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HaFAS powers Ethiopia's next phase of digital agriculture

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Government, researchers and development partners align to expand AI-driven fertilizer and agronomy advisory services nationwide

Ethiopia is accelerating its digital agriculture agenda with the Harmonized Fertilizer Advisory System (HaFAS), an artificial intelligence-powered platform that is rapidly emerging as the country's flagship model for delivering personalised crop and nutrient management advice at scale. The system took centre stage at the Ministry of Agriculture's Annual Digital Agricultural Extension and Advisory Services (DAEAS) Forum in Addis Ababa, where policymakers, researchers, technology providers and development partners outlined strategies to institutionalise digital advisory services nationwide.

Held under the theme of strengthening collaboration, harmonisation and innovation in digital extension, the forum brought together more than 200 stakeholders from government agencies, research institutions, universities, technical training institutes, NGOs and the private sector to chart the next phase of Ethiopia's digital transformation in agriculture.

Among the technologies showcased, HaFAS stood out as one of the country's most advanced digital advisory platforms. Developed by Ethiopia's Ministry of Agriculture, the Ethiopian Institute of Agricultural Research (EIAR), Regional Agricultural Research Institutes (RARIs), ICRISAT and the Alliance of Bioversity International and CIAT, the platform integrates artificial intelligence, machine learning, soil health, climate and agronomic datasets to generate location-specific fertilizer and crop management recommendations for individual farms.

Unlike conventional extension systems that often rely on generic recommendations, HaFAS uses data-driven decision support tools to produce site- and season-specific advisories, enabling farmers to optimise fertilizer use while improving crop productivity and resource efficiency.

The platform has already demonstrated significant field-level impact. During 2025, HaFAS advisories reached 22,162 farmers through a zonal scaling network involving agricultural offices, NGOs and ICRISAT. Digital delivery channels further expanded its footprint, highlighting the growing role of mobile technologies in agricultural extension.

ICRISAT's Telegram network, operating across 43 district groups, disseminated 19,260 advisory messages, while its interactive Telegram bot recorded 120 farmer feedback interactions, primarily related to crop management and disease diagnosis. Meanwhile, Digital Green's FarmerChat platform delivered personalised recommendations to 49,000 farmers, and agritech platform LERSHA extended advisory services to 32,000 farmers while connecting 8,000 producers to agricultural credit and insurance products, including 1,300 women farmers.

Building on these early successes, Ethiopia has set an ambitious objective of expanding harmonised digital advisory services to seven million farmers nationwide. Discussions at the forum focused on scaling the platform through stronger public-private partnerships and leveraging existing agricultural institutions at zonal, district and kebele levels alongside cooperatives, extension workers and private digital service providers.

Technical sessions also explored multiple delivery mechanisms designed to improve accessibility and farmer engagement. Participants highlighted the complementary use of AI-enabled chatbots, SMS alerts, voice messaging, hotlines, farmer agents and extension officers to ensure that digital advisory services reach farmers across diverse production environments and varying levels of digital literacy.

Beyond technology deployment, stakeholders emphasised that HaFAS is built upon long-term scientific research, validated agronomic evidence and rigorous quality assurance protocols. Its harmonised framework provides a nationally standardised process for developing fertilizer and agronomic recommendations, reducing duplication among digital platforms while improving interoperability across Ethiopia's expanding agricultural innovation ecosystem.

Participants concluded the forum by reaffirming their commitment to strengthening collaboration through the national digital advisory platform, recognising that integrated digital services will play a critical role in improving productivity, enhancing climate resilience and modernising Ethiopia's agricultural extension system.

As African agriculture increasingly embraces artificial intelligence and digital advisory tools, Ethiopia's HaFAS programme illustrates how coordinated partnerships between governments, research institutions and technology providers can help transform scientific data into practical, farm-level decisions capable of reaching millions of smallholder farmers.