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"Reconcile land system changes
with planetary health"

Stakeholder perspectives on enhancing the use of satellite-based products and services in smallholder African agriculture

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Abstract

The utilisation of earth observation (EO) data, products, and services in combination with big data mining and machine learning in digital agriculture is an enabler in technical and political decision-making at different levels of production, distribution and consumption. EO and Artificial Intelligence (AI) technologies and innovations provide information to farmers about crops or livestock, which facilitates the choice of the best course of action for the best outcome in terms of agricultural production and productivity. However, in sub–Saharan Africa (SSA), several factors still limit the scaling of outputs from successful EO projects.

This study sought to identify strategies for scaling successful EO programmes in SSA to address barriers to utilisation of EO data, products, and services. One hundred seventy-seven EO value chain actors from public and private sectors in six countries in Eastern and Southern Africa were interviewed in May and June 2023.

The following policy actions are recommended: (i) establish collaborative frameworks with EO national, continental, and global programs; (ii) lobby for open access to very high-spatial resolution satellite imagery and products; (iii) create policy and compliance guidelines to ensure that labelled agriculture research datasets are Findable, Accessible, Interoperable, Re-usable; (iv) increase awareness of the available EO data, products, and services and processing tools; (v) strengthen the capacity of institutions; and (vi) develop local models suitable for African communities and provide funding to validate them.

Efficient use of satellite data, products, and services to support policy making in agriculture and food security requires a strong science-policy interface. Driving the science-policy interface in Africa requires a continental space policy to guide member states in developing national space policies.

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