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Institute for Agricultural Economics and Social

Sciences in the Tropics and Subtropics

Rural Development Theory and Policy

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**Impact assessment
of a bio fuel plantation in Madagascar
using household panel data**

Master thesis

submitted by

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Abstract

This paper assesses the socio-economic impacts of wage work offered by a *Jatropha* plantation on rural household in central Madagascar. Primary data was collected over 2 years in three villages surrounding the plantation. Preliminary results suggest positive effects on income and food security. To control if those results hold their promise over time this study uses in a first step the propensity score matching method to compare the findings of 2010 with the findings from 2008. Then in a second step a panel data analysis uses the difference in difference method to reveal stronger evidence on income and food security effects over time. Furthermore effects on income inequality, on education and other effects for the communities are assessed.

The results show that incomes and food security have improved in 2008, but deteriorated between 2008 and 2010, mostly due to a decline in agricultural yields. Plantation incomes however have been relatively stable over time and therefore contributed to a stabilization of the situation. Households working for the plantation experienced a lower reduction in incomes and had to reduce their expenditures less than control households. Determinants for working on the plantation did not change over time, households offering labour to the plantation are mostly poorer farmers who need an additional income source. Therefore, the plantation contributed to an alleviation of poverty in the area. The assessment of income inequality furthermore suggests a reduction of income inequality over time.