources/GFOI-MGD-3.1-en.pdf> [↑](#footnote-ref-2)
2. It is important to note that the contribution of source(s) of error to total uncertainty relates to ERs, not GHG emissions, so the implications of different parameters may vary as certain parameters may be fully correlated between the Reference Level and the monitoring having little impact on Uncertainty of ERs For instance, usually Emission Factors are the same for RL setting and GHG monitoring, Emission Reductions can be expressed as the difference in the activity data in the Reference Period and the Monitoring Period multiplied by the Emission Factor (i.e. )). [↑](#footnote-ref-3)
3. Defined as “A quantitative measure that approximates or represents activities in the FCPF ER Program Area in the absence of direct activity data that is consistent with IPCC guidelines”. Under the FCPF this refers to methods that use logging volumes for estimation GHG emissions. [↑](#footnote-ref-4)
4. Documentation that the Program Entity should review include operational monitoring reports prepared by the Program Entity, environmental and social plans prepared during Program implementation (e.g., Environmental and Social Management Plans (ESMPs), Resettlement Action Plans (RAPs), Indigenous Peoples Plans (IPPs)), and other relevant records (e.g., records produced under the Feedback and Grievance Redress Mechanism, as available). [↑](#footnote-ref-5)