The **Soil and Water Research Group** has a transversal focus on landscape elements: **soil - water - air - management of agricultural and forestry systems**.

The **strategic objectives** are:

- Determination of the spatio-temporal variability of the flood of the Mediterranean side of the Iberian Peninsula based on the study of two aspects: the relationships between precedent moisture precedent of the soil and the formation of superficial runoff in each episode; and the impact of the changes in land uses in response to the volume of hydrograms and shifts in the swell tip.
- Detect the spatio-temporal variability of the characteristics of the floods of greater magnitude and of the rains that caused them in a long historical context (from the 14th century) and establish relationships with their causes: climate, land use of the basin and exposure and vulnerability of the populations.
- Analysis of soil-landscape relationships as a tool in soil mapping, through the study of soil in the field, property analysis and soil micromorphology.
- Study of paleosoils, in particular those developed on wind and river sediments in the Ebro Valley to learn about the evolution of soils during the Quaternary and the relationship with paleo-environments; as a tool to predict the impact of climate change on soil properties.
- Effects of work and management of current soil (particularly fertilization with livestock waste and irrigation) in the physical and chemical quality of the soil and the implications for greenhouse gas emissions in different agrarian systems in Catalonia.