



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Il ruolo dei suoli nel Global South - Conservazione, ripristino, e salute dei servizi ecosistemici legati ai suoli

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24

OPENDISTAL
20 SETTEMBRE

Global South funding – Soil Health Evaluation in Ecological Restorations (SHEER)

- International decade of ecological restoration (UNEP, 2021-31)
- The role of soil is fundamental to provide ecosystem services and sustain any ecosystem
- Soil health and biodiversity and ecology are understudied...
- Soil quality indicators (SQI), conservation and restoration, all need to consider a variety of chemical, physical and biological characteristics and represent a global research priority.
- BEFORE we start planting, we need to know if the soil can sustain those plants and communities...

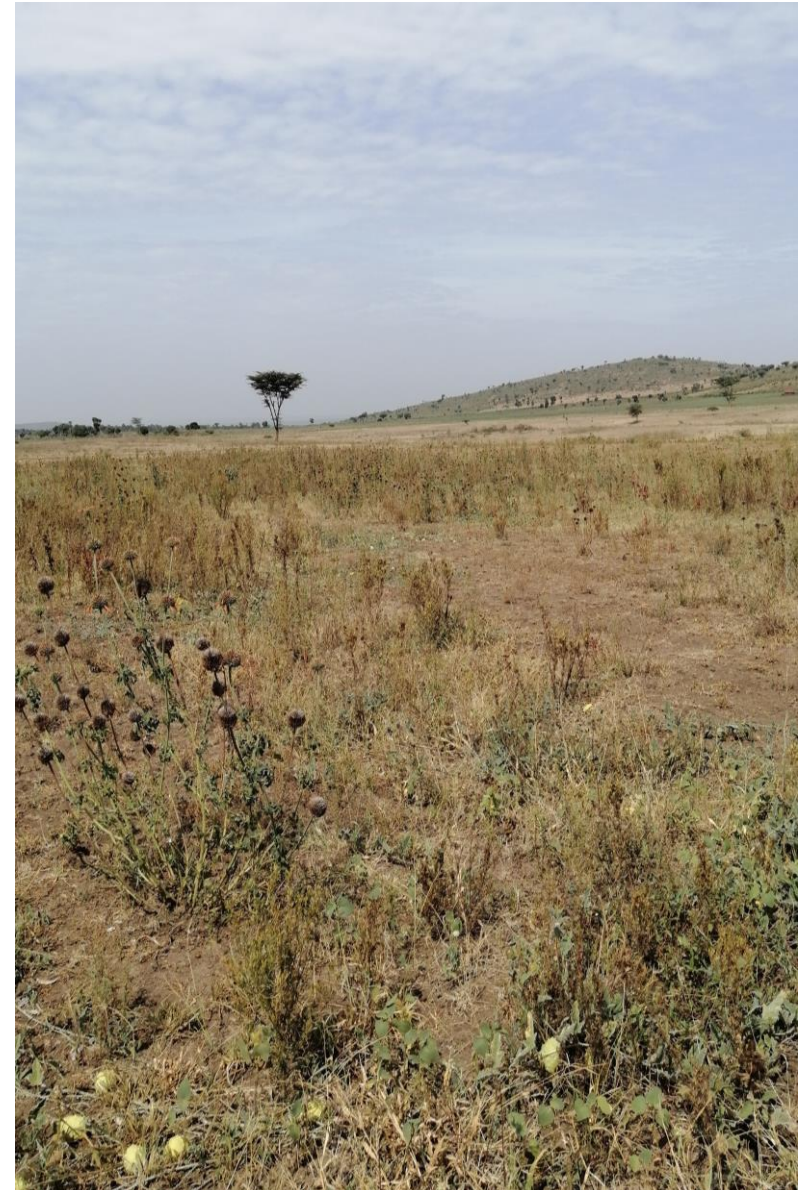
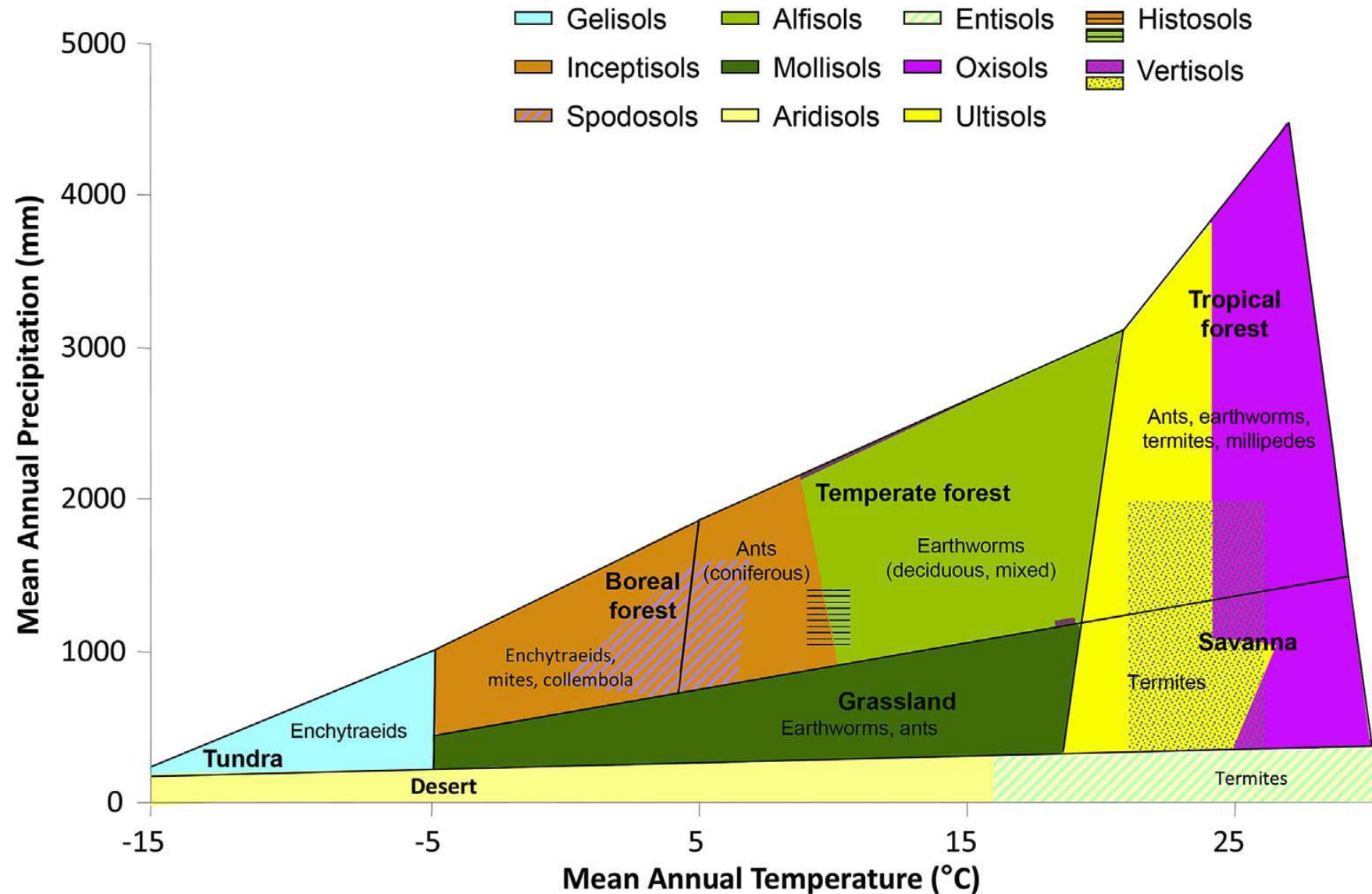


Photo by Mauro De Feudis



Background - Soil degradation and restoration indicators: a complex picture

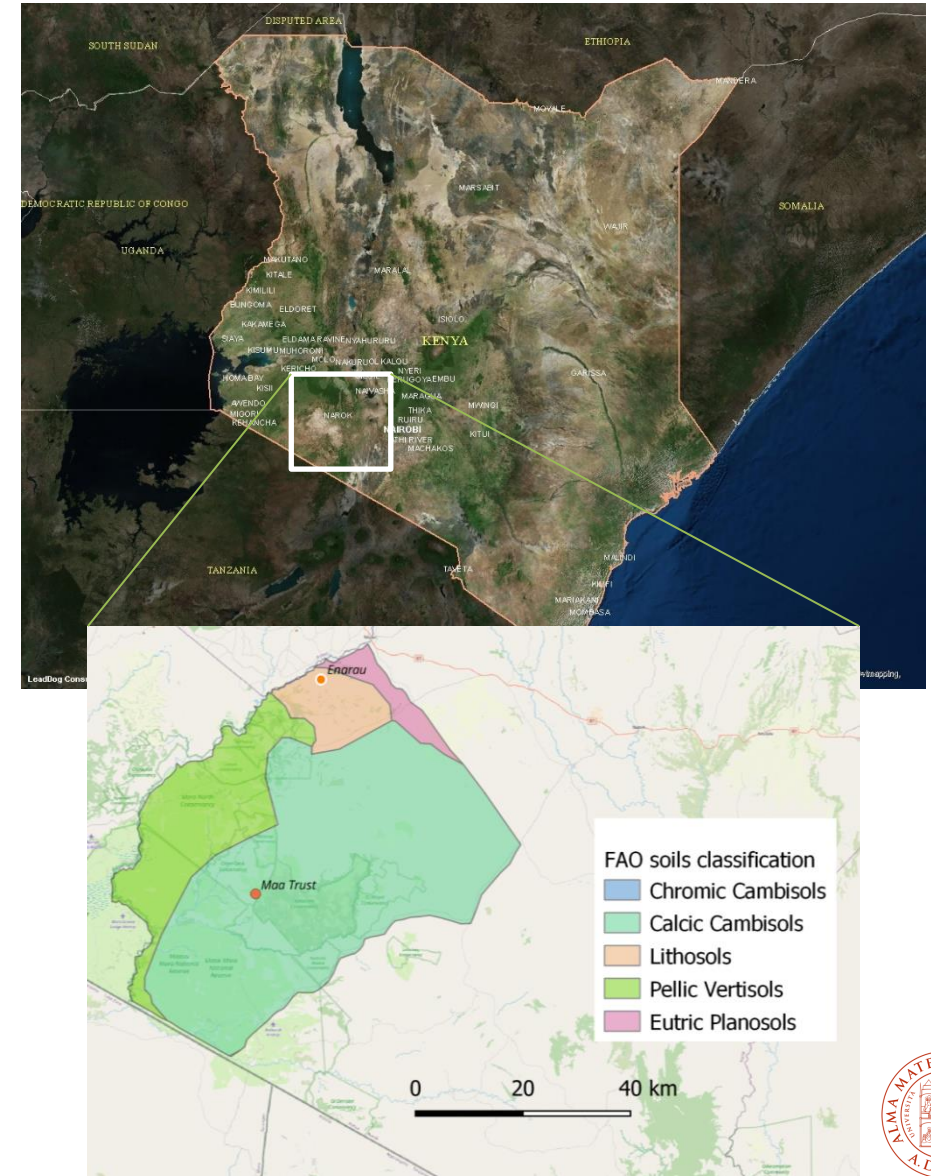
- Different pedoclimatic environments and contexts.
- Soil degradation in the Global South due to desertification, erosion, loss of fertility, overgrazing...
- Priorities: conservation, restoration, and improving soil ecosystem services.
- Local livelihood and food security...



Source image: Bunemann et al., 2018

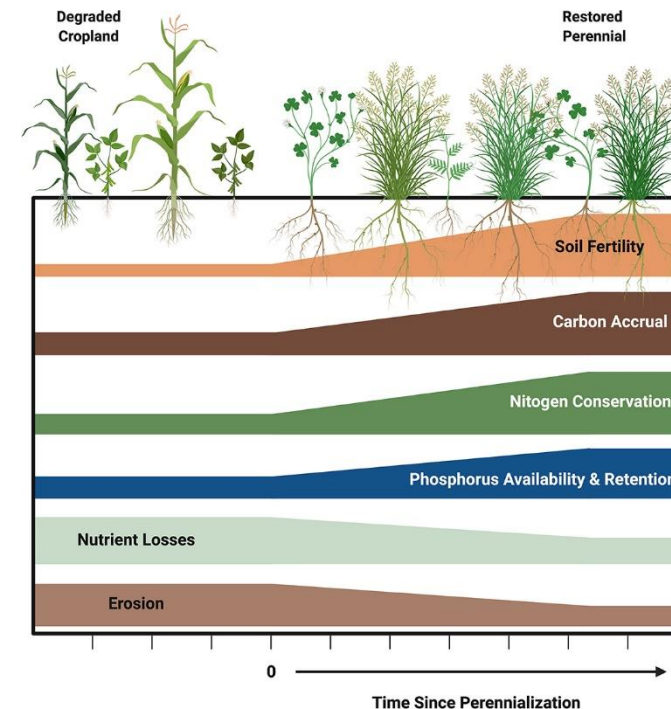
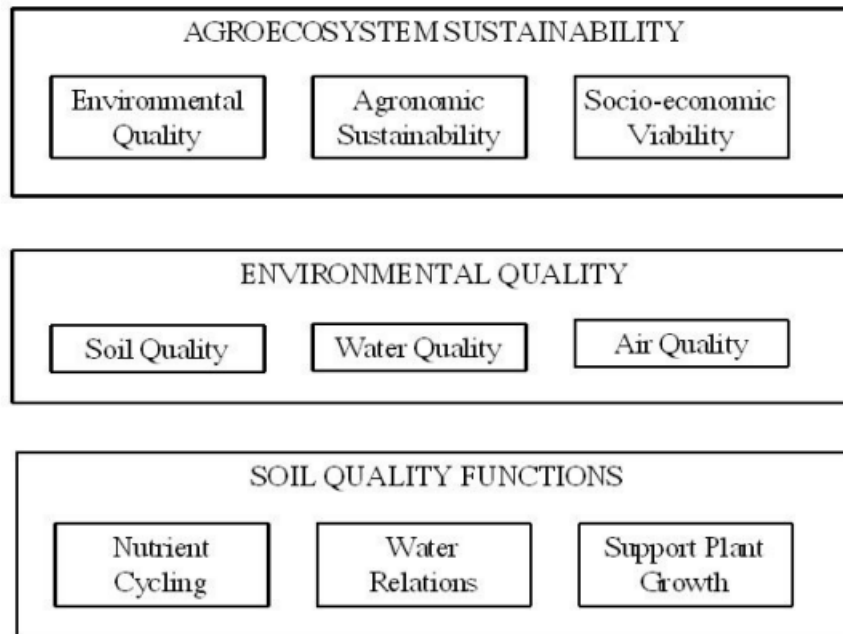
SHEER - The problem, the site, the questions, the partnership...

- Using sites in Keya where soil degradation was caused by deforestation, overgrazing, and industrial agriculture.
- Collaborating with two Kenyan universities (Jomo Kenyatta University of Agriculture and Technology - JKUAT, Mount Kenya University - MKU), a research institute specialised in restoration (Centre for Ecological Restoration - Kenya – CER-K) to answer important research questions about soil degradation and restoration, such as:
 1. What are the key soil-related indicators for landscape degradation that can be used for restoration purposes?
 2. Can we focus on soils to 'restore' the landscape?
 3. What minimum data are needed?
 4. What approaches can be used to restore land to a more resilient state?



SHEER – Objectives and methods: understand role of soil for restoration strategies

- Analysing soil characteristics and ecology allows the comprehension of soil ability to sustain plant growth, animal sustenance, maintain or enhance water and air quality, and support human health....
- Surveys and mini- projects by MSc students: 1) Pedological (UNIBO), 2) ecological (JKUAT/MKU), 3) Botanical (JKUAT/MKU)



SHEER - Project status and potential impact



Anzeil Mohamed, JKUAT



- MSc project still continuing with 3 students
- Abstract presented at Kenyan conference
- 2 papers in preparation from Kenyan students
- More analyses to be done at UNIBO and Kenyan partners with samples taken
- Lasting partnership and sites for future projects with UNIBO, JKUAT, MKU, CER-K
- Open to DISTAL students...





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