Annex 15

CLARIFICATIONS REGARDING METHODOLOGIES FOR AFFORESTATION AND REFORESTATION CDM PROJECT ACTIVITIES

A. Pre-project emissions

1. The Board clarified that, where the baseline scenario is expected to correspond to approaches of paragraphs 22 (a) and (c) of the modalities and procedures for CDM A/R project activities:

(a) In accordance with paragraph 21 of the modalities and procedures for CDM A/R project activities, only the increase of pre-project GHG emissions as a consequence of the implementation of the project activity has to be taken into account in the calculation of net anthropogenic GHG removals by sinks.

(b) Pre-project GHG emissions by sources which are displaced outside the project boundary in order to enable an afforestation or reforestation project activity under the CDM shall not be included under leakage if the displacement does not increase these emissions with respect to the pre-project conditions. Otherwise, leakage for the displacement of pre-project activities is equal to the incremental GHG emissions compared with the pre-project conditions.

2. The Board requested the A/R WG to develop a proposal on how pre-project emissions are to be considered by project activities using the approach of paragraph 22 (b) of the modalities and procedures for CDM A/R project activities to determine a baseline scenario.

B. Leakage

3. The Board clarified that the accounting of decreases of carbon pools outside the project boundary are to be considered as leakage and that, in particular:

(a) In the case of deforestation as land clearance outside the project boundary due to activity shifting, effects on all carbon pools shall be considered;

(b) In the case of fuelwood collection or similar activities outside the project boundary, only the gathered volume of wood that is non-renewable shall be considered as an emission by sources if forests are not significantly degraded due to this activity. The equation (Eq. 3.2.8) for fuelwood gathering as outlined in IPCC GPG (2003) could be applied in combination with household surveys or Participatory Rural Appraisal (PRA). In the case that forests are significantly degraded, accounting rule 1 applies. "Not significantly degraded" means, that the extracted volume results in emissions which are between 2% and 5 % of net actual GHG removals by sinks. If the extracted wood volume results in emissions which are below 2% of the net actual GHG removals by sinks, this type of leakage can be ignored.

C. Equations for the calculation of net anthropogenic GHG emissions by sinks

4. Decision 19/CP.9 outlines the general rule on how to quantify the net anthropogenic GHG removals by sinks of a project activity as:

Net anthropogenic GHG removals = actual net GHG removals - baseline GHG removals - leakage.

5. However, due to the fact that:

(a) Two *different types of CERs* are available for A/R project activities; and

(b) Both *carbon pools* and *GHG flows* are accounted for,

special attention has to be paid to the mathematical and procedural methodological description for the quantification of net anthropogenic GHG removals by sinks that takes into account these specificities. As will be illustrated further down, the tCERs and lCERs cannot simply be calculated based on an equation calculating net anthropogenic GHG removals by sinks on a per-year basis (t CO_2/year) or as cumulated data (t CO_2), (only for the first verification).

6. Currently, the available forms and guidelines on how to fill in the CDM-AR-NMB and CDM-AR-NMM do not provide adequate guidance for proponents of new methodologies on this issue. As a consequence, the equations to calculate the 'net anthropogenic GHG removals by sinks' currently proposed in new methodologies often are incomparable (e.g. different units) and generally do not allow one to quantify tCERs or lCERs based on the equations described for the net anthropogenic GHG removals by sinks (or only for the first verification).

7. As the final quantification of lCERs and tCERs is equal for all methodologies, the A/R WG recommends to the Board to:

(a) Include standard equations in the respective sections of the CDM-AR-NMB and CDM-AR-NMM for the quantification of 'net anthropogenic GHG removals by sinks' as a proposal to proponents of new methodologies. They can be adapted by the proponents to the specific notation and topics covered by their methodologies;

(b) Provide guidance in the forms CDM-AR-NMB and CDM-AR-NMM (or in the recommended joint form CDM-AR-NM) and the respective guidance documents that carbon pools shall be calculated/monitored as existing t CO_2 in a specific year (in t CO_2); emissions by sources and leakage shall be calculated/monitored as emissions in a specific year (in t CO_2).

8. The equations below reflect the way tCERs and lCERs are quantified, based on the most common approaches for estimating and monitoring effects on carbon pools, emissions by sources and leakage. A notation based on annual changes of carbon pools in the baseline and the project scenario would also be possible. However, calculating annual changes as difference of existing carbon stocks for both the baseline scenario and the project activity in subsequent years adds unnecessary additional mathematical steps. In addition to that, terms for carbon pools and emissions still would differ in the equations below.

2. Equations to calculate tCERs and lCERs

9. In the following, the generic ways of calculating tCERs and lCERs are:

(a) tCERs reflect the difference of carbon stock in the carbon pools in the project and baseline *at the time of verification* less cumulative project GHG emissions within the project boundary less cumulative GHG emissions outside the project boundary due to afforestation or reforestation less difference in carbon stocks in the carbon pools outside the project boundary (t CO_2), affected by afforestation or reforestation activity, in the baseline and project at the time of verification, i.e,

$$t-CER(t_v) = C_P(t_v) - C_B(t_v) - \sum_0^{t_v} E(t) - \sum_0^{t_v} L_E(t) - \left(L_{P\_B}(t_v) - L_{P\_P}(t_v)\right)$$

- lCERs reflect the difference of *increment of the carbon stock in the carbon pools,* between two verification period, in the project and the baseline less project GHG emissions between two verification period less GHG emissions outside the project boundary less difference of increment in carbon stock in the carbon pools outside the project boundary (t CO_2), affected by afforestation or reforestation project activity, in the baseline and project, i.e,

$$l-CER(t_v) = \left[C_P(t_v) - C_P(t_v - \kappa)\right] - \left[C_B(t_v) - C_B(t_v - \kappa)\right] - \sum_{t_v-\kappa}^{t_v} E(t) - \sum_{t_v-\kappa}^{t_v} L_E(t) -$$

$$- \left[\left(L_{P\_B}(t_v) - L_{P\_B}(t_v - \kappa)\right) - \left(L_{P\_P}(t_v) - L_{P\_P}(t_v - \kappa)\right)\right]$$

where:

$t\text{-}CER(t_v)$	t-CERs emitted at time of verification t_v (t CO_2)
$l\text{-}CER(t_v)$	l-CERs emitted at time of verification t_v (t CO_2)
$C_P(t_v)$	Existing carbon stocks at the time of verification t_v (t CO_2)
$C_B(t_v)$	Estimated carbon stocks of the baseline scenario at time of verification t_v (t CO_2)
$E(t)$	Project emissions in year t (t CO_2)
$L_E(t)$	Leakage: estimated emissions by sources outside the project boundary in year t (t CO_2)
$L_{P\_B}(t_v)$	Leakage: estimated carbon pools outside the project boundaries in the baseline scenario on areas that will be affected due to the implementation of a project activity at time of verification t_v (t CO_2)
$L_{P\_P}(t)$	Leakage: existing carbon pools outside the project boundaries that have be affected by the implementation of a project activity at time of verification t_v (t CO_2)
t_v	Year of verification
κ	Time span between two verifications

Note that accounting for the volume of extracted wood products from forests outside the project boundary would be accounted for as leakage related to emissions by sources.

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