



Research project of counterparts funded at UNJA

Name	Counterpart	Title
Edison, Ira Wahyuni	C08	The Effect of Land Conversion on Smallholder Palm Oil Production and Income in Geragai Sub-District, Tanjab Timur District, Jambi Province

RESEARCH SUMMARY

Agricultural development is still important for encouraging the acceleration of regional development in Jambi Province. This is demonstrated by the large contribution of this sector to GRDP and labour absorption in the regional economy. It contributes approximately 27.5% to the GRDP of Jambi Province and also absorbs a relatively large proportion, 46.88% of the existing labour force. Furthermore, the main contributor to the agricultural sector of Jambi Province is the plantation and estate subsector and this subsector includes oil palm plantations.

Oil palm plantations have often been established on former paddy which previously produced food (rice). This process continues and is unavoidable. The challenge, a particularly tough one, is therefore to support sustainable agriculture, especially for food (e.g. paddy). Sustainable agriculture is defined as the maintenance, extension, improvement and continuation of the productive capacity of agriculture to meet food consumption.

From year to year the paddy fields continue to shrink. Socio-economic factors that influence land use change include: population growth, the influence of plantation companies and the development of the palm oil industry, increased knowledge, high income expectation, the perceived riskiness of farming, and the increasing expectations of people who demand infrastructure development. These factors contribute to the continuing reduction in the area used for rice farming area without regard to its function in food production. The rate of such land conversion in Tanjab Timur Regency is high. It has resulted in a continuing decline in rice production in the Regency. And in addition to the direct conversion of land from rice to oil palm, the remaining paddy fields also experience interference from the oil palm plantations surrounding them.

Our study therefore had three purposes: (1) to analyse the effect of land area, labour and capital on rice field and palm oil production in Geragai Sub-District, Tanjab Timur District, (2) to analyse the influence of the amount of production, the selling price, the amount of labour and capital on the income of rice farmers and smallholder palm oil producers in Geragai and, (3) to analyse the influence of social factors, economic factors and the physical characteristics of land on the conversion of paddy rice to oil palm in Geragai.

The research area was Geragai Sub-district, Tanjab Timur District Jambi Province. This area was chosen on purpose because Jambi Province is one of the most important palm oil production areas in Indonesia and Tanjab Timur District has the highest level of conversion of land to smallholder palm oil in Jambi Province. Research samples were identified by Cluster Sampling methods. There were a total of 90 samples (30 samples for rice farmers, 30 samples for oil palm farmers and 30 samples for rice and oil palm farmers). The research took place in 2018. The model used was the Cobb-Douglas production function model representing, in algebraic form, the production function expected. The Cobb-Douglas production function model is written as: $Y = \beta_0 \beta_1 X_1^{\beta_1} X_2^{\beta_2} X_n^{\beta_n}$

The main factors affecting the production of wetland rice was land area and capital. The factors significantly affecting palm oil production of was the area of land, labour and capital. Factors that significantly affect farmer incomes were production price and selling price (for rice farmers), as well as selling price and capital (for palm oil farmers). Significant factors affecting the conversion of rice field land into palm oil were education, farmer incomes and saving opportunities. There was a tendency for wetland rice fields to be converted into palm oil more than rice grown under irrigation. Based on the analysis of farming, the efficiency of community palm oil farming was higher than that of rice (B/C ratio of rice = 1.01).