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**AI-BASED AGRI-HORTICULTURAL COMMODITY PRICE PREDICTION**

Agricultural commodity price fluctuations pose challenges for farmers, traders, and policymakers, impacting economic stability and food security. Traditional prediction models often lack accuracy and adaptability. This project develops a data-driven approach for predicting agricultural commodity prices using machine learning.

The framework integrates real-time market data, historical trends, and external factors like weather, supply-demand, and government policies. Key data sources include AgMarkNet, government reports, and economic indicators. Models like ARIMA, SARIMA, LSTM, and XGBoost are used to improve forecasting accuracy.

Explainable AI (XAI) techniques, such as SHAP, provide transparency, helping stakeholders understand price fluctuations. The system aids in buffer stock management, procurement planning, and market interventions by offering accurate, explainable forecasts.

This approach advances agricultural price forecasting by combining accuracy with transparency, enhancing decision-making. Future research will focus on improving model generalization and refining explainability techniques.

**Keywords:** Agricultural price prediction, Machine learning, XAI, LSTM, ARIMA, Market analysis, Economic forecasting.