



FCCC/WEB/2004/2

7 April 2004

Methodological issues
Small-scale afforestation and reforestation project activities
under the clean development mechanism

Simplified modalities and procedures for small-scale afforestation and reforestation project activities under the clean development mechanism

Submissions from accredited organizations

1. The Conference of the Parties (COP), by its decision 19/CP.9, adopted modalities and procedures for afforestation and reforestation project activities under the clean development mechanism (CDM) in the first commitment period of the Kyoto Protocol. It requested the Subsidiary Body for Scientific and Technological Advice (SBSTA) to recommend a draft decision on simplified modalities and procedures for small-scale afforestation and reforestation project activities under the CDM and on measures to facilitate these project activities, for adoption by the COP at its tenth session. The COP invited Parties and accredited observers to submit to the secretariat, by 28 February 2004, their views on simplified modalities and procedures for small-scale afforestation and reforestation project activities under the CDM.
2. The secretariat has received 11 such submissions from Parties; these submissions can be found in document FCCC/SBSTA/2004/MISC.4.
3. The secretariat has also received two submissions from intergovernmental organizations and one from a non-governmental organization; these submissions are attached and reproduced* in the language in which they were received and without formal editing.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

CONTENTS

	<i>Page</i>
1. FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (Submission received 1 March 2004).....	3
2. HAMBURG INSTITUTE OF INTERNATIONAL ECONOMICS (Submission received 20 February 2004).....	14
3. WORLD BANK, CARBON FINANCE BUSINESS (Submission received 27 February 2004).....	23

Views on

Simplified modalities and procedures for small-scale afforestation and reforestation projects activities under the Clean Development Mechanism

1. Definitions

“Small-scale afforestation and reforestation project activities under the CDM are those that are expected to result in net anthropogenic greenhouse gas removals by sinks of less than 8 kilo tonnes of CO₂ per year¹ and are developed or implemented by low-income communities and individuals as determined by the host Party. If a small-scale afforestation or reforestation project activity under the CDM results in net anthropogenic greenhouse gas removals by sinks greater than 8 kilo tonnes of CO₂ per year, the excess removals will not be eligible for the issuance of tCERs or ICERs.” (FCCC/SBSTA/2003/L27)

“For the purpose of this annex, the definitions in paragraph 1 of the annex to decision 17/CP.7 and the definitions of forest, reforestation and afforestation in paragraph 1 of the annex to draft decision -/CMP.1, shall apply.” (FCCC/SBSTA/2003/L27. Annex):

“Forest” is a minimum area of land of 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30 per cent with trees with the potential to reach a minimum height of 2-5 metres at maturity *in situ*. A forest may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground or open forest. Young natural stands and all plantations which have yet to reach a crown density of 10-30 per cent or tree height of 2-5 metres are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes but which are expected to revert to forest;

“Afforestation” is the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources;

“Reforestation” is the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on 31 December 1989; (11/CP7)

Comments: Not only forest trees, but also fruit trees, as well as bamboos and palms, qualify as long as they meet minimum height stipulations. A tree is a woody perennial with a single main

¹ Corresponds to 2180 t of carbon. The text seems ambiguous: It is not clear if annual net sequestration can exceed the limit as long as ex post sequestration per year is below this limit

stem, or, in the case of coppice, with several stems, having a more or less definite crown; includes bamboos, palms and other woody plants meeting the above criteria (FAO 2001)

Forests can be open, consisting of scattered trees, lines or groups of trees, as long as the crown cover requirements are met; there is no maximum spatial assessment unit.

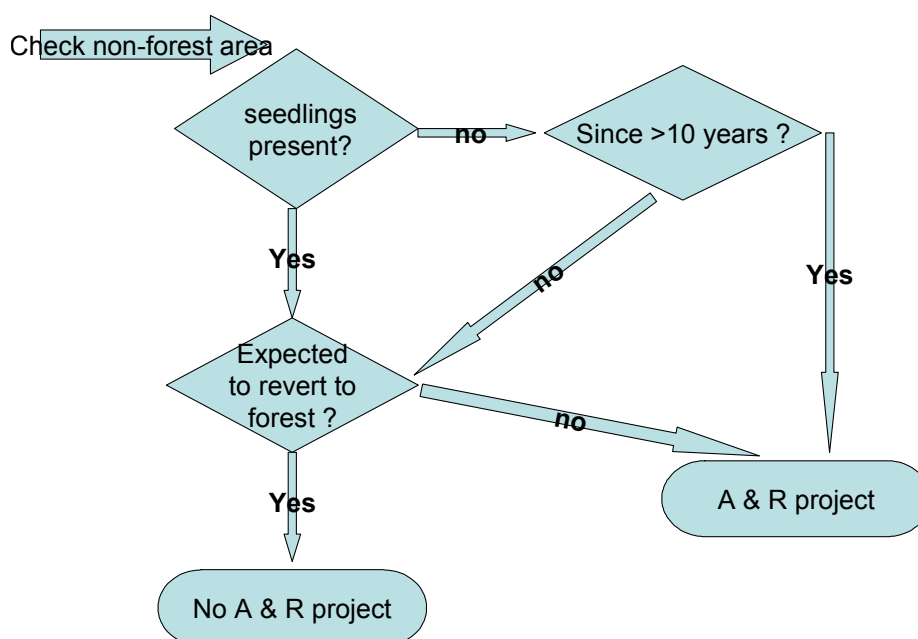
2. Good Practice Guidance

“In addition to the minimum area of forest, it is good practice that countries specify the minimum width that they will apply to define forests and units of land subject to A&R activities” (IPCC, 2003)

3. Project constraints and prerequisites

For reforestation, the project area must be non-forest land; former forest land must have been converted to non-forest no later than 31.12.1989. Young natural stands/plantations and those temporarily unstocked areas which are expected to revert to forest are considered forest.

“Temporarily unstocked” is undefined in the Marrakech Accords, but FAO uses a 10 - year default. Therefore, fallow land in a shifting cultivation scheme would only be eligible for a reforestation project, if it were unstocked for at least 10 years beginning before 1990, or stocked with seedlings that would not meet minimum requirements for forests in the future.



Areas which have been unstocked for at least 10 years and are not expected to revert to forests, e.g. because of grazing/ browsing pressure, would qualify for reforestation. Rehabilitation could also qualify as reforestation, if the remaining stocking of mature trees since 1990 is below the chosen crown cover and the site is not expected to revert to forest due to prolonged lack of regeneration or another impediment.

Agroforestry landscapes could qualify, if stocking is and has been below the national limit since 1990, and A&R would raise it above that threshold.

Land *ownership* is not a requirement; instead mere implementation or development by low income communities and individuals as determined by the host Party suffices. Commercial timber production, for example, in out grower schemes, appears eligible, as long as area and other constraints are not violated and bundled projects pass the de-bundling test (see Appendix C of the simplified procedures for energy projects).

4. Differentiating within small-scale A&R projects

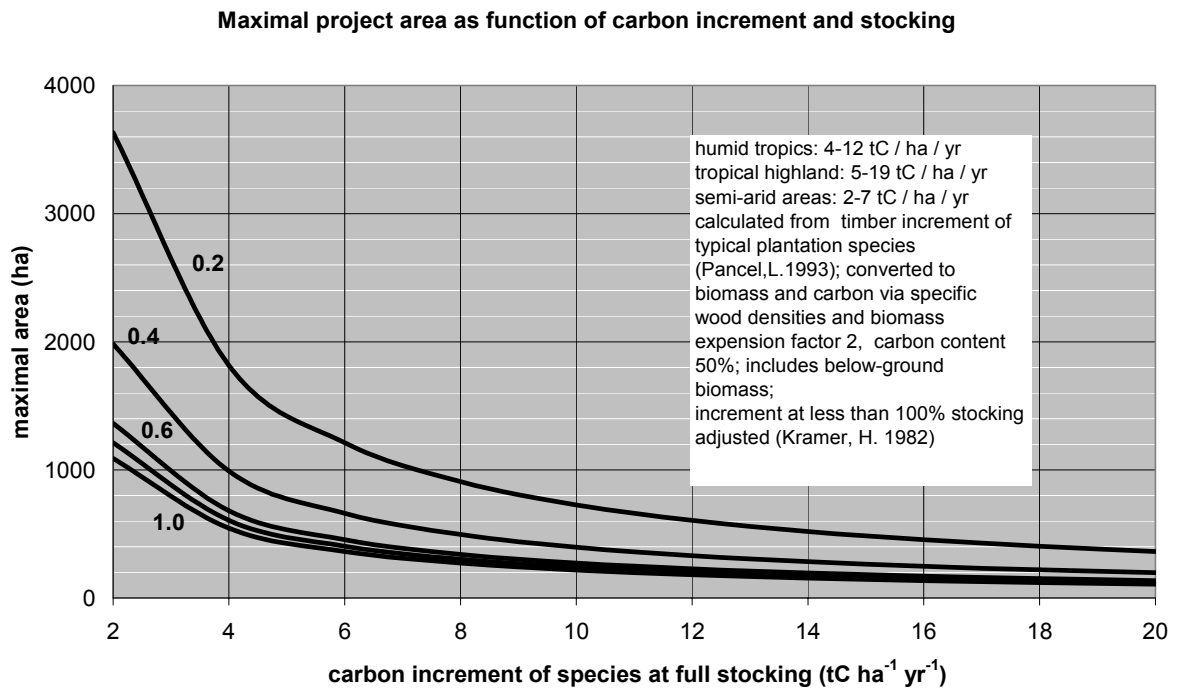
Simplifying modalities and rules for small-scale A&R projects while still safeguarding the integrity of the CDM and its dual goals requires different solutions for different categories of small-scale projects, analogous to the categories already established in the energy sector. Key factors to distinguish such categories might be: maximum permissible project area; actual scale of projects within this maximum; specific “forest”- types and purpose; prior land use in the project area.

4.1. Project area corresponding to maximal sequestration

Fig.1 shows possible maximal land areas for small-scale projects, based on available estimates of mean annual increment of plantations and corresponding carbon sequestration.

Project areas may range from ca. 100 ha with typical fast growing exotic species and full stocking, to ca. 4000 ha in agroforestry landscapes of slow growing, scattered trees. The graph integrates the fact that reducing stocking lowers increment less than proportionally (Kramer, H.1982); Increment to be used for the purpose of determining the maximal project area is maximum Current Annual Increment (CIA) for essentially even-aged plantations and Mean Annual Increment (MAI) for uneven-aged forests or plantations with a more or less even age-class distribution

Figure 1²



4.2 Scale in small-scale: what is in a name?³

Actual project areas for small-scale projects may be much smaller than the maximal sizes outlined above. An IUFRO working group compiled the following terms related to small-scale forestry and sometimes provided approximate sizes.

² Example: a species with CAI 10 tC / ha can maximally occupy 218 ha. The same species used in an agroforestry landscape at 20% stocking could maximally occupy not 1090 ha, but only 727 ha, as open growing trees have proportionally higher increment.

³ see paper by IUFRO Working Unit 3.08.00 on small-scale forestry (Harrison, Herborn and Niskanen, in Small-scale forest economics, management and policy 1:1-11;2002)

Name	Definition	Indication of size
Smallholder forestry	Small-scale forestry in developing countries	usually 1-5 ha in SE-Asia
Community forestry	Forest owned and generally managed by a community, the members of which share the benefits	Small relative to industrial estates; 100's of ha instead of 1000s
Non-industrial private forests (NIPF) ⁴	Forest land that is privately owned by individuals or corporations other than forest industry and where management may include objectives other than timber production	Only 10% of owners own more than 40 ha (USA)
Small-scale farm forestry	Private forest holdings of between 1 and 200 ha where the proprietor is not a juristic person	1-200 ha (Austria)
Family forestry		Typical size 25-40 ha (Nordic countries)
Small private forests	Forests that are neither community nor state forests	With an area of less than 100 ha, "smallest-scale" with <10ha; Germany
Small scale private forests		90 % <2 ha; Japan
Farm forests		93% <100 ha; Australia

Based on this characterization of small-scale forests, and the possible maximum areas from Fig.1, reasonable size classes could be:

Smallholder forests: < 10ha; small forests: 10-100 ha; medium-sized forest: 100-1400 ha⁵; open forest types (crown cover <0.6) could be designated woodlands instead of forests, with an additional class of 1400-4000 ha, designated as large woodlands. Size limits apply to single as well as to bundled projects.

Other divisions and designations are possible, but the majority of small ownerships are very small and warrant differential treatment; a 2 ha woodlot embodies different risks and consequences than one of 1000 ha. Project areas of >1400 ha are only conceivable at low stocking levels (e.g. agroforestry landscapes); these open forests present different risks and consequences, and simplifying modalities should reflect this.

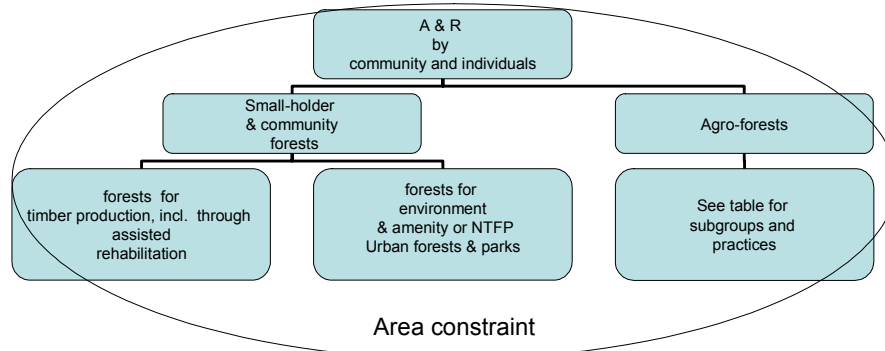
4.3. Conceivable forest types

Stands of trees established as "forests" under the CDM might vary widely. Again, simplifying conditions for small-scale projects should match these conceivable forest types. The following classification (Pancel, L., 1993, Nair, P. and Muschler, R., 1993, Smith, J. and Scherr, S., 2002) captures range and characteristics.

⁴ other terms used: farm forestry; farm woodlands; small-grower plantations

⁵ 1400 ha corresponds to the maximal possible area for forests with a stocking above 0.6 (Fig.1). In practice, most forests for timber production will be much smaller, as CAI will tend to be more than 2 tC/ha/yr.

Types of small-scale A&R projects



Comment: Sustainable agroforestry practices (Appendix 1) may contribute substantially more to global warming mitigation than mere carbon stores or sequestration rates imply. Dixon (1995) found carbon storage values of 30-220 t C/ha with a median of 95 t C/ha above and below ground in agroforestry systems worldwide. Burschel and Kürsten (1993) attribute from 6-52 t C/ha to aboveground biomass. In forested regions of developing countries, each ha of sustainable agroforestry saves 5-20 ha of forest from destruction (Dixon, 1995; Kürsten and Burschel 1993). Wood from agroforestry systems substitutes for fossil fuels and preserves carbon in wooden structures. Where non-forested soils would degrade, agroforestry helps prevent erosion, desertification and associated soil carbon losses. Approximately 630 million ha of degraded and underutilized lands could realistically be used to establish new agroforestry systems and could soon sequester an average of 3 t C/ha annually (IPCC, 2000). Agroforestry can contribute more and faster to carbon storage than any other land use practice.

Planting trees in urban environments is also more effective than it initially seems. Individual trees sequester only a small amount of carbon, but transpire large quantities of water for cooling, increase reflective ness of dark asphalt surfaces, and thus reduce the heat-island effect in cities and energy consumption for air conditioning. In cold climates, trees insulate structures against the cold by reducing long-wave heat loss during nights, and decreasing wind-speeds and turnover rates of heated air inside residences. Urban trees are 4-15 times more effective in overall carbon preservation than trees in forests.

In providing simplifying modalities, the positive ancillary effects of both agroforestry and urban tree planting should be factored in implicitly.

4. 4. Prior land use of A&R lands

The IPCC GPG for LULUCF differentiates the following possible transitions to forest, calling for differential treatment:

forest land	cropland	grassland	wetland	settlements	other land
not eligible	eligible	eligible	eligible	eligible	eligible

Non-forest land may contain trees with low crown cover or other woody vegetation before the transition. Each transition would have typical socio-environmental risks and implications, which should be reflected in the simplifying conditions.

Overall, small-scale A & R projects should be differentiated by size class, stand- or forest type (including dominant products and services) and prior land use.

4.5. Grouping small scale projects into categories

By grouping possible projects according to the likelihood of socio-environmental harm, the scale of projects, trans-boundary effects, moral hazards, but also likely positive spill-over leads to the following categories:

Category I, most stringent, least simplified modalities:

small-and medium sized forests for timber production, incl. via forest rehabilitation; taungya; improved fallow; estate crop combinations, e.g. oil palms, rubber wood, coffee; estate crops with pasture; aqua forestry; *if established on croplands, natural indigenous grassland ecosystems, and wetland.*

Category II, moderately stringent, moderately simplified modalities:

Medium-sized forests for timber production, incl. forest rehabilitation; taungya, improved fallow, estate crop combinations, estate crops with pasture, aqua forestry, *if established on other land and grass lands*; medium-sized forests for environment and amenity values, medium and large open urban forests and parks; large woodlands

Category III, least stringent, strongly simplified modalities:

All others, e.g. all smallholder forests, small and medium-sized woodlands

5. Simplified modalities

The Small-Scale Category project Design Document and all Appendices and Attachments (e.g Attachment A to Appendix B, attachment C on de-bundling) shall apply with the following complements and adjustments (see Appendix 2)

Bibliography

FAO, 2001. Global Forest Resource Assessment. Rome, 2001

IPCC. 2003. Good Practice Guidance for Land Use, Land –Use Change and Forestry.

Kramer, H. 1982. Nutzungsplanung in der Forsteinrichtung. Sauerlaender. Frankfurt

Pancel, L. 1993. Tropical Forestry Handbook. Vol. I and II. Springer. Berlin

Nair, P. and R. Muschler. 1993. Agroforestry. In: Tropical Forestry Handbook

Smith, J. and Scherr, S. Forest carbon and local livelihood. CIFOR Occasional paper 37

Burschel, P. and Kürsten, 1993. CO₂-mitigation by agroforestry

Dixon, R. 1995. Agroforestry systems: sources or sinks of greenhouse gas? Agroforestry Systems 29:1-18

IPCC, 2000. Land-use, land-use change and forestry. Special report.

Appendix I

Agroforestry practices in small-scale A&R⁶

System	Practice	Combination	Components
Agrisilvicultural systems	1.Improved fallow	trees planted during non-forest phase, if land not expected to revert to forest	w: fast growing h: agricultural crop
	2.Taungya	crops during tree seedling stage	w: plantation species h: agricultural crops
	3. alley cropping	trees in hedges, crops in alleys	w: coppice trees h: crops
	4. tree gardens	multispecies, dense, mixed	w: vertical structure, fruit trees h: shade tolerant
	5.Multipurpose trees on cropland	trees scattered, boundaries	w: multipurpose trees h: crops
	6. estate crop combinations		w: coffee, coconut, fruit trees h: shade tolerant
	7.Homegardens	multi-storey combinations around homes	w: fruit trees h: crops
	8. trees in soil conservation, reclamation		w: multipurpose fruit trees h: crops
	9. shelterbelts, windbreaks, live hedges	around farmland plots	w: trees h: crops
	10. Fuel wood production	firewood species around cropland plots	w: firewood species h: crops
Silvopastoral systems	11.Trees on rangelands	scattered trees	w: multipurpose, fodder f: present a: present
	12. Protein banks	trees for protein-rich cut fodder	w: leguminous trees h: present a: present
	13. Estate crops with pasture	Example cattle under coconut palms	w: estate crops F: present a: present
Agrosilvopastoral; systems	14.Homegardens with animals	around homes	w: fruit trees a : present
	15.Multipurpose woody hedgerows	trees for browsing, mulch, soil protection	w: coppicing fodder trees a, h: present
	16. Aqua forestry	trees lining ponds	w: leaves forage for fish

⁶ W: woody species; a: animals; h: herbaceous(crop) species

Appendix II				
Simplified Modalities and Procedures for Small-scale A &R projects				
project cycle detail		category III	category II	category I
Project Design Document	A. general description	document development / implementation by low-income individual / community	same	same
		document prior land-use; conversion date; long-term unstocked condition; barriers to reversion to forests		
		document estimated C-sequestration; forest / agro forest type		
	B. Baseline - Create analogue to Appendix B for LUCF categories I – III, covering technology, project boundary, baseline, leakage, monitoring	Delineate project boundaries on maps, aerial photos, GIS, GPS; mark clearly visibly and permanently in the field	same	same
		baseline is static threshold value (tC / ha) established as average in same or similar settings; document historic fertilizer and herbicide use	dynamic baseline for specific project area; document historic fertilizer and herbicide use	same

	D. Monitoring methods and plan to be developed (e.g. by FAO, ICRAF; IPCC-GPG)	simplest carbon inventory methods which allow full participation; default factors, yield tables, biomass pool only without additional evidence for other pools; document chemical use	more precise methods , other greenhouse gases, pools documented	same,
		leakage assumed zero, except possible chemical use	make plausible through project design that leakage is 0; document chemical use	same
	E. Environmental impact	short statement on environmental impact suffices, no EIA necessary	small-scale general CDM rules apply	same
	F. Stakeholder comments	Not needed	needed	needed
registration fee		none	e.g. \$ 100	e.g. \$300
review period		minimal	short	short
designated operational entity		local/regional nationals	same	same

PAPER NO. 2: HAMBURG INSTITUTE OF INTERNATIONAL ECONOMICS (HWWA)

Joint Submission to the UNFCCC Secretariat
**Indicative Simplified Baseline and Monitoring
Methodologies for Selected Small-Scale CDM
Project Activity Categories**

The following institutions are supporting this submission:

- B,S,S. Economic Consultants, Switzerland
- Centro Tecnico Forestal (CETEFOR), Bolivia
- FACE-Foundation, Netherlands
- Forest Investment Services (FIS), Uganda
- Forest Research Institute Malaysia, Malaysia
- GFA Terra Systems invest, Germany
- Hamburg Institute of International Economics (HWWA) Germany
- Joanneum Research, Austria
- Laboratory of Forest, Nature and Landscape Research, KU, Leuven, Belgium
- Programme Face de Forestacion (PROFAFOR) Ecuador
- Unique Forestry Consultants, Germany
- World Agroforestry Centre, Kenya

General Guidance

1. This appendix contains indicative simplified baseline and monitoring methodologies for selected small-scale afforestation and reforestation CDM project activity categories, including recommendations for determining the project boundary, leakage, baseline and monitoring.
2. Project participants involved in small-scale CDM project activities may propose changes to the simplified baseline and monitoring methodologies specified in this appendix or propose additional project categories for consideration by the Executive Board. Project participants willing to submit a new small-scale project activity category or revisions to a methodology shall make a request in writing to the Board providing information about the technology/activity and proposals on how a simplified baseline and monitoring methodology would be applied to this category. The Board may draw on expertise, as appropriate, in considering new project activity categories and/or revisions of and amendments to simplified methodologies. The Executive Board shall expeditiously, if possible at its next meeting, review the proposed methodology. Once approved, the Executive Board shall amend appendix B.

3. The appendix reflects the following guidance regarding type of measure, project boundary, biomass projects, leakage and monitoring.
4. Project boundary: The project boundary shall be limited to the physical project activity, including transport emissions between discrete land areas that compose the overall project area.
5. In the cases where leakage is to be considered, it shall be considered only within the boundaries of non-Annex I Parties.
6. In the case of project participants using IPCC default values for emission coefficients, these shall be the most up-to-date values available in the “IPCC Good Practice and Guidance for Land Use, Land-Use Change and Forestry” and the “Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories”.
7. Accounting: Long-term CERs (ICERs) carrying over 60 years do not need to be replaced after their regular expiration. In case of a loss in net anthropogenic greenhouse gas removals by sinks during the underlying project’s crediting period, ICER replacement is due in any case.

Contents

- I. Rotation forestry
- II. Restoration forestry
 - II.a Domestic species with selective cutting
 - II.b Domestic species without harvesting

Annex: Determining the occurrence of debundling

I. Rotation forestry

This category includes all types of commercial forest operations, where there is a control of species and regular harvesting, be it in clear-cut or in cohorts.

Technology/Measure

This category is likely to produce a large amount of timber over short rotation periods or high-value timber under controlled growth conditions. It may be combined with energy production, which is to be accounted for under a separate methodology.

Boundary

The physical, geographical site of the afforestation or reforestation delineates the project boundary, including project practices such as the emissions from fuel uses related to the activity.

Baseline

The baseline is the afforestation and reforestation rate (in terms of annual area) determined by the historic, actual, or economically most attractive afforestation and reforestation rates within a control group within the project region. This control group is composed by managed lands of comparable geomorphologic, soil conditions, [management] and ownership structure in a control area of five to ten times the project size, excluding other CDM afforestation or reforestation activities. The control group need not be contiguous with the project area, but could be formed by patches of land within the region where the project occurs. The determination of the area that is afforested or reforested annually in the control group is done through on-the-ground assessments. Next, the annual rate of afforestation and reforestation in the control group is used to calculate the hypothetical annual afforestation and reforestation on the project site, assuming that the same “intensity” of afforestation and reforestation takes place there. This is the “baseline” afforestation / reforestation rate that later will be subtracted from the actual reforestation rate.

NOTE: the difference from the baseline methodology for regular projects is that here only the area rate of afforestation and reforestation in the baseline are considered, but not the stock changes and non-CO₂ GHG emissions on these lands.

Paragraphs 20 (b) to (e) of Decision -/CP.9 need to be taken into due consideration.

Leakage

No leakage calculation is required.

Monitoring

The project area needs to be measured through GPS. Growth tables may be used if available for the specific biome. In the absence of specific allometric equations, a conservative estimate can be taken from literature, to be verified on every harvesting. The use of fuels and fertilizers related to the activity is monitored. The total fuel carbon content is deducted from the project benefits. The estimation of N₂O emissions resulting from synthetic and organic fertilizer application based on default IPCC emission factors is considered adequate. Soil carbon may be excluded as a pool provided the water regime is not changed as part of the activity and stumps are not removed between plantation cycles. In case soil carbon measurement is carried out, verification every ten years is sufficient.

II. Restoration forestry

Forest restoration aims to establish a semi-natural forest, including re-vegetation of non forest land, or where a forest cover was removed before December 31st, 1989. Wood production is only one purpose of this category, besides environmental services, like watershed protection, biodiversity conservation, wildlife habitats or recreational value.

II.a Domestic species with selective cutting

Technology/Measure

Carbon benefits accrue in the first years / decade of operation until maturity of the ecosystem, where carbon stocks stabilize. Low-impact management practices are a precondition for this category. If more than 50 percent of the species planted are harvested for commercial uses, the activity belongs to category I.

In some situations, native trees do not have a chance to survive in open areas. For this purpose, fast-growing pioneer species or mulch crops are planted with enough spacing

to allow understory to grow. There is no weeding in between the plantation lines. The pioneer trees are harvested once and not replanted.

Boundary

The physical, geographical site of the afforestation or reforestation delineates the project boundary, including project practices such as the emissions from fuel uses related to the activity.

Baseline

The baseline is the afforestation and reforestation rate (in terms of annual area) determined by the historic, actual, or economically most attractive afforestation and reforestation rates within a control group within the project region. This control group is composed by managed lands of comparable geomorphologic, soil conditions, [management] and ownership structure in a control area of five to ten times the project size, excluding other CDM afforestation or reforestation activities. The control group need not be contiguous with the project area, but could be formed by patches of land within the region where the project occurs. The determination of the area that is afforested or reforested annually in the control group is done through on-the-ground assessments. Next, the annual rate of afforestation and reforestation in the control group is used to calculate the hypothetical annual afforestation and reforestation on the project site, assuming that the same “intensity” of afforestation and reforestation takes place there. This is the “baseline” afforestation / reforestation rate that later will be subtracted from the actual reforestation rate.

NOTE: the difference from the baseline methodology for regular projects is that here only the area rate of afforestation and reforestation in the baseline are considered, but not the stock changes and non-CO₂ GHG emissions on these lands.

Paragraphs 20 (b) to (e) of Decision -/CP.9 need to be taken into due consideration.

Leakage

No leakage calculation is required, unless the validating DOE concludes from the stakeholder consultation that there are irrefutable indications for measurable and attributable leakage.

Monitoring

The project area needs to be measured through GPS. Monitoring shall consist of regular growth measurements on permanent sample plots. Carbon content estimations may be taken from literature if existing for the specific biome. For pioneer species, monitoring may rely on carbon expansion factors from literature if existing for the specific biome. The carbon content of trees harvested is deducted, while growth of replanted trees may be taken from expansion tables or monitored individually. For other woody vegetation, regular stock measurements on sample plots are required. The use of fuels and fertilizers related to the activity is monitored. The total fuel carbon content is deducted from the project benefits. The estimation of N₂O emissions resulting from synthetic and organic fertilizer application based on default IPCC emission factors is considered adequate. Soil carbon may be excluded as a pool provided the water regime is not changed as part of the activity and stumps are not removed. In case soil carbon measurement is carried out, verification every ten years is sufficient.

II.b Native species without harvesting

Technology/Measure

This activity is aimed at restoring a nature-near forest biome.

In some situations, native trees do not have a chance to survive in open areas. For this purpose, fast-growing pioneer species or mulch crops are planted with enough spacing to allow understory to grow. There is no weeding in between the plantation lines. The pioneer trees are harvested once and not replanted.

Boundary

The physical, geographical site of the afforestation or reforestation delineates the project boundary, including project practices such as the emissions from fuel uses related to the activity.

Baseline

The baseline is the afforestation and reforestation rate (in terms of annual area) determined by the historic, actual, or economically most attractive afforestation and reforestation rates within a control group within the project region. This control group is composed by unmanaged lands of comparable geomorphologic, soil conditions and ownership structure in a control area of five to ten times the project size, excluding areas protected by law and other CDM afforestation or reforestation activities. The control group need not be contiguous with the project area, but could be formed by patches of land within the region where the project occurs. The determination of the area that is afforested or reforested annually in the control group is done through on-the-ground assessments. Next, the annual rate of afforestation and reforestation in the control group is used to calculate the hypothetical annual afforestation and reforestation on the project site, assuming that the same “intensity” of afforestation and reforestation takes place there. This is the “baseline” afforestation / reforestation rate that later will be subtracted from the actual reforestation rate.

NOTE: the difference from the baseline methodology for regular projects is that here only the area rate of afforestation and reforestation in the baseline are considered, but not the stock changes and non-CO₂ GHG emissions on these lands.

Paragraphs 20 (b) to (e) of Decision -/CP.9 need to be taken into due consideration.

Leakage

No leakage calculation is required.

Monitoring

The project area needs to be measured through GPS. Monitoring shall consist of regular growth measurements on fixed sample plots. For pioneer species, monitoring may rely on carbon expansion factors from literature if existing for the specific biome. The carbon content of the pioneer species harvested is deducted. For other woody vegetation, carbon content estimations may be taken from literature if existing for the specific biome. In the absence of reliable estimates, regular stock measurements on sample plots are required. The use of fuels and fertilizers related to the activity is monitored. The total fuel carbon content is deducted from the project benefits. The estimation of N₂O emissions resulting from synthetic and organic fertilizer application based on default IPCC emission factors is considered adequate. Soil carbon may be excluded as a pool. In case soil carbon measurement is carried out, verification every ten years is sufficient.

III. Annex: Determining the occurrence of debundling

1. Debundling is defined as the fragmentation of a large project activity into smaller parts. A small-scale project activity that is part of one large project activity is not eligible to use the simplified modalities and procedures for small-scale CDM project activities. The full project activity or any component of the full project activity shall follow the regular CDM modalities and procedures.

2. A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- With the same project participants;
- With the same landowner;
- In the same project category and technology/measure; and
- Registered within the previous 2 years; and
- Whose project boundary is within 10 km of the project boundary of the proposed small-scale activity at the closest point.

3. If a proposed small-scale project activity is deemed to be a debundled component in accordance with paragraph 2 above, but total size of such an activity combined with the previously registered small-scale CDM project activity does not exceed the limits for small-scale CDM project activities as set in paragraph 1 (i) of the decision xx/CP.9 (SBSTA/2003/L.27), the project activity can qualify to use simplified modalities and procedures for small-scale CDM project activities. In the opposite case, the land use activities taken together cannot generate more than 8 kilotons CO₂ equivalents per year of certified emission reductions.

Small-Scale Afforestation and Reforestation Projects: Simplified Modalities and Procedures

Summary Suggestions

- 1-1** Instead of requiring removals not to exceed 8 kt CO₂ in any given year (which will not be subject to verification) the requirement should be based on the average annual removal during the verification period, i.e. 40 kt CO₂ over a five-year period.
- 1-2** It is suggested that, for small-scale projects, the lower values contained in the forest definition (0.05 ha minimum area, 10% crown cover, 2m height of trees) be adopted, irrespective of the parameter values chosen by the host country for full-scale projects. SBSTA may wish to consider lowering the minimum area below 0.05 ha.
- 1-3** In the absence of formal land property, tenure or use rights, recognized customary or access rights to the land should be a sufficient condition for low-income communities and individuals to participate in the CDM. A substantial proportion of the benefits from the CDM project activity should be assigned to these low-income communities and individuals.
- 2-1** Whereas it is important to ensure that full-scale projects are not artificially de-bundled into many small-scale projects, consolidation in the way that small-scale A&R projects are validated, monitored and verified is essential to allow them to absorb the CDM-related transaction costs. A DOE should be allowed to validate and/or verify a group of small-scale projects with a similar design and management process and which implement similar carbon sequestration activities within a particular region or across comparable regions. The CDM Executive Board may wish to consider an appropriate fee for this kind of consolidated activities.
- 2-2** It is recommended to adopt the same set of debundling criteria for A&R projects that were previously defined for energy projects, with the exception of the second criterion “in the same project category and technology/measure”. It is important to recognize individuals or communities as the project participants (not simply an aggregating/consolidating entity which assists the whole program).
- 2-3** For small-scale A&R projects, the baseline approach outlined in para 22 (a) should be accepted as sufficient and the default value for the existing or historical changes in carbon stocks should be zero. Project participants may, however, choose to follow a different approach if they wish.

* <http://carbonfinance.org/> Contact person: Kenneth Newcombe, Senior Manager, knewcombe@worldbank.org

- 2-4** Similar to the case for small-scale energy projects, small-scale A&R projects should be able to demonstrate additionality based on barriers to implementation. The fact that the afforested or reforested lands have been without forest since at least 1990 should in most cases be regarded as sufficient evidence for their existence and thus for the additionality of the proposed project.
- 2-5** In small-scale projects literature sources may be used to justify the exclusion of carbon pools providing that those sources indicate that the exclusion of the pool(s) will not result in an over-estimate of carbon credits.
- 2-6** Emissions from small-scale A&R activities, such as, for example, increases of nitrous oxide due to fertilization, should only be estimated and deducted for small-scale projects if they are relatively significant, i.e. 15% or more of the proposed net anthropogenic removals by sinks. Default methods as outlined in the IPCC Good Practice Guidance may be used for their assessment.
- 2-7** Leakage should only be assessed for small-scale A&R activities if it is estimated to be substantial, measurable and attributable to the proposed activity. “Market” leakage should be ignored.
- 2-8** Small-scale project activities should be able to revert, to the extent possible, to the use of standard allometric equations (per species), standard estimation using biomass expansion factors and other low-cost monitoring techniques, consistent with the IPCC Good Practice Guidance for the LULUCF sector, as applicable.
- 2-9** For small-scale A&R project activities, the same operational entity should be able to undertake validation, verification and certification.
- 2-10** For small-scale A&R project activities, a low fixed fee to cover administrative costs should be established. Consolidated projects would also receive a further preferential treatment regarding fees of registration. These types of activities should be exempt from payments to the Adaptation Fund.
- 2-11** At the end of the crediting period, either a one-time 30-year period or the last of three consecutive 20-year periods, tCER and ICER from small-scale A&R project activities shall continue to be valid, provided that the DOE performs the periodic verification, establishing the continued existence of the created carbon stock.

Introduction

At its ninth session held in Milan from 1st to 12th December 2003, the Conference of the Parties (COP) to the UNFCCC agreed to allow “small-scale afforestation and reforestation (A&R) project activities under the CDM”. Such projects would benefit from “simplified modalities, procedures and definitions for small-scale activities.” Parties and accredited observers to the UNFCCC such as the World Bank were invited to submit their views by 28th February 2004¹ on how to best define these modalities. They were also invited to submit, by the same date, their views on “how to facilitate the implementation” of these activities². The intention of this report is to address these two issues based on the concrete project experience of the World Bank. The report examines in three sections, first, the definition of small-scale A&R and its implications for the eligibility of projects, second, different options for simplifying modalities and procedures and, third, additional options for facilitating the implementation of such projects.

1. Definition of Small-Scale Afforestation and Reforestation

Decision 19/CP.9, para 1(i) states:

“Small-scale afforestation and reforestation project activities under the CDM” are those that are expected to result in net anthropogenic greenhouse gas removals by sinks of less than 8 kt of CO₂ per year and are developed or implemented by low-income communities and individuals as determined by the host Party. If a small-scale afforestation or reforestation project activity under the CDM results in net anthropogenic GHG removals by sinks greater than 8 kt of CO₂ per year, the excess removals will not be eligible for the issuance of tCERs or lCERs.

For illustration purposes, Table 1 indicates the area corresponding to the defined threshold of 8 kt yearly removal of CO₂ for different types of A&R activities.

Table 1: Area meeting the threshold criterion of small-scale A&R

Activity—reforest or afforest with	t CO ₂ /ha.yr	t C/ha.yr	Approx. maximum size of project (ha)
Multi-purpose tree species	3.7-11.0	1.0-3.0	700 to 2000
Native species (dry tropics)	3.7	1.0	2000
Native species (wet tropics)	16.5	4.5	500
Plantation (slow)	7.3	2.0	1,000
Plantation (fast)	36.7	10.00	200

References to rates of CO₂ removal have been taken from:

- 1) *Intergovernmental Panel on Climate Change (IPCC). 2000. Special Report on Land Use, Land-Use Change and Forestry. Cambridge University Press, UK (and citations therein).*
- 2) *J. Niles, S. Brown, J. Pretty, A. Ball and J. Fay. 2002. Potential carbon mitigation and income in developing countries from changes in use and management of agricultural and forest lands. Philosophical Transactions of the Royal Society, Series A 1797: 1621-1639 (and citations therein).*

The initial area assessments were prepared by the TNC team assisting the sessions of COP 9 of the UNFCCC, held in Milan, Italy, from 1st to 12th December 2003.

¹ See paragraph 3 of Decision 19/CP.9 on “modalities and procedures for afforestation and reforestation project activities under the Clean Development Mechanism in the first commitment period of the Kyoto Protocol

² See paragraph 4. of the aforementioned document.

While the definition of small-scale A&R is for the most part practicable and clear, **an issue requiring further clarification is how the allowed quantity of 8 kt yearly should be calculated.** Should this level of removal be calculated based on the annual changes in carbon stocks, the long-term storage average, or by applying a different calculation approach?

The exact amount of sequestered tons of CO₂ is verified by a Designated Operational Entity on a periodic basis as a precondition for the issuance of tCERs or ICERs. For regular A&R projects, the required verification frequency is 5 years and this period could even be longer for small-scale projects as a measure of simplifying procedures. In the years between periodic verifications, the achieved carbon storage is estimated by the project operator but is not officially verified and reported. It makes sense to request compliance with the criterion for a period for which official data exists, namely the entire verification period. Operatively, there is no way of ascertaining, by third parties, the annual uptake or removals at the project level, unless verification is performed every year. As the verification element in CDM A&R projects is very cost-sensitive, it makes no economic sense to perform verification every year.

Suggestion 1-1

Instead of requiring removals not to exceed 8 kt CO₂ in any given year (which will not be subject to verification) the requirement should be based on the average annual removal during the verification period, i.e. 40 kt CO₂ over a five-year period.

Another issue arising in the context of defining small-scale A&R projects is whether the **definitions of forest, afforestation and reforestation adopted at COP 7** and applied to the “large size” forestry projects in the CDM by Decision 19/CP.9, should be rigorously applied to small-scale projects or whether some special provisions could be made. The **definition of a forest** adopted by COP 7³, in particular the minimum area requirement, may prove restrictive for some community driven forestry projects, particularly if a project consists of a bundle of small, individually owned or used, patches. Given the objective to promote activities implemented by low-income communities and individuals, it is foreseeable that plantings will be in small patches that do not necessarily meet the minimum area criteria of a forest defined by the Host Country.

³ “Forest” is a minimum area of land of 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30 per cent with trees with the potential to reach a minimum height of 2-5 meters at maturity in situ. A forest may consist either of closed forest formations where trees of various stories and undergrowth cover a high proportion of the ground or open forest. Young natural stands and all plantations which have yet to reach a crown density of 10-30 per cent or tree height of 2-5 meters are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes but which are expected to revert to forest; para 1.(a), Annex of Decision 11/CP.7

Experience from the TIST (The International Small Group Tree-Planting) Program

The TIST program encourages groups of subsistence farmers in Tanzania to restore local deforested areas by paying 2 US cents for a live tree planted. The payment is irrespective of whether the trees are planted in a single grove or whether they are more scattered in the landscape, e.g. as shelterbelts. This reduces the barrier to entry in the program and widens the group of people that can benefit from the program by making it accessible to very small land-owners. It further encourages the planting of trees at spots that offer particular social and environmental benefits, e.g. streets or crop fields. Through the use of GPS technology employed by the TIST program it is possible to trace even small groves of trees accurately.

TIST provides coordination services to local communities, by providing information and by managing a series of locally trained “quantifiers” who help in training and monitoring the progress of the plantings. TIST also coordinates the quality assurance, methodologies for estimating carbon sequestration and the payments to the local communities.

Suggestion 1-2

It is suggested that, for small-scale projects, the lower values contained in the forest definition (0.05 ha minimum area, 10% crown cover, 2m height of trees) be adopted, irrespective of the parameter values chosen by the host country for full-scale projects. SBSTA may wish to consider lowering the minimum area below 0.05 ha.

In the implementation of the definition of small-scale project activities there might be some problems related to diverse structures of **land tenure and property rights** in host countries. The definition contained in the Annex to decision 19/CP.9 requests that the projects have to be “developed or implemented by low-income communities and individuals as determined by the host Party”. We will not analyze here the issue of defining low-income communities, which depends very much on the methodologies, systems and thresholds defined by host countries to establish their own “line of poverty”. The issue here is that low-income communities and individuals that work, derive their sustenance or live in some areas of land, which could eventually be included in a project activity, do not necessarily have full property rights recognized by law, to these areas of land⁴. The Decision does not address the issue of land property or use rights in this paragraph. However, in paragraph 2 (c) of Appendix B of the Annex to decision 19/CP.9, there is a request for the “*description of the legal title to the land, rights of*

⁴ In some cases, communities work and live in public or fiscal lands. Sometimes they rent land from larger landowners, for long periods of time (in this case, a formal written approval for the implementation of project activities will have to be obtained from the landowner). And sometimes their property rights are being processed, while, in some countries, legal bureaucratic procedures could take years to unfold, until the legal title to the land is signed by the high officer in charge. Some countries, like Bolivia and Paraguay, require that the legal title be signed by the President. Not less important is the case of some countries in which common titles and rights for traditional, indigenous or ancient communities are legally recognized. In some cases, only a part of the community could be participating in a project activity, but still an authorization of the community leaders would have to be obtained.

access to the sequestered carbon, current land tenure and land use". The question is the extension of the definition of the terms "*being developed and implemented by*" low-income communities. Asking these communities to have *legal property* of the lands in which projects activities are implemented might be a barrier that is impossible to overcome. It would be better if, in the absence of formal land property rights, customary land use and access rights could be demonstrated, with the obvious provisions for authorization from the landowner or the community leaders in cases in which they apply and as recognized by the host country. Another critical issue would be the distribution of benefits, that is, if the benefits actually reach the low-income communities, or if these communities are secured the "rights of access to the carbon". In any case, benefits from the CDM project activity should reach these local communities in a noticeable and timely fashion.

Suggestion 1-3

In the absence of formal land property, tenure or use rights, recognized customary or access rights to the land should be a sufficient condition for low-income communities and individuals to participate in the CDM. A substantial proportion of the benefits from the CDM project activity should be assigned to these low-income communities and individuals.

2. Simplified Modalities and Procedures

A natural starting point for the development of simplified rules for small scale A&R projects are the simplified modalities and procedures for small scale energy projects adopted by the Conference of the Parties at its eighth session (Annex II of [Decision 21/CP.8](#)). While consistency across project categories seems generally desirable, these rules should however be examined carefully regarding their applicability to small-scale A&R projects and should be modified if necessary. Some additional simplifications related to the specifics of forestry projects should also be considered.

For energy projects, the simplified modalities and procedures include the following⁵:

- a) Project activities may be bundled or portfolio bundled at the following stages in the project cycle: the project design document, validation, registration, monitoring, verification and certification. The size of the total bundle should not exceed the limits stipulated in paragraph 6 (c) of decision 17/CP.7;
- b) The requirements for the project design document are reduced;
- c) Baselines methodologies by project category are simplified to reduce the cost of developing a project baseline;
- d) Monitoring plans are simplified, including simplified monitoring requirements, to reduce monitoring costs;
- e) The same operational entity may undertake validation, and verification and certification.

⁵ Annex II of Decision 21/CP.8, accessible at <http://cdm.unfccc.int/pac/Reference/Documents/AnnexII/English/annexII.pdf>

Furthermore, small-scale energy projects benefit from a reduced project registration fee of 5,000 USD.

The simplifications adopted for energy projects are examined for A&R projects in the following paragraphs.

2.1 Consolidation of projects

The experience of the World Bank Carbon Finance Business shows that there are many opportunities to implement small-scale A&R projects that will bring significant benefits to low income communities. However, projects that deliver no more than 8kt CO₂ per year are not large enough to individually absorb the costs of the due diligence, validation and verification procedures necessary to safeguard the atmospheric, environmental and social benefits that are sought from small-scale projects in the CDM. From its past experience with the implementation of CDM projects, the World Bank Carbon Finance Business considers only projects with a minimum delivery of 30,000 tonnes annual emission reductions to be financially feasible and capable of absorbing the CDM-related transaction costs. At 8kt of emission reductions per year, the entire revenue from the sale of the carbon credits can easily be eaten up by transaction costs alone, assuming today's transaction costs and market price.⁶ It can also be expected that the amount of CO₂ reductions from small-scale energy projects will be considerably larger than the amount of CO₂ sequestered by small-scale A&R projects.⁷ In addition, tCERs and ICERs are likely to command lower market prices than CERs due to the ultimate buyer's liability to replace them with permanent credits. This further reduced the expected revenue.

The cost of maintaining the necessary safeguards can be reduced significantly if small-scale projects, carried out by separate low-income communities, but of a similar nature and in similar environmental and social conditions, can be **treated as a consolidated unit and the costs of validation, verification and monitoring can be shared between them.**

This could be achieved, for example, by a single entity (e.g. TIST in Box above) working with multiple communities to promote a particular type of A&R activity (e.g. village tree lots for multiple purposes such as shelter, fuel wood, fruits, etc). The entity would organize a monitoring system that includes appropriate visits and authentication to establish that agreed procedures are being carried out, the number, size and class of the trees and so on. The entity would also establish regional allometric equations to convert simple count and size sampling to carbon pools. This work would be largely carried out by local people under local supervision, but the whole process would be subject to independent validation and verification.

⁶ Assuming up-front transaction costs of 100,000 USD for preparation of the project documents, negotiation and validation of the project (less than the Carbon Finance Business is currently experiencing), verification costs of 20,000 USD at 7 year intervals, a price of 3 US Dollars per ton of tCERs/ICERs and a discount rate of 12%, the share of transaction costs of total revenues accrues to 95% if the project size is limited to 8,000 tons tCERs/ICERs per year.

⁷ Consider the case of a 15 MW hydropower plant with a 60% capacity factor that is feeding its output into a grid with an average emission rate of 0.6 t CO₂/MWh. The expectable annual amount of credits in this case is 47,304 t CO₂. This amount is about six times bigger than the acceptable amount for small-scale A&R projects. .

In this way, a large number of separate projects could go ahead. Each would be carried out by different low-income communities and with a large degree of autonomy as to what degree they engaged in the activity (e.g. the number of trees planted) and even which species they preferred, and what local management and cost/benefit sharing occurred. The consolidation process would allow local expertise to be developed and delivered to these communities and ensure that the expertise was of adequate quality and authority. The independent validation and verification by a DOE of the whole process ensures that the appropriate international standards are adhered to.

Suggestion 2-1

Whereas it is important to ensure that full-scale projects are not artificially de-bundled into many small-scale projects, consolidation in the way that small-scale A&R projects are validated, monitored and verified is essential to allow them to absorb the CDM-related transaction costs. A DOE should be allowed to validate and/or verify a group of small-scale projects with a similar design and management process and which implement similar carbon sequestration activities within a particular region or across comparable regions. The CDM Executive Board may wish to consider an appropriate fee for this kind of consolidated activities.

2.2 Criteria for debundling

For small-scale energy projects, the following criteria have been defined to determine the occurrence of debundling.⁸

A proposed small-scale energy project activity is deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- With the same project participants;*
- In the same project category and technology/measure;*
- Registered within the previous 2 years; and*
- Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.*

There is also a necessity to define criteria to avoid debundling criteria for large-scale A&R projects, and eliminate the possibility of these projects to present themselves as many small-scale projects. In defining the debundling criteria for A&R projects, one has to balance two competing objectives: The criteria should be rigid enough to exclude the kind of activities not intended to be eligible for simplified rules, e.g. large commercial plantations. At the same time, they should be inclusive enough to allow the bundling of various small-scale activities to projects of an economically feasible size. The following paragraphs analyze whether the debundling criteria defined for energy projects can also be adopted for A&R projects, given these objectives.

⁸ Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM project activities

It appears that the existing criteria effectively prevent the debundling of large commercial plantation projects and thereby the misuse of the small-scale category. First, the definition of small-scale A&R calls for the implementation of the project by low-income communities and individuals. Secondly, large plantation owners will not find it profitable to debundle their project area into smaller plots (each meeting the 8 kt/y sequestration threshold) if this means that they can only register plots with at least 1km distance to each other as CDM project and forego carbon credits for the areas in-between. Instead, it seems more attractive to register the whole plantation area as a regular CDM project.

With regard to the second objective, which is not to prevent the desirable bundling of small plantation plots to economically feasible project sizes, the criteria adopted for energy projects seem fairly inclusive and reasonably applicable to small-scale A&R projects as well. There may, however, be cases in which small scale plots owned and managed by different individuals are located within 1km distance of each other. It seems desirable not to exclude bundling of these projects given that the beneficiaries from the CDM activity are different. In order not to be excluded, these activities should be ascertained as being implemented by different project participants, thus not meeting the first criterion for the occurrence of debundling. The individuals owning and managing the land should be counted as project participants. This is consistent with the definition of small-scale projects, which asks for low-income individuals and communities to develop and implement the CDM project thereby implicitly recognizing individuals as project participants.⁹ An example would be the case of many small landowners developing a project and sharing the carbon benefits of their joint undertaking, under the direction, supervision or management of a centralized organization.

In that line of analysis, the second criterion for the consideration of debundling seems to have no relevance in the case of forestry projects under the CDM. The second criterion asks the project to be *in the same project category and technology/measure*. Projects can only be in the categories of afforestation and reforestation, and the technology applied would evidently be the plantation of trees¹⁰. Generally speaking, the analysis could not go beyond that ascertainment of facts, and not, as in the case of energy projects, be allocated to various categories and technologies. Hence, *all* projects, bundled or de-bundled from a larger project activity, will meet the criterion of being in the same project category and of using the same technology, in a general way. This means that all of these projects will be using plantation techniques for the removal of carbon from the atmosphere, as a common technology, unless the act of planting is conventionally divided into several technologies, for the purpose of categorization.

Suggestion 2-2

It is recommended to adopt the same set of debundling criteria for A&R projects that were previously defined for energy projects, with the exception of the second criterion “in the

⁹ However, an inconsistency may arise with respect to the definition of project participants in the “Glossary of terms used in the CDM PDD” adopted at the 7th meeting of the CDM Executive Board. There, project participants are defined as either a Party or a private and/or public entity authorized by a Party to participate in CDM activities, which takes decisions on the allocation of CERs from the project activity. In the case of bundled small-scale activities it is foreseeable that an aggregating entity instead of individual land-owners will be authorized by the Party and hold the responsibility over the allocation of tCERs and ICERs.

¹⁰ Unless the Executive Board adopts definitions related to the specific purposes of plantations, in which case this problem has to be revisited.

same project category and technology/measure”. It is important to recognize individuals or communities as the project participants (not simply an aggregating/consolidating entity which assists the whole program).

2.3 Simplified Project Design Document (PDD)

It is advisable to simplify the requirements of the Project Design Document for small-scale A&R projects, as is the case for small-scale energy projects. Specifics of the simplified template, however, are not suggested here as they critically depend on the prior adoption of other simplified rules.

2.4 Simplified methodologies

2.4.1 Baseline methodologies

Decision 19/CP.9 para 22 lists three possible baseline approaches for A&R projects:

- (a) Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary;*
- (b) Changes in carbon stocks in the carbon pools within the project boundary from a land use that represents an economically attractive course of action, taking into account barriers to investment;*
- (c) Changes in carbon stocks in the pools within the project boundary from the most likely land use at the time the project starts.*

For the purpose of developing a simplified and widely applicable baseline methodology, the approach listed in 22 (a) seems to be most appropriate since the existing or historical trends can be easily assessed by project proponents for all types of small-scale projects.

In any case, the distinction between baseline methodological approaches listed in (b) and (c) is not so clear, for the time being. One wonders what would be the practical difference between “*a land use that represents an economically attractive course of action*” taking into account any barriers to investment and “*the most likely land use at the time the project starts*”. Coming to make methodological differentiations among these two approaches, this could take complex modeling tools, even for the determination of a methodology using the approach listed in (b), resulting in costs that may be unbearable for small-scale activities.

Carbon stocks in the carbon pools within the project boundary can be increasing, decreasing or can remain constant. Since the definition of afforestation and reforestation requires the project area under consideration to be without forest since at least 1990, the most likely situation is that

no changes in carbon stocks are occurring before the onset of the project. Prevalence of the existing carbon stocks appears to be a reasonable baseline.

Suggestion 2-3

For small-scale A&R projects, the baseline approach outlined in para 22 (a) should be accepted as sufficient and the default value for the existing or historical changes in carbon stocks should be zero. Project participants may, however, choose to follow a different approach if they wish.

2.4.2 *Additionality*

Small-scale energy projects have to prove additionality by demonstrating the existence of one or more barriers that hinder the implementation of the project. In the case of small-scale A&R projects, barriers such as lack of knowledge or information, limited access to capital, poor land management and prevailing practices are likely to play a crucial role and a demonstration of additionality based on an analysis of these barriers would seem conclusive. However, one may argue that a demonstration of barriers is already implicit in the definition of afforestation and reforestation. The fact that an area has been without forest since at least 1990 gives a very strong indication for prevailing economic or social barriers impeding its afforestation and/or natural conditions being such that no natural regrowth occurs. Thus, one may think of the definition of afforestation and reforestation as a built-in additionality test. In the definition of small-scale A&R projects, an additional barrier is introduced by the fact that a project is to be implemented by low-income communities or individuals. For small-scale projects it seems reasonable to waive the requirement of a further proof of their additionality given that the risk of crediting business-as-usual projects appears to be very low.

Suggestion 2-4

Similar to the case for small-scale energy projects, small-scale A&R projects should be able to demonstrate additionality based on barriers to implementation. The fact that the afforested or reforested lands have been without forest since at least 1990 should in most cases be regarded as sufficient evidence for their existence and thus for the additionality of the proposed project.

2.4.3 *Carbon Pools*

Decision 19/CP.9 recognizes above-ground biomass, below-ground biomass, litter, dead wood and soil organic carbon as carbon pools. The “actual net GHG removals by sinks” are to be determined as the sum of verifiable changes in the carbon pools minus any increases in emissions due to the project activity. This means that the project proponent needs to take into account verifiable changes in all of the above-mentioned carbon pools plus any other emissions which can be linked to the project activity (para 1.[d]). Project participants are allowed not to include in their calculations one or more carbon pools, if “*transparent and verifiable information is*

provided that the choice will not increase the accounting of anthropogenic gas removals by sinks”¹¹.

¹¹ Paragraph 21 of the Annex of Decision 19/CP.9

In general, the greatest changes in carbon stocks from A&R activities occur in above-ground tree and below-ground biomass (roots). While methods to determine the carbon stock changes in trees are well-established and easy to apply, estimation of changes in other carbon pools prove to be more difficult and may involve the use of sophisticated equipment and laboratory analysis. Lack of measuring and monitoring capacities should not result in a barrier to the implementation of small-scale projects. The monitoring requirements for small-scale projects should be such that even less resourceful project proponents are able to implement them. One option is for the CDM EB to allow the small-scale projects to use literature sources to justify the exclusion of carbon pools providing that those sources indicate that the exclusion of the pool(s) will not result in an over-estimate of carbon credits.

Suggestion 2-5

In small-scale projects literature sources may be used to justify the exclusion of carbon pools providing that those sources indicate that the exclusion of the pool(s) will not result in an over-estimate of carbon credits.

2.4.4 Emissions from A&R activities

Emissions that may increase as a result of A&R activities are, in particular, CO₂ from transportation or burning of biomass during site preparation, N₂O from fertilizer use and planting of leguminous trees, as well as methane emission due to changes in the groundwater table. As a measure of simplification, small-scale A&R projects should only have to account for these emissions if they are considered significant, i.e. represent 15% or more of the total expected removals by sinks.

Suggestion 2-6

Emissions from small-scale A&R activities, such as, for example, increases of nitrous oxide due to fertilization, should only be estimated and deducted for small-scale projects if they are relatively significant, i.e. 15% or more of the proposed net anthropogenic removals by sinks. Default methods as outlined in the IPCC Good Practice Guidance may be used for their assessment.

2.4.5 Project Boundary and Leakage

Leakage is a concern in forestry related activities as other uses of the afforested land such as, e.g., cattle grazing or firewood harvesting, may simply be shifted to forested areas outside the project boundary where they lead to losses of biomass and sequestered carbon. Due to the environmental

damage this may cause, especially if activities are shifted to environmentally sensitive areas such as primary forests, project proponents should be given the incentive to prevent leakage. This incentive is best established in paragraph 1.(f) of Decision 19/CP.9 by requiring leakage to be

taken into account in the assessment of net greenhouse gas removals by sinks. Therefore, leakage should be estimated and deducted from net anthropogenic removals by sinks in the project area, if it is found to be clearly significant, its level is feasible to be assessed, and it is directly attributable to the small-scale A&R project activity

Besides physical leakage, projects may exert market-induced leakage if their implementation impacts the price of wood and thereby affects the behavior of other actors in the market. In the case of small-scale projects, however, it seems reasonable to disregard market leakage, given that their impact on market prices appears negligible.

Suggestion 2-7

Leakage should only be assessed for small-scale A&R activities if it is estimated to be substantial, measurable and attributable to the proposed activity. “Market” leakage should be ignored.

2.4.6 Monitoring

Monitoring costs could be reduced if small-scale projects are allowed, to the extent possible, to revert to standard allometric equations (per species), standard biomass-conversion equations and other monitoring techniques, that facilitate the estimation of carbon stock changes at low cost. An example is the estimation of the carbon sequestration in roots based on an average ratio between aboveground and belowground biomass. To lower monitoring costs, small-scale projects should be allowed to use the lower tier methods of the IPCC Good Practice Guidance for the LULUCF sector to estimate the sequestration of each carbon pool.

Suggestion 2-8

Small-scale project activities should be able to revert, to the extent possible, to the use of standard allometric equations (per species), standard estimation using biomass expansion factors and other low-cost monitoring techniques, consistent with the IPCC Good Practice Guidance for the LULUCF sector, as applicable.

2.5 Single Designated Operational Entity (DOE)

In the case of small-scale project activities for the reduction of emissions, Annex II of Decision 21/CP.8, in its paragraph 20, clearly determines that “*A single designated operational entity may perform validation as well as verification and certification for a small-scale CDM project activity or bundled small-scale CDM project activities*”. With this legal antecedent, it would be

logical to establish an equivalent guideline for small – scale project activities in the LULUCF sector.

Suggestion 2-9

For small-scale A&R project activities, the same operational entity should be able to undertake validation, verification and certification.

2.6 Share of proceeds

Again, in the case of small-scale project activities, Annex II of Decision 21/CP.8, in its paragraph 21, establishes that “*The Executive Board, in proposing the share of proceeds to cover administrative expenses and registration fees to recover any project related expenses, may consider proposing lower fees for small-scale CDM project activities*”. The current procedure for energy projects establishes a fixed lower upfront fee for small-scale project activities in the energy sector, which has to be reimbursed thereafter. Normally, the portion of the “share of proceeds” destined to cover administrative costs should be a percentage of the total CERs accrued by the project activity. Given that small-scale project activities in the LULUCF sector are especially projected to be “developed or implemented” by low-income communities or individuals, it would make economical sense to establish a fixed fee to cover the administrative costs of these project activities, instead of a proportion of the CER earned, which could go to a maximum of, e.g., US\$ 5,000.

For regular size projects, 2% of the CER should go to the Adaptation Fund. However, the text of Decision 17/CP.7 has also waived this obligation for the LDC, in its paragraph 15 (b), which reads “*clean development mechanism project activities in least developed country Parties shall be exempt from the share of proceeds to assist with the costs of adaptation*”. Since, as mentioned in the preceding paragraph, the expected beneficiaries/implementers of small-scale LULUCF project activities are low-income communities or individuals, it follows logically that the same exact principle should apply to these project participants.

Suggestion 2-10

For small-scale A&R project activities, a low fixed fee to cover administrative costs should be established. Consolidated projects would also receive a further preferential treatment regarding fees of registration. These types of activities should be exempt from payments to the Adaptation Fund.

2.7 Replacement of temporary credits

For the case of small-scale LULUCF project activities in the CDM, it is important to ensure the maximum possible income stream to the project participants from the sale of CERs and to remove any incentives to release the sequestered carbon at the end of a crediting period. The following procedures could apply for this category of project activities:

- a) In the case of a loss in carbon stock the project participants will have to replace the corresponding amounts of tCER or lCER with the adequate units, as established in Decision 19/CP.9.

- b) At the end of the crediting period, either if the project activity completes a 30-year implementation lifetime or three consecutive 20-year terms, tCER or ICER will continue to be valid until the project participants decide to cease to perform the verification by a DOE at which time they will have to replace the tCER or ICER with the adequate units, as established in Decision 19/CP.9. However, no further ICER or tCER will be issued for the same project activity.

These procedures also provide an incentive for the project proponent to maintain forests after the end of the crediting period.

Suggestion 2-11

At the end of the crediting period, either a one-time 30-year period or the last of three consecutive 20-year periods, tCER and ICER from small-scale A&R project activities shall continue to be valid, provided that the DOE performs the periodic verification, establishing the continued existence of the created carbon stock.
