

# Direct Market Access Mobile Application for Farmers using Random Forest Algorithm

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**Abstract:** *Agriculture remains a vital sector of the global economy, yet farmers often struggle with limited market access and reduced profit margins due to intermediaries in the supply chain. To address this issue, we propose a smart mobile application that facilitates direct transactions between farmers, consumers, and retailers. The platform enables farmers to list their products, set competitive prices, and manage transactions efficiently, eliminating the reliance on middlemen. Key features of the application include GPS-based location tracking to help buyers find nearby sellers, a machine learning-driven daily product analysis system to optimize pricing and sales strategies, and a secure transaction gateway for seamless payments. The integration of artificial intelligence enhances sales efficiency by predicting demand trends, reducing wastage, and improving revenue generation. A pilot study conducted with a group of farmers demonstrated increased earnings, reduced spoilage, and improved market access. The proposed system not only empowers farmers with greater control over their sales but also fosters a more transparent, cost-effective, and efficient agricultural marketplace. Future enhancements will incorporate blockchain for transaction security, multilingual support for wider accessibility, and AI-driven demand forecasting for better decision-making.*

**Keywords:** Mobile application, direct sales, agriculture, machine learning, location tracking, farmers, consumers, retailers