ITC INFOTECH

Business-friendly Solutions

Turning Every Indian Farmer into a Knowledge Powered Decision Maker

How ITCMAARS is redefining what's possible when Responsible AI, rural networks, and decades of agri-expertise come together at scale.

CASE STUDY

Scaling Farmer Impact Nationwide with ITCMAARS

2.4 million smallholder farmers and Farmer Producer Organizations (FPOs) across India, with a scale ambition of over 10 million through the ITCMAARS ecosystems.

Core Challenges

Critical intelligence across crops, weather, and markets was fragmented and difficult to access, limiting farmers' ability to unlock productivity, profitability, and long-term resilience.

ITC Infotech Solution

Built a path breaking digital farmer platform and embedded the world's first AI co-pilot for farmers into ITCMAARS, ITC's phygital agri platforms, combining GenAI, deep agri expertise, and rural networks.

Impact

30–40% productivity gains and ~10% month-on-month growth in engagement, driving improved market access and financial inclusion.

From smallholder risk to data-driven control

India's agricultural sector is marked by low productivity, fragmented value chains, and climate stress. It faces a structural crisis that demands systemic, not incremental, solutions.

ITCMAARS (ITC Metamarket for Advanced Agriculture and Rural Services), ITC Ltd.'s platform is proving that enterprise-led ecosystem transformation can unlock sustainable value in complex, underserved markets.

This success is notable as most digital agri ventures have failed to move beyond pilots—trapped between tech-first design and the reality of India's fragmented farming landscape. ITCMAARS breaks that pattern by rooting digital tools in existing trust networks like Farmer-Producer Organizations (FPOs) and merging them with an on-ground ecosystem that seamlessly connects finance, advisory, inputs, and markets.

In doing so, it flips the platform playbook: success comes not from owning the ecosystem, but from enabling it to thrive. For long, India's smallholder farmers have operated with incomplete information: uncertain weather, opaque mandi prices and limited access to trusted agronomy advice. Even when digital tools existed, they were rarely localized, intuitive, or available in the farmer's own language.

ITC Infotech, together with ITC's agri business, set out to change this equation—putting enterprise-grade AI, many decades of agronomy expertise, and ITC's rural reach directly in the hands of farmers through ITCMAARS. The objective was clear: make every farmer as informed and empowered as the most sophisticated agribusiness, using nothing more than a mobile device and their voice.

How ITC is redefining agri-tech at scale

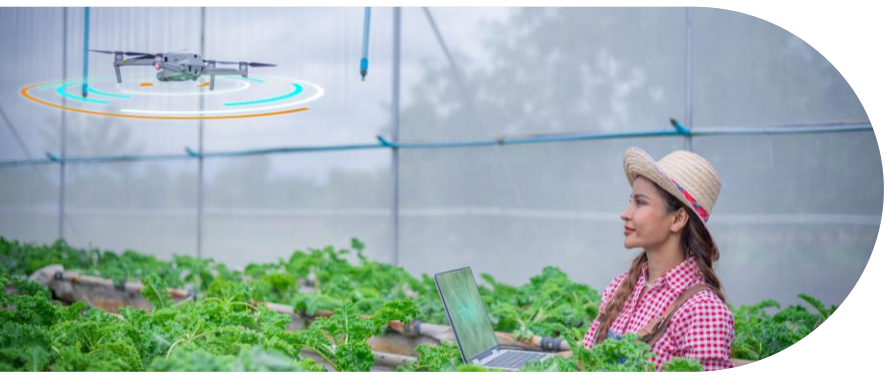
ITCMAARS now marks the next evolutionary chapter in ITC's agri-digital journey—evolving from the pioneering e-Choupal model launched about 25 years back to a fully integrated, scalable ecosystem leveraging contemporary AI and Mobile Apps. The result is a platform that is as farmer-centric in design as it is enterprise-ready in execution.

Embedded AI, not just another app: Instead of launching yet another standalone tool,
ITC Infotech engineered a farmer-focused AI co-pilot directly into ITCMAARS through Krishi
Mitra— a leading edge Gen AI implementation that allows farmers to converse with their applications
in their vernacular languages through voice based interfaces. This breaks the barriers to farmer usage and adoption, addressing India's linguistic diversity and farmer user experience preferences.

Enterprise tech tuned for village realities: Under the hood, the solution operates on multimodal GenAI, cognitive services for speech, translation, and document intelligence, a SQL and vector search data layer, and microservices on Kubernetes. However, every design choice is optimized for low-bandwidth environments, varied literacy levels, and mobile-first usage—making advanced AI feel simple, familiar, and dependable in the field.

Responsible AI by design: From day one, Responsible AI principles were built into the experience: explicit consent, feedback on every interaction, and the ability to regenerate answers. Models were trained and validated on high-quality, bias-aware data and tested with thousands of farmers across more than ten states to ensure reliability and trust.

Value from farm to market: Crucially, ITCMAARS does more than provide advice: it connects agronomy, inputs, markets, and finance into a single ecosystem. This end-to-end design helps farmers decide what to grow, how to grow it, when and where to sell, and which schemes and credit lines can further de-risk their livelihoods.



What the AI co-pilot delivers to every farmer

Always-on agronomist in your pocket: The AI co-pilot offers personalized crop management. A 'Crop Doctor' optimizes cultivation plans, real-time pest identification, input recommendations, irrigation schedules, and crop calendars—tailored to each farmer's GPS location and crop stage. Insights are grounded in ITC's agri domain expertise that spans nearly a century, making advisory both data-rich and field-tested.

Precision input access: Farmers gain timely, data-driven access to seeds, fertilizers, and pest management tools that optimize yield and reduce input waste.

No more guessing the weather: Location-specific weather forecasts are translated into clear, actionable recommendations: when to sow, irrigate, spray, or harvest. Instead of reacting to climate variability, farmers can plan intelligently aligned to their specific fields and crops.

Technology in action: From drones to zero-tillage and biofertilizers, technology-enabled
practices help farmers boost yields and build long-term environmental resilience.

Never sell blind: The platform provides near-real-time market intelligence on more than 20 commodities across more than 15,000 regional price points. Farmers gain transparency on where and when to sell, improving price realization and negotiation power.

Don't leave money on the table: The AI co-pilot helps farmers discover relevant government schemes, subsidies, insurance, and credit programs using a RAG-driven search across diverse data sources. Complex eligibility criteria and processes are surfaced as simple, actionable guidance, helping farmers move from subsistence to sustainable growth.

Speak your language, literally: The GenAI-powered voice assistant, 'Krishi Mitra', acts as an agri-copilot, helping farmers with their voice/text-based queries in 9 Indian vernacular languages powered by Microsoft Azure Cognitive Services Speech and translation services. Farmers simply speak their questions and the system understands the voice queries and responds in familiar languages and formats, dramatically lowering barriers to digital adoption.

Scale built on collaboration

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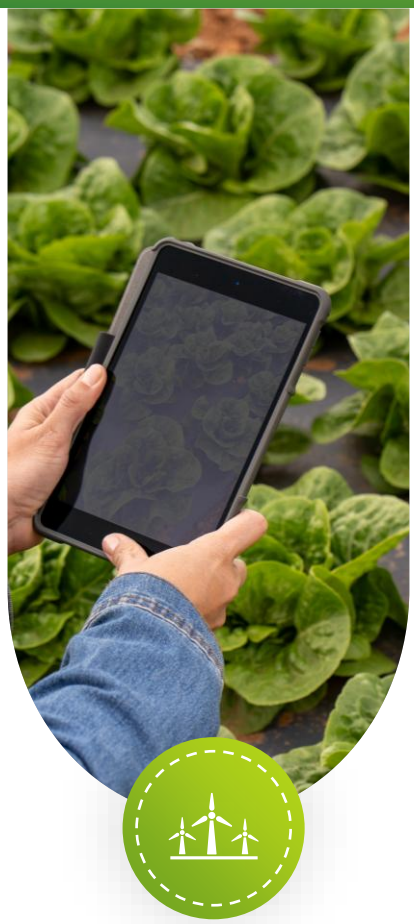
Changing the baseline for Indian agriculture

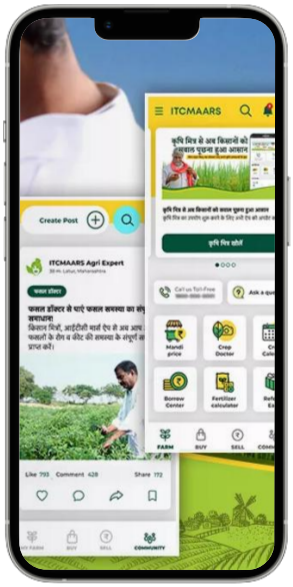
- **Exponential Reach**: New scale of reach with 300,000 pilot farmers growing to 2.4M active users, aiming for 10M+.
- **Compounding Gains**: Connecting 2050+ FPOs across 11 states with a target of 4,000 FPOs for 2030.
- **Productivity Gains**: 30–40% improvement in farm productivity.
- **Engagement and Trust**: ~10% month-on-month growth in interactions, signaling strong trust, relevance (leading to habit-forming behavior).
- **Inclusion**: Expanded access to markets, subsidies, and formal credit for smallholders.Together, these shifts are not just improving individual farm economics; they are resetting expectations for what digital agri ecosystems in emerging markets should deliver.
- **Enhanced Incomes:** Scientifically curated Krishi Samadhan Kits coupled with real-time advisories are enhancing farmer incomes by 18-30% while reducing usage of chemical fertilizers.



Impact

Transforming yields through precision advisory

Under Project Dronagiri, ITCMAARS partnered with the Geospatial Data Promotion and Development Committee, an apex body under the Ministry of Science & Technology, to deploy AI/ML-powered, hyperlocal crop advisory services across Varanasi's wheat belt. Spanning **15 FPOs**, **27,000+ farmers**, and **39,000+ acres,** the pilot delivered more than a **15% yield uplift**—demonstrating how data-driven, localized insights can turn digital innovation into tangible income gains for rural India.



Setting the bar for Responsible AI in agriculture

Through ITCMAARS and Krishi Mitra, ITC Infotech is establishing a new reference point for Responsible AI in agriculture—where world-class GenAI is grounded in on-the-ground relationships and designed for real-world constraints. By bringing hyper-local intelligence, multilingual access, and end-to-end value chain integration into a single, farmer-first experience, ITC Infotech is helping make Indian agriculture more resilient, profitable, and future-ready at scale.

About ITC Infotech

ITC Infotech is a leading global technology services and solutions provider, led by Business and Technology Consulting. ITC Infotech provides business-friendly solutions to help clients succeed and be future-ready, by seamlessly bringing together digital expertise, strong industry specific alliances and deep domain expertise. The company provides technology solutions and services to enterprises across industries through a combination of traditional and newer business models, as a long-term sustainable partner.

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