
Late Holocene Oases of South-East Arabia: emergence and agricultural management of the mountainous palm grove of Masafi (UAE)

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Résumé

Oases are precious agro-ecosystems, fragilized today by decreasing resources and changing human activities. Due to their rich heritage, their preservation and revitalization is currently implemented in the United Arab Emirates. However, this management strategy lacks a better understanding of the link between climate change, resource availability/management, and human occupation. It seems therefore necessary to provide new data on the long-term socio-environmental dynamics of these spaces.

The oasis of Masafi (Emirate of Fujairah) has been excavated by the French Archaeological Mission in the United Arab Emirates since 2007. Still cultivated for its dates and exploited for its mineral water, this terraced landscape has been occupied, exploited, cultivated and irrigated since the beginning of the Iron Age (1st mil. BCE). To allow for more direct correlations between climatic data (indicating continuous aridification for the last 4 millennia in Arabia) and socio-economic dynamics (indicating regional cycles of land development *vs* abandonment), a project structured around the reconstruction of the hydro- and agrosystems, considered as the main structural elements of an oasis, as well as their dynamics and interactions has been developed in Masafi since 2014 in the framework of a MAEDI and ANR project (ANR OASIWAT).

A systematic geoarchaeological, chronological and paleoecological study, combined with a geophysical and geomatical survey, have revealed the preservation of circa five meters of sediments in some areas, dated from the last 4 millennia onwards. The results highlight phases of massive landscape artificialization associated with major hydro-agricultural development, such as during the 1st mil. BCE (Iron Age) (soil burning, runoff water harvesting, use and drainage of high groundwater levels) and after the 14th century CE (Middle-Late Islamic Period) (underground water channelling, well). On the other hand, the results also suggest different land use, settlement pattern or resource availability between 300 BCE to 1000 CE (Late Pre-Islamic, Sassanian and Early Islamic periods). These events, which will be related to changing climatic conditions and phases of land anthropisation, allow for an illustration of systemic answers to ecological and social issues.

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Mots-Clés: oasis, irrigation, agriculture, palaeoenvironment, geoarchaeology, Southeast Arabia, United Arab Emirates, Masafi