

### Facts about the field of study

- 7 sites located in East Tanzania were selected for the study
- The sites were dated between 500 and 1500 CE
- Iron slag from each of the settlements was analysed using optical microscopy and  $\mu$ -XRF analytical instrumentation
- The results revealed significant compositional variability between smelting slag from different settlements
- Significant compositional overlap was found when smithing slag was compared

Part of the fieldwork carried out during the course of this project was funded by Fiedler's foundation. The additional funds enabled the candidate to participate at Unguja Ukuu excavations that took place in 2017.

### Time and place for the defence

7 June 2019

Venue: Auditorum at MOMU Moesgård Allé 15, 8270 Højbjerg.

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# MAKING AND TRADING IRON IN THE SWAHILI WORLD

## AN ARCHAEOLOGICAL STUDY OF IRON PRODUCTION TECHNOLOGIES, THEIR ROLE, AND EXCHANGE NETWORKS IN 500-1500 CE COASTAL TANZANIA

PhD dissertation by Emā Baužytė



# MAKING AND TRADING IRON IN THE SWAHILI WORLD: AN ARCHAEOLOGICAL STUDY OF IRON PRODUCTION TECHNOLOGIES, THEIR ROLE, AND EXCHANGE NETWORKS IN 500-1500 CE COASTAL TANZANIA

**Summary of the main points of PhD dissertation Making and trading iron in the Swahili world by Ema Baužytė, Department of Culture and Society, Aarhus University.**

**The dissertation focuses on Iron production technologies and their role in 500-1500 CE Swahili settlements. The thesis presents a multidisciplinary investigation of iron production debris, that examines material networks and comments on the role of craftworking in the Swahili world.**

## Technological variability

The results indicated that highly variable technological traditions were used at the investigated sites. Three iron smelting sites were included in the study with distinct technologies identified at each of the sites. Multiple smelting technologies were identified at at least one of the sites. Meanwhile, evidence of smithing was more comparable throughout different settlements.

## Spatial organisation of iron production

Iron smelting is often recorded taking place outside of inhabited areas and deliberately positioned in isolation from settlements. The three iron smelting sites investigated as part of

this study present an intriguing contrast, as smelting activities took place either within or immediately next to the settlement. Evidence of smithing was found scattered largely evenly throughout the extent of settlements with the exception of one site where smithing slag was found concentrated in one area of the site in association with midden contexts.

## Economic role of iron production

The investigation revealed two major centres of iron production – it examined the vast scale of smelting at Kilwa Nguruni, and highlighted the intensity with which smithing was carried out at Unguja Ukuu. Iron production was determined to have significant economic impact at these settlements, while a less dominant role of iron working was inferred at others.

## Movement of materials and knowledge

The results suggested that both, materials, and technological knowledge moved between settlements. The thesis suggested that materials were traded at every stage, including transportation of ores, raw iron, and produced iron objects. Furthermore, the variability of technology and the nature of engineering solutions recorded during the course of the project suggest that craftsmen and/or technology may have travelled in the region.

## Iron production in Swahili settlements

The research project set out to understand the role of iron production in Swahili settlements and examine material and technological exchange networks. The uncovered evidence paints a complex and dynamic picture of a craft that varied from isolated smithing episodes to huge scale smelting operations and likely played a variety of socioeconomic roles in the society. The thesis also concludes that production was often reliant on exchange networks at every stage of the process.

## Contextualising iron production in Swahili settlements

Studies of Swahili craftworking and its role in the society are few and far between. This makes it difficult to address the significance of iron production in comparison to other craft activities. Similarly, our understanding of raw material sources that would have been used for iron production at these settlements is limited. Alongside providing intriguing evidence regarding the role of iron production and exchange networks, the project highlights questions for future investigations.