

Paper Title: Blockchain-Enabled Green Supply Chain Management: Innovating Agricultural Plastic Waste Recovery and Reverse Logistics

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Abstract:

In the scientific field of green supply chain management and reverse logistics, addressing the escalating issue of plastic pollution stands as a critical challenge, particularly within the agricultural sector. The integration of sustainable practices and innovative technologies in managing agricultural plastic waste is par-amount to advancing environmental stewardship and operational efficiency. In that direction, the research presented in this paper delves into the development of a novel approach that harmonizes with the principles of reverse logistics and green supply chain management, aiming to mitigate the environmental footprint of agricultural plastics. Central to this study is the exploration of an advanced system for the management of agriplastic waste, leveraging Blockchain technology to foster a transparent, efficient, and sustainable supply chain. This system proposes a decentralized platform that enables seamless interaction between stakeholders, including farmers and waste collectors, facilitating the effective tracking, collection, and recycling or energy recovery of agricultural plastics. By establishing a reliable network for the detailed reporting of agriplastic usage and disposal, the research underscores the potential of digital ledger technologies to enhance traceability and accountability in waste management processes. Furthermore, this research emphasizes the importance of reverse logistics in the lifecycle management of agricultural plastics, from their initial deployment to their final disposal or repurposing. Through the creation of a mobile application and the formulation of a comprehensive business model, the study aims to facilitate the recovery and recycling of materials and thus, to contribute to the reduction of environmental pollution, the promotion of sustainable agricultural practice and the broader objectives of environmental conservation and sustainability.

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