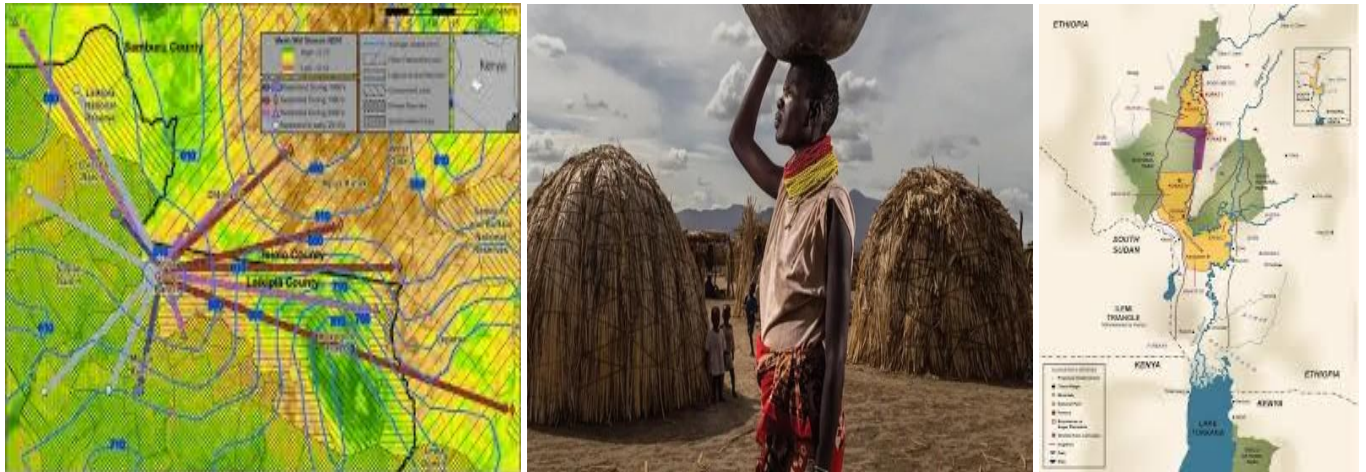


POST CONFERENCE TRAINING

Modelling landscape to reframe our understanding of past socioecological changes in Kenya and writing for Publication .

6-7th June 2024



Course Contact: endiema@museums.or.ke or endiema@gmail.com

Brief course introduction:

Over the past twenty years, the landscape approach has deeply influenced disciplines such as archaeology, anthropology and ecology by enabling the emergence of research frameworks focused on the socio-ecological dynamics, especially in East Africa. These approaches, or landscape approaches, are based on a strong interdisciplinarity and a collective work deployed within the theoretical framework of STS (Science-Techniques- Society). They result in the establishment of "critical zones" or "workshop zones" calling on diverse disciplinary skills. They are based on new tools ranging from GIS to modelling and 3D virtual model. Based on interdisciplinary research carried out on the "water places" of Northern Kenya, the panel proposes to present the STS framework and to show how the specific contribution of GIS and data modelling within a disciplinary anchorage can renew our understanding of socio-ecological dynamics.

"This two-hour course introduces R for data manipulation, analysis, and visualization. The course is designed for beginners with little to no prior experience in R, aiming to provide a solid foundation for future learning and application. Participants will be given a brief overview of R, how it differs from other statistical software, and its advantages. This overview will be followed by a practical component that will acquaint attendees with R syntax, and basic operations, focusing on vectors and data frames. Participants will also learn to import data from Excel spreadsheets and sub-set and summarize data. This will allow us to delve into conducting basic statistical tests. The last half an hour of the course will be spent plotting and visualizing data using ggplot2. Participants should expect to leave the course with a fully reproducible script that is transferable to a range of analytical problems across multiple disciplines."

AIMS OF THE COURSE: To equip early-career scientists with interdisciplinary skills and tools in landscape approaches, focusing on socio-ecological dynamics within the theoretical framework of Science- Techniques-Society (STS).

Target Audience: Early-career scientists and researchers in archaeology, anthropology, ecology, and related fields.

PROVISIONAL COURSE OUTLINE:

1. Introduction to STS and Landscape Approaches:

- Presenter: Dr. Emmanuel Ndiema (Department of Earth Science, NMK)
- Overview of landscape approach in East African research
- Introduction to the STS framework and its relevance to understanding socio-ecological dynamics.

2. Case Study Presentation: Water Places of Northern Kenya:

- Presenter: Dr. Benoit Hazard (CNRS, France)
- Presentation of the North Horr database and key findings
- Discussion on the interdisciplinary methodologies employed, including GIS and data modeling.

3. Technical Workshop: Reconstructing Virtual Models of Springs

Presenters: Paul Tyrol, Remi Crouzevialle, F. Cerbelaud

- Hands-on training in using LiDAR and GIS technologies
- Practical session on creating virtual models of ecological sites.

4. Future Scenario Modeling:

- Presenter: Cedric Gaucherie (CIRAD, France)
- Techniques in modeling future ecological scenarios, case study on the Chalbi Desert
- Discussion on the implications of these models for conservation and management.

5. Introduces R for data manipulation, analysis, and visualization.

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Special Notes:

- A dedicated space will be allocated for a photo session to document the training.
- The design of the training venue and materials should be engaging and conducive to learning.
- 5 scholarships are provided by the 3P WATART project for students interested in participating in the training

WHAT TO BRING:

Training Materials Needed:

- Computers with GIS software installed
- Access to the North Horr database and LiDAR data
- Projectors and presentation materials
- Handouts and reading materials on STS and landscape approaches

Students will:

1. Be expected to fill a simple training survey
2. Do a brief training report at the end



The National Museums of Kenya

NMK is a State Cooperation established by the Museums and Heritage Act. It is a registered Multidisciplinary Research Institution and a center of excellence in heritage research, conservation and management. The Directorate of National Repository and Research (DNRR) coordinates research at NMK and manages the National Scientific Reference Collections. DNRR collaborates with National and International institutions in implementing its mandate, and has a mission to collect, preserve, study, document and present Kenya's past and present cultural and natural heritage. The vision of DNRR is to be a center of excellence in heritage management and research for posterity. The directorate has various departments whose mandate is research dissemination through publications, exhibitions, industrial attachments and trainings.

Department of Earth Sciences

The Department of Earth Sciences at the National Museums of Kenya (NMK) is a core research division comprising four sections: Paleontology, Archaeology, Palynology/Paleobotany, and Geology. The department conducts extensive field and laboratory research to document and conserve paleontological, archaeological, and geological collections. Renowned for its contributions to prehistoric studies, it holds one of the largest fossil collections in the world. The department also plays a pivotal role in training local and international students, disseminating scientific findings, and supporting interdisciplinary research projects that span from the Precambrian to the present.

