



SUMMARY

World palm oil consumption has significantly increased over the years. Indonesia has scored a significant achievement on oil palm development by becoming the biggest palm-oil-producing country in the world, both in terms of plantation area and in total national production of crude palm oil (*CPO*).

The purpose of this research is to design, construct and simulate a model of *CPO supply chain* system in order to predict demand and supply, production, domestic and export revenue, with the ultimate purpose of analyzing the potential growth *CPO* agro-industries in Indonesia while remaining globally competitive.

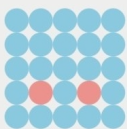
The initial of system dynamic model consists of production sub-model, supply and demand sub-model, along with industrial revenue sub-model. The system dynamic model can be deployed by using Powersim software to simulate structure of *CPO supply chain* system. Model validations were done to improve fitness of the model. *Supply chain* Performance measured by using scenarios based on Performance of Activiry Model (*POA*) and *Supply chain* Operating Reference (*SCOR*) Model. The data used in this research is secondary data of Indonesia Crude Palm Production from year 2000 to year 2010 and primary data from PT Kharisma Pemasaran Bersama Nusantara (KPBN).

The experimentally result shows that in the next 20 years, the production, land for new plant and revenue of Indonesian *CPO* industries tends to increase and the export market still grow more attractive. The increase competitive advantage and profitability is expected to achieve by reducing production cost and logistics cost.

Keywords: *Supply chain* Management, System Dynamic, Crude Palm Oil, *POA*, *SCOR*

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