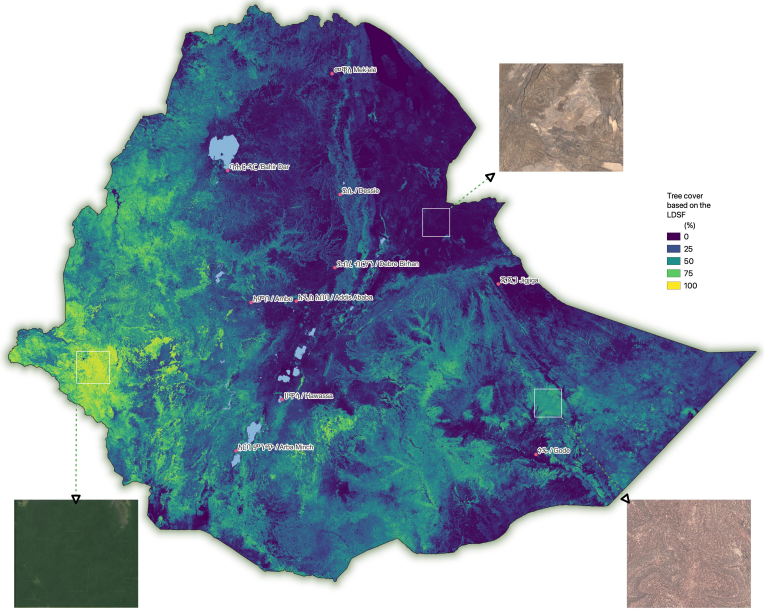
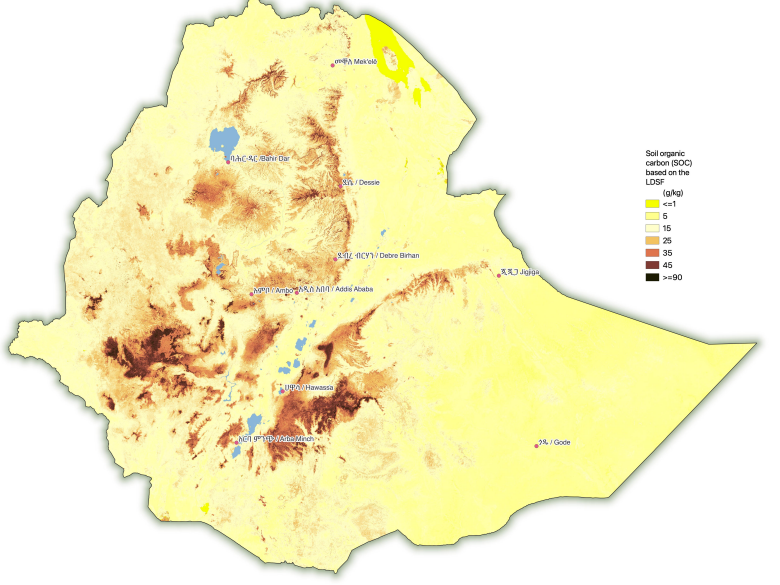


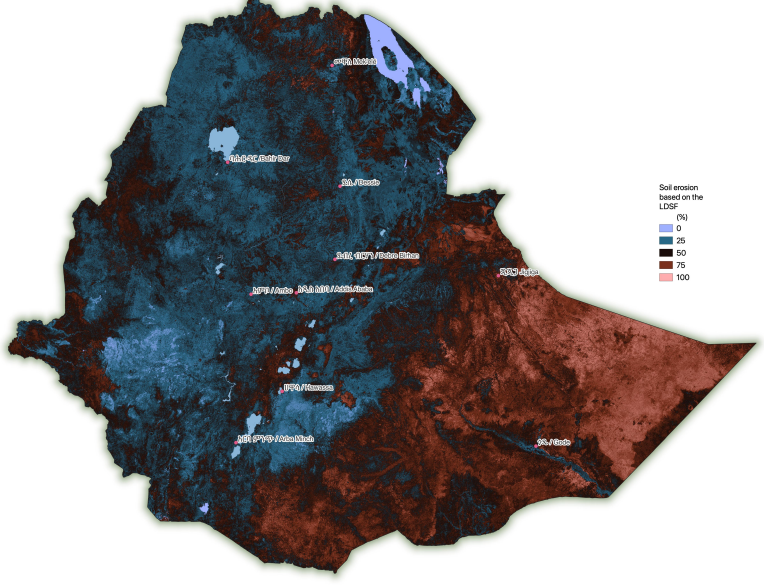
Tree cover predicted using tree counts from Land Degradation Surveillance Framework (LDSF) field surveys and satellite image (remote sensing) data



Soil organic carbon (SOC) predicted using soil data collected as part of the Land Degradation Surveillance Framework (LDSF) and satellite image (remote sensing) data



Soil erosion predicted using field observations from the Land Degradation Surveillance Framework (LDSF) and satellite image (remote sensing) data



The Land Degradation Surveillance Framework (LDSF)

DATA COLLECTION IN THE FIELD

Data is collected at multiple spatial scales to understand the key drivers of land degradation. This nested hierarchical sampling design enables regional spatial analysis, important for setting baseline and monitoring change over time.

Over 1000 sites are selected at cluster across a region or watershed, or they are selected based on the vegetation. Within each cluster, 25 plots are selected and 16 sites of 2.5km x 2.5km are established.

Within each the random selected locations are generated for clusters. Clusters (100m) are the basic sampling units and are 100m x 100m. Plots (100m) along each cluster centre point, the sampling sites are established.

Each plot consists of four sub-plots (100m).

Field observations are made at the plot and sub-plot level. Each site has 100m and 500m radius. The randomization applied in the LDSF recognizes bias in the sampling as well as captures the topographic variability in the landscape.

LDSF INDICATORS

The LDSF measures a wide range of indicators, that serve as a valuable landscape baseline.

- LAND USE:** Current, Historical, Ownership
- LAND COVER:** Vegetation status (ECCS), Vegetation type, Woody vegetation
- LAND DEGRADATION:** Soil erosion prevalence, Soil water conservation measures, Root-depth resistance, Rock/stone cover
- TOPOGRAPHY/LANDFORM:** Elevation, Aspect, Slope
- SOIL HEALTH:** Soil organic carbon (SOC), Total nitrogen, Infiltration capacity, Soil productivity, Texture (sand and clay), Carbonized soil mass, Earthworm presence
- Restored/health results:** Green grass density and distribution, Annual to perennial ratio, Groundwater

LDSF DATABASE

All geospatial (LDSF) data are stored in the ICRAF LDSF Database in Africa and sub-region, for retrieval and to facilitate analysis.

GENERATING EVIDENCE FOR DECISION MAKING

The LDSF provides on the ground evidence combined with other knowledge sources and models to provide the overall picture of land health to support evidence-based decision making.

This allows programs, projects and government agencies a systematic way to provide both a baseline on ecosystem health and track critical indicators of soil and land health over time.

Evidence is generated through systematic on the ground data collection, citizen science to crowd source data from apps and models to produce data and maps. This evidence is applied through capacity support, training and stakeholder engagement to ensure the critical value of having the right information in the right format, demonstrating relationships in the systems (vegetative cover, soil health, etc.) to support decision making around land health.

The LDSF provides data and information that is valuable to:

- Farmers and extensionists
- Project managers and monitoring focal points
- National and district level decision makers

ACCESS POWERFUL PREDICTIVE DATA FROM A GLOBAL NETWORK OF SITES

The LDSF allows for assessments of key indicators of soil and land health at multiple scales across landscapes. The ICRAF LDSF database is the largest set of coherent and georeferenced ecosystem health indicators to date.

Hosted within the ICRAF Spatial Data Science and Applied Learning Lab (previously dubbed Geoscience Lab), these data provide an excellent opportunity for partnerships and collaboration around big analytics.

The Regreening Africa Dashboard

Welcome to the Regreening Africa Land Restoration Hub

82,225 FARMERS IN THE TREES

70,221 FARMERS RECONNECTED AND MANAGING TREES

807 NURSERIES REESTABLISHED

Project countries: Ethiopia, Ghana, Senegal, Kenya, Ethiopia

Project background, Monitoring and Evaluation, Economics of Land Degradation (ELD), Partnership networks

Regreening Africa is a five-year project funded by the European Union that seeks to reverse land degradation among 500,000 households, and across 2 million hectares in eight countries in Sub-Saharan Africa. By incorporating trees (agro-forestry, commercial lands and forest of parks, re-greening efforts make it possible to restore Africa's degraded landscapes.

Benefits of land restoration include increased crop yields for farmers, access to forest products, watershed protection, reversing biodiversity loss and carbon sequestration.

With an estimated 2 billion hectares in need of land restoration globally, land restoration represents a significant threat to food and nutritional security globally, affecting the livelihoods of billions of people. Land degradation also exacerbates climate change and restoration of degraded land is therefore also important for climate change mitigation and adaptation. The focus on re-greening is land restoration makes economic, social and moral sense in light of accelerating loss of biodiversity and ecosystem services, the water crisis and an increasing warming up of the planet. Challenge, which are being 150 million hectares under restoration estimates, will generate up to USD 8.4 billion in net benefits, and 525 million hectares restored by 2030 will generate up to USD 170 billion per year in net benefits.

Ethiopia

Integration of data from across Regreening Africa

- Analysis and synthesis of results
- Interactive visualization
- User-friendly tools