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## **Economic Efficiency of Tidal Swampland Farming in Indonesia: Local and Migrant Farming Practice**

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### **Abstract**

As the world's fourth most populous country, Indonesia has a high susceptibility to food supply and security. The effort to increase food production faces a rapid land conversion into agricultural land; in Java Island this conversion reached 100,000 ha per year. Indonesia has large swamplands which can be used for agriculture if managed well. Several large reclaim projects have been executed since 1981. These projects were followed by transmigration projects, which translocated more than 3 million families from populated islands to work on reclaimed agricultural land. Most of the transmigrants were young and landless farmers. They came from different cultures, farming skills, and land ecology. However, the project occupied communal land and later lead to conflicts between transmigrants and locals. The different cultures, characteristics, and backgrounds exacerbated the conflicts. Several efforts have been made to alleviate the tension. On the other hand, swampland ecosystem is of marginal and fragile nature (drought, fire, and flood) and susceptible for management failure (reclamation, opening and intensive cultivation). The fertility is low and characterised by high soil acidity, the present if high pyrite and some thick peat layer, and an uncontrolled tidal hydrology regime. Its success of agricultural development is determined by proper land and tidal water management, as well as adaptive farming practice and requires a mix between of indigenous farming practices and new technologies. However, a management exists. Transmigrants tent to use mixed improved techniques while local farmers rely on the indigenous techniques. The major problem is a low overall productivity that is caused by low efficiency of inputs use and it is aggravated through climate change and lack of resources to adapt. Thus, the study objectives are: to investigate the gap between transmigrant and indigenous farmer in terms of achieving productivity and efficiency. A stochastic frontier production function that incorporated inefficiency factors will be estimated using a maximum likelihood technique to provide estimates of technical and economic efficiency.

**Keywords:** Efficiency, indigenous farming practice, Indonesia, stochastic frontier, tidal swampland