INDICATIVE SIMPLIFIED BASELINE AND MONITORING METHODOLOGIES FOR SELECTED SMALL-SCALE CDM PROJECT ACTIVITY CATEGORIES

General guidance on leakage in biomass project activities (Version 02)

I. Definition of Renewable Biomass

1. Definition of renewable biomass shall be as per annex 18 of the report of the twenty-third meeting the CDM Executive Board <http://cdm.unfccc.int/EB/Meetings/023/eb23_repan18.pdf>.

II. Project Boundary for biomass projects

2. Table 1 below identifies different emission sources based on type of biomass being considered. For biomass from forests and biomass from croplands or grasslands, the project boundary shall include the area where the biomass is extracted or produced.

Table 1. Emission source per type of biomass

Biomass type	Activity / source	Shift of pre-project activities	Emissions from biomass generation / cultivation	Competing use of biomass
Biomass from forests	Existing forests	-	-	x
	New forests	x	x	-
Biomass from croplands or grasslands (woody or non-woody)	In the absence of the project the land would be used as cropland / wetland	x	x	-
	In the absence of the project the land would be abandoned	-	x	-
Biomass residues or wastes	Biomass residues or wastes are collected and used	-	-	x

III. Leakage

3. The following guidelines identify potentially significant sources of leakage and project emissions for renewable biomass projects and suggest methodological approaches to address them.

Identification of relevant emission sources

4. For small-scale energy CDM project activities involving renewable biomass, there are three types of emission sources that are potentially significant (>10% of emission reductions) and attributable to the project activities:

A. **Shifts of pre-project activities.** Decreases of carbon stocks, for example as a result of deforestation, outside the land area where the biomass is grown, due to shifts of pre-project activities.
B. **Emissions** related to the production of the biomass.
C. **Competing uses for the biomass.** The biomass may in the absence of the project activity be used elsewhere, for the same or a different purpose.

5. These emission sources may be project emissions (if under the control of project participants, i.e. if the land area where the biomass is grown is included in the project boundary) or sources of leakage (if the source is not under control of project participants). Table 1 summarizes, for different types of biomass, the cases where the emission source is relevant and the cases where it is not.

A. Shifts of pre-project activities

6. Shifts of pre-project activities are relevant where in the absence of the project activity the land areas would be used for other purposes (i.e. agriculture). For example: where cropland is converted to forest to produce wood for energy purposes, the pre-project activity (crop production) might be shifted to other land areas. In the worst case, this shift of the pre-project activity could result in deforestation on other land areas.

7. Consequently, as a first guidance, project participants may neglect leakage effects due to shifts in pre-project activities, where the land would not be used or where the land use (inside the project boundary) does not change as a result of the project activity. This is the case for the extraction of biomass from existing forests, the cultivation of biomass on lands that would be abandoned in the absence of the project or in the case of biomass residues or wastes. In this latter case, it can be reasonably assumed that the use of the residue or waste is unlikely to affect the generation of the residue or waste. For example, in case of sugar cane, rice husks or residues from wood panel production the main activity (sugar, rice or panel production)

occurs independently of the CDM project activity. Thus, emissions associated with that generation of the biomass are not affected by a CDM project using the biomass residues.

8. For other types of biomass, deforestation on other land areas as a result of shifts of pre-project activities might be the most important potential leakage source. For the assessment of whether a project activity results in deforestation elsewhere, it can be necessary to evaluate whether there is significant land pressure in the area, e.g. in cases where there are large areas of abandoned land, it is very unlikely that a project activity will result in deforestation elsewhere, whereas in cases of high land pressure, it is more likely that the project results in a shift of pre-project activities.

9. Project participants should assess the possibility of leakage from the displacement of activities or people considering the following indicators:

- Percentage of families/households of the community involved in or affected by the project activity displaced (from within to out of the project boundary) due to the project activity;
- Percentage of total production of the main produce (e.g. meat, corn) within the project boundary displaced due to the generation of renewable biomass.

10. If the value of these two indicators is lower than 10%, then leakage from this source is assumed to be zero. If the value of any of these two indicators is higher than 10% and less than or equal to 50%, then leakage shall be equal to 15% of the difference between baseline emissions and project emissions. If the value of any of these two indicators is larger than 50%, then this methodology is not applicable and a new procedure must be submitted for the approval of the Board.

B. Emissions from the production of the renewable biomass

11. Potentially significant emission sources from the production of renewable biomass can be:

(a) Emissions from application of fertilizer[1]; and

(b) Project emissions from clearance of lands.

12. These emissions sources should respectively be included in a simplified manner, not involving any significant transaction costs. All other emission sources are likely to be smaller than 10% (each) - including transportation of raw materials and biomass, fossil fuel consump-

[1] While this emission source may be small for most forest plantations, it may be very large (>30% of emission reductions through fossil fuel substitution) for some energy crops.

tion for the cultivation of plantations - and can therefore be neglected in the context of SSC project activities.

(a) Emissions from the application of synthetic fertilizer

13. Project participants should monitor the type and quantity of fertilizer applied to the land areas.

14. N_2O emissions from the use of synthetic and organic fertilizers should be estimated according to provisions outlined in the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (Chapter. 4.5).

(b) Project emissions from clearance of lands

15. Project emissions from clearance of lands can be significant in cases where an area is deforested to produce the biomass. In other cases, the land area (e.g. abandoned land) can re-generate in the absence of production of the biomass resulting in increasing carbon stocks in carbon pools. As a consequence, carbon stocks in carbon pools could be higher in the baseline scenario than in the project scenario. However, as a simplification, it is suggested to neglect this latter case. The potential of deforestation due to the implementation of the CDM project activity must be addressed by considering the following applicability condition:

16. Where the project activity involves the use of a type of renewable biomass that is not a biomass residues or waste, project participants should demonstrate that the area where the biomass is grown is not a forest (as per DNA forest definition) and has not been deforested, according to the forest definition by the national DNA, during the last 10 years prior to the implementation of the project activity. In the absence of forest definition from the DNA, definitions provided by relevant international organisations (e.g. FAO) shall be used.

C. Competing uses for the biomass

17. In some cases, the biomass used in the project activity could be used for other purposes in the absence of the project. For example, biomass residues from existing forests could have been used as fuel wood or agricultural biomass residues could have been used as fertilizers or for energy generation. Competing uses for biomass are not relevant, where the biomass is generated as part of the project activity (new forests or cultivations).

18. The project participant shall evaluate annually if there is a surplus of the biomass in the region of the project activity, which is not utilised. If it is demonstrated (e.g. using published literature, official reports, surveys etc.) that the quantity of available biomass in the region (e.g. 50 km radius), is at least 25% larger than the quantity of biomass that is utilised including the project activity, then this source of leakage can be neglected otherwise this leakage shall be estimated and deducted from the emission reductions.