ABSTRACT

I Gusti Putu Wigena, Sustainability Management Model of Nucleus Estate Smallholder Oil Palm Plantation: A Case Study at PIR-TRANS PTPN V Sei Pagar, Kampar District Riau Province. Under Guidance of Sudradjat (as chairman), Santun R.P Sitorus and Hermanto Siregar (as members).

Goal of the experiment was to provide a sustainability of oil palm management model, which can be described as follow: (1) to analyze land suitability and productivity performance of oil palm area, (2) to analyze oil palm yield model, (3) to analyze the role and institutions linkage, (4) to create sustainability management model and its scenario strategic for implementing of the promoted model. The results showed that sustainability of Nucleus Estate Smallholder oil palm plantation for 2010-2035 period can be achieved through the promoted management model with the conditions of people growth 1.7%, land suitability S2 (moderately suitable) and weak competition capacity of competitor crop (rubber). The indicators of sustainability oil palm management model were (a) favorable physical land condition which can be shown from the lower level of land degradation about 0.03-0.08%, environmental carrying capacity also low about 0.002-0.01%, and by average, production of fresh fruit bunch was 25.83 tones/year, (b) farmer’s income about Rp. 45 719 916/year and society income Rp. 16 845 025/year, higher then the minimum regional wage of Riau Province, (c) Socially, education level of the farmer increased significantly which can be equalized into total income up to Rp. 55 000 000/year. Empowerment of farmer group was the best alternative in generating of sustainability oil palm management model. In accordance to the local condition, The PRITAMA scheme model has the highest probability in creating of an harmonies institutional linkage. There were 7 key variables for implementing of the promoted sustainability of oil palm management model, namely, land holding size, land status, land suitability, capital, human resources, institution and government policy. The medium scenario has the highest probability towards sustainability oil palm management model with the conditions for future are land holding size rather decrease, land status fixed, land suitability relative remain, quality of human resources moderate, working capital available, institution rather harmonies and government policy favorable for implementing of the promoted model.

Key words: nucleus estate smallholder oil palm, sustainability, land suitability, land degradation, environmental carrying capacity.