

World Conference on

Climate Change

October 24-26, 2016 Valencia, Spain

Soil organic carbon in forest and non-forest land in Lithuania

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The Land Use Land Use Change and Forestry (LULUCF) reporting under UNFCCC require specific carbon values in forest floor and mineral or peat topsoil in the land of different use. By the support of Norwegian Financial Mechanisms for Lithuania “Norway grants” we have estimated soil organic carbon stocks in forest, arable land and grassland. The study mainly covered not fertile *Arenosols* and, in opposite, fertile *Luvisols* and *Retisols*. The study was performed in 2015 at National Forest Inventory (NFI) permanent sample plots grid (approximately 9x9 km, in total 764 plots) that covers the whole territory of Lithuania. Forest floor samples were collected for the mass and carbon content, where as mineral top soil samples (from 0-10 cm and 10-30 cm surface layers) - for bulk density and carbon stock determination. It was found that in fertile soils the carbon stocks were higher in forest land as compared with arable land, while in not fertile soil – vice versa. Our findings confirmed that land use could be important factor for the estimation of soil organic carbon stocks in different soil groups.

Biography

Povilas Zemaitis is a researcher in Institute of Forestry, Lithuanian Research Centre for Agriculture and Forestry, Department of Ecology. He has completed PhD studies in 2014. In his PhD thesis he was focused on climate change impact on Norway spruce health and vulnerability. Now his research interest is forest ecology, forest health, climate change impact on forest ecosystems. Currently he is working on carbon stocks assessment in forest and non-forest land in soil; the impact of afforestation on soil organic carbon stock.

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