



## **A regional estimate of soil organic carbon content linking the RothC model to spatialised climate and soil database**

Costantino Sirca (1,2), Michele Salis (1,2), Donatella Spano (1,2)

(1) University of Sassari, DIPNET, Sassari, Italy (cosirca@uniss.it), (2) CMCC, Euro Mediterranean Centre on Climate Change, IAFENT Division, Sassari, Italy

Soil organic carbon (SOC) represents the largest pool of organic carbon in the biosphere, and plays a vital role in ecosystem function determining soil fertility, water holding capacity, and susceptibility to land degradation. The SOC amount is mainly led by soil type, land use, and climate.

In this work an assessment of SOC pools in Mediterranean soils is presented. The SOC content was estimated at regional scale in Sardinia, the second largest island of the Mediterranean Basin, linking the RothC model (Rothamsted Carbon model) to a high detailed spatialised climate, land use and soil database. More than 300 soil analysis data, covering different land use typologies, were used for the calibration and validation of the model. A good agreement between soil C estimated from the model and ground data was found. The methodology allowed to obtain the current SOC pools estimation for the different land use categories at regional scale.