

**Annex 23****REVISION TO THE GUIDELINES ON CONSERVATIVE CHOICE AND APPLICATION  
OF DEFAULT DATA IN ESTIMATION OF THE NET ANTHROPOGENIC GHG  
REMOVALS BY SINKS****(Version 02)****I. SCOPE**

1. The guidelines provided in this document should be used to ensure that application of default data in estimation of the net anthropogenic GHG removals by sinks results in conservative, but not overly conservative, estimates.

**II. PROCEDURE****Sources of Default Data**

2. When using default data to estimate the net anthropogenic GHG removals by sinks, the following guidance should be applied when selecting sources of data:
- If an approved A/R CDM methodology requires application of a default value and provides its numerical value then the value shall be considered as the conservative one;
  - Values should if possible be species-specific, with selection from the following data sources (given in order of priority; highest first):
    - Local peer-reviewed studies under similar climate/soil conditions—provided the smaller datasets typical of local studies are considered sufficiently reliable; or
    - Regional or national forest or GHG inventory for the same ecological zone (that is, the same broad climate zone, and similar soil fertility and depth); or
    - International or global forest or GHG inventory, including IPCC literature, for the same ecological zone.
  - If species-specific default data are not available, data may be selected from studies in the same ecological zone for the same *genus*<sup>1</sup> and regarded as conservative. Default data may also be selected from studies in the same ecological zone for the same *family*, provided the applicability of the data is checked (see Section 3.c. (i), below). The priority for selection of default data sources should be that given in the bullet point above.

**Conservative Choice of Default Data**

3. The guidelines below should be followed to ensure that conservative choice of default data occurs:
- (a) If default data are available for conditions that are similar to the project (same vegetation *genus*; same ecological zone), then mean values of the data are considered as conservative;
  - (b) In all other circumstances;

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<sup>1</sup> See, for example, <[http://www.treecanada.ca/trees/genus.php?sort=en\\_genus&lang=en](http://www.treecanada.ca/trees/genus.php?sort=en_genus&lang=en)>.



- (i) The mean values of default data may be considered as conservative if they have been checked against field measurements and the mean measured data<sup>2</sup> fall within  $\pm 10\%$  of the mean default value;
- (ii) If the applicability of mean values of default data is not to be verified by field measurement, conservative values of default data should be assessed using the approach provided below:
  - If standard deviation is quoted then the conservative value is defined as being one standard deviation above (or below, as appropriate) mean values;
  - If a standard error and the number of samples are quoted then calculate the standard deviation by multiplying the standard error by the square root of the number of samples. The conservative value is defined as being one standard deviation above (or below, as appropriate) mean values;
  - If a range of data is quoted, but without a standard deviation, then assume the range represents the upper and lower 95% confidence limits of a normally distributed dataset. In this case the conservative value is that which falls half way between the mean and the limits of the range;
  - If none of the above are provided, project participants (PPs) shall use estimates of standard deviations provided in the paragraph: Nominal Values for Standard Deviations of Key Default Variables (below) and assess the conservative value as being one standard deviation above (or below, as appropriate) mean values.

#### **Definition of Conservative Way of Application of Biomass-related Default Data**

4. Conservative application of default data is followed when a default value used in calculations has its conservative value under the following conditions:
  - (a) If two or more default values are multiplied at any step of calculations in estimation of the net anthropogenic greenhouse gas removals by sinks then the default value which is characterized by the largest standard deviation shall be at its conservative value while the remaining default values shall be using their mean values;
  - (b) A default value increased by a constant number shall be treated as the same default value with respect to the conservative application of default data (e.g., R and 1+R where R is a default value for root/shoot ratio shall both be treated as root/shoot ratio with respect to conservative application of default data).

#### **Conservative estimation of the net anthropogenic GHG removals by sinks using the default data**

5. Conservative estimation of net anthropogenic GHG removals by sinks using the default data occurs when:
  - Increases in the carbon stocks in the carbon pools within the project boundary that would have occurred in the absence of the afforestation or reforestation project activity

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<sup>2</sup> A sample of at least 10 measurements must be used.



under the CDM are estimated using the default data in the conservative way while all decreases in them are estimated using mean values of the default values involved;

- The actual net greenhouse gas removals by sinks is estimated using mean values for all default values involved;
- The leakage is estimated using the default data in the conservative way.

### Nominal Values for Standard Deviations of Key Default Variables

6. If only mean data are quoted in reports or studies considered to otherwise contain credible data, or if the datasets are small and so it is considered the range of values may not be an adequate estimate of the standard deviation of the particular parameter, the following nominal values should be assumed for standard deviations, expressed here as percentages of the mean (as estimated from the range in IPCC data for these parameters<sup>3</sup>):

- Above-ground volume increment of existing woody vegetation: 50%;
- Above-ground biomass increment of existing woody vegetation: 50%;
- Above-ground biomass of existing woody vegetation: 50%;
- *BEFs* of existing woody vegetation based on biomass stocks: -40% below the mean to +100% above;
- *BEFs* of existing woody vegetation based on increment in biomass stocks: 10%;
- Root:shoot ratios for use in estimation of below-ground biomass: 35% for both trees and shrubs.

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### History of the document

Version	Date	Nature of revision(s)
02	EB 50, Annex 23 16 October 2009	Two approaches are added: (i) Definition of Conservative Way of Application of Biomass-related Default Data, (ii) Conservative estimation of the net anthropogenic GHG removals by sinks using the default data.
01	EB 46, Annex 17 25 March 2009	Initial adoption.
<b>Decision Class:</b> Regulatory <b>Document Type:</b> Guideline <b>Business Function:</b> Methodology		

<sup>3</sup> IPCC default values for  $G_{AB,j,t}$ ,  $I_{V,j,t}$ ,  $R_j$ ,  $BEF_{1,j}$  and  $BEF_{2,j}$  can be found in the *Good Practice Guidance for Land Use, Land-use Change and Forestry*. (GPG-LULUCF; IPCC 2003), with values also available in the *Guidelines for National Greenhouse Gas Inventory. Volume 4; Agriculture, Forestry and Other Land (AFOLU Guidelines)*; IPCC 2006). See Tables 3A.1.5 to 3A.1.10 of the GPG-LULUCF (IPCC 2003), or Tables 4.4, 4.5, 4.9–4.11, 4.13, and 4.14 of the AFOLU Guidelines (IPCC 2006).