DESIGNING A SUPPLY CHAIN TRACEABILITY PLATFORM FOR COFFEE PRODUCTS UTILIZING BLOCKCHAIN TECHNOLOGY

JAGAD RAYA RAMADHAN
Informatics Study Program, Faculty of Science and Technology
University of Technology Yogyakarta
Jl. Ringroad Utara, Jombor, Sleman, Yogyakarta
E-mail: jagadraya377@gmail.com

ABSTRACT

Coffee is a global commodity that plays a crucial role in the economies of many countries, including Indonesia. As the world's fourth-largest coffee producer, Indonesia has vast potential to boost its coffee exports. This economic impact not only contributes to national foreign exchange earnings but also serves as a vital source of income for smallholder farmers. However, inefficiencies in recent years have led to a decline in exports and challenges in quality control. These problems are exacerbated by the lack of transparency and traceability in the coffee supply chain, making it difficult for stakeholders to track the journey of coffee beans from farm to market. To address these challenges, this research aims to develop a blockchain-based traceability platform supported by Internet of Things (IoT) technology. The platform connects all stakeholders within the coffee supply chain—farmers, processors, distributors, retailers, and consumers—to ensure real-time monitoring and transparent data flow throughout the supply process. The system benefits not only the involved stakeholders but also end consumers, who can scan a QR code to access detailed information about the coffee's origin, quality, and processing, thereby enhancing consumer awareness and trust in the product.

Keywords: *Coffee, Supply Chain, Blockchain, Internet of Things, Traceability, Transparency*