

AI Enabled Micro-market Intelligence for Farmers

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SUMMARY

AI enabled micro market intelligence empowers farmers with precise, real-time insights at the local level. It analyzes data on weather, soil, crop health and local market demand. Farmers receive accurate price forecasts for nearby markets, not just national averages. The system helps decide what to grow, when to harvest, and where to sell. AI reduces dependence on middlemen by improving market transparency. It supports risk management through early warnings on climate and price changes. Small and marginal farmers benefited from data driven decision making tools. Productivity and profitability increases with optimized input use. Post-harvest losses are reduced through better timing and logistics. Overall, it enables smarter, more sustainable and resilient farming systems.

INTRODUCTION

Micro-market intelligence focuses on small, geographically specific markets rather than broad national or regional averages. By combining AI algorithms with local data, farmers can receive accurate forecasts on crop prices, demand fluctuations, optimal harvest timing, and nearby market opportunities. This enables them to choose the right crops, plan inputs efficiently, reduce post-harvest losses, and negotiate better prices. AI-driven insights are often delivered through mobile applications and digital platforms, making them accessible even to small and marginal farmers. Personalized recommendations help farmers move from intuition-based decisions to data-driven strategies. Ultimately, AI-enabled micro-market intelligence empowers farmers to increase profitability, reduce risk, and strengthen their resilience in an increasingly complex agricultural economy, supporting sustainable and inclusive rural development.

Understanding Micro-Markets at the Local Level

-AI systems analyse village-level, mandi-level, and even farm-gate data to identify micro-markets. This helps farmers understand local demand, price variations, and buyer preferences rather than relying on broad regional averages.

Real-Time Price Forecasting

-Using machine learning models, AI predicts short-term and seasonal price trends based on historical prices, weather patterns, arrival volumes, and demand cycles. Farmers can decide the right time to sell their produce to maximize profits.

Demand Prediction and Crop Planning

-AI analyzes consumption trends, export data, and processing industry needs to forecast demand for specific crops. This enables farmers to choose crops and varieties that are likely to have better market value.

Buyer and Market Linkage Insights

-AI platforms identify nearby buyers, traders, processors, and aggregators, matching farmers with the most profitable markets. This reduces dependency on middlemen and improves bargaining power.

Weather-Market Integration

-AI combines weather forecasts with market intelligence to assess supply risks such as crop damage or surplus. Farmers receive alerts on how weather events may affect prices and availability.

Personalized Advisory for Farmers

-Based on farm size, crop type, location, and market access, AI delivers customized recommendations on harvesting time, storage, transportation, and selling strategies.

Reduction of Post-Harvest Losses

-By predicting demand and price movements, AI helps farmers avoid distress sales and unnecessary storage, reducing wastage and post-harvest losses.

Empowering Small and Marginal Farmers

-AI-enabled mobile apps and voice-based tools make market intelligence accessible to small farmers, helping bridge the information gap between large and small producers.

Data-Driven Policy and Cooperative Support

-Aggregated AI insights support farmer cooperatives, FPOs, and policymakers in planning procurement, setting minimum support strategies, and improving supply chain efficiency

CONCLUSIONS

AI-enabled micro-market intelligence empowers farmers with timely, localized, and data-driven insights that improve decision-making. By analyzing weather patterns, soil conditions, market prices, and demand trends, AI helps farmers optimize crop selection and pricing strategies. This reduces uncertainty, minimizes losses, and increases profitability. Small and marginal farmers especially benefit from personalized recommendations tailored to their local markets. Overall, AI bridges the information gap between farmers and markets, fostering sustainable agriculture and resilient rural economies.

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