ABSTRACT

BANUN DIYAH P. Model Design of Supply Chain for Small Scale Enterprise Integrated Coconut Industry. Under direction of YANDRA ARKEMAN and DJUMALI MANGUNWIDJAJA

The supply chain is a network that performs the procurement of raw material, the transportation of raw material to intermediate and end products, and the distribution of finished products to retailers or directly to customers. There was many complexity problem of supply chain. Simulation is often seen as a proper means for supporting by enabling modeling and analysis of alternative supply chain designs. Simulation is one of the most popular tools employed in the operational analysis of supply chains. How to design a supply chain model was an interesting matter. The aims of this research were to design a model of supply chain for a small scale enterprise of integrated coconut industry and to get a total supply chain cost from simulation’s result. Minimization of total supply chain cost was an indicator from the model.

A supply chain model was designed with a simulation dynamic that used Stella’s 9.14 software. There were many stages to design the model. The beginning of this stage was identifying and determining the prospective products. Then they were used as input to design a model. The prospective product were coconut oil, coconut gel, coconut fibre and coconut shell charcoal. The model showed that there were 6,232,828 kilograms coconuts every years that could be made many product for integrated coconut industry.

The simulation’s result showed that if there were 4,932,531.44 kilograms whole nuts supply. There were 4,346,052.35 kilograms coconut s that could be converted as raw materials to produce many products for integrated coconut industry. There were 633,128.46 kilograms coconut oils at rendemen 12%; 429,333.08 kilograms coconut gels at rendemen 10%; 2,040,588.93 kg coconut fibre at rendemen 30%; 1,319,583.51 kilograms coconut shell charcoals at rendemen 40%.

The model resulted total supply chain cost 13,602,224,880.00 rupiahs from 8 units coconut oil industries, 36 units coconut gel industries, 14 units coconut fibre industries and 4 unit coconut shell charcoal industries. Model from this research could be used to design Integrated Coconut Industry in the potential rural.

Keywords: integrated coconut industry, design of supply chain model, simulation with Stella 9.14 software.