Historical Ecologies of East African Landscapes (HEEAL)

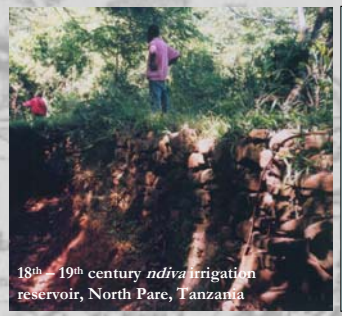
Eastern Africa is a mosaic of diverse landscapes and habitats, each of which is associated with its own particular history of land use. Based around two broad study areas of the Usambara and Pare Mountains, Maasai Steppe and Pangani Basin, Tanzania, and Tsavo, Laikipia Plateau and Northern Rift, Kenya, the this Marie Curie-funded project aims to explore land-use, subsistence and settlement prior to, during and following the development of the long-distance caravan trade of late 18th and 19th centuries. In particular, the project will examine the environmental and economic consequences of the ivory trade, iron smelting and the development of specialised hunting, pastoralism and intensive agriculture from AD 1500 and aims to relate these to contemporary and historical perceptions of these landscapes. The research is structured around five interrelated sub-projects.

Perceptions of landscape, Pauline von Hellermann

Maasai Steppe, Tanzania c. 1900

Commencing in January 2008, this project will focus on investigating the creation of landscape values and institutional structures of land use and management, and aims to compare and contrast the perceptions and evaluations of landscapes and their resources by different indigenous communities, state-level institutions (under both colonial and post-colonial regimes), and international conservation and heritage management bodies.

The development of intensive agriculture, Daryl Stump (ds551@york.ac.uk)



18th – 19th century *ndiva* irrigation reservoir, North Pare, Tanzania

Using a combination of documentary and oral historical sources, archaeological survey, remote sensing, and stratigraphic investigations of landscape features, this sub-project aims to map the development of the terrace and irrigation systems located within highland areas to the north of the Pangani river (eg Usamabara, Pare, Kilimanjaro). These economies are known to have supplied agricultural and non-agricultural products to long distance caravans but little is known of their long-term history or of the environmental consequences of agricultural intensification in these areas.

Irrigation channels, Engaruka, Tanzania, 14th – 18th century

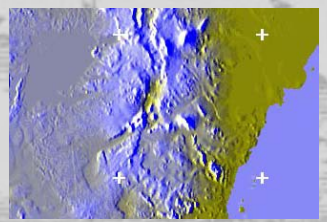
Tracing the links between elephants, humans, and land use in East Africa during the 19th century caravan trade: a bioarchaeological study
Ashley Coutu (ac609@york.ac.uk)

Zanzibar, Tanzania c. 1880-1900

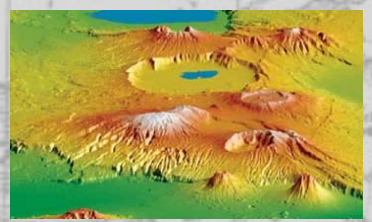
This project will trace links between elephants, humans and land-use before, during and after the 19th-century caravan trade using a variety of sources including stable isotope analysis of ivory sourced from East African archaeological deposits, museum collections and from archaeological investigations of ivory processing sites in the UK and USA. Stable isotope analysis will enable examinations of elephant diet and migration patterns, and the sourcing of ivory to specific locations. When combined with historical records of ivory exports and ethnohistorical data relating to East African elephant hunters and ivory traders it is envisioned that this research will permit assessments of the numbers of elephants removed from the ecosystem and an appraisal of the ecological and economic consequences of this removal.

Geoarchaeology of East African landscapes
Mattias Heckman (mh603@york.ac.uk)

This project focuses on landscape ecology, palaeoecology, the reconstruction of landscape and vegetation and especially how environmental and climatic constraints shaped human cultures and how their responses impacted on ecosystems and landscapes. Techniques to be employed include remote sensing using satellite images (Landsat, Spot, Coronna), aerial photos, and Digital Elevation Models (SRTM-DEM), with fieldwork focussing on palaeosoils, slope deposits, river terraces and anthropogenic features to examine land surface stability and erosion phases, vegetation change, and evidence of agricultural and pastoralist land-use. Standard sedimentological analyses (texture, CaCO3, C,N,P,) as well as magnetic and mineralogical examinations will be used to characterize former land surfaces and erosion events, whilst vegetation changes will be modelled through phytoliths, 13C-isotope analysis, charcoal, and pollen.



NASA landsat image showing East African topography



Topographical model of Crater Highlands, Tanzania

An historical archaeology of the 19th century caravan trade in East Africa: people, trade and diet
Thomas John (tj513@york.ac.uk)

Long-distance caravan, late 19th century

The expansion of the caravan trade from the late 18th century has been seen as a primary factor in the development of intensive agriculture in areas crossed by trade routes, with markets developing in these areas acting as points of interaction between farmers, pastoralists, traders and craft specialists. Using a combination of historical sources and detailed analysis of archaeological faunal and botanical assemblages from sites linked with caravan routes, this project aims to examine how the ecology of settlement areas were effected by this expansion of trade and whether changing economic strategies and relationships had any impacts on diets and levels of nutrition.

Project co-ordinator Paul Lane email: pjl503@york.ac.uk Kings Manor, York, YO1 7EP

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