

Table I Preliminary data and information provided by Annex I Party on carbon stock changes and areas related to article 3.3 activities

Article 3.3 Country- specific data	Relevant Definition	Accounting framework	a_i (ha)	ΔC_i (t C)	a_{ii} (ha)	ΔC_{ii} (t C)	a_{cp} (ha)	ΔC_{cp} (t C)	Methods and approaches	Data sources, data quality, and uncertainty (e.g. ranges)	Other information relevant to decision-making
"Afforestation & Reforestation"	IPCC	Activity-based							* Estimated with the FAO activity-based accounting approach. * Only above- and below-ground biomass accounted as carbon stock. Litter, humus and soil carbon not included as carbon stock.	* Areas afforested and reforested based on historical data and forecasting. * Estimated standing tree volume in each period using yield tables, then converted to carbon stock by applying coefficients.	* Activity-based accounting approach recommended owing to high uncertainties in estimating soil carbon. * Is rational to estimate carbon stock from standing tree volume.
		Land-based									
Afforestation	FAO	Activity-based	35,000	50,000	58,000	294,000	134,000	1,368,000			
		Land-based									
Reforestation	FAO	Activity-based	316,000	491,000	459,000	2,736,000	749,000	9,102,000			
		Land-based I									
		Land-based II									
"Afforestation & Reforestation"	Other	Activity-based									
		Land-based									
Deforestation	IPCC/FAO	Activity-based	-107,000	-5,956,000	-148,000	-8,461,000	-319,000	-5,104,000			
		Land-based									
	Other	Activity-based									
		Land-based									

a_i : Area (ha) afforested and reforested, or deforested since 1990 up to 1995 or possibly an earlier specific year.
 ΔC_i : Carbon stock change (t C) since 1990 up to the same year as used in a_i on land afforested, reforested, and deforested.
 a_{ii} : Area (ha) afforested and reforested, or deforested since 1990 up to 1999 or an earlier specific year.
 ΔC_{ii} : Carbon stock change (t C) since 1990 up to the same year as used in a_{ii} on land afforested, reforested, and deforested.
 a_{cp} : Projected area (ha) afforested and reforested, or deforested since 1990 up to 2012.
 ΔC_{cp} : Projected carbon stock change (t C) over the first commitment period on land afforested, reforested, and deforested since 1990 up to 2012.

EXPLANATORY TEXT (Table I)

1. Definitions and accounting

a) Forest

"Land with trees and/or bamboo growing in a group, and/or land provided for collective vegetation of trees and/or bamboo (Article 2.1, the Japanese Forest Law).

b) Afforestation, reforestation, and deforestation

"Afforestation" : "Artificial establishment of forest on lands that were not historically forest"

"Reforestation": "Artificial establishment of forest on lands that had them previously (including regeneration post harvest)"

"Deforestation": "Conversion of forest to non-forest."

c) Accounting approaches

The activity-based accounting approach is applied for estimation, and carbon pools of above- and below-ground biomass are considered.

Carbon stock changes are estimated as follows, using yield tables to estimate stem volume as well as its change for a given period.

i) Total stem volume is estimated with afforested areas by planting years, and stem volumes per hectare for the corresponding forest ages derived from the yield table, which was applied to design Basic Plan on Forest Resources.

$T_i = \sum (A_{ij} \times V_j)$, where

T_i : total stem volume of the year "i" of the forest stand established since 1990.

A_{ij} : area of the part of the forest at age "j" in the year "i".

V_j : stem volume of forest at age "j" according to the yield table.

ii) The following formula and coefficients to convert stem volume to carbon weight are used.

Carbon Weight = Stem Volume \times Expansion Coefficient \times Wood Density \times Carbon Content, where

Expansion Coefficient : 1.7 ; coefficient to convert stem volume to above- and below-ground biomass, including branches and roots

Wood Density : 0.4 ; coefficient to convert volume to weight

Carbon Content : 0.5 ; fraction of carbon content in a tree

2. Carbon pools included (e.g. above-ground biomass, litter and woody debris, below-ground biomass, soil carbon, and harvested materials)

In this estimation, above- and below-ground biomass are considered.

In estimating the carbon stock, it is considered efficient and pertinent to estimate it based on stem volume, readily available from conventional forest surveys which have been widely and routinely implemented.

As stem volume correlates closely with volumes of branches and roots, it was concluded that carbon stock covering above- and below-ground biomass can be derived from stem volume.

3. Stratification (e.g. biomes and regions)

Stem volume is derived from yield table prepared by regions, major tree species and site quality.

4. Methodologies and data

a) Data sources

"Forestry Statistics" and "Basic Plan on Forest Resources" are referred to as information on forest resources, and the "White Paper on Land Use" and "National Land Use Plan" as information on land use as source materials.

b) Sampling techniques

Complete enumeration has been implemented for the survey of the current status of forest resources, which forms the base of estimation for sequestration, .

c) Models and key parameters

As described above, stem volume with expansion coefficients, and above- and below-ground biomass are estimated.

d) Uncertainties

Uncertainty is considered relatively low since complete enumeration was implemented for the Survey of the Current Status of Forest Resources, which forms the base of estimation for sequestration.

5. Treatment of non-CO₂ greenhouse gases.

Emissions of greenhouse gases from forests, other than CO₂, are not considered.

6. Methods and key assumptions in projections for the first commitment period (2008–2012) and discussion, if possible, of trends beyond the first commitment period.

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Future areas for planting, i.e. afforestation and reforestation, are estimated on the basis of historical data, and stem volume is estimated with yield table.

Future conversion area of forest lands is estimated based on conversion area data in National Land Use Plan.