

Jahrestagung der Deutschen Bodenkundlichen Gesellschaft 02. - 07.09.2017, Göttingen

Tagungsnummer

V53

Thema

Kommission V: Bodengenetik, Bodensystematik, Bodeninformation Bodenfunktionsbewertung

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Titel

Soil distribution and soil properties in the subalpine region of Kazbegi; Greater Caucasus

Abstract

Georgia Soils of the alpine ecosystem of Kazbegi region were investigated in an interdisciplinary project (founded by the Volkswagen Stiftung) from 2014 until 2017. Soils on sediment fans as well as glacial sediments, mostly Cambisols (Humic), are characterized by a low to moderate yield potential while high-yield soils, mostly Cambic Umbrisols, can be found on volcanic plateaus. A common element of all soils is the high humus content. Actually, most of them are used only for pasture, due to poor accessibility. Soils on fluvial deposits, mostly Fluvisols, show a very high range of Muencheberg Soil Quality Rating (M-SQR)-scores. Most limiting factors are climate as well as steepness, while the low nutrient supply and soil acidity can be tackled by adequate fertilization and liming practice. Inorganic or organic pollution were not detected. Altogether, the soils of the study area have the actually untapped potential to optimize the basic supply of the local population as well as tourism also by cultivation of cereals. Nevertheless, variety trials on different soil forming substrates as well as erosion control are major preconditions for successful implementation of new cropping systems in the Kazbegi region. Furthermore, particularly rare soils, e.g. Cambisols on Tephra, should be protected.