GLOBAL CARBON COUNCIL

Driving Climate Actions

Tool for calculation of the number of sample plots within NBS project activities

GCCTA007
V1.0 - 2024

www.globalcarboncouncil.com

CONTENTS

1. GCC NBS Methodologies and Tools

1. Global Carbon Council (GCC) is MENA region's first and only voluntary carbon offsetting and sustainable development program that contributes to a vision of sustainable and low carbon economy of the region and catalyses climate actions on the ground. Refer to www.globalcarboncouncil.com for details.

2. GCC Nature-based Solutions (NBS) methodologies and tools allow for conservative estimation of GHG emission reductions and changes in carbon stocks resulting from the NBS project activity.

2. Source of this Tool

3. This tool follows the approach contained in the CDM A/R Tool "Calculation of the number of sample plots for measurements within a A/R CDM project activities" Version 02.1.0 and replaces it for use in Nature-based Solution (NBS) projects seeking registration/registered under the GCC.

3. Scope, Applicability, and Entry into force

3.1. Scope

4. This tool calculates the number of sample plots needed to reach a targeted precision in estimation of biomass stocks from sampling-based measurements in baseline and project scenarios of a GCC NBS project activity.

3.2. Applicability Conditions

5. This tool has no internal applicability conditions. However, any methodology implementing the tool shall define the targeted precision for biomass stocks to be estimated.

3.3. Entry into force

6. The date of entry into force of this version of the methodology is DD MM 2024.

4. Definitions

7. The definitions contained in the following documents shall apply:[1]

   (a) GCC Program Definitions;

   (b) IPCC (2006). Guidelines for National Greenhouse Gas Inventories.

5. Assumptions

8. This tool applies the following assumptions:

   (a) The approximate value of the area of each stratum within the project boundary is known;

[1] These documents are available online at the following URLs:
(a) <http://www.globalcarboncouncil.com/resource-centre/>;
(b) <https://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>.

(b) Variability of biomass stock is expressed as the standard deviation of biomass stock in the stratum. The approximate value of the standard deviation of biomass stock in each stratum at the time of estimation is either known from existing data applicable to the project area or existing data related to a similar area, or is estimated on the basis of a preliminary sample or an expert judgement.

(c) All parameters used in calculation of plot level biomass stock (e.g. biomass expansion factors, root-shoot ratios) are fixed constants.

(d) All models used for calculation of plot level biomass stock (e.g. volume tables or equations, allometric equations) are exact.

6. Parameters determined by the tool

9. This tool provides procedures to determine the parameters listed in Table 1.

Table 1. Parameters determined by the tool

Parameter	Unit	Description
n	dimensionless	Number of sample plots required for estimation of biomass stocks within the project boundary
n_i	dimensionless	Number of sample plots allocated to stratum i for estimation of biomass stocks within the project boundary

7. Stratification

10. The project area is stratified based on the variability of the biomass stock being estimated, and approximate area of each stratum is determined. If the biomass stock being estimated is sum of biomass stocks in more than one pool, then stratification is carried out on the basis of the variability of the biomass stock of the dominant pool (i.e. the pool containing the largest amount of biomass stock).

8. Calculation of the number of sample plots

11. Number of sample plots required for the estimation of biomass stocks within the project boundary is calculated using the iterative approach provided in the CDM A/R Tool "Calculation of the number of sample plots for measurements within a A/R CDM project activities" Version 02.1.0. The approach is implemented in the MS Excel file annexed to this document.

9. Data and parameters used in the tool

12. To apply this tool, the following data shall be known from existing data applicable to the project area or existing data related to a similar area otherwise the data can be estimated on the basis of a preliminary sample or an expert judgement:

(a) Approximate area of each stratum;

(b) Approximate value of the standard deviation of biomass stock in each stratum.

9.1. Monitoring of Tool Implementation

13. The Project Submission Form (PSF) shall provide information allowing to determine that the commonly accepted methods for the project area/stratum area measurement have been implemented, followed by a concise description of how an approximate value of the standard deviation of biomass was obtained for each stratum.

DOCUMENT HISTORY		
Version	**Date**	**Comment**
V 1.0	06/11/2024	Initial adoption by GCC Regulatory Committee based on following: i. Consideration by individual Regulatory Committee member, followed by evaluation of entire Regulatory Committee. ii. 30 days global stakeholder consultation taken place between 06/11/2024 to 05/12/2024.