

Digital Agronomist

From master's research to a live, farmer-focused advisory service

Builder: Martin Ruto | **Initial locations:** Bomet and Mwea, Kenya

The idea

Give farmers useful agricultural guidance through a channel they already use: WhatsApp. Digital Agronomist starts with weather questions and crop photographs, with a longer-term goal of combining farm history, soil results and professional agricultural knowledge into practical, farm-specific support.

What is live today

Current position	As reported by the builder
Launch	October 2026
Initial users	Five farmers in Bomet and Mwea
Crops represented	Maize, beans and rice
Early usage	Approximately 20 messages in a week
Current questions	Weather and advice based on crop photographs

Farmers have reported that the advice helped them select a pesticide for their crops and prepare for upcoming weather. These are early, self-reported experiences. Pesticide suitability, crop diagnoses, yield improvements and income benefits have not been independently verified.

What I have built

I designed and implemented the system myself, using my master's project as the foundation. The research prototype includes a web portal, backend, WhatsApp integration and an experimental model combining soil data with crop-image features. The WhatsApp service is now in early live use; the wider prototype should not be confused with a fully deployed field system.

Why this matters

Farmers make time-sensitive decisions with incomplete information. Advice that is difficult to access or disconnected from a farm's actual conditions can be hard to use. The project explores whether a familiar conversation, supported by better records and specialist input, can make relevant guidance easier to act on.

What comes next

- Strengthen reliability, maintain useful farm histories and record farmer feedback and follow-up.
- Develop opt-in requests for crop updates and relevant weather notifications. Proactive alerts are in development, not claimed as already deployed.
- Establish agronomist oversight and a laboratory partnership for soil-informed recommendations.
- Expand towards a supported pilot of 25-50 farms over a suitable growing season, subject to reliable delivery and participation.
- Use actual farm and harvest records to assess benefits before investing in advanced monitoring or locally validated yield prediction.

What support would unlock

Support would sustain hosting and messaging, provide time to improve the service, enable agricultural partnerships and help collect dependable local data. The priority is a useful, trusted service and measurable outcomes, not an immediate purchase of expensive machinery.

How value will be assessed

Intended benefit	Evidence to collect
Useful, accessible advice	Repeat use, farmer understanding and actions taken
More timely support	Response and follow-up times
Better-informed spending	Input quantities, costs and reasons for changes
Improved farm performance	Harvest and income records, with weather and management differences considered
A sustainable service	Delivery cost per farm, specialist workload and willingness to pay

Evidence and honest limitations

The master's research included 84 complete survey responses and 10 interviews. Those research participants are not the current service's user count. The yield model used simulated maize and beans data because representative local sensing data were unavailable. It is not field-validated, and the live advisory launch does not validate its predictions.

No fixed yield or income increase is promised. Recommendations with significant consequences need appropriate professional review. Farmer information should be collected with consent, limited to what is needed and kept out of public demonstrations.

Long-term ambition: A shared advisory service for farmer groups, with testing, monitoring and predictions added only when they demonstrate practical value.