



Impact of the Climate Change on Cultural Heritage Sites in Cyprus

Branka Cuca (1,2), Athos Agapiou (1), Vasiliki Lysandrou (1), Kyriacos Themistocleous (1), Argyro Nisantzi (1), Silas Michaelides (1), and Diofantos G. Hadjimitsis (1)

(1) Remote Sensing and Geo-Environment Laboratory, Department of Civil Engineering and Geomatics Cyprus University of Technology Saripolou Str. 2-8, 3036 Limassol, Cyprus, (2) Politecnico di Milano, Department of Architecture, Built Environment and Construction Engineering, via Ponzio 31, 20133 Milan, Italy

Climate change is one of the main factors with a significant impact on changes of cultural heritage and landscapes. Exposed and buried archaeological remains are particularly endangered by effects of climate change processes hence it is of great importance to understand the type of risks and the degree of their impact on such assets. Some of the potential risks for cultural heritage and landscape include flooding, intense rainfall, increase in time of wetness, extreme events in temperature change, coastal flooding, drought, wind driven/transported agents (sand, rain or salt) and so forth. From the geo-science perspective, the topic of climate change and the risks it causes is of crucial importance for environmental monitoring in general and it is one of the main applications of the European program on Earth Observation Copernicus. The activities performed in CLIMA project - “Cultural Landscape risk Identification, Management and Assessment” have as one of the main tasks to combining the fields of remote sensing technologies, including the Sentinel data, and cultural heritage monitoring. Such interdisciplinary approach was undertaken in order to identify major climate change risks affecting archaeological heritage in rural areas in Cyprus and to identify the most suitable Earth Observation (EO) and ground-based methods that might be effective in the mapping, diagnostics and monitoring of such risks. This thorough analysis will support the overall design of the CLIMA platform based in EO data analysis, risk models and ground-based methods to provide integrated information for specialists in remote sensing but also to archeologists and policy makers engaged in heritage preservation and management. The case study selected for Cyprus is the awarded Nea Paphos archeological site and historical center of Paphos that is surrounding this UNSECO World Heritage site.