



Università
Ca'Foscari
Venezia

PROJECT ACRONYM AND TITLE: FUZZFARM - Modelling of the early agricultural spread in south of the Eastern Europe

FUNDING PROGRAMME: HORIZON 2020

CALL: H2020-MSCA-IF-2019-EF – Marie Skłodowska-Curie Individual Fellowships– European Fellowship

KEYWORDS: Early farmers, Neolithization, agricultural spread, agent-based modelling, fuzzy sets, paleoecology, paleosoils

HOST DEPARTMENT: DSAAM - Department of Asian and North African Studies

FELLOW: Dmytro KIOSAK

SCIENTIFIC RESPONSIBLE: Paolo BIAGI

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€ 183.473,28	€ 183.473,28

ABSTRACT:

The project aims at modeling of the early agricultural spread, the process that brought agriculture and the settled way of life to large portions of Europe in VII-V mill. BC. It is focused on the archaeological record of south of Eastern Europe and it will employ innovative way of agent based modeling based on the fuzzy sets approach. Fuzzy logic appeared extremely fruitful in modeling processes of multi-criteria decision-making. Early farmers faced various ecological, economic and social constraints in order to select a certain micro-region for colonization. These conditions will be studied in the course of the project by means of database approach for the whole south of Eastern Europe (roughly modern south-eastern Poland, Ukraine, Moldova, and eastern Romania); taking additional samples for research on paleo-soils in the three focus microregions which evidenced several waves of early agricultural colonization. The criteria will be formulated for a site selection by Neolithic farmers. They will be incorporated into agent-based model "Fuzzy Farmers" using a fuzzy sets approach to combine the criteria of various character in a single model (for example, type of soil needed and a need of a similar site in geographical proximity for exchange of marital partners). Agents will be represented by communities of early agriculturalists. The model will simulate the process of early agricultural expansion in actual geographic space (modelled in GIS). I plan to seek the conditions of ceasing the expansion pace and in such a way try to explain the frontiers of early farmers' spread known from archeological record of the south Eastern Europe. The archaeological record of Eastern Europe is still badly integrated into pan-European theoretical context. This process was hampered by differences in organization of science, financial background and research methodologies. The project will work towards the more general aim of building a unified European archaeology.

Planned Start date	Planned End date
15th March 2021	15 th March 2023

PARTNERSHIP:

1 Università Ca' Foscari, Venezia	Venice (IT)	Coordinator
2 University of Bern	Switzerland (CH)	Partner
