



environment, forestry & fisheries

Department:
Environment, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Box C.11. Annual change in Carbon stocks in SOC due to accumulation of SOC: Forest management

Sheet Land Stock-Difference Method in the MRV tool; column ΔC SOC

The default Tier 1 method applied in the MRV tool uses a steady state stock of C in SOC by ha in Forest Management areas. However, if facility-specific data is available i.e. a Tier 2 or 3 method is applied, then SOC from Forest Management areas can be estimated.

To estimate the stock change for 10 ha area *Eucalyptus grandis* which has been under forest management for 5 years, it is assumed that:

C in SOC in forest reached equilibrium at 48 t C ha⁻¹ after 15 years

C in SOC in non-forest use: NA (not applicable)

Then, $\Delta C_{SOC} = (48 \text{ t C ha}^{-1} / 15 \text{ years}) \times 10 \text{ ha} = 32 \text{ t C yr}^{-1}$

Note: the values used in this example do not represent real data.

Accounting of Annual Change in Plantation Carbon Stocks, ΔC

All emissions and removals from annual changes in plantation carbon stocks that are reported are accounted within the MRV Tool. **Refer to the Accounting Rulebook** (see Chapter B, section B.2) for further information.

C.3.3. Harvested Wood Products, S_{HWP}

C.3.3.1. The mass balance approach

Calculation method in the MRV tool

A mass balance approach (Ado_Paku, 2015) can be used to determine the mass of carbon in the HWP emanating from a mill as follows:

$$mC_{HWP} = mC_{RM} - mC_E - mC_{SW} - mC_{LW} \quad \text{Equation C.9}$$

Where:

- mC_{HWP} = mass of biogenic carbon in HWP leaving the mill. This should include pulp, paper, solid wood products, saw milling waste sold for pulping if applicable, fines or lignin by products, t C
- mC_{RM} = mass of biogenic carbon entering the mill in the timber raw materials, t C

Biogenic carbon mC_{RM} can be calculated based on the mass of timber processed and default conversion. It also included the mass of recycled wood/pulp.

$$mC_{RM} = V_{(OB)} \times D \times CF + mC_{recycled} \quad \text{Equation C.10}$$