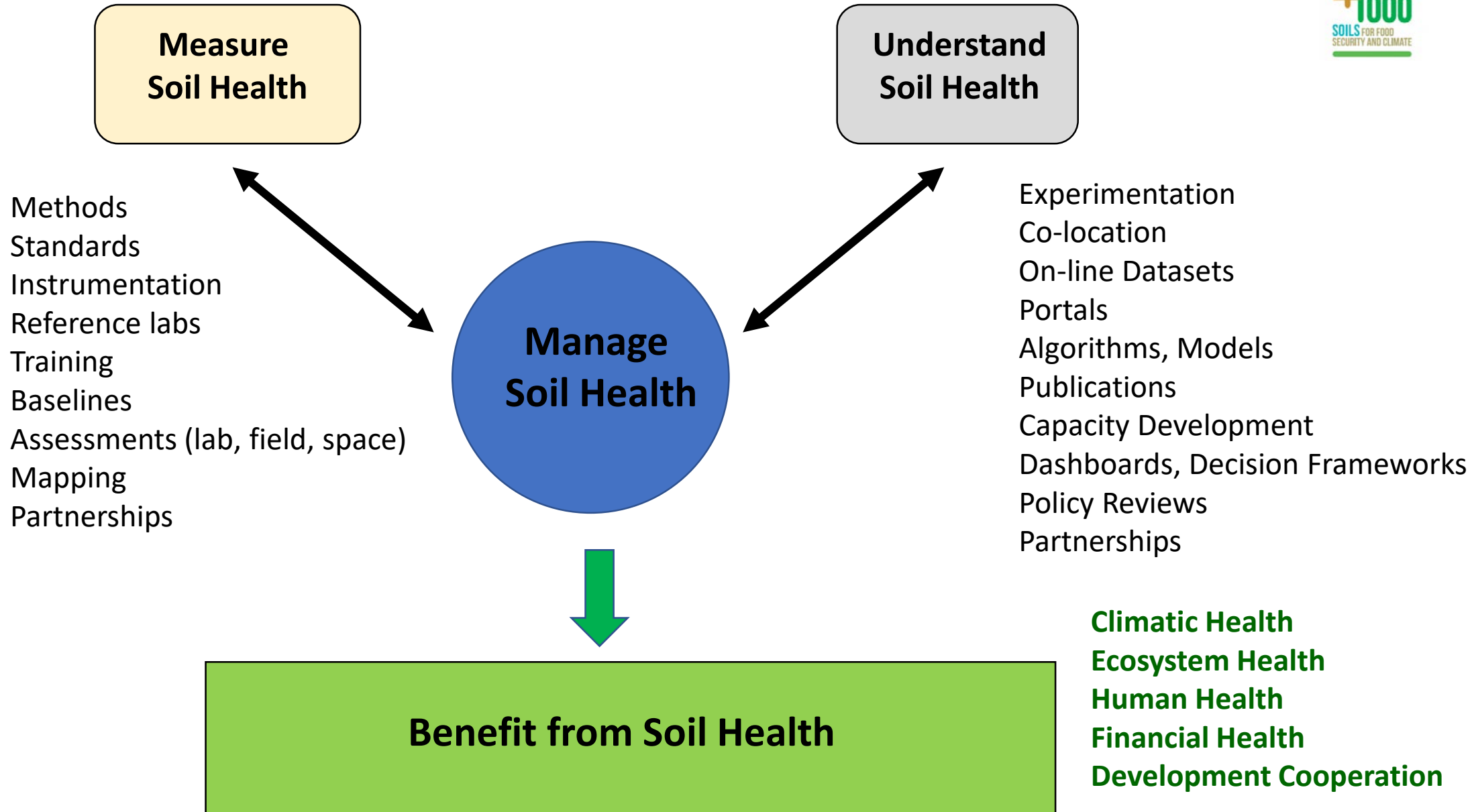


CIFOR-ICRAF Contributions to Soil Health and 4per1000

Tony Simons, Tor Vagen & Leigh Winowiecki, CIFOR-ICRAF, Nairobi

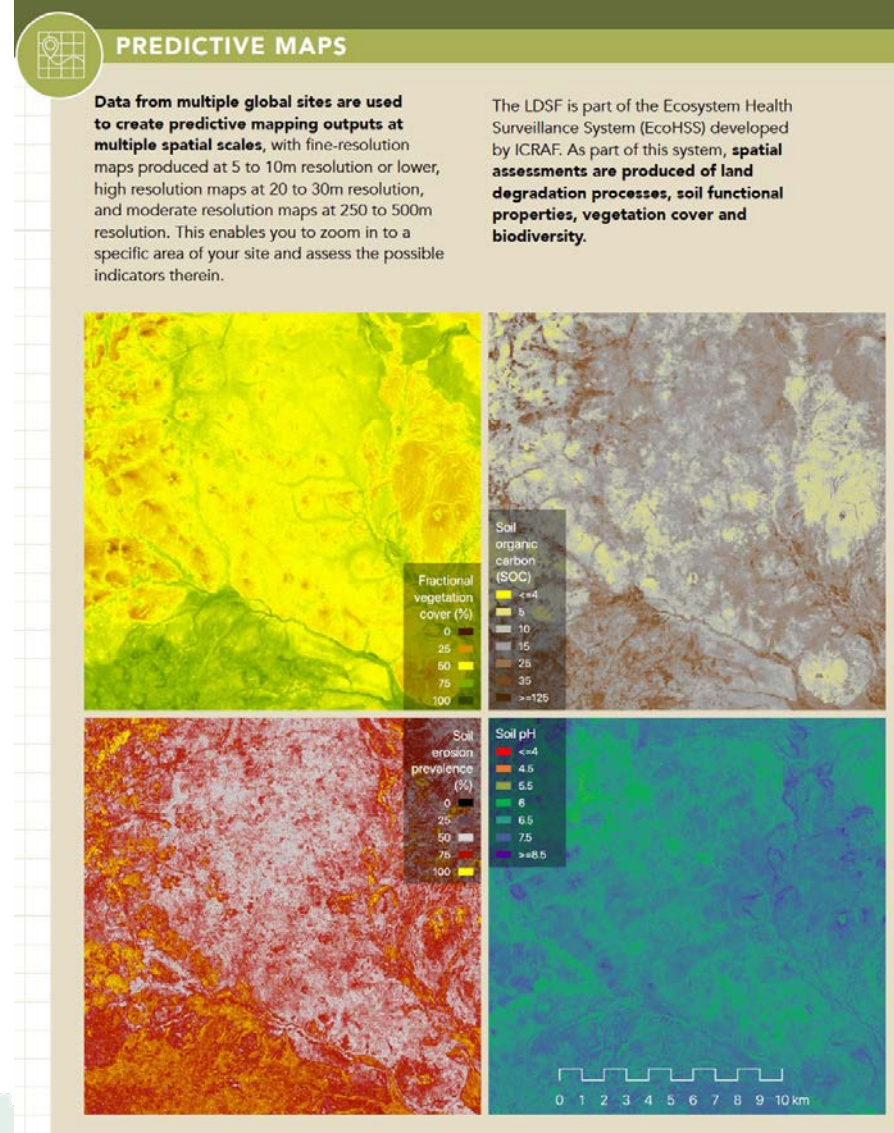
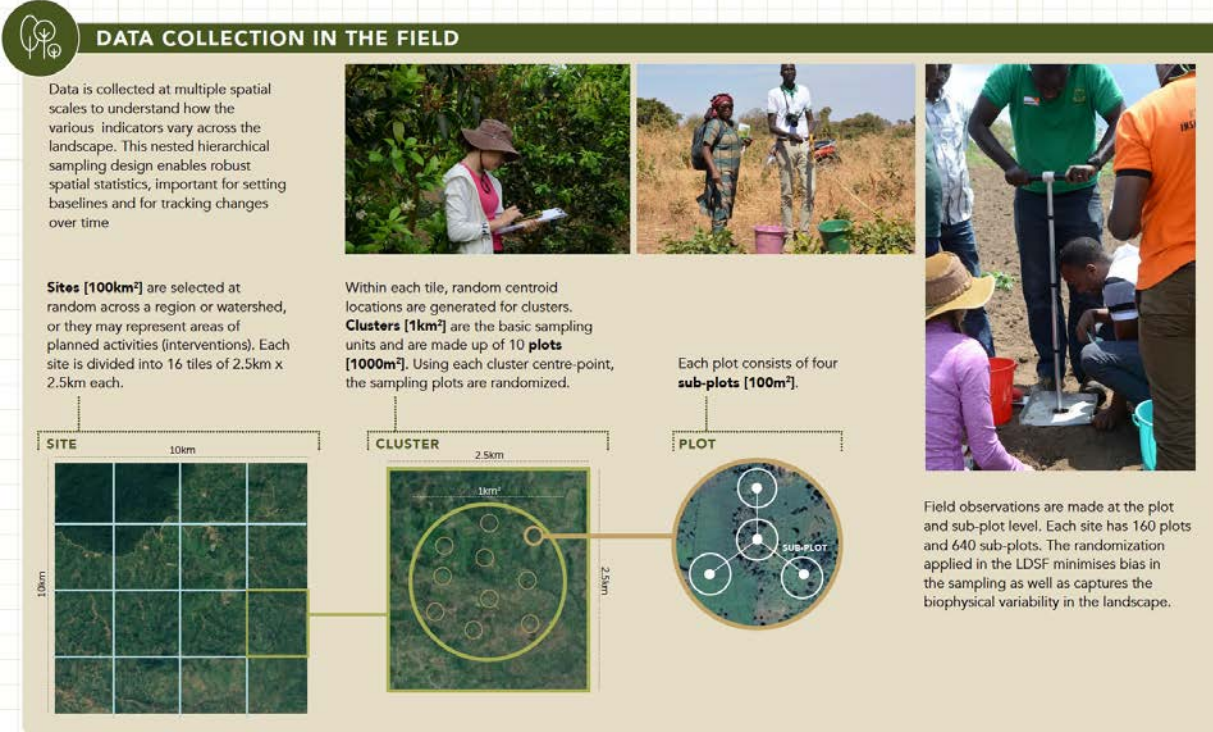


CIFOR-ICRAF Activities & Results from Soil Health



Soil and Land Health Surveillance:

Coupling Consistent Field Methodology, Soil Spectroscopy, Remote Sensing and Data Analytics to produce reliable maps of soil health indicators and degradation risk for evidence-based decision making

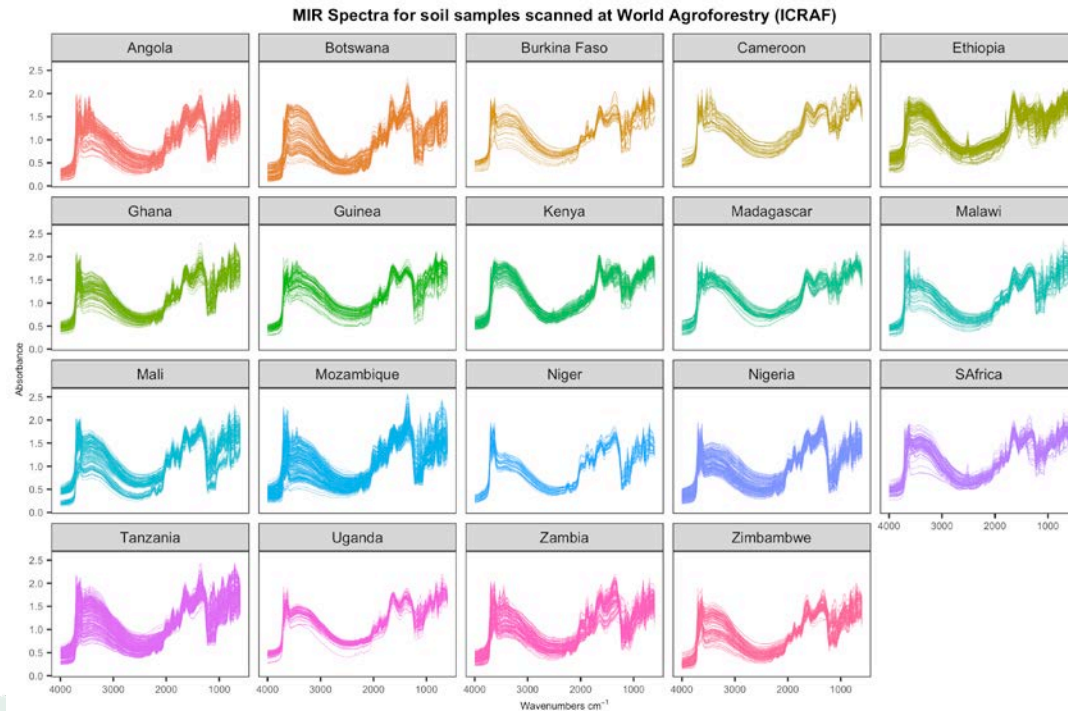


Explore the LDSF methodology here: <http://landscapeportal.org/blog/2015/03/25/the-land-degradation-surveillance-framework-lsdf/>



Using Spectroscopy for Soil & Plant Diagnostics

The use of spectral methods has advanced landscape-scale assessments of soil and ecosystem health, which continue to play a key role in global monitoring of agriculture and restoration interventions. Spectroscopy can reliably and cost-effectively be used to predict soil properties including SOC, TN, Clay, Sand, Mg, Ca; assess agro-inputs (manure, inorganic fertilizer), as well as monitor plant nutrition.



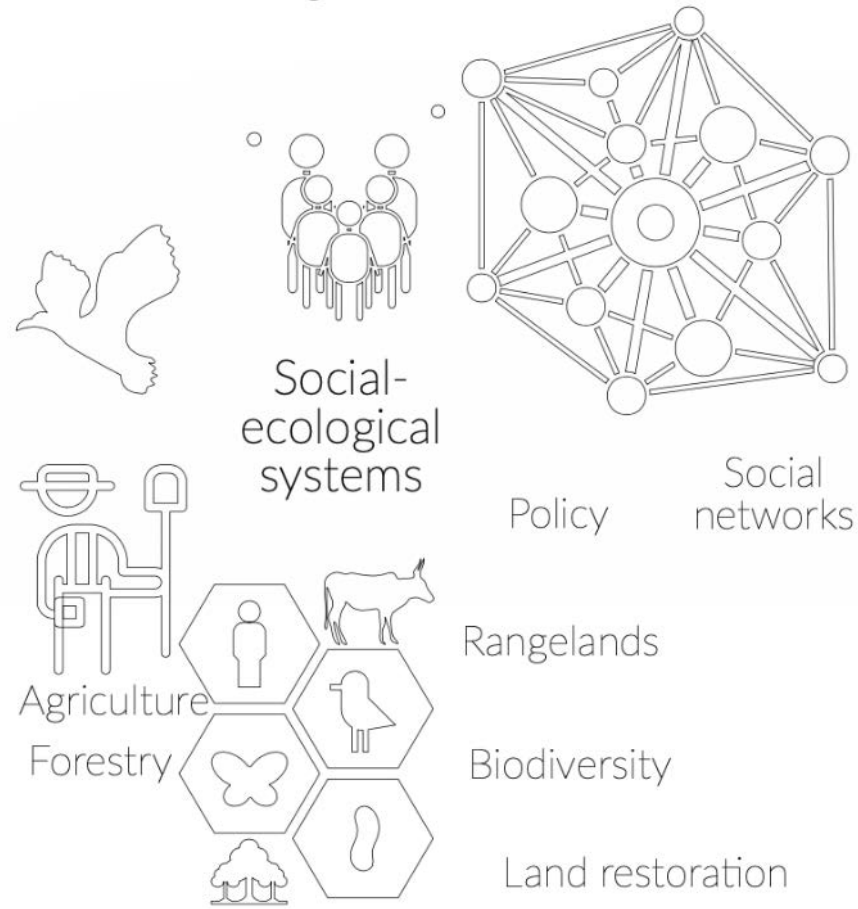
Explore the CIFOR-ICRAF Spectral Lab:

<https://worldagroforestry.org/sd/landhealth/soil-plant-spectral-diagnostics-laboratory>



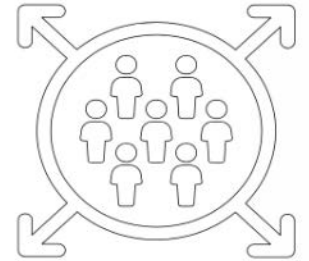
CIFOR-ICRAF Spatial Data Science and Applied Learning Lab (SPACIAL)

A new CIFOR-ICRAF hub for advanced spatial data science and stakeholder engagement to support enhanced decision making and learning through data-driven insight!

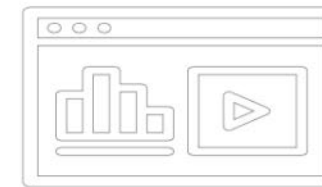


Stakeholder engagement

- Structured facilitation
- Stakeholder interaction with evidence
- Evidence-based decision making
- User-centered design



Evidence



Tools and Dashboards

- The Landscape Portal
- Decision support tools



Impact at scale



Scale-able analytics



RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry



Global
Landscapes
Forum



Resilient
Landscapes

Problem: Reservoir capacity and siltation

→ Upland erosion & degradation

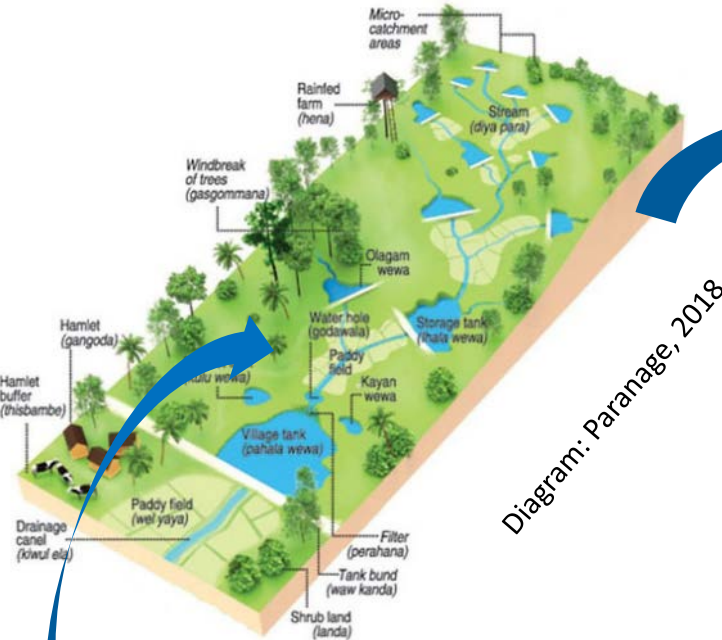
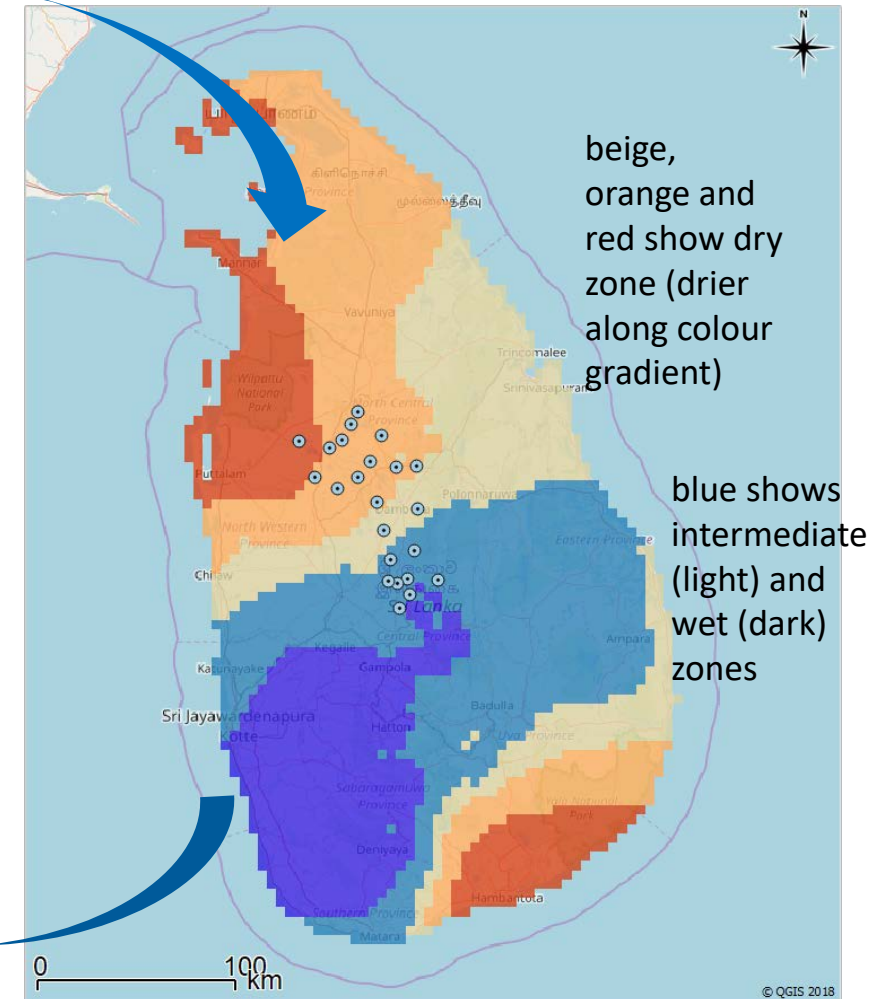


Diagram: Paranage, 2018

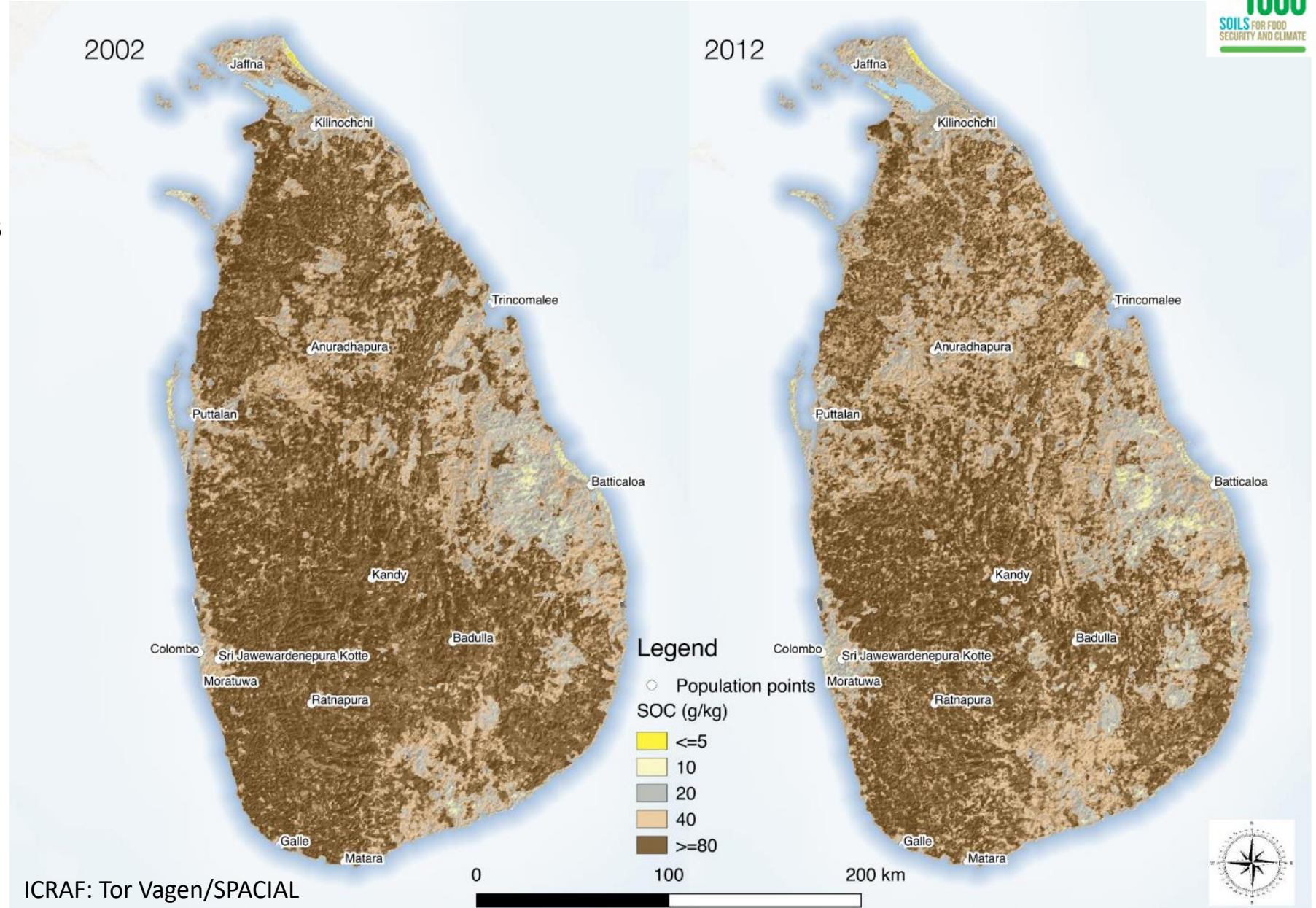


Photo: Ada Derana

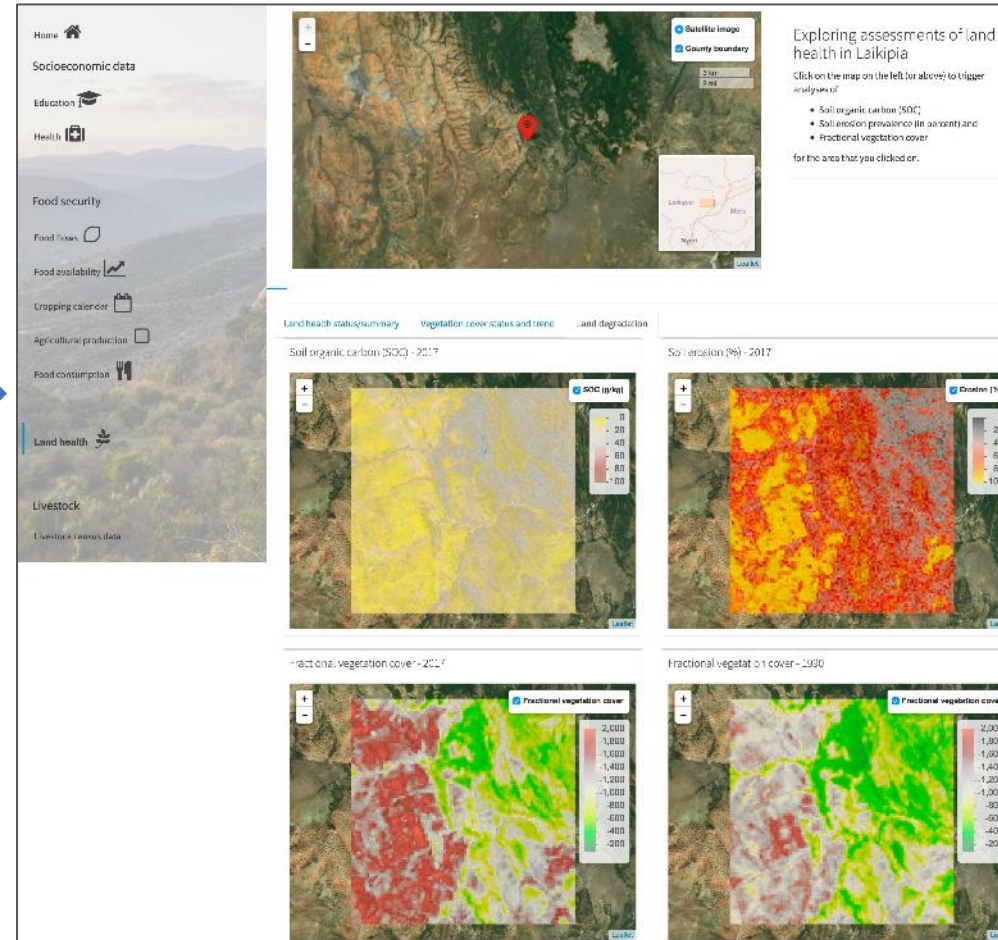
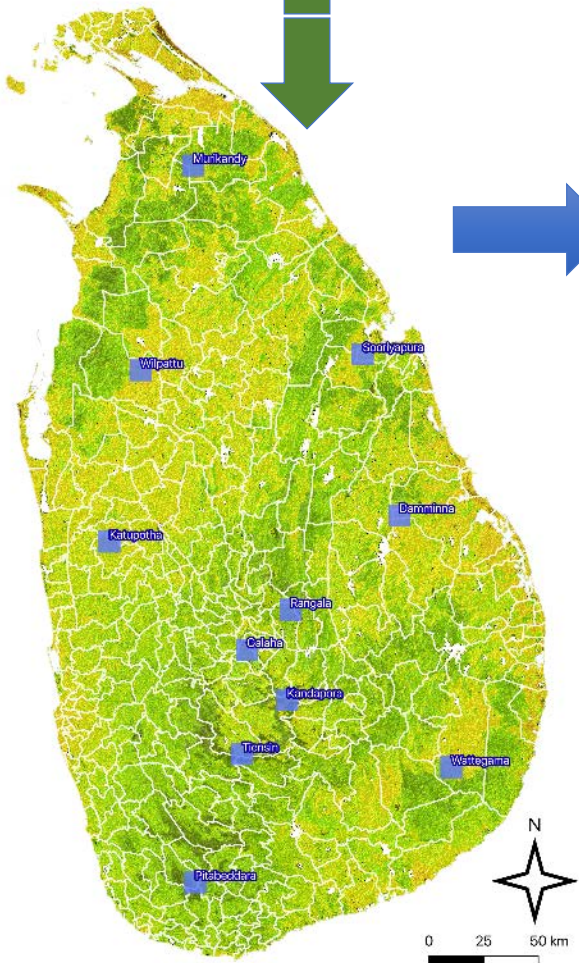
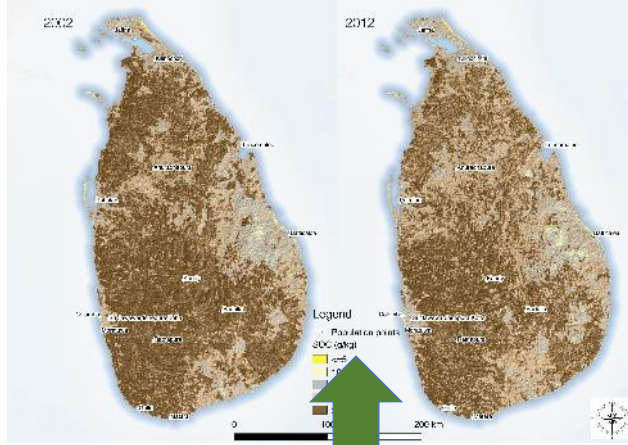


Changes in Soil Organic Carbon Overtime

- Tracking soil health over time is key for informing and prioritizing investments.
- In order to do this, the maps produced must be accurate to detect these changes.
- This map of Sri Lanka shows hotspot areas in the north and east that have lost SOC between 2002 and 2012 (500 m resolution)
 - dark brown is high carbon,
 - yellow is low carbon



Cutting edge Science – *provides information for decision makers*



Explore the CIFOR-ICRAF Spectral Lab:

<https://worldagroforestry.org/sd/landhealth/soil-plant-spectral-diagnostics-laboratory>

Funding Proposal

\$49,000,000

FP124: Strengthening Climate Resilience of Subsistence Farmers and Agricultural Plantation Communities residing in the vulnerable river basins, watershed areas and downstream of the Knuckles Mountain Range Catchment of Sri Lanka

Sri Lanka | International Union for Conservation of Nature (IUCN) | Decision B.25/04

15 April 2020

