

## **Regional Characterization of Soil Properties via a Combination of Methods from Remote Sensing, Geophysics and Geopedology**

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Soil is one of the most precious resources on Earth. Preserving, using and enriching soils are most complex processes that fundamentally need a sound regional data base. Many countries lack this sort of extensive data or the existing data must be urgently updated when land use recently changed in major patterns. The project "RECHARBO" (Regional Characterization of Soil Properties) aims at the combination of methods from remote sensing, geophysics and geopedology in order to develop a new system to map soils on a regional scale in a quick and efficient manner. First tests will be performed on existing soil monitoring districts, using newly available sensing systems as well as established techniques.

Especially hyperspectral and infrared data measured from satellites or airborne platforms shall be combined. Moreover, a systematic correlation between hyperspectral imagery and gamma-ray spectroscopy shall be established. These recordings will be compared and correlated to measurements upon ground and on soil samples to get hold of properties such as soil moisture, soil density, specific resistance plus analytic properties like clay content, anorganic background, organic matter etc.

The goal is to generate a system that enables users to map soil patterns on a regional scale using airborne or satellite data and to fix their characteristics with only a limited number of soil samples.