

1. Project title

What makes a soil landscape robust? Assessment of landscape sensitivity in relation to land use changes in a southern Alpine valley (Ticino, Switzerland)

2. Proposer

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4. Key words

(Max. 5 – at least 2)

Soil landscapes, land use change, Alps, soil physical and chemical properties, landscape sensitivity

5. Abstract

(Max.1.500 characters with spaces)

Land use changes induced by agriculture constitute the ecologically most intense and, in terms of surface area affected, the largest anthropogenic impact on natural soil landscapes. Alpine soil landscapes can be considered as particularly sensitive to land use changes because their effects tend to be enhanced by extreme climatic and topographic conditions as well as intense geomorphological activity. Within the scope of the present project the sensitivity of a southern Alpine soil landscape in Ticino (Switzerland) will be assessed in respect to different land use changes. These land use changes are represented in six different land use-topography units that can be differentiated regarding: (i) the type of land use (pasture; meadow; agriculture; forest), (ii) the status of land use (active; abandoned/extensified), and (iii) the topography (artificial terraces; natural slope). The aim of the project is to analyze the effects of the different land use changes on particular soil physical and chemical properties that serve as indicators for the sensitivity of the soil landscape. Moreover, we determine if the observed changes in the indicator properties resulted in a significant increase of soil erosion. As soil erosion is the main contributor to soil degradation in mountainous regions, finally, the sensitivity of the southern Alpine soil landscape to these land use changes can be deduced.