

Title	Impact of Land use Change on Soil Carbon Stocks and Livelihoods of Communities on MT. Elgon Region, Uganda
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Purpose	To provide a better understanding of how land use change affects livelihoods, soil organic carbon pools and fluxes to allow for effective land use policy that promotes carbon sequestration in soils to prevent increased global warming.
Project Summary	Soil is one of the key support systems responsible for the performance of major ecological functions such as biomass production in agriculture & forestry; storing, filtering & transforming nutrient substances & water; as well as altering biodiversity, physical and cultural environment for humans and human activities (Vladimir et al., 2008). The world's soils store more carbon (1500gt) than is present in biomass (560 gt) and in the atmosphere (720 gt). Carbon in terrestrial ecosystems, both tropical and temperate, is stored as soil organic matter (SOM) (Laura et al. 2003). In natural forests, land use changes such as forest clearing, cultivation and pasture introduction are known to result in changes in soil carbon content (Houghton, 1994), yet the sign and magnitude of these changes varies with land cover and land management (Van et al. 2004). Agricultural cultivation is known to decrease carbon storage (Yoneyama et al. 2001), and result in a net flux of carbon to the atmosphere (Schlesinger, 1998) leading to global warming. Even though forests are most often mentioned as having great potential for carbon sequestration, the role of soil as a net sink for atmospheric carbondioxide (Co2) has not yet been fully explained (Lal,1995) in Africa. Under article 3.4 of the Protocol, the idea of sequestering carbon in soils as SOC is implied as a possible means to reduce atmospheric CO2 and this approach is being considered by countries which are signatories to the protocol. There is inadequate knowledge on the form of SOC pools and fluxes that are affected by land use cover change. Hence a need to understand how soil

	<p>organic carbon is affected by land use change and what form of SOC increases or decreases after the change. This knowledge gap makes it difficult not only to predict the effects of land use change on ecosystem processes but also limits the management of ecosystems through ecosystems function approach when determining carbon sources or sinks when calculating soil organic carbon balances. This study will be conducted on and around Mt. Elgon, to obtain information from the community about their perception on land use/cover change and its impact on the their livelihood and SOC. Knowledge on community coping strategies in improving and maintaining soil carbon levels will be investigated. Two Ugandans will be trained to enhance capacity to conduct research on soil organic carbon or any other similar problems. This study will be relevant to a number of stakeholders e.g. policy makers, communities, National Environment Management Authority, institutions such as NARO, FAO, NAADS and the Ministry of Lands, Water and Environment.</p>
Country and Specific Location(s)	Mt. Elgon , Uganda
Participating Institutions	Faculty of Forestry & Nature Conservation, Makerere University
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