



Last-Mile Agents hold the Key



The central barrier to agricultural transformation in Africa is not a lack of innovation. Improved varieties of seeds, fertilizers, and other inputs already exist. Seed manufacturers are established and distribution networks reach the village level. Yet adoption rates remain inconsistent, and too many promising products stall before reaching sustainable scale.

The problem is not agricultural inputs, it is the system. And within that system, the most fragmented and at the same time most essential layer is the last-mile agent network. Agents are the hinge between corporate seed strategy and the everyday decisions of smallholder farmers.

They are the people who determine whether adoption moves forward or stalls out.

Think about it the way we think about public health. A vaccine by itself does not eliminate disease. Pfizer or Moderna cannot solve a country's vaccination challenge just by producing doses. The real success comes from delivery systems: the nurses, clinics, supply chains, and trusted health workers who make

sure each vial actually reaches a patient. Agriculture is no different. Without reliable last-mile agents who connect improved varieties to farmer trust, liquidity, and risk decisions, even the best innovations stall just short of adoption.

Through the Enabling Market Intelligence & Building Engagement (EMBE) project, we developed a software backbone for last-mile delivery: rural agent management software, often described as a "LinkedIn for Agents" coupled with a behavioral intelligence platform. This system turns scattered, fragile agent networks into structured, credentialed, data-rich ecosystems where performance is visible, incentives line up with outcomes, and mobility opportunities keep talent invested and investors engaged.

Scaling is likely not a question of whether a seed has the correct set of attributes. The real question is whether the system around it is designed to help farmers, agents, and companies make the right decisions.



EMBE: A CGIAR-led initiative

Recognizing these bottlenecks, the Alliance of Bioversity International and CIAT, within CGIAR, launched the EMBE (Enabling Market Intelligence & Building Engagement) program in 2023, with support from the Gates Foundation. EMBE began as a behavioral gamification initiative, designed to generate rigorous, experimental evidence on what drives or suppresses sales to rural households and to translate that evidence into tools that could reduce customer acquisition costs.

What emerged, however, was a more comprehensive approach: EMBE became a multi-method effort to reimagine rural agent networks and to build behavioral infrastructure for seed adoption.

The Alliance provided scientific governance and management. Busara Center for Behavioral Economics designed and implemented the field and lab experiments. Usiku Games contributed early software prototypes for gamified training. Together, this consortium executed one of the most ambitious applied behavioral science programs in last-mile African agriculture to date.

Over two years, EMBE deployed a portfolio of studies:

- Randomized controlled trials with **Everlend (Uganda)** testing the performance of carefully selected and incentivized agents against business-as-usual recruitment.
- Field and platform experiments with **SeedSasa (Kenya)** using digital training, gamification, and redesigned incentives for agents in a savings-based seed purchase model.
- SMS and data quality experiments with **DigiCow (Kenya)** to identify behavioral drivers of farmer engagement, agent reliability, and pathways to strengthen sales orientation.
- Marketplace experiments in **Meru and Bungoma** that recreated real farmer choice environments with competing offers and agents.
- Surveys and interviews with **Kuza, DigiCow, SeedSasaa and ACRE Africa agents** across Kenya, yielding large-scale insights into agent motivation, churn, and training needs.
- Incentive and behavioral design trials testing incentive preferences, agent traits, training formats, and message framings under controlled conditions.

This integrated approach—combining RCTs, simulations, platform pilots, and lab studies—allowed EMBE to triangulate insights across methods and settings, producing a uniquely rich evidence base on seed adoption.



Four Core Challenges in Last-Mile Seed Sales

Despite the critical importance of last-mile delivery, agent networks in sub-Saharan Africa remain fragile. Through EMBE's work with agribusinesses, four systemic choke points consistently emerged:



Demand visibility is weak.

While agents often possess an intuitive understanding of farmer demand, they struggle to predict the decisions and processes of agribusinesses due to underlying data asymmetry issues. Agribusinesses often lack the necessary transparency, which prevents agents from fully grasping market dynamics and trends. Furthermore, agents are not incentivised and lack the structural support to communicate their insights effectively. As a result, the valuable knowledge that agents hold remains unshared, limiting their ability to influence agribusiness decisions and optimally respond to market demands.



Agent networks are unstable.

Agent turnover is often 40% or higher per season. Agents face cumbersome paperwork, bear the cost of unsold stock (often to the point of reducing their targets), and lack basic tools for route planning or order tracking. As a result, companies waste resources constantly recruiting and retraining new agents rather than building cumulative expertise.



Incentives are misaligned.

Low margins leave agents with little motivation to invest in quality service. Distributors rarely have the data to identify or reward top-performing agents. Training programs are often generic and disconnected from actual observed behaviors in the field.



Feedback loops are broken.

Demo plot results, farmer satisfaction, and delivery delays rarely feed back into company decision-making. Each season begins with guesswork, repeating the same mistakes and losing ground to inertia.

Other factors compound the challenge: microfinance systems are disconnected from commission payments, certification data fails to reach frontline actors, and weather shocks remain isolated from extension advice. The result is a fragmented system where value is lost not because products fail, but because the agent ecosystem is too brittle to carry them through.



Insights from EMBE: What Agents Actually Need

The Enabling Market Intelligence and Building Engagement (EMBE) project worked with more than twenty agribusinesses to unpack the behavioral dynamics of last-mile delivery. Its findings cut through the surface-level narrative that farmers are “hesitant” or that agents “don’t perform.” Instead, EMBE revealed that adoption challenges are predictable, preventable, and solvable when agent incentives and tools are properly designed.

Several insights stood out:

Gamified systems drive retention. When one participating distributor introduced scorecards and tiered commission levels, agent re-registration rates jumped significantly. Agents responded not just to cash, but to recognition, status, and clear mobility pathways.

Savings-linked purchase flows boost redemption. Trust building is strengthened when agents are matched to farmer demographics. In another pilot program, where women agents were matched with women farmers, deeper relationships were cultivated, leading to greater engagement. This trust led to higher participation rates, with over 80% of enrolled farmers redeeming their seed bundles on time when these purchases were linked to mobile wallet savings targets.

Agents crave data — if it’s actionable. Even companies without advanced enterprise systems reported that simple dashboards and WhatsApp summaries helped their agents track performance and adapt quickly. Agents are not anti-data; they are anti-busywork.

These insights became the backbone for a new type of digital infrastructure: the EMBE-built agent management software, often described as a “LinkedIn for Agents” with associated BI platform.

- For agents, it functions like a professional profile and credentialing system. They log trainings, verify sales, and build track records that can move with them between employers. Performance is linked to recognition, mobility, and pay.
- For companies, it transforms vague territory-level data into actionable, agent-level intelligence. Instead of guessing which district is underperforming, companies can see which specific agent needs support, which ones are excelling, and where to allocate training or resources.
- For the broader ecosystem, it creates a credible labor market for agents — one where data-rich profiles help seed companies, agro-dealers, and financial services recruit and reward talent based on proven performance.

In short, EMBE showed that fixing last-mile delivery is not about pushing harder. It is about building behavioral infrastructure that allows agents and farmers to succeed on their own terms.



Translating Evidence into Systems: AgentBI

Testing shows what works. Infrastructure ensures it sticks. Too often, companies run pilots that deliver insights but fail to embed them into the daily operating system of the business. The result is that lessons learned dissipate after one season.

From the outset, EMBE was designed as an applied pipeline. Each study fed directly into the design of AgentBI, a business intelligence platform purpose-built for seed/input adoption. Developed by the EMBE consortium, **AgentBI** converts behavioral insights into operational tools.

It includes four integrated modules:

1

Agent Credentialing ("LinkedIn-for-Agents")

– verifiable agent profiles
logging training,
performance, and
endorsements.

2

Adoption Risk Dashboards –

predictive heatmaps
integrating agent
activity, farmer behavior,
and external signals.

3

Offer Testing Modules –

embedded A/B testing
of discounts, bundles,
and repayment designs
with ROI calculators.

4

Quality Assurance

Systems – optimized
SMS and validation
tools to improve
engagement and data
integrity.

Together, these modules professionalize agent networks, embed behaviorally informed offers, and give companies predictive insight into rollout health.



The Business Case for Input Companies

Four levers drive measurable value:



Agent optimization:

improves sales efficiency by 20–30%, concentrating resources on high performers and reducing attrition.



Offer testing:

increases adoption of higher-value hybrids by 10–15%, aligning offers with farmer liquidity patterns.



Predictive risk management:

prevents rollout failures, avoiding \$5–10 million in sunk costs per product cycle and protecting brand trust.



Supply chain optimization:

better visibility on farm locations and planting patterns enables more accurate production planning and efficient distribution.

Conclusion



The EMBE program shows that agricultural product adoption bottlenecks are behavioral and structural, not agronomic. Agents — whether absent or trusted, untrained or professionalized — make the decisive difference.

AgentBI is the missing infrastructure for seed adoption: a system that aligns finance, incentives, trust, and data with farmer behavior, making adoption predictable and manageable.

Behavioral infrastructure deserves the same priority as genetics and agronomy. And with EMBE's transition from project to spinout, this is not another pilot, but a scalable system capable of delivering adoption at the level global seed companies demand.

With this platform millions in wasted marketing spend and low quality agent jobs can be converted into predictable growth, durable farmer trust, improved livelihoods for youth and lasting sectoral impact.