



Re-writing the historical perceptions of semi-arid agriculture at the abandoned site of Engaruka, NE Tanzania

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Archaeological excavations and surveys recognised as early as the 1960s that the extensive area of archaeological remains at Engaruka in northeast Tanzania were the remnants of former settlements overlooking c. 2000ha of agricultural fields and terraces served by a complex network of irrigation canals. Given that the area is now semi-arid and receives c. 400mm of rain per year, it was naturally assumed that this irrigation was necessary in order to undertake arable cultivation. However, recent and ongoing geoarchaeological research – including stratigraphy, micromorphology and geochemistry, complemented by archaeobotany and modelling of hydrology and sediment transport – demonstrates that the site was formerly much wetter. So much wetter, in fact, that farmers built fields containing soils with paddy-like characteristics, and constructed sediment traps that accumulated vast quantities of alluvium entrained within watercourses, resulting in deposits up to 60cm deep over an area of c. 900ha, and up to 2m deep (totally some 16,000 m³) within just one large terrace covering c. 0.6ha. This paper presents the stratigraphy, micromorphology and geochemistry of the site, discusses the importance of relating this wet phase (or phases) to broader palaeoclimatic signatures covering the period of the site's occupation between the 14th and mid- to late 18th century AD, and questions if and how data of this sort can inform assessments of systemic sustainability or resilience.

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