

4. Conclusion

This paper describes the design and implementation of a support system for monitoring and tracing agricultural products using blockchain and LoRa technology. The sensor network nodes in this study have a compact hardware design and robust operation software, allowing them to transmit and receive data with the gateways under actual conditions. A web application for easy operation and a map utility that makes tracking more intuitive with continuously updated data in real-time is also included in the system. Besides the benefits obtained, the system still has some limitations, such as the sensors used not having high accuracy, and the gateways being arranged in non-optimal positions for connection to transmit/receive data within the LoRa network. The authors intend to add more sensors, use high-quality sensors, and apply traceability at various phases of the manufacturing process to monitor metrics for various commodities. The authors will need to perform further experiments, and construct and expand more gateways and sensor nodes to be able to monitor different transport processes across longer journey routes.

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