



**Land Soil Crop
Hubs**

Agriculture Ministerial
Conference - 2023



Land, Soil, Crop Information Services for Climate-Resilient Food Systems in Africa

18 May 2023

Kampala, Uganda

Meet us at our booth to learn more!

Speakers



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Kampala - Uganda

Transforming Agriculture for Improved Livelihoods

Overview of the LSC hub project



ir Thaïsa van der Woude

18 May 2023



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Introduction



Goal

- Develop Land, Soil, Crop (LSC) information hubs in National Agricultural Research Organisations to:
 - Strengthen Agricultural Knowledge and Innovation System (AKIS) and;
 - Contribute to Climate-Resilient Food Systems and Climate Smart Agriculture (CSA).
- Impact:
Increased agricultural productivity for farmers through **LSC informed decision making** by users at national, regional and local level.

Scope

- Integrated Soil Fertility Management (ISFM)
- Soil and Water Conservation (SWC)
 - Pilot countries: Kenya, Rwanda and Ethiopia
 - Lead by National Agriculture Research Institutes: KALRO, RAB and EIAR
 - Based on user needs and skills (user needs assessment).

Land, Soil, Crop Information Hubs



Contribution of LSC hub

- The LSC hub can be used as AKIS for:
 - Deliver information from producer (institution) to user
 - Combine information from multiple sources
 - Access available CSA resources
 - Avoidance duplication of efforts
 - Obtain feedback from users
 - Create partnerships and collaboration among stakeholders

Factsheet LSC Hubs

Visit our booth for more information



DESCRIPTION

The land, soil and crop (LSC) hub is an easy-to-access platform enabling stakeholders to access information on soil, crops, land and climate. An LSC hub supports improved decision-making for climate-smart agriculture at national, regional and local levels. The focus is on two use cases: soil fertility management and soil water conservation.

The LSC hub brings together data users and providers that enable the exchange of knowledge and information between farmers, knowledge institutes, development partners, the private sector and policymakers.

STAKEHOLDERS

- **Data users:** to get recent data, improve decision-making on soil fertility and soil water conservation, find answers to agriculture-related questions and find other stakeholders.
- **Data providers:** to reach a large group of potential users, promote your data and have a more significant impact.

FUNCTIONALITIES

The LSC hub functionalities depend on the user's skills and needs. It may contain the following functionalities:

1. **LSC data:** catalogue to find relevant open data
2. **LSC Information services:** listing of existing projects, initiatives, apps, services and tools
3. **LSC models:** an overview of technical models for assessing soil fertility and soil water conservation
4. **LSC applications:** description of the use cases and how to use the available information for the two use cases
5. **LSC user network:** find other stakeholders

OWNERSHIP

The National Agriculture Research Organisations hosts, maintains and operates the LSC hub.

The LSC hub will be initiated in three (3) pilot countries: Kenya, Ethiopia and Rwanda.

The project is co-funded by:



Co-funded by
The European
Union



Ministry of Foreign Affairs



Project partners include:



Call to action - sustainability

- Create policies
 - to support the development and maintenance LSC hubs
- Invest in capacity building
 - to guarantee wide-use and up-to-date LSC hubs
- Offer sustainable finance from governments
 - to keep LSC hub after the project ends
- Encourage data validation and quality control
 - to ensure open and FAIR data



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Lessons from Kenya



Dr. Kennedy Were
18th May, 2023



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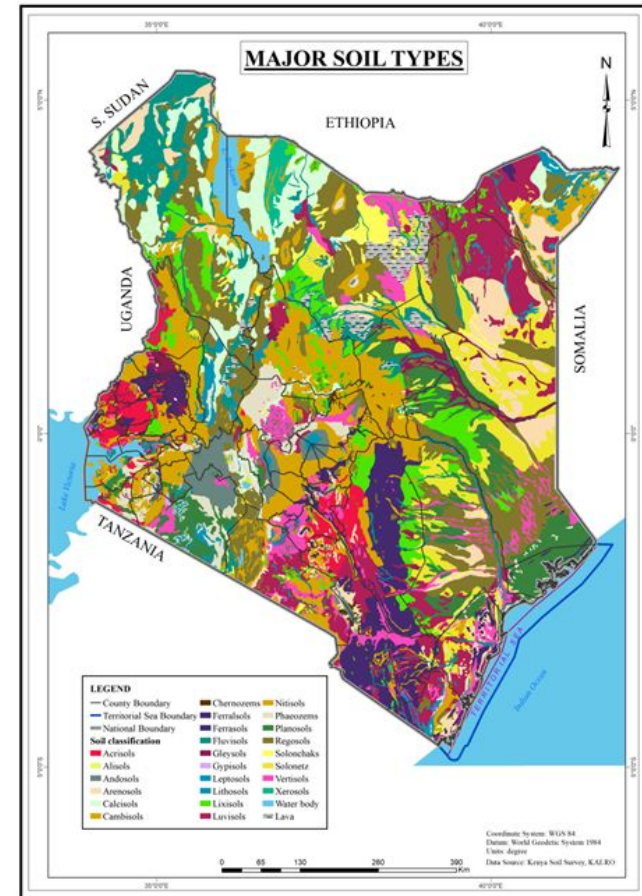
Background

- Diverse terrain, climate, soils, culture
- Agro-based economy >> Small scale crop and livestock production
 - **Low inputs – Low yield** subsistence agric.
 - **Frequent droughts** >> climate change



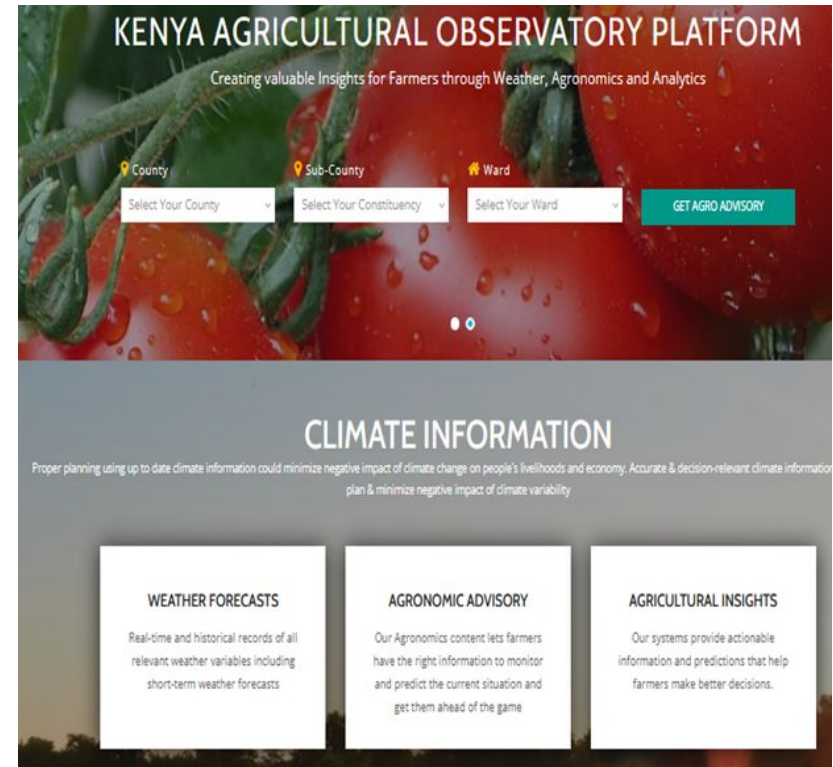
Lesson 1: LSC data and information

- **Abundant LSC data & information, but not FAIR**
 - **Mostly outdated**
 - Difficult to access
 - Scattered & poorly archived
 - Incomplete (gaps)
 - Coarse
 - Not accurate in some cases (poor quality)
 - Not well-packaged
 - Low awareness on existing datasets



Lesson 2: AKIS initiatives

- Abundant **active** AKIS initiatives at County and National levels with positive impact
 - Mostly run by the **private** sector
 - Intervene at various stages along the agricultural value chain
 - Examples:
 - KAOP
 - M-Shamba
 - Safaricom DigiFarm



Lesson 3: AKIS-related policies

- **Strong** policy environment at **national** level >
 - Data Protection Act 2019; ASTGS 2019 - 2029
- **Weak** policy environment at the **local** levels
 - Mostly CIDPs
- **Differing** data sharing policies at **institutional** levels
 - Private sector has useful LSC data but share at a cost, while the public sector share freely





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Lessons from Rwanda



Eric Nsabimana, MSc
18 May 2023



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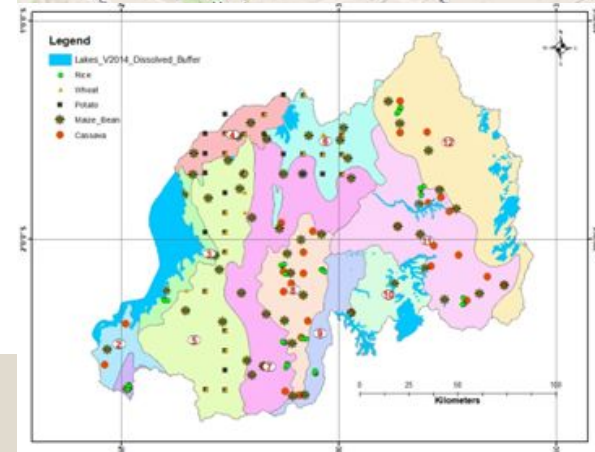
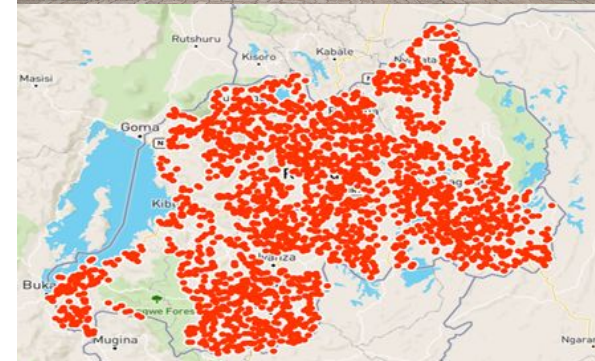
Background

- Rwanda, A country of Thousand hills
- High population density (5th in the world)
- Put pressure on the agriculture
- **Strategic Plan for agriculture Transformation (PSTA 4)**, a pillar to achieve productivity, resilience, and innovation



AKIS initiatives

- ALIS (Agriculture Land Information System)
- SNS (Smart Nkunganire System)
- MIS (Agriculture Management Information System)
- RwaSIS (Rwanda Soil Information Services)
 - Produce site specific lime and fertilizer, & erosion control measures





Challenges in LSC data

- Not FAIR
- Inadequate coordination in data value chain
- Inadequate data validation
- Low capacity
 - advances laboratory and data management
 - Low investment on research

Lesson 1: LSC data and information

- Organizations should **share information** or the lessons learned
- Mostly rely on government Agencies
- Provided LSC data used for:
 - natural disaster management;
 - farm inputs;
 - CSA;
 - decision making support tools;
 - markets and finance
- Clear **data sharing protocol** needed

Lesson 2: AKIS INITIATIVE

- Need for operational agricultural knowledge information services (AKIS)
- Need to **strengthen channels**:
 - digital platforms, training, field schools, publications, manuals
- Increase the data dissemination by data providers
- Need for **central repository** platform for data Sharing

Lesson 3: LSC Policies

- **Existing policies:** data collection-NISR, cooperatives, Public Private Partnership(**PPP**), and other national agriculture-related tools.
 - Need for policy framework for LSC data/information management;
 - Harmonize existing policies and mandates to avoid stakeholder rivalry;
 - Sensitization to use the existing legal frameworks:
 - Need for **policy**:
 - to promote indigenous crops like pumpkin, cowpea,...
 - to initiate participation of farmers in agriculture research.



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Lessons from Ethiopia



Dr. Girma Mamo

18 May 2023

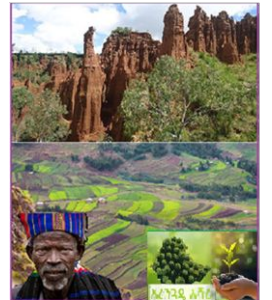


Meet us at our booth to learn more!

Background

The Ethiopian region: Generous to the world

- The cradle of humanity, rich history environmental & socio-cultural diversity □ Luci.
- Rich in biodiversity (>7000 plant species), Vavilov (1920s).
- Diverse terrain and land uses



Challenges: key to success

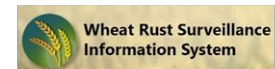
- Land degradation at various scales
 - Poor management practices (soil fertility, acidity, salinity, water)
- Five capacity related challenges (forward looking)
 - Widespread digital illiteracy/**knowledge**
 - Lack of digital **infrastructure** (hard and software)
 - Poor investment in digital **technology**:
 - Data collection, analysis, dissemination
 - Data digitization is capital intensive (poor **financing**)
 - **Partnership** within a value chain increases chances of scaling bundled agro-advisory services

Lesson 1: LSC data & information

- Data and knowledge: The new gold of the 21st century
- Ethiopian Agricultural Research System (EARS) continues to building **big database** (Hub) to fuel digital agriculture practices
- **Make key data assets findable, accessible, and interoperable**
- Advanced **data** analytics
- Strengthening dissemination of bundled **information** and services to the spectrum of users in the value chain, with feedback mechanism

Lesson 2: AKIS initiatives

- CoW (tenured @ EIAR) – 150 members
- National Ag Datahub
- EthioSIS
- DAEAS Roadmap -2030
- Interactive Voice Response System (IVRS)
- Wheat Rust Prediction Modeling & Early Warning
- Ethiopian Digital Agro-Climate Advisory Platform (EDACaP)
- National Land Registration/Certification/Bank
- Seed Certification Information System (SCIS)



Lesson 3: AKIS-related policies/Strategies:

LSC-IS is an integrator

Two principal enabler policies & strategies

Ten Years Perspective Development Plan

Nationally Determined Contribution (NDC). Reduce GHGs emission by 68.8%

Drivers

Data/knowledge

Infrastructure

Technology

Finance

Partnerships

Strategic Implementation Frameworks

Ten National Programs in Ten Years

Agric Com. Cluster (ACC)

Transforming Ethiopian Food System

CSA 2030 Roadmap

Irrigated wheat production

Objectives

Enable and encourage use of a powerful data assets in Ethiopia



Ethiopia's Digital Agricultural Extension and Advisory Services (DAEAS) Roadmap

International Convening

... provide a direct channel to reach farmers with relevant info & services



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Summary



Dr. Ermias Betemariam



Blaise Amony MSc



Dr. Jules Rutebuka



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Thank you!

For more information:

- Visit our website: <https://lsc-hubs.org>
- Come by our booth!
- Contact **Thaïsa van der Woude**, *project coordinator*:
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