

## Mature Products & Assets

### [NextGen Agroadvisory]

[product URL Web:

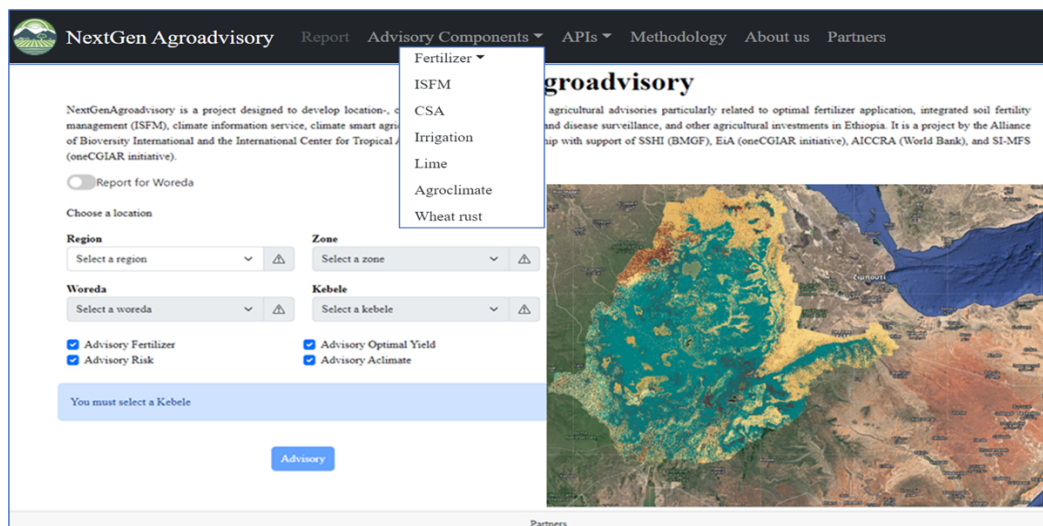
*https://nextgenagroadvisory.com/fertilizer\_advisories ]*

### Scope and benefits

The CGIAR Excellence in Agronomy Initiative (EiA) collaborated with national and international partners to co-develop a tailored, location-specific, and season-smart agro-advisory decision support tool to guide planners, extension workers and farmers on appropriate planting timelines and the amount and types of fertilizers and organic inputs that will be required; to promote and co-implement the advisory service; and build national capacity.

The advisory tool provides site and contextualized advisories for farmers in Ethiopia. Farmer access to the advisory services will be ensured through customized dissemination channels, including video, IVR, SMS, radio, telegrambot, and traditional extension channels. Male and female farmer preferences and constraints as well as resources endowments will be factored in during the entire process to ensure adaptive learning.

Example:



The team developed and piloted an agro-advisory tool to help farmers make informed decisions about best nutrient management practices. Generated from research-based data integrated with detailed biophysical co-variates, the advisory is site - and context-specific, tailored to households and their specific plots. This advisory is ‘season-smart’ and considers ‘next season’ climate information when providing recommendations. Currently, the advisory is integrated with ‘lime recommendation’ to guide input and management use for acid impacted soils.

Further to this, outcomes and data are integrated with a climate-advisory tool called Ethiopian Digital Agroclimate advisory Platform (EDACaP), which assists in generating accurate information about planting timelines. The DST is also integrated with process-based models such as Quantitative Evaluation of the Fertility of Tropical Soils, which predicts water-limited yield and indigenous soil fertility supply. This farmer-facing technologies are customized by Digital Green who is responsible to disseminate the advisory to extension workers and framers. Content is tailored according to specific household typologies. A private sector called Lersha is also using the advisory integrated with credit and/or insurance services based on an adaptive exercise with farmers through human-centred design exercise.

## Development & versioning

The earlier version of the DST was focused on inorganic fertilizer. However, currently it expanded to organic fertilizer alternatives, lime amendments, and planting dates. Next steps involve integrated features to account farmers’ feedback and interaction with the advisory to fine-tune in near real-time hyper-localization. Farmers’ feedback and associated dashboard are already developed and being tested.

## Use considerations

A customized decision support tool (DST) is developed to guide planners, extension workers, and farmers in making optimal planting and fertilizer use decisions by disseminating a location-specific, season-smart fertilizer, organic inputs and climate advisory for wheat. The advisory also incorporates ISFM, and is delivered through video, IVR, API, chatbot, and maps.

### Target users

Extension agents and farmers

### Maturity and Scalability

CGIAR innovation readiness: 8 | innovation use: 7

### **Validation and Piloting**

The Decision Support Tool (DST) underwent validation in three regions of Ethiopia, namely Amhara, Oromia, and Southern Nation Nationalities and People (SNNP) and has produced significantly better results than previous farming activities and practices. The validation involved comparing the results obtained from the DST with both national recommendations and local control groups. 300 farmers participated in the validation process during the 2021-2022 season. The outcomes demonstrated significant benefits in terms of yield, agronomic practices, nutrient utilization, and water efficiency. Results showed notable advantages in terms of yield and agronomic, nutrient and water use efficiencies. The DST has demonstrated a higher grain yield of 12-25%, for farmers and extension workers who took part in the validation trials. Field trials and feedback from farmers and extension workers during field days confirmed the DST's efficacy, as it consistently resulted in a higher grain yield. Furthermore, when comparing location-specific fertilizer rates recommended by the DST with local and national blanket recommendations, there was a notable increase in partial profit per hectare per season. Specifically, there was a 24% (USD 580) increase in profit for one location and a 16% (USD 412) increase for another. Applying the location-specific fertilizer rate of approximately 5.3 tons per hectare to the wheat production area of about 1.75 million hectares resulted in an average monetary gain of around USD 2.3 billion per season. Building on these positive findings, the DST is now being piloted across five districts in three major regions of Ethiopia. Despite high fertilizer costs in the summer of 2022, over 3,500 of the more than 10,000 farmers engaged adopted the new DST. Early implementation has yielded promising results, demonstrating strong performance levels.

During the 2023/2024 season, the national research system independently validated the advisory to open the way towards packing it into the extension system. The result shows significantly better performance compared to current recommendations (national and local). Currently, the advisory has been disseminated across ca.80,000 farmers through the collaborate work of Ministry of Agriculture, Regional, Zonal and District Bureau of Agriculture, Digital Green, and Lersha.

### **Supported Results**

- Report detailing effectiveness of advisory and adoption rates <https://hdl.handle.net/10568/135020>
- Supporting report on the piloting reach <https://hdl.handle.net/10568/135020>



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*for Sustainable Intensification and Climate Change Adaptation*

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