

Change, decline, crisis, transformation are all terms used in one time or another to describe the processes occurring in the late Antique period, especially in the Roman West. Traditionally, they have been analysed from an Empire-wide to a micro-regional level and from a variety of data sets, allowing their correlation with political shifts and general socio-economic trends. Recently, climate fluctuations and the resulting environmental changes occurring in the middle of the first millennium AD are starting to be taken into consideration and observed in light of human adaptation and resilience, as well as through a holistic/global approach to landscape archaeology. There is a significant lack of regional studies focused on the potential impact of climate change on the developments of the late Roman period in the Adriatic region, especially based on high-resolution paleoenvironmental data. To the latter belong to the studies of lake sediments, which are the best archives of paleoclimatic data for the late Holocene period. Croatia is located between two sub-basins of Mediterranean in terms of Holocene climate reconstructions (bordering zone between North Atlantic Oscillation - NOA and Continental climate influence). All this makes the area of the eastern Adriatic Sea an excellent region to explore late Roman settlement in the context of environmental changes taking place between the 3th and 8th centuries AD, in an attempt to determine the potential interrelations of these changes with both the settlement network and the spatial organization of settlement units.

By collecting and analysing diverse proxies indicative of environmental and climatic changes in the North-Eastern Adriatic region (Roman northern *Dalmatia* and *Histria*) dating to Antiquity/late Antiquity, and detecting settlement patterns and intra-site transformations occurring in the region through geo- and archaeological studies of selected archaeological sites, the project's aim is to reconstruct the interactions between environment and society within the framework of the complex and diverse set of processes that invested the Roman world from the 3rd and into the 8th c. AD.

To perform the geoarchaeological part of the project, four archaeological sites were carefully selected (Tar-st. Blek, Tar-Vabriga Municipality, Istria county; Lopar-Podšilo, Island of Rab County of Primorje and Gorski Kotar; Plemići bay, Ražanac Municipality, Zadar county; Danilo Gornje - Šematorij - Gradina, town of Šibenik, Šibenik-Knin county) which all functioned in the late Roman period. Additionally, all are localized within fertile areas allowing divers economic activities in the past (agriculture, herding, or both), as well as different production or processing activities, thus presenting several case-studies on which to test land-use and human-environment interaction patterns. All were initially recognized or tackled by surveys and/or trial trenches, including those known from bibliography, thus their usefulness for the planned research activities has been fully confirmed. In the first - noninvasive stage, integrated geophysical prospection will be performed at each site using ground - penetrating radar and magnetic method. In second, intensive field research will concentrate on involved sites, through a yearly campaign of excavations and other multidisciplinary surveys.

For the purpose of regional reconstruction of climatic conditions drillings will be carried out in three selected lakes located in the Dalmatian coastal zone: Lake Vransko, Lake, Fruška lokva - Pond on Island of Rab (former Lake) and Velo Blato on island of Pag. What is very important, coastal lakes in the Dalmatian area record sensitive responses to changes in climate and also sea level. In each lake, two drillings will be made to obtain two columns of bottom sediments for comparison purposes. Depending on thickness of examined series and changes in lithology, about 400 samples are to be collected and analysis with a number of methods.

The finale result of the project will be creation of first scenario of climate and environmental change in the late Roman period for the eastern Adriatic area, which will be combined with archaeological data on settlement pattern changes and framed within a GIS integrated database. In next phase, landscape and land use reconstructions will be developed by integration of all generated data in frame of a GIS database, which is a novel approach in archaeology in the considered area. Collected and interpreted data will be used to construct a scenario of human-landscape interactions in late Antiquity of the NE Adriatic region.