

<http://www.clima-project.eu/>

CLIMA project aims to promote a **highly interdisciplinary research, based on a soil-oriented approach**, to develop effective tools for the authorities responsible for cultural landscape preservation.

The **main aim** of the CLIMA project is to **design and implement a WebGIS based multi-task platform that integrates different remote sensing technologies, which can ensure**, on a spatial scale, both macro and micro levels, **the mapping, diagnostic and monitoring purpose of cultural landscapes including buried and exposed archaeological remains.**

Europe has rich and diverse cultural heritage resources, which include landscapes and landscape elements, comprising standing monuments, buried archaeological sites, artefacts and ecofacts. This cultural heritage, often characterized and enhanced by the presence of exposed and buried archaeological remains, is nowadays at risk, endangered by environmental processes and anthropogenic pressures as more specifically by intensive agriculture activities and climate change. These pressures pose a range of immediate and future threats to these sensitive cultural landscapes and the historical, archaeological and environmental archives they preserve.

Over the last decade, attempts have been made to identify the main threats from climate change, including the threats on soils and historical and archaeological remains that characterise the European cultural landscape. In particular, the extreme weather phenomena can help to amplify the processes of soil erosion caused by agricultural activities. Moreover, hydrogeological disturbance of soil, due to climate changes, can threaten historic buildings and their stability.

Monitoring soil processes and land use changes that can be produced by climate changes (environmental pressures) and agricultural activities (anthropogenic pressures) and, at the same time, monitoring structures stability can therefore help to prevent damages to our buried and exposed archaeological heritage.

Specifically the CLIMA project aims to design and develop a multi-task platform, **combining advanced remote sensing technologies, from satellite and ground-based, with GIS application for mapping and monitoring of cultural landscapes** with buried and exposed archaeological remains. This will be achieved by interweaving archaeological and geo-archaeological expertise related

to knowledge and protection of archaeological cultural landscapes with experts of soil processes, land use and climate change and experts of Satellite and ground-based remote sensing. **The Platform will provide specific products (e.g. periodic vulnerability and warning maps) to allow the authorities in charge of cultural landscape preservation to implement more effective maintenance plans and actions.**

Three different case studies have been chosen in order to demonstrate how the CLIMA Platform is effective in monitoring and assessing the Cultural Landscape under different geographic and climatic conditions: the Roman towns of **Falerii Novi** (Fabrica di Roma, Lazio, Italy), in the Center-Mediterranean area, the **Roman Antonine Wall** (Scotland, United Kingdom), in North-West Europe and the Greek-Roman town of **Nea-Paphos** (Cyprus), in the dry East Mediterranean area, the last two listed as UNESCO World Heritage sites.