Digital Green Farmer.Chat in Kenya

IMPLEMENTED 2023–2027 · AGRICULTURE AND FOOD · KENYA · BAND D · PARTLY PROVED
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A generative AI chatbot gives smallholder farmers and extension agents in Kenya crop and livestock advice. A phone survey of 450 users by 60 Decibels, run in partnership with Digital Green, reports high use of the advice; a randomised trial of yield and income effects is under way.

ABOUT THIS SYNOPSIS

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NOTICE WORDING LAST UPDATED 16 NOVEMBER 2026

AT A GLANCE

AI used: Generative AI chatbot with retrieval over local agronomy content, in text, voice and images.

Implemented: 2023–2027. Grade: band D, Task support, Partly proved.

Headline result, as reported: A farm advice chatbot is used and valued by Kenyan farmers in a 60 Decibels survey for Digital Green; effects on yield and income are still being tested

1 · The case

The facts, as reported by the 3 sources listed at the end. Where a source is silent, the field says "Not reported".

Organisation

Digital Green. Digital Green designed Farmer.Chat, an AI chatbot for farmers and extension workers in four countries, per 60 Decibels. The system paper is by Digital Green with a Microsoft Research India co-author, and the work was funded by the Bill & Melinda Gates Foundation. This case covers Kenya, its largest deployment. Canvas block: 3. Customers and proposition. Also 4. Operations and process.

Business challenge

The challenge. The developers say smallholder farmers lack timely, local advice, and that extension agents cannot reach them in numbers. They cite a government-reported ratio in Kenya of about one agent to 1,000 farmers, and as many as 4,000 in places, against a recommended 1 to 400.

Who implemented it

In-house (In-house): Developed and runs Farmer.Chat.
Microsoft Research India (University or research lab): Co-authored the system paper with Digital Green.
60 Decibels (Consultancy): Ran the user survey in Kenya in partnership with Digital Green.
Funded by the Bill & Melinda Gates Foundation (Generative AI for Agriculture project), per the developers' paper.

Technology (SEAM pillar E)

SEAM types: T3 API integrations, T4 RAG / vector search over your own data. Deployment: Not reported. Vendors and products: Google, Farmer.Chat.

Where it was built in: Delivered on WhatsApp and Telegram; queries translated with Google Translate APIs; retrieval-augmented generation over localised knowledge bases; conversation logs reviewed by human annotators.

What changed

Before: advice depended on extension agents and word of mouth, and most surveyed users had not used a similar service (83% first-time access). After: users ask the chatbot, and two thirds of surveyed users who recalled their last query say they took a concrete action. Yield and income effects: Not reported. [1] [2] [3]

What it cost

Not reported

What it saved

Not reported. No cost, time or yield figures are published; the registered trial will measure yields and household income. [1] [2] [3]

Governance and control

Developers log conversations and have human annotators review them to refine answers, per their paper. Digital Green partnered with 60 Decibels on a user survey, and IFPRI-led researchers have registered a randomised trial. Accountable owner: Not reported.

S2 · Accountable owner · Not reported
Not reported.

A1 · Safe use · Not reported
Not reported.

A2 · Human in the loop · Claimed
The developers' paper describes human annotators reviewing conversation logs; Ministry of Agriculture extension agents are among the users. [2]

A3 · Monitoring and assurance · Claimed
Digital Green partnered with 60 Decibels on a survey of 450 users, and developers review conversation logs; a randomised trial by IFPRI-led researchers is registered but has not reported. [1] [3]

A4 · Vendor AI · Not reported
Not reported.

A5 · Agent controls · Not reported
Not reported.

A6 · Standards and regulation · Not reported
Not reported.

What worked, what did not, what is unproven

WORKED

– In the 60 Decibels survey, 61% of users report meaningful use, against a Kenya benchmark of 27%, and the Net Promoter Score is 63.

– Two thirds of users who recalled their last query report taking a concrete action or decision on their farm because of it; 90% report no challenges with the app.

– The developers' paper scores average context precision of 71% for retrieval.

DID NOT

– The survey notes over half of users hold university or higher education, so the app is not reaching the lowest-literacy farmers.

– Only part of farmers' actions matched the recommendation: in the survey, actions completely or partially overlapped with the advice for 49% of users.

– The developers' paper reports the chatbot's performance on gender-based violence and harassment questions was inadequate.

UNPROVEN

– Effects on yields, income and adoption of practices, which the cluster randomised trial is designed to measure.

– Whether advice is accurate beyond the developers' own tests.

– Whether results hold for lower-literacy and women farmers (28% of survey respondents were women).

Timeline

Oct 2023 Kenya deployment of Farmer.Chat starts [2]

2024 Digital Green and Microsoft Research India report over 15,000 farmers and over 300,000 queries across four countries, with the Kenya deployment the largest at 8,805 users [2]

Jul 2025 60 Decibels begins phone interviews with 450 Kenyan Farmer.Chat users (to August 2025) [1]

Sept 2025 Cluster randomised trial of Farmer.Chat in 600 villages in Nakuru County, Kenya, starts (registered October 2025) [3]

Mar 2027 Registered end date of the trial; two agricultural seasons are covered [3]

2 · Grade and SEAM assessment

MarLuc's opinion, made on the evidence above. How cases are graded: marluc.co.uk/case-studies/how-we-rate

Level of change and impact

Claimed: Not applicable. Grade: D, Task support. Proof: Partly proved. Route: Tool-led.

Task support (Level 1, band D). Farmers and agents get advice faster. No source shows a change in yield, income or in how extension is organised.

Graded D. Farmers and extension agents get answers from a chatbot; the sources show use and reported action on advice, and no change in yield, income or the extension system itself. Partly proved: the survey was carried out by 60 Decibels, separately from the developers, but in partnership with Digital Green, from its user database and on users' own reports; the causal trial has not reported.

The SEAM view and lessons learnt

The survey shows adoption and reported action; it cannot show that the advice caused better farms, which is what the registered trial tests. The chatbot sits beside existing extension agents, so the case says little about replacing them. Before copying it, a leadership team should ask how answer quality is checked against local agronomy, and who is not reached by a phone-based service.

1. Commission an independent user survey and a causal trial early.
2. Measure who the service reaches, not just how many.
3. Test sensitive question types before they reach users.

Evidence

Score 2 of 4. Partly proved: a survey by 60 Decibels in partnership with Digital Green (users' own reports, respondents from Digital Green's database) and a developer paper; no causal result yet.

Evaluation method. Survey by 60 Decibels in partnership with Digital Green (phone interviews with 450 users drawn at random from Digital Green's database, plus backend query data) and the developers' own paper; causal trial registered, not reported.

Sources disagree. Not reported.

Status. Ongoing: randomised trial registered to run to March 2027.

3 · Original sources

Read these in full. To challenge a fact or a grade, use the contact form at marluc.co.uk or the link on https://marluc.co.uk/case-studies/digital-green-farmer-chat-kenya

[1] 60 Decibels: Digital Green Farmer.Chat study, Kenya (Lean Data Insights, September 2025)
https://60decibels.com/wp-content/uploads/2025/11/25.11.03_Digital-Green-

[2] Singh et al. (Digital Green and Microsoft Research India): Farmer.Chat: Scaling AI-Powered Agricultural Services for Smallholder Farmers (arXiv preprint)
https://arxiv.org/pdf/2409.08916.pdf

[3] AEA RCT Registry: Improving smallholder agriculture with generative AI: the impact of Farmer.Chat in Kenya (AEARCTR-0017035)
https://www.socialscienceregistry.org/trials/17035

Digital Green website: https://digitalgreen.org

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