# ANNEX 1. DATA AND PARAMETERS



## *A. Data and parameters not monitored (default or measured one time)*

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|---|---|
| **Data / parameter:** | $A_{planned,i}$ |
| **Data unit:** | Ha |
| **Used in equations:** | 1 |
| **Description:** | Total area of planned deforestation over the fixed baseline period for stratum *i* |
| **Source of data:** | GPS coordinates and/or Remote Sensing data and/or legal parcel records |
| **Measurement procedures (if any):** | N/A |
| **Any comment:** | |

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|---|---|
| **Data / parameter:** | *CF* |
| **Data unit:** | t C t d.m.$^{-1}$ |
| **Used in equations:** | 26 |
| **Description:** | Carbon fraction of dry matter |
| **Source of data:** | Species specific values from the literature (e.g. IPCC 2006 INV GLs AFOLU Chapter 4 Table 4.3) or default value 0.47 t C t$^{-1}$ d.m. Default shall be used if no species specific values are available. |
| **Measurement procedures (if any):** | |
| **Any comment:** | |

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| **Data / parameter:** | $D\%_{planned,i,t}$ |
| **Data unit:** | % year$^{-1}$ |
| **Used in equations:** | 1,2 |
| **Description:** | Projected annual proportion of land that will be deforested in stratum *i* at year *t* |
| **Source of data:** | Analysis of Remote Sensing data and/or legal records for a number of proxy areas |
| **Measurement procedures (if any):** | N/A |
| **Any comment:** | |

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| **Data / parameter:** | $D_{mn}$ |
| **Data unit:** | t d.m.m$^{-3}$ |
| **Used in equations:** | 26 |
| **Description:** | Mean wood density of commercially harvested species |
| **Source of data:** | The source of data shall be chosen with priority from higher to lower preference as follows:<br>(a) Averaged national and commercial species-specific (e.g. from National GHG inventory);<br>(b) Averaged commercial species-specific from neighboring countries with similar conditions. Sometimes (b) may be preferable to (a).<br>(c) Averaged regional commercial species-specific (e.g. Table 4.13 IPCC National Guidance for Greenhouse Gas Inventories AFOLU Section).<br>(d) Regional average (0.58 t d.m.m-3- tropical Africa; 0.60 t d.m.m-3- tropical America; 0.57 d.m.m-3- tropical Asia) from Brown, S. 1997. *Estimating Biomass and Biomass Change of Tropical Forests: a Primer*. For the Food and Agriculture Organization of the United Nations. Rome, 1997. FAO Forestry Paper - 134. ISBN 92-5-103955-0.<br>Must use the same value as in **CPES.E**. |
| **Measurement procedures (if any):** | |

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| **Any comment:** | |

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| **Data / parameter:** | $HistHa_i$ |
| **Data unit:** | ha |
| **Used in equations:** | 21 |
| **Description:** | Average annual area of deforestation by the baseline agent or class of agent of deforestation in stratum *i* for the 5 years prior to project implementation |
| **Source of data:** | Analysis of Remote Sensing data and/or legal records and/or survey information for lands owned or controlled or previously owned or controlled by the baseline agent of deforestation |
| **Measurement procedures (if any):** | |
| **Any comment:** | |

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| **Data / parameter:** | $L\text{-}D_{,i}$ |
| **Data unit:** | % |
| **Used in equations:** | 1 |
| **Description:** | Likelihood of deforestation in stratum *i* |
| **Source of data:** | Analysis of Remote Sensing data and/or legal records for a number of proxy areas |
| **Measurement procedures (if any):** | N/A |
| **Any comment:** | For all areas not both under Government control and zoned for deforestation, $L\text{-}D_i$ shall be equal to 1. For areas under Government control and zoned for deforestation $L\text{-}D_i$ shall be calculated as the summed proxy areas in the appropriate stratum divided by the areas within these proxy areas that has been deforested within the previous five years. |

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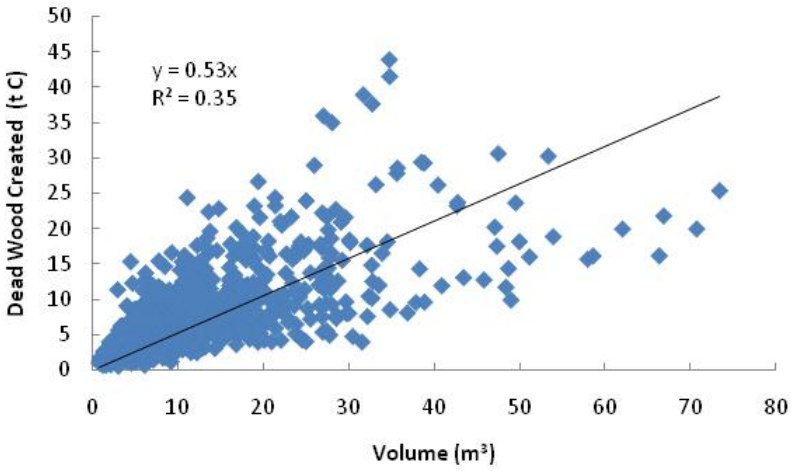
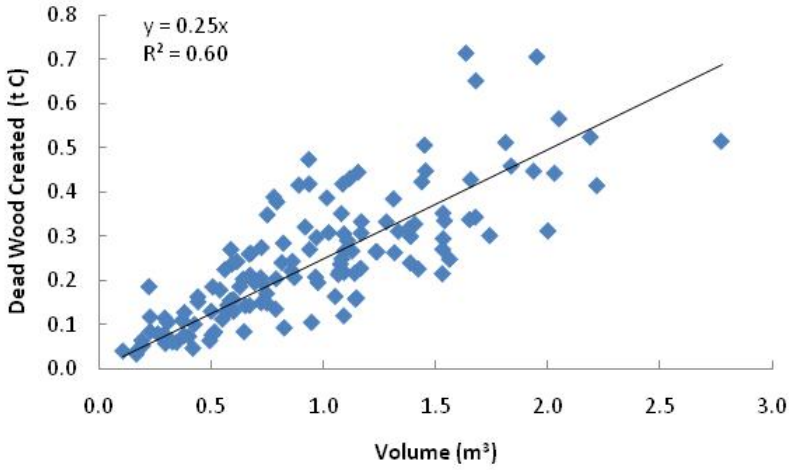
| **Data / parameter:** | *LDF* |
| **Data unit:** | t C $m^{-3}$ |
| **Used in equations:** | 26 |
| **Description:** | Factor for calculating the biomass of dead wood created during logging operations per cubic meter extracted |
| **Source of data:** | Default value of 0.53 t C $m^{-3}$ for broadleaf and mixed forests, and 0.25 t C $m^{-3}$ for coniferous forests. Based on 774 logging gaps measured by Winrock International in Bolivia, Belize, Mexico, the Republic of Congo, Brazil, Indonesia, and 134 logging gaps in Mexico. **See below.** |
| **Measurement procedures (if any):** | |
| **Any comment:** | For broadleaf and mixed broadleaf/conifer forests:<br>  <br><br>For conifer forests: |




Methods used by Winrock are described in the following reports to USAID:

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| Deliverable 9: | Use of Aerial Digital Imagery to measure the impact of selective logging on carbon stocks of tropical forests in Republic of Congo |
| Deliverable 10: | Quantification of carbon benefits in conservation project activities through spatial modeling: Republic of Congo as a case study |
| Deliverable 13a: | Impact of logging on carbon stocks of forests: Chihuahua, Mexico as a case study |
| Deliverable 17: | Impact of logging on carbon stocks of forests: The Brazilian Amazon as a case study |
| Deliverable 21: | Use of aerial digital imagery to measure the impact of selective logging on carbon stocks of tropical forest in Brazilian Amazon |
| Deliverable 24: | Impact of selective logging on carbon stocks of tropical forests in East Kalimantan, Indonesia |

Under Carbon and Co-Benefits from Sustainable Land-Use Management project: Cooperative Agreement No. EEM-A-00-03-00006-00.

And the following report to the Nature Conservancy: Casarim, F.M., S.K. Grimland, and S. Brown. 2010. *Carbon Impacts from Selective Logging of Forests in Berau, East Kalimantan, Indonesia.*

And in the following manuscript being prepared for peer-reviewed publication: Pearson, TRH and Brown, S. 2009. *Impact of selective logging on the carbon stocks of tropical forests: case studies from Belize, Bolivia, Brazil, Indonesia,*

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| | *Mexico and the Republic of Congo*.<br><br>Results are from uneven forest management practices. Application to even-aged forest management practices is conservative as under even-aged practices the emissions are solely from the non-extracted proportion of the timber trees while in uneven-aged practices emissions also come from trees incidentally damaged and killed during the felling of timber trees. |

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| **Data / parameter:** | *LIF* |
| **Data unit:** | t C $m^{-3}$ |
| **Used in equations:** | 26 |
| **Description:** | Factor for calculating the emissions arising from the creation of logging infrastructure (roads, skid trails and decks) during logging operations per cubic meter extracted |
| **Source of data:** | Conservative default value of 0.29 t $CO_2$-e $m^{-3}$, calculated from 1,839 hectares of logging concessions analyzed by Winrock International in the Republic of Congo and Brazil, may be used for tropical broadleaf forests. **See below.** |
| **Measurement procedures (if any):** | |
| **Any comment:** | |

| | Congo | | Brazil | |
|---|---|---|---|---|
| Area examined (ha) | 1,473 | | 366 | |
| Area of logging gaps (ha) | 31.9 | | 3.7 | |
| Length of skid trails (km) | 18.4 | | 3.2 | |
| Length of roads (km) | 4.6 | | 0.8 | |
| Calculated extraction ($m^3$ +/- 95% C.I.) | 14,150 | *±870* | 1,617 | *±327* |

Mean biomass of trees killed during logging operations:

- For roads, 0.15 t C $m^{-3}$ (± 0.08; 95 % confidence interval)
- For skid trails, 0.01 t C $m^{-3}$ (± 0.05; 95 % confidence interval)
- For logging decks, 0.03 t C $m^{-3}$ (± 0.04; 95 % confidence interval)
- Therefore LIF = 0.1865 t C $m^{-3}$ (± 0.11; 95 % confidence interval)
- Conservative value for LIF = 0.29 t C $m^{-3}$ (mean plus 95% confidence interval)

Methods used by Winrock are described in the following reports to USAID:

| | |
|---|---|
| | Deliverable 9: Use of Aerial Digital Imagery to measure the impact of selective logging on carbon stocks of tropical forests in Republic of Congo<br><br>Deliverable 10: Quantification of carbon benefits in conservation project activities through spatial modeling: Republic of Congo as a case study<br><br>Deliverable 17: Impact of logging on carbon stocks of forests: The Brazilian Amazon as a case study<br><br>Deliverable 21: Use of aerial digital imagery to measure the impact of selective logging on carbon stocks of tropical forest in Brazilian Amazon<br><br>Under Carbon and Co-Benefits from Sustainable Land-Use Management project: Cooperative Agreement No. EEM-A-00-03-00006-00.<br><br>And in the following manuscript being prepared for peer-reviewed publication:Pearson, TRH and Brown, S. 2009. *Impact of selective logging on the carbon stocks of tropical forests: case studies from Belize, Bolivia, Brazil, Indonesia, Mexico and the Republic of Congo*. |

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| **Data / parameter:** | $PML_{FT}$ |
| **Data unit:** | % |
| **Used in equations:** | Section **V.F** |
| **Description:** | Mean merchantable biomass as a proportion of total aboveground tree biomass for each forest type |
| **Source of data:** | The source of data shall be chosen with priority from higher to lower preference as follows:<br>1. Peer-reviewed published sources (including carbon/biomass maps or growing stock volume[1] maps with a scale of at least 1km)<br>2. Official Government data and statistics<br>3. Original field measurements<br>The forest types considered shall be only those relevant for the specific market effects leakage; i.e. only forest types with active timber production.<br>An appropriate source of data will be Government records on annual allowable |

[1] Volumes shall be converted to merchantable biomass using wood densities/specific gravities. A weighted wood density shall be used to convert multi-species data on growing stock volume to merchantable biomass.

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| | cuts for the areas of commercial forests.<br><br>Where volumes are used, the source of data wood density is required to convert to merchantable biomass. The source of data on wood densities shall be chosen with priority from higher to lower preference as follows:<br><br>1. Knowledge on commercial species and thus an appropriately weighted wood density derived from the density of these species<br>2. A region-specific mean wood density as given e.g. in Brown 1997[2] |
| **Measurement procedures (if any):** | |
| **Any comment:** | |

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|---|---|
| **Data / parameter:** | $V_{BSL,EX,i,t}$ |
| **Data unit:** | $m^3$ |
| **Used in equations:** | 26 |
| **Description:** | Volume of timber projected to be extracted from within the project boundary during the baseline in stratum *i* at time *t* |
| **Source of data:** | The source of data shall be chosen with priority from higher to lower preference as follows:<br><br>1. Timber harvest records and/or<br>2. Estimates derived from field measurements and/or<br>3. Assessments with aerial photography or satellite imagery |
| **Measurement procedures (if any):** | |
| **Any comment:** | Note that this volume does not include logging slash left onsite (tracked as part of the dead wood pool). Data compilers should also make sure that extracted volumes reported are gross volumes removed (i.e. reported volume does not already discount for estimated wood waste, as is often the practice in harvest records). |

[2] Brown, S. 1997. *Estimating biomass and biomass change of tropical forests: a Primer*. FAO Forestry Paper 134. http://www.fao.org/docrep/W4095E/W4095E00.htm

### *B. Data and parameters monitored*

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|---|---|
| **Data / parameter:** | $A_{burn,i,t}$ |
| **Data unit:** | ha |
| **Used in equations:** | Section **V.C** |
| **Description:** | Area burnt in stratum *i* at time *t* |
| **Source of data:** | GPS coordinates and/or Remote Sensing data |
| **Measurement procedures (if any):** | N/A |
| **Monitoring Frequency:** | Areas burnt shall be monitored at least every five years |
| **Any comment:** | *Ex ante* estimations of areas burned shall be based on historic incidence of fire in the Project region |

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|---|---|
| **Data / parameter:** | $A_{DefPA,i,t}$ |
| **Data unit:** | Ha |
| **Used in equations:** | 11 |
| **Description:** | Area of recorded deforestation in the project area in stratum *i* at time *t* |
| **Source of data:** | Remote sensing imagery |
| **Measurement procedures (if any):** | |
| **Measurement Frequency** | At a minimum every five years, prior to verification |
| **QA/QC Procedures** | |
| **Any comment:** | *Ex ante* an estimation shall be made of deforestation in the with-project case. If the belief is that zero deforestation will occur within the project boundaries then this parameter may be set to zero if clear infrastructure, hiring and policies are in place to prevent deforestation. |

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|---|---|
| **Data / parameter:** | $A_{Deg,i}$ |
| **Data unit:** | Ha |
| **Used in equations:** | 14 |
| **Description:** | Area potentially impacted by degradation processes in stratum *i* |
| **Source of data:** | GIS delineation and ground truthing |
| **Measurement procedures (if any):** | $A_{Deg,i}$ shall be composed of a buffer from all access points (access buffer), such as roads and rivers or previously cleared areas. The width of the buffer shall be determined by the depth of degradation penetration as defined as a PRA output |
| **Measurement Frequency** | Must to be repeated each time the PRA indicates a potential for degradation |
| **QA/QC Procedures** | |
| **Any comment:** | *Ex ante* a limited survey can be used to determine a likely depth of degradation penetration |

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|---|---|
| **Data / parameter:** | $A_{defLK,i,t,}$ |
| **Data unit:** | ha year$^{-1}$ |
| **Used in equations:** | 23 |
| **Description:** | The total area of deforestation by the baseline agent or class of agent of the planned deforestation in stratum *i* at time *t* |
| **Source of data:** | Analysis of Remote Sensing data and/or legal records and/or survey information for lands owned or controlled or previously owned or controlled by the baseline agent of deforestation |
| **Measurement procedures (if any):** | |
| **Monitoring frequency:** | Must be examined at least every 5 years, prior to ACR's required field verification no less frequently than every 5 years |
| **QA/QC procedures:** | |

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| **Any comment:** | Legal records will include government permits to deforest including concession licenses<br><br>*Ex ante*, Project Proponents shall determine and justify the likelihood of leakage based on characteristics of the baseline agent or class of agent |

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| **Data / parameter:** | $A_i$ |
| **Data unit:** | Ha |
| **Used in equations:** | |
| **Frequency:** | At the project start and whenever biomass stocks are re-measured (every 5 years) |
| **Description:** | Total area of stratum *i* |
| **Source of data:** | GIS coverages, ground survey data and/or remote imagery (satellite or aerial photographs) |
| **Measurement procedures (if any):** | N/A |
| **Any comment:** | |

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|---|---|
| **Data / parameter:** | $AP_i$ |
| **Data unit:** | Ha |
| **Used in equations:** | 14 |
| **Description:** | Total area of degradation sample plots in stratum *i* |
| **Source of data:** | Ground measurement |
| **Measurement procedures (if any):** | The sampling plan must be designed using plots systematically placed over the buffer zone so that they sample at least 3% of the area of the buffer zone. |
| **Measurement Frequency** | At a minimum every five years, prior to verification |
| **QA/QC Procedures** | |

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| **Any comment:** | *Ex ante* an estimation should be made of area of plots. This should be set to exactly 3% of the buffer zone $A_{Deg,i}$ |

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|---|---|
| **Data / parameter:** | $A_{planned,i}$ |
| **Data unit:** | Ha |
| **Used in equations:** | 22 |
| **Description:** | Total area of planned deforestation over the entire project lifetime for stratum *i* |
| **Source of data:** | GPS coordinates and/or Remote Sensing data and/or legal parcel records |
| **Measurement procedures (if any):** | N/A |
| **Monitoring frequency** | Must be examined at least every 5 years, prior to ACR's required field verification no less frequently than every 5 years |
| **QA/QC Procedures** | |
| **Any comment:** | *Ex ante*, $A_{planned,i}$ shall be determined as described in **IV.B** |

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|---|---|
| **Data / parameter:** | $C_{Deg,i,t}$ |
| **Data unit:** | t $CO_2$-e |
| **Used in equations:** | 14 |
| **Description:** | Biomass carbon of trees cut and removed through degradation process in stratum *i* at time *t* |
| **Source of data:** | Field measurement |
| **Measurement procedures (if any):** | The diameter of all tree stumps is the designated plots will be measured and conservatively assumed to be the same as the DBH. If the stump is a large buttress, identify several individuals of the same species nearby and determine a ratio of the diameter at DBH to the diameter of buttress at the same height above ground as the measured stumps. This ratio will be applied to the measured stumps to estimate the likely DBH of the cut tree. The above and below ground carbon stock of each harvested tree must be estimated using the same allometric |

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| | regression equation and root:shoot ratio used in **CPES.A**. |
| **Measurement Frequency** | At a minimum every five years, prior to verification |
| **QA/QC Procedures** | |
| **Any comment:** | *Ex ante* an estimation shall be made of likely degradation in the with-project case. Such an estimation shall be based on rates of degradation in surrounding areas and the degree of protection that will be in place (e.g. forest guards) in the with-project case. |

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| **Data / parameter:** | *Degradation PRA Results* |
| **Data unit:** | |
| **Used in equations:** | Section **V.C** |
| **Description:** | |
| **Source of data:** | PRA |
| **Measurement procedures (if any):** | The PRA shall consist of semi-structured interviews / questionnaires. PRA shall evaluate whether the following activities may be occurring in the project area:<br>• harvesting of fuelwood<br>• harvesting of wood for charcoal production<br>• timber harvest<br>If ≥ 10% of those interviewed/surveyed believe that degradation may be occurring within the project boundary then the limited on-the-ground degradation survey shall be triggered.<br>An additional output of the PRA shall be a depth of penetration of degradation pressure. A maximum distance shall be recorded for penetration into the forest from access points (such as roads, rivers, already cleared areas) for the purpose of harvesting fuel wood, charcoal and/or timber. It is likely that differing distances shall exist for each degradation pressure. If multiple pressures exist in the same stratum the deepest depth of penetration shall be used to define $A_{deg,i}$. |
| **Measurement Frequency** | Every two years |
| **QA/QC Procedures** | |

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| **Any comment:** | *Ex ante* an estimation shall be made of degradation in the with-project case. If the belief is that zero degradation will occur within the project boundaries then this parameter may be set to zero if clear infrastructure, hiring and policies are in place to prevent deforestation. |

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|---|---|
| **Data / parameter:** | $E_{BSL\ SS}$ |
| **Data unit:** | t $CO_2$-e |
| **Used in equations:** | 7 |
| **Description:** | Carbon stocks or GHG sources (e.g. trees, dead wood, soil organic carbon, emission from fertilizer addition, emission from biomass burning etc.) in the baseline case |
| **Source of data:** | The terms denoting significant carbon stocks, GHG sources or leakage emissions used in the baseline procedure to calculate net emission reductions. |
| **Measurement procedures (if any):** | |
| **Any comment:** | Monitored once every ten years (when the baseline is revisited) |

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| **Data / parameter:** | $E_{P,SS}$ |
| **Data unit:** | t $CO_2$-e |
| **Used in equations:** | 27 |
| **Description:** | Carbon stock or GHG sources (e.g. trees, down dead wood, soil organic carbon, emission from fertilizer addition, emission from biomass burning etc.) in the with-project case |
| **Source of data:** | The terms denoting significant carbon stocks and GHG sources used in calculating net emission reductions from **CPES.A through CPES.H**<br>The terms denoting leakage emissions from **V.E** and **V.F** |
| **Measurement procedures (if any):** | |
| **Any comment:** | The *ex ante* estimation shall be derived directly from the estimations originating |

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| | in **CPES.A through CPES.H** (for carbon pools and GHG sources) and **V.E** and **V.F** (for leakage emissions). |

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| **Data / parameter:** | $PMP_i$ |
| **Data unit:** | % |
| **Used in equations:** | Section **V.F** |
| **Description:** | Merchantable biomass as a proportion of total aboveground tree biomass for stratum *i* within the project boundaries |
| **Source of data:** | Within each stratum divide the summed merchantable biomass (defined as "Total gross biomass (including bark) of a tree 30 cm DBH or larger from a 30 cm stump to a minimum 10 cm top DOB of the central stem") by the summed total aboveground tree biomass. Merchantable biomass is equal to merchantable volume multiplied by wood density ($D_{mn}$). |
| **Measurement procedures (if any):** | |
| **Monitoring frequency:** | At least every five years at the time of verification |
| **QA/QC procedures:** | |
| **Any comment:** | *Ex ante* a t=0 measurement shall be made of this factor |

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| **Data / parameter:** | *Project Forest Cover Benchmark Map* |
| **Data unit:** | |
| **Used in equations:** | 11,14 |
| **Description:** | Map showing the location of forest land within the project area at the beginning of each monitoring period. If within the Project Area some forest land is cleared, the benchmark map must show the deforested areas at each monitoring event |
| **Source of data:** | Remote sensing in combination with GPS data collected during ground truthing |
| **Measurement procedures (if any):** | The minimum map accuracy should be 80% for the classification of forest/non-forest in the remote sensing imagery. If the classification accuracy is less than |

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| | 80% then the map is not acceptable for further analysis. More remote sensing data and ground truthing data will be needed to produce a product that reaches the 80% minimum mapping accuracy. |
| **Measurement Frequency** | At a minimum every ten years prior to baseline renewal |
| **QA/QC Procedures** | |
| **Any comment:** | Where forest land contains more than one forest class, the map must be stratified into forest classes. |

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|---|---|
| **Data / parameter:** | *Project Forest Cover Monitoring Map* |
| **Data unit:** | |
| **Used in equations:** | 11,14 |
| **Description:** | Map showing the location of forest land within the project area at the beginning of each monitoring period. If within the Project Area some forest land is cleared, the benchmark map must show the deforested areas at each monitoring event. |
| **Source of data:** | Remote sensing in combination with GPS data collected during ground truthing |
| **Measurement procedures (if any):** | The minimum map accuracy should be 80% for the classification of forest/non-forest in the remote sensing imagery. If the classification accuracy is less than 80% then the map is not acceptable for further analysis. More remote sensing data and ground truthing data will be needed to produce a product that reaches the 80% minimum mapping accuracy. |
| **Measurement Frequency** | At a minimum every five years, prior to verification |
| **QA/QC Procedures** | |
| **Any comment:** | Where forest land contains more than one forest class, the map must be stratified into forest classes. |

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| **Data / parameter:** | *Regional Forest Cover / Non-Forest Cover Benchmark Map* |
| **Data unit:** | |

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|---|---|
| **Used in equations:** | 11 |
| **Description:** | Map showing the location of forest land within the reference region at the beginning of the crediting period |
| **Source of data:** | Remote sensing in combination with GPS data collected during ground truthing |
| **Measurement procedures (if any):** | The minimum map accuracy should be 80% for the classification of forest/non-forest in the remote sensing imagery. If the classification accuracy is less than 80% then the map is not acceptable for further analysis. More remote sensing data and ground truthing data will be needed to produce a product that reaches the 80% minimum mapping accuracy. |
| **Measurement Frequency** | At a minimum three times over the ten years leading up to baseline renewal |
| **QA/QC Procedures** | |
| **Any comment:** | |

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|---|---|
| **Data / parameter:** | *Result of Limited Degradation Survey* |
| **Data unit:** | |
| **Used in equations:** | Section **V.C** |
| **Description:** | |
| **Source of data:** | |
| **Measurement procedures (if any):** | Sampled by surveying several transects of known length and width across the access-buffer area (equal in area to at least 1% of $A_{Deg,i}$ ) to check whether new tree stumps are evident or not. |
| **Measurement Frequency** | Must to be repeated each time the PRA indicates a potential for degradation |
| **QA/QC Procedures** | |
| **Any comment:** | *Ex ante* an estimation shall be made of degradation in the with-project case. If the belief is that zero degradation will occur within the project boundaries then this parameter may be set to zero if clear infrastructure, hiring and policies are in place to prevent deforestation. |

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|---|---|
| **Data / parameter:** | $U_{BSL,SS}$ |
| **Data unit:** | % |
| **Used in equations:** | 7,8 |
| **Description:** | Percentage uncertainty (expressed as 90% confidence interval as a percentage of the mean where appropriate) for carbon stocks and GHG sources in the baseline case (1,2…n represent different carbon pools and/or GHG sources) |
| **Source of data:** | Calculations arising from field measurement data |
| **Measurement procedures (if any):** | Uncertainty in pools derived from field measurement with 90% confidence interval calculated as the standard error of the averaged plot measurements in each stratum multiplied by the t value for the 90% confidence level.<br>For wood products the uncertainty should be the confidence interval around the volume of timber extracted from the forest.<br>For emission sources conservative parameters should be used sufficient to allow the uncertainty to be set as zero. |
| **Any comment:** | Monitored once every ten years (when the baseline is revisited) |

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| **Data / parameter:** | $U_{P,SS}$ |
| **Data unit:** | % |
| **Used in equations:** | 27,28 |
| **Description:** | Percentage uncertainty (expressed as 90% confidence interval as a percentage of the mean where appropriate) for carbon stocks and GHG sources in the with-project case (1,2…n represent different carbon pools and/or GHG sources) |
| **Source of data:** | Calculations arising from field measurement data |
| **Measurement procedures (if any):** | Uncertainty in pools derived from field measurement with 90% confidence interval calculated as the standard error of the averaged plot measurements in each stratum multiplied by the t value for the 90% confidence level.<br>For wood products the uncertainty should be the confidence interval around the volume of timber extracted from the forest.<br>For emission sources conservative parameters should be used sufficient to allow |

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| | the uncertainty to be set as zero. |
| **Any comment:** | *Ex ante* the uncertainty in the with-project carbon stocks and sources shall be equal to the calculated baseline uncertainty |