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Bridging the Information Gap: How Munda Makeover is Transforming Agricultural Learning in Zambia

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This project note presents midline findings regarding the effects of Munda Makeover (MMO), a farm makeover TV show designed to disseminate agricultural knowledge to Zambian farmers in an entertaining way. IFPRI and partners designed and implemented a cluster randomized trial across 160 villages involving two main interventions: village screenings of MMO episodes, combined with weekly SMS reminders to watch the show; and agricultural roadshows or input fairs. Results from a phone survey with 976 farmers show that community screenings and SMS reminders significantly increased viewership and knowledge around innovations promoted in the TV show. However, the uptake of agricultural inputs sold during the roadshows remains limited, largely due to liquidity constraints. These findings offer critical insights for optimizing the delivery of agricultural extension content through mass media and improving farmers' access to agricultural inputs.

Farmers in Zambia face numerous challenges that threaten their agricultural productivity and livelihoods. Climate change, for one, makes weather less predictable and increases the frequency and severity of weather extremes. In addition, many farmers lack access to extension or other advisory services that provide timely and accurate information on climate-smart agricultural practices and technologies, limiting their ability to adapt to climate change. Finally, Zambian smallholder farmers often struggle to access inputs and tools needed to adopt these climate-smart technologies and practices, due to poor infrastructure resulting in high transportation costs.

When it comes to information, Zambian farmers mainly rely on direct agricultural extension, traditionally provided by government extension officers. Its effectiveness, however, has been limited partly due to a low ratio of extension officers to farmers, significantly hampering farmers' access to critical agricultural information (Chavula & Yali, 2022). In terms of access to physical agricultural inputs and tools, farmers

in Zambia still face significant challenges, a problem that is heightened by dilapidated roads especially in rural areas. For example, the World Bank's 2016 Rural Access Index report reveals that only about 17% of Zambia's rural population had access to a paved road within a 2-kilometer radius (Iimi et al., 2016). To make matters worse, damaged infrastructure due to flooding during the rainy season further hinders mobility in rural Zambia, isolating farmers from essential inputs and limiting their productivity.

Recognizing these challenges, the CGIAR research initiative Ukama Ustawi: Diversification in East and Southern Africa (UU) and the Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) program invested in and partnered with the Mediae Company in the production of Munda Makeover (MMO), a farm makeover reality TV show that delivers agricultural content through an educational and entertaining approach. Modeled after Kenya's popular Shamba Shape Up, which is estimated to reach over 8-9 million viewers weekly, the show features agricultural experts who visit farms, diagnose challenges, and provide practical, expert-driven solutions to farmers (Makau, C., 2023). Through practical demonstrations of agricultural practices and technologies, the show aims to equip farmers with relevant knowledge they can use to improve agricultural productivity and overall livelihoods. The show is broadcast in English and local languages to reach a wider audience of farmers.

While television has long been recognized as an effective tool for conveying information in an educational and entertaining manner (Abate et al., 2023; Aju et al., 2022; Clarkson et al., 2018; and Harwin & Gandhi, 2014), there is limited evidence of its impact on agricultural investment and productivity. A key question is thus whether access to Munda Makeover translates into real changes in farming practices and investments that in turn lead to increased productivity. Moreover, since farmers in regions with poor input access may face challenges trying to apply what they learned on TV on their farm, an additional question is how facilitating access to inputs can strengthen impacts on the use of recommended practices, and, ultimately, agricultural productivity and profitability.

Intervention and Experimental Design

To answer these questions, IFPRI and partners implemented a cluster randomized trial in 160 villages across 20 camps in Eastern and Central Provinces. The aims are to (i) assess the impacts of MMO's edutainment model, in particular in terms of farmer agricultural knowledge and adoption of practices and technologies promoted by the show; (ii) assess how roadshows (locally held events where input providers bring their products and services closer to farmers) affect the availability and accessibility of essential agricultural inputs and services; and (iii) evaluate any synergies between both interventions.

Recognizing that access to TV remains limited in rural Zambia (household survey data from Central and Eastern provinces suggests that just 11% of farmers own a TV), the study does not depend just on farmers watching MMO by themselves; in 80 randomly selected villages, the study team screened MMO episodes using a walk-in cinema model. In addition, weekly SMS reminders were sent to study farmers

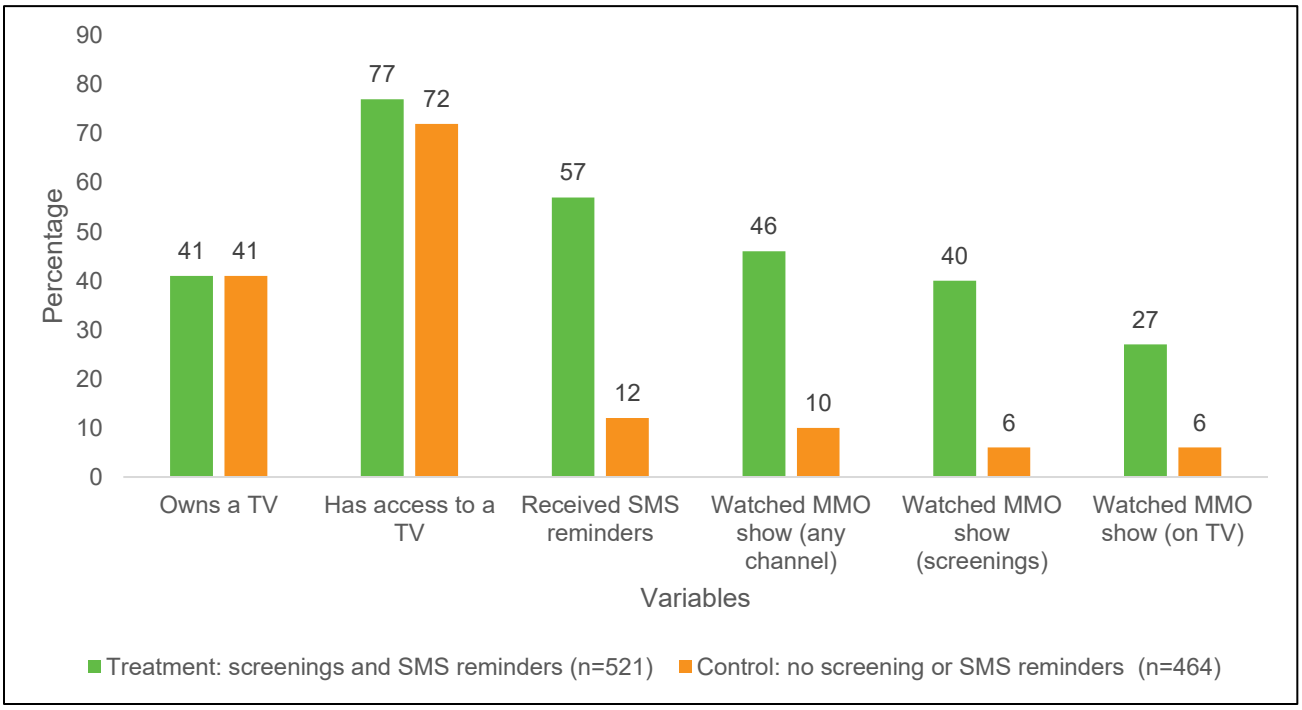
with access to a TV in these same villages, nudging them to watch MMO on TV. This dual strategy aimed at overcoming the hurdle of low TV penetration especially in remote farming communities.

To complement the information provided by the TV program and improve access to inputs and technologies promoted in the show, farmers in 10 randomly selected camps (out of the 20 study camps) were invited to attend roadshows, organized in a central location in their camps. The roadshows featured a diverse range of exhibitors, including seed companies, agro-dealers, financial institutions, chemical and fertilizer suppliers, agro-equipment manufacturers, and tree seedling providers—many of whom had their products showcased in MMO episodes.

Descriptive Statistics

While the impacts of the intervention are to be ultimately be evaluated by means of an endline survey, towards the end of 2024, IFPRI conducted a phone-based midline survey among 976 farmers (from both treatment and control group villages) to assess farmers' awareness and perceptions of the interventions, whether they had watched the show, their level of knowledge around the innovations promoted by the show, and their extent of participation in the roadshows. The aim was to identify areas of improvement moving forward, to inform the design of the endline survey, and to improve understanding of the mechanisms through which impacts may or may not occur.

Figure 1: Munda Makeover intervention indicators



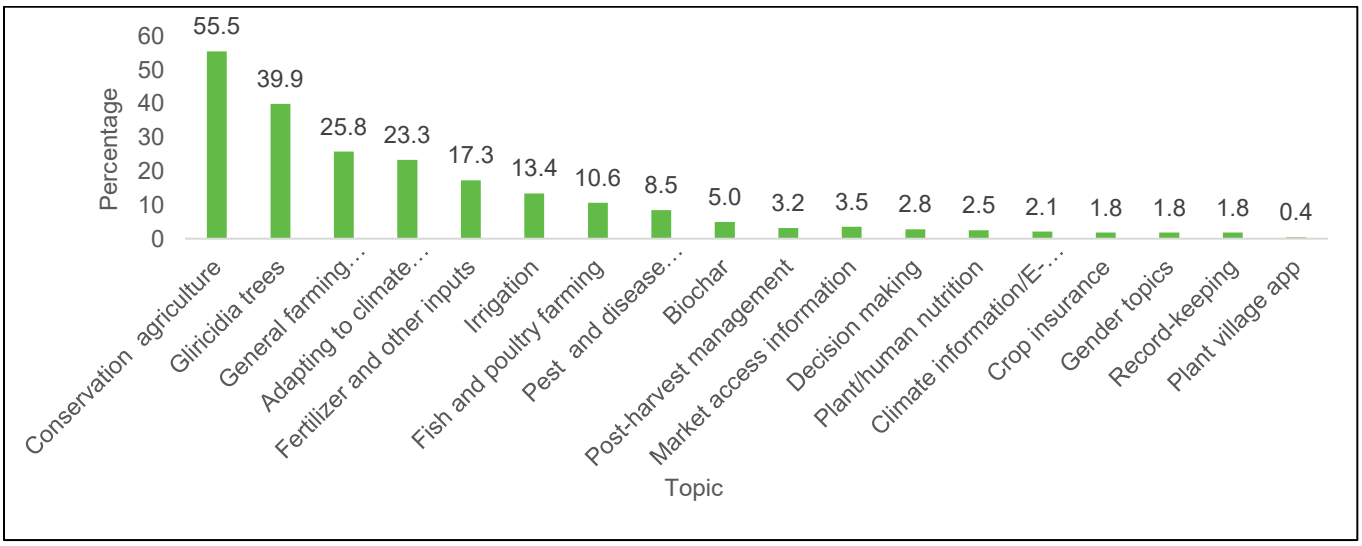
Source: Midline phone survey

Overall, midline survey data show that the intervention significantly increased exposure to Munda Makeover (Figure 1). Village screenings proved to be a vital channel for engagement, with 40% of farmers in treatment villages (receiving screenings and weekly SMS reminders) reporting watching the show

through this channel, compared to only 6% in control villages. Moreover, 27% of treatment farmers reported watching the show on TV—a sharp contrast to just 6% of control farmers (and 8% of control farmers with access to TV). A 21 percentage point increase in viewership over TV is remarkable considering frequent power outages in Zambia during the study period, suggesting that the screenings and SMS reminders not only increased exposure to the show by means of a somewhat artificial, costly intervention but also increased awareness of the show and encouraged farmers to watch its content on TV.

The survey also inquired about which of the topics featured on Munda Makeover farmers had found *most useful*. Practical, hands-on topics like conservation agriculture (55.5%) and Gliricidia trees (39.9%) stood out as the most valued by farmers (see Figure 2), both relevant and actionable practices that farmers can apply directly to their fields. Other broad topics like general farming advice and adapting to climate change also ranked high, reinforcing the idea that farmers are eager for information that boosts their resilience and productivity.

Figure 2: Most useful topics featured in the show



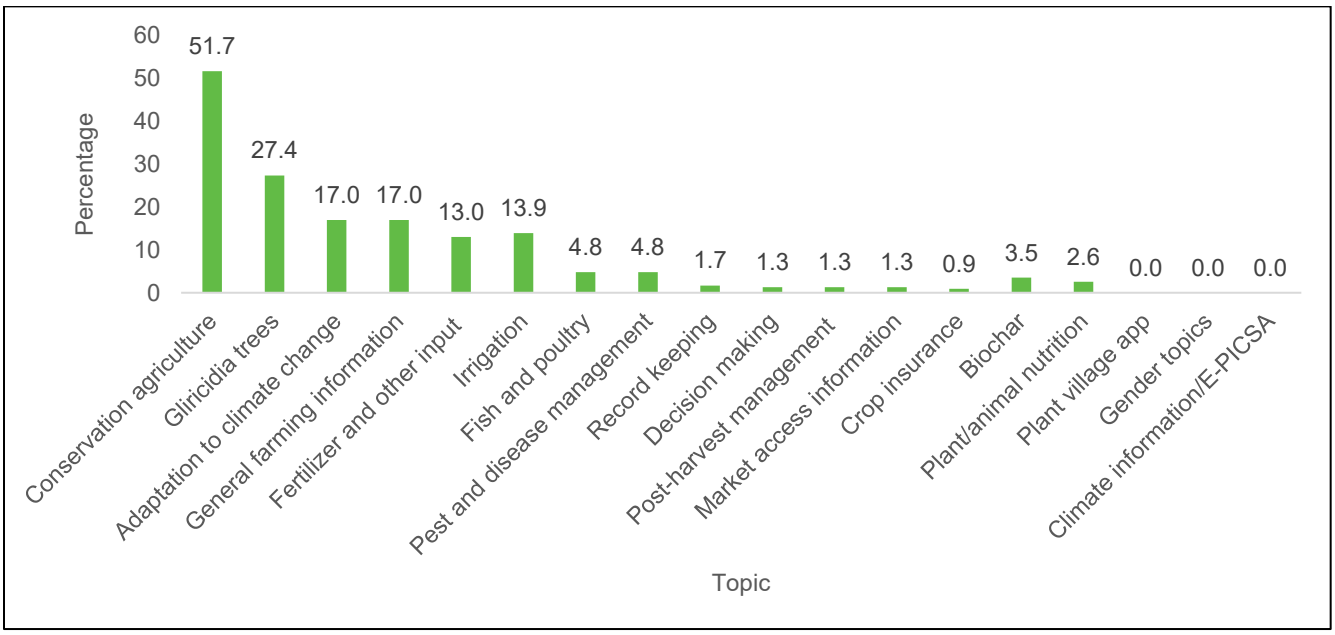
Source: Midline phone survey. "Gliricidia trees" refers to the multipurpose use of Gliricidia trees to enhance soil fertility, provide fodder, and offer shade. "E-PICSA" is an abbreviation for Enhanced Participatory Integrated Climate Services for Agriculture and refers to a tool that helps farmers use historical climate information and forecasts for planning. "Plant Village App" is a digital tool to help farmers diagnose crop diseases, access climate-smart farming advice, and improve decision-making through real-time, AI-driven support.

The program resonated deeply with its audience — 98% of farmers found it very interesting to watch. When asked about their likelihood of trying new farming techniques introduced in the show, 99.7% expressed a strong willingness to adopt them. More importantly, 81.3% of viewers stated having adopted at least one farming practice featured in the show during the current season, hinting at the show's effectiveness to shape decision-making and drive agricultural change (Figure 3). Similarly, conservation agriculture, Gliricidia trees, and climate adaptation practices were the practices most reported as having been adopted by farmers.

Beyond inspiring change, *Munda Makeover* seems to be regarded as a trusted and credible agricultural resource. More than 99% of farmers reported being confident about the information provided and stated

that they would recommend the show to others. These findings reaffirm the show's growing influence in transforming farming practices, bridging knowledge gaps, and empowering farmers with the tools they need to thrive.

Figure 3: Self-reported adoption of topics featured in the show



Source: Midline phone survey. See Figure 2 for a description of Gliricidia trees, E-PICSA, and Plant Village App.

Midline Effects on Awareness and Knowledge

This subsection presents estimates of the causal effect of watching MMO on farmer awareness and knowledge of the innovations featured on the show (as measured through awareness and knowledge questions conducted during the midline survey). To do this, we rely on a two-stage least squares (2SLS) instrumental variable approach, using each village's random assignment to the information intervention (which included screenings and SMS reminders) as an instrument for farmers reporting to have watched MMO (either at the screenings or directly on TV).

Awareness is measured by considering farmer responses to whether they had ever head of the different topics featured in the show at the time of the midline survey. Topic-specific variables are coded as dummy variables and the variable "*All topics combined"* is constructed as the proportion of all topics that a farmer has ever heard of. Knowledge is measured as the proportion of correct benefits that a farmer was able to mention (as an open-ended answer) for each of the topics featured in the show, conditional on them having ever heard of that topic. For each of the topics, any benefit mentioned by the farmer is considered to be a correct answer if that benefit was mentioned in the show. Finally, the variable "*All topics combined*" is constructed as the proportion of correct benefits a farmer listed across all topics.

Overall, watching MMO led to a 32 percentage points increase in the proportion of topics which respondents are aware of. When it comes to topic-specific variables, the strongest positive effects are observed

for topics such as velvet bean (55 percentage points), Gliricidia trees (52 percentage points), and pest and disease management (42 percentage points) — all topics closely tied to everyday farming decision and the need to adapt to a changing climate.

Table 1: Effect of watching MMO on awareness and knowledge

	All topics combined	Dry spell effects	Gliricidia trees	Orange maize	Velvet bean	Benefits of cooperatives	Early maturity crops	Pest and disease management	Post-harvest management	Crop insurance	E_picsa
Awareness											
Watched MMO	0.321***	0.471***	0.519***	0.392***	0.552***	0.155*	0.170**	0.424***	0.187**	0.277***	0.062
	(0.048)	(0.089)	(0.086)	(0.084)	(0.095)	(0.085)	(0.069)	(0.089)	(0.077)	(0.093)	(0.052)
Knowledge											
Watched MMO	0.063***	0.047***	0.101***	0.068***	0.092***	0.035*	0.028*	0.029	0.036**	0.048**	-0.095
	(0.012)	(0.011)	(0.021)	(0.018)	(0.019)	(0.020)	(0.016)	(0.027)	(0.017)	(0.022)	(0.071)

Source: Midline phone survey. *The values in parentheses are standard errors. Significance levels are denoted as follows: *** p < 0.01, ** p < 0.05, * p < 0.10. The results from the first stage of the 2SLS regression are not shown but are highly statistically significant, confirming the strength of the instrument.*

Importantly, watching MMO does not only increase awareness of the topics discussed in the show but also helps to increase viewers' actual knowledge about them. In particular, watching the show resulted in a 6.3 percentage points increase in the proportion of correctly-listed benefits across all topics. While such a magnitude may seem modest, this represents a statistically meaningful shift and is especially large when benchmarked against other agricultural extension interventions, for which substantial shifts in knowledge are usually rare and typically fall within a small-to-moderate range (Hörner et al.,2022; Kondylis et.al., 2017). Similarly to the above results on awareness, topics such as Gliricidia, velvet beans, and biofortified orange maize show the largest gains in knowledge, likely because they were less known beforehand. For instance, the multiple uses of Gliricidia trees—as a soil enhancer, as fodder, and to provide shade—may have resonated with farmers seeking low-cost sustainable ideas for their farms. Similarly, velvet beans and orange maize offer nutritional and agronomic advantages that align with household needs and climate goals at a relatively low financial and learning cost.

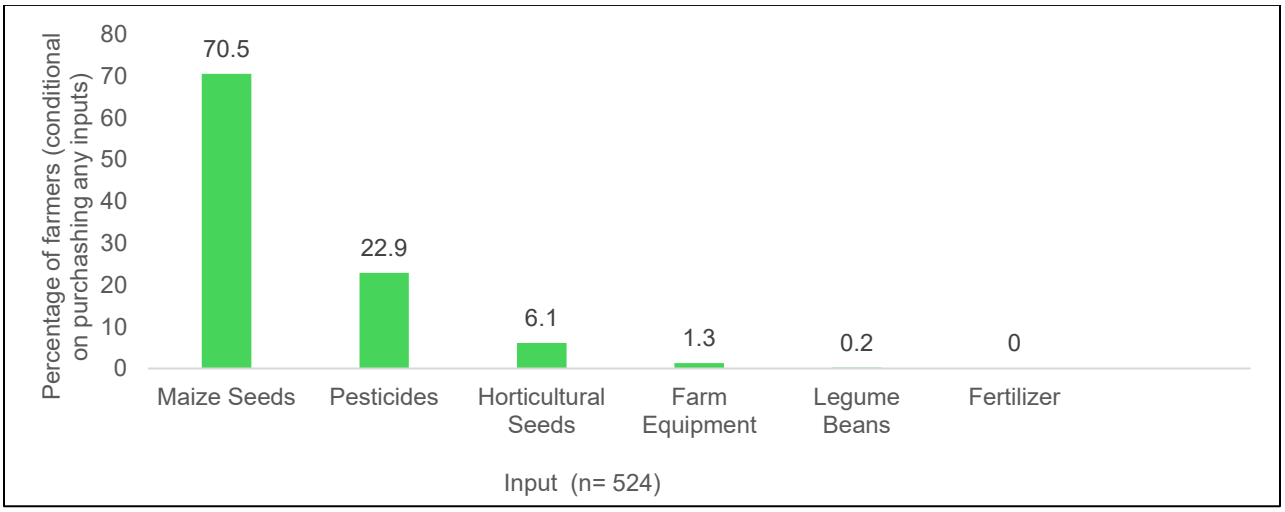
Roadshow Attendance and Input Purchase

As discussed above, another aspect of the intervention consistent in organizing roadshows in 10 randomly selected camps. These were conducted in a central location close to the study villages in each camp. During these roadshows, providers offered inputs and services promoted by the TV show. An initial wave of roadshows was held between September 2023 and January 2024. To assess attendance and purchasing behavior at these roadshows, we draw on two complementary data sources. First, the midline survey provides estimates of roadshow attendance among study farmers. Second, the administrative data collected during the roadshows provide information on the types of inputs purchased by the farmers.

The midline survey inquired farmers about roadshow attendance. This was found to be generally low. In particular, only 2% of farmers in the roadshow treatment group and 1% in the control group reported attending the roadshows. Discussions with input providers and focus groups held with farmers indicated that such low attendance was likely due to the severe droughts experienced in the study area (and Zambia more generally) during 2023 and 2024, which resulted in significant crop failures and constrained farmers' purchasing power. Additionally, delays in receiving emergency relief funds from the government, insufficient savings, and limited access to credit seemed to have further hampered farmers' ability to purchase inputs and thus to attend the roadshows.

Administrative data from the roadshows indicate that 524 farmers purchased at least one agricultural input during the events. Out of the farmers that purchased inputs at the roadshows, most of them purchased maize seeds (70.5%) and pesticides (22.9%), indicating a strong focus on staple crop production and pest control (Figure 4). Purchases of farm tools (1.33%) and legume seeds (0.19%) were minimal, and no purchases of fertilizer were recorded, arguably due to farmers' ability to obtain highly subsidized fertilizers from Zambia's Farmer Input Support Programme (FISP).

Figure 4: Input purchase at roadshows



Source: roadshow input purchase data

Conclusions and recommendations

Overall, findings from our process evaluation are highly encouraging, both in terms of the quality of implementation of interventions around the process evaluation of MMO and in terms of the effects of watching the TV show on awareness and knowledge of featured agricultural topics. In particular, screenings and sending SMS reminders seems to have significantly boosted the show's viewership in the information treatment villages, and watching MMO seems to have driven greater awareness and knowledge of the key topics featured in the show.

While our findings indicate a positive impact from watching MMO, the screening model is not directly scalable considering that it requires significant resources. Aside from large-scale, government-supported electrification projects to increase TV access in remote rural areas (which may take significant time), alternative approaches to expand the show's reach could be to leverage digital platforms like YouTube by sending links of Munda Makeover content to extension officers' and farmers' phones, or to encourage group watching at select locations within the village with access to a TV (oftentimes powered through solar panels), a practice that is reportedly common in rural Zambia.

Although increased knowledge about recommended practices and technologies is indeed a step in the right direction, bridging the adoption gap is essential to improve productivity and livelihoods. Enhancing access to inputs and services featured in the show, for instance by connecting farmers with providers, therefore remains essential. Careful timing of future roadshows around the post-harvest period (when farmers have or perceive to have more disposable income) or after disbursement windows of social protection programs may be an effective strategy in this direction. Integrating financial literacy training with the roadshows may also help to equip farmers with useful financial management skills and encourage saving for agricultural inputs.

While these early results are promising, the story doesn't end here. A deeper look at the long-term impact is currently underway, with an in-person endline survey conducted towards the end of 2025. These data will truly allow us to see whether knowledge gains turn into actual increased adoption and lasting behavior change, and whether this translates into increased resilience, higher output, or lower costs for Zambian farmers.

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