ELGY MUHAMMAD RIZQYA. Design of Prototype *Traceability* System Based on Information Technology on Coconut Palm Sugar Supply Chain. Supervised by KUDANG BORO SEMINAR and AGUS BUONO.

Coconut is a plant that can only grow and be productive in tropical climates, therefore the largest producer of coconut commodities is located in Asia Pacific region. Coconut plants play an important role in Indonesia’s national economy as Indonesia is the world’s second largest producer of coconut commodities, with a market share of 18% of all traded coconut commodities in the world.

Implementation of international regulations on food traceability encourages companies to adapt to the established rules. Consumers are also considered to have the right to receive safety of products and in with the quality promised.

Traceability system is one of the tools to guarantee the quality and safety of a product. The development of technology and information systems become one of the factors that support the development of traceability, but there are still many companies who have not realized the importance of information technology for the development. Therefore, the traceability system in the coconut sugar supply chain in Indonesia still utilizes paper-based traceability. One of the development of traceability system that already exists in the world is utilizing barcode and Radio Frequency Identification (RFID) to be able to store and read product data.

This study aims to design a traceability system prototype using System Development Life Cycle (SDLC) approach. Based on the SDLC approach, this research through the identification phase, system investigation, system analysis, system design, prototype manufacture, testing and maintenance, and implementation and evaluation. This study focused on analyzing the information system needs in the collecting, storing and digital data exchange. The results of this study indicates that the actors involved in the coconut sugar supply chain are farmers, collectors, processors, transporter and retailers. Development of prototype traceability system can be used by actors and end consumers to do track and trace products.

Keywords: coconut palm sugar, RFID, traceability, information technology