

Remote sensing and Maasai Ethnoarchaeology in Engaruka, Tanzania

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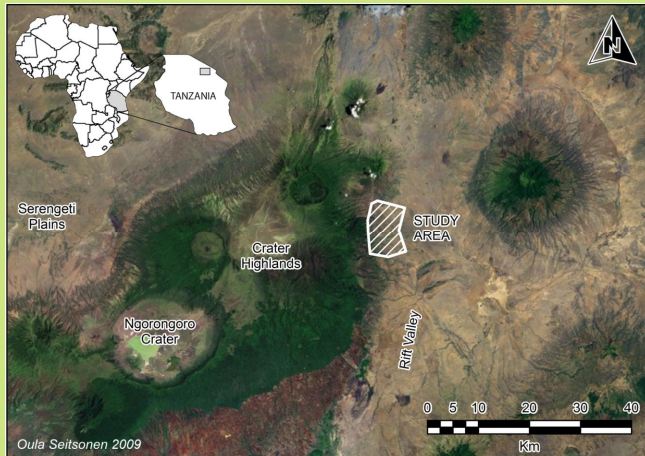
Introduction

The Department of Archaeology, University of Helsinki, Finland, has studied the past of the north Tanzanian Rift Valley for more than a decade.

- Main focus on prehistory
- The current author and Mr. Gilbert Oteyo of the Pitt Rivers Museum have also undertaken ethnoarchaeological research among the modern Maasai
- Our local Maasai friend and aide *Israel Ole Molel* was invaluable in this work (fig. 1)



Fig. 1. *Israel ole Molel and the author in Engaruka.*



Maasai settlement studies

- One subject of the ethnoarchaeological research
- Study area restricted to the area of a high-resolution QuickBird satellite image (fig. 2)
- Settlements (maa: 'enkang') digitised from the image and a sample ground-proofed (fig. 3-4)

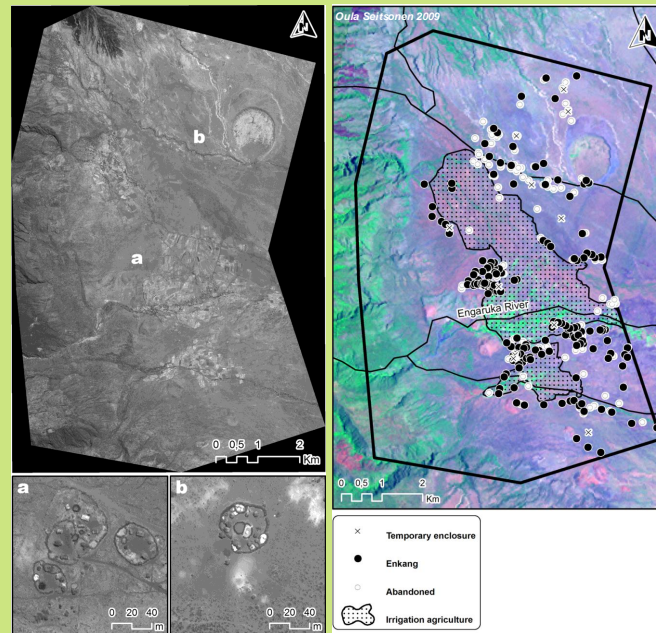


Fig. 2. High-resolution QuickBird image of the area

Fig. 3. Distribution of the sites, background Landsat ETM+ mosaic.

Goals to

- study the land-use and intra-site patterns
- study their transformations in the recent times
- collect comparative material for the Pastoral Neolithic and Pastoral Iron Age studies

Collected data

- Combined sample from the pedestrian surveys and the remote sensing includes 159 enkangs, 10 cattle enclosures without huts, and 99 abandoned sites (fig. 3)
- 53 of these (c. 20 percent) ground-proofed in 2004 and 2009
- Also environmental attributes, such as slope and aspect, were recorded both on ground and from Digital Elevation Models (30 m Aster data)

Preliminary results

- Maasai sites concentrate along the seasonal streams, on shallow slopes (fig. 4) – the area around the perennial Engaruka River is occupied by the agricultural settlement and fields (fig. 3)
- Close to the Engaruka Center the Maasai enkangs have changed in recent years, due to contacts with the western-influenced "modernity" (fig. 2a) – further away the enkangs have remained in a traditional form (fig. 2b)
- In the traditional enkangs the settlement area and diameter correlate roughly with the number of huts (fig. 4)

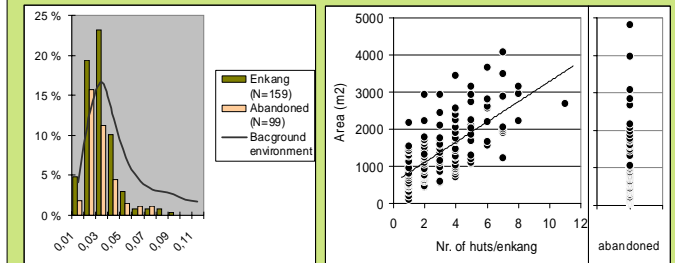


Fig. 4. Left) Slope gradients at the sites, Right) Correlation between the number of huts and the area covered by the enkang.

Future prospects

- Study area will be extended
- Temporal changes of the environment and the settlement patterns and layouts will be studied
- Collected ethnoarchaeological interviews will be analysed and used to supplement the remote sensing and pedestrian survey data

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