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Soil carbon monitoring using surveys and modelling

General description and application
in the United Republic of Tanzania

This publication describes the application of survey- and modelling-based methods for monitoring soil organic carbon stock and its changes on a national scale. The report presents i) a design of the first inventory of soil organic carbon, including discussion on factors that affect the reliability of carbon stock estimates; and ii) a design of a modelling-based approach, including links to national forest inventory data and discussion on alternative soil organic carbon models. Both approaches can provide necessary information on soil carbon changes for a national greenhouse gas (GHG) inventory.

Forest soils constitute a large pool of carbon and releases of carbon from this pool, caused by anthropogenic activities such as deforestation and forest degradation, may significantly increase the concentration of GHGs in the atmosphere. Therefore, estimating and reducing emissions from these activities have become timely issues. Currently, reliable estimates of soil organic carbon stock and stock changes are needed for REDD (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries) and GHG reporting under the United Nations Framework Convention on Climate Change (UNFCCC).

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