

AgroChain - AI Powered Agriculture Waste and Fertilizer Marketplace

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Abstract: *Agricultural waste management remains one of the most persistent environmental and economic challenges in farming communities. AgroChain offers a smart, AI-driven solution by connecting farmers, manufacturers, and sustainability-focused startups through a unified digital marketplace. The platform allows farmers to post details of their crop residues, such as type, quantity, and location, while manufacturers and startups can place bids to purchase the waste for use in organic fertilizer production or other applications - for example, mushroom cultivation units that require soybean husk as a raw material. Artificial intelligence assists both farmers and buyers by classifying waste, suggesting small-scale fertilizer formulations, and optimizing input combinations for production. All activities, including posts, bids, and transactions, are recorded in user histories to maintain transparency and traceability. With features like QR-based payments, real-time notifications, and order tracking, AgroChain promotes a circular farming economy that reduces waste burning, improves soil health, supports emerging agribusinesses, and enhances farmers' income through sustainable resource utilization.*

Keywords: AgroChain, Agricultural Waste Management, AI in Agriculture, Organic Fertilizer, Sustainable Farming, Circular Economy, Transparency, Waste Recycling

