The project explicitly aims at overcoming the drawbacks of the hitherto dominant profile of studies at the Neolithic settlement at Çatalhöyük in Central Anatolia by explicitly investigating the settlement's neighboring zone in terms of the characterization of its biotic elements, its occupation and exploitation by the settlement's inhabitants, the biodiversity as well as their subsequent transformations throughout a millennium of its occupation.

The project's goals will be achieved by systematically collecting and comprehensively examining different types of evidence originating from the offsite locations, in particular an area directly north, south and east of the Neolithic settlement at Çatalhöyük. They will be aimed at recognizing two fundamental aspects of functioning of the local community: (1) the occupation and exploitation of the settlement's neighboring zone by its inhabitants and (2) the characterization of the settlement's immediate environment, its biodiversity and human ecodynamics.

These two fundamental aspects of functioning of the Çatalhöyük community will be pursued in the form of three intertwined research objectives:

(1) Recognition of the built environment and exploitation of the offsite zone of the Neolithic settlement at Çatalhöyük
(2) Recognition of the immediate environs of the Neolithic settlement at Çatalhöyük
(3) Recognition of human ecodynamics and biodiversity in the offsite zone of the Neolithic settlement at Çatalhöyük

The project shall involve an implementation of a wide range of methods. These require multidisciplinary and technological approach able to combine cutting-edge methods and technologies of airborne prospection, geophysical survey, geomorphology environmental genetics and archaeology. In particular, this multi-layer approach involves a multiscale integration of remote sensing methods, large scale multispectral and LIDAR surveys by drones and satellite imagery, geomorphological coring, eDNA analysis and excavation of the East Area, which will offer new insights about the classification, representation and simulation of the archaeological (empirical) and ancient (reconstructed) landscape, in particular the relation between the built environment in a close proximity to the settlement at Çatalhöyük and the neighboring natural landscape related to the Çarşamba river basin flowing next to the settlement.

The offsite zone of the Neolithic settlement at Çatalhöyük, as any other large settlement in the Near East, was unquestionably an area of important social and economic activities of a primordial significance for the existence of any Neolithic community. A shift from the settlement itself at the expense of its immediate spatial and geographical context marks a significant departure from the dominant genre of the Near Eastern Neolithic studies. It makes it possible to reveal the relationships between the occupation and exploitation of this area and the settlement itself, which in turn facilitate the recognition of the character of existence of the Neolithic community in its full complexity. Putting up this the hitherto unexplored zone of existence of the Neolithic groups in the center of our investigation adds an innovative dimension into studies of the Near Eastern Neolithic.

The project applies a range of innovative techniques. It will deploy drone airborne prospection by using different sensors: LIDAR, photogrammetry and multispectral aerial photography. This type prospection will be explicitly integrated with magnetic survey implemented continuously over the large scale aimed to achieve the archaeological continuum. The advocated synergistic procedure will also involve the deployment electrical reistivity tomography aimed at determining the subsurface distribution in two or three dimensions (2D and 3D) of resistivity in combination with electromagnetic induction allowing penetration to app. 10 meters depth and ability to perform mathematical inversion to reconstruct a full 3D model. For the first in the study of the Near Eastern Neolithic, the project will employ environmental DNA to reconstruct total environments through time at a local scale, including vegetation, humans, animals and diseases to create a local window that will enable us to investigate changes in the total local environment, most importantly its biodiversity as well as ecosystem structure and function at all trophic levels. A full suite of geomorphological methods will also be applied.