

Land use and climate change in Minorca between al Andalus and the feudal conquest

Andrea Luca BALBO¹, Jaime FRIGOLA², Arnald PUY^{1,3}, Felix RETAMERO⁴, Isabel CACHO², Helena KIRCHNER⁴

¹ Complexity and Socio-Ecological Dynamics (CaSEs), Department of Archaeology and Anthropology, Institució Milà i Fontanals, Consejo Superior de Investigaciones Científicas (CSIC), Barcelona, SPAIN

² GRC Geociències Marines Departament d'Estratigrafia, P. i Geociències Marines, Facultat de Geologia, Universitat de Barcelona Barcelona, SPAIN

³ Geographisches Institut, Universität zu Köln, Köln, GERMANY

⁴ Arqueologia Agrària de l'Edat Mitjana (ARAEM), Departament de Ciències de l'Antiguitat i l'Edat Mitjana, Facultat de Filosofia i Lletres, Universitat Autònoma de Barcelona (UAB), Cerdanyola, SPAIN

The medieval period sees the definition in the Mediterranean world of the frontier between Islamic and Christian populations. The Iberian Peninsula played a key role in this process, coinciding with the westernmost expansion of Islamic populations in the Mediterranean, between the 8th and the 13th centuries. The Balearic Islands were among the northernmost lands reached by migrant Arab-Berber communities proceeding from N Africa and the Near East, who occupied Minorca in 902 AD. Here, as in the rest of al Andalus (as the Iberian Peninsula was known at the time), the newcomers imported a number of oriental edible plants such as orange and lemon trees, colocasia, aubergine, artichoke and cucumber that required specific acclimatation strategies. This process implied significant changes in the landscape, in particular the construction of irrigation systems and terraced fields. In Minorca, these hydraulic systems were abandoned or converted for milling purposes following the feudal conquest and the withdrawal of Islamic populations in 1287 AD and goat husbandry became the main activity on the island. These historical events coincided with major shifts in climate, in particular the onset of the Medieval Climatic Anomaly (MCA 900-1300 AD) and later the Little Ice Age (LIA 1300-1850 AD). The geoarchaeological study of a sediment sequence deposited in the alluvial plain of Barranc d'Algendar (a small canyon in the southern portion of Minorca) reveals a ten-fold increase in sedimentation rate around 1300 AD. The date is consistent with the feudal conquest of the island and overlaps with the MDA-LIA climatic transition. Based on the integration of geoarchaeological, historical and climatic evidence, we discuss the interplay between contrasting land-use strategies and Late Holocene climatic events in Minorca, and their significance in terms of environmental transformations and conflict within the broader Mediterranean context.

