

# GSEFM Stem Volume, Biomass and Carbon Statistics: Product Sheet

## Product Description:

Volume, biomass and carbon stock estimates in table format according to FCCC and Kyoto reporting requirements.

The product 'National and Regional Volume, Biomass and Carbon Change Statistics utilizing NFI data, GSE-FM-CS-1-6' is a product designed for central Europe in order to obtain the information required for FCCC- and Kyoto reporting in the sector of LULUCF.

Parameters available:

## Area Change

Specification	Area Change Estimates for separate classes (forest land, cropland, grassland, wetland, settlements, other land)
Assessment / Data Source	Combination of multi-temporal EO-data and in-situ data from sample survey
Required reliability	Total area per class $\pm 3\%$

## Forest for KP reporting

Specification	Combination of EO-data and in-situ data from sample survey
Assessment / Data Source	Combination of multi-temporal EO-data and in-situ data from sample survey
Required reliability	Total area per class $\pm 1\%$

## Change of stem volume

Specification	<ul style="list-style-type: none"> <li>- Change of single tree stem volume estimated by species specific volume functions</li> <li>- Aggregated tree volumes as average change per unit area (<math>m^3/ha</math>) and total volume (<math>m^3</math>)</li> </ul>
Assessment / Data Source	<ul style="list-style-type: none"> <li>- In-situ measured tree variables (e.g. diameters, tree height) on sample plots at successive occasions</li> <li>- Forest stratification derived from EO-data</li> </ul>
Required reliability	Total volume $\pm 1\%$ , Volume per unit area $\pm 1\%$

### Change of woody biomass

Specification	<ul style="list-style-type: none"> <li>- Includes change of above and below ground woody biomass</li> <li>- Conversion of single tree stem volumes by biomass expansion factors (BEF), or</li> <li>- Single tree biomass estimated by species specific volume functions</li> <li>- Aggregated change of woody biomass as average per unit area (t/ha) and total volume (t)</li> </ul>
Assessment / Data Source	<ul style="list-style-type: none"> <li>- Conversion factors for tree volume, or</li> <li>- In-situ measured tree variables (e.g. diameters, tree height) on sample plots</li> <li>- Forest stratification derived from EO-data</li> </ul>
Required reliability	<p>Total biomass <math>\pm</math> 5 %            Biomass per unit area <math>\pm</math> 5 %</p>

### Change of carbon stock

Specification	<ul style="list-style-type: none"> <li>- Includes change of carbon content of woody biomass, carbon content of dead wood, and soil carbon</li> <li>- Obtained by conversion factor applied to woody biomass assessed at successive occasions</li> </ul>
Assessment / Data Source	<ul style="list-style-type: none"> <li>- In-situ by sample survey and models</li> <li>- Forest stratification derived from EO-data</li> </ul>
Required reliability	<p>Total carbon stock <math>\pm</math> 10 %            Carbon Stock per unit area <math>\pm</math> 10 %</p>