



Tropentag, October 6-8, 2009, Hamburg

“Biophysical and Socio-economic Frame Conditions  
for the Sustainable Management  
of Natural Resources”

## Rural Poverty and Soil Degradation: Some Evidences from a Land Reform Settlement in the Brazilian State of Goiás

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### Abstract

In different continents there is a paradigm of a vicious circle of poverty and depletion of natural resources. Some authors however found that this vicious circle does not exist. Thus, the central objective of this study was to analyse the relationship between rural poverty and soil degradation in land reform settlement in the Brazilian Center West region. Therefore, farmers belonging to the Cachoeira Bonita land reform settlement in Caiapônia (GO, Brazil) were interviewed via questionnaire. The data was analysed through an econometric analysis of the probit model. Our hypothesis was that environmental degradation can worsen the rural poverty in the farm enterprises. The binary and dependent variable was the adoption of crop rotation as soil conserving practice. As independent variables that explain the probability to occur ( $y=1$  or  $y=0$ ) we considered the total (agricultural and non agricultural) income, the total herd size of cattle, the land ownership and the education level of farmers (years of school visit). We expected positive signs for all estimated coefficients in the probit model, i.e. the higher the values of independent variables the more likely the conservation practice (crop rotation) to be adopted. The estimated model was significant at 5% level. The independent variables explain 50.41% (McFadden R-squared) of the variation in the probability of adoption of crop rotation in the farms. Three of the independent variables had negative signs: total income, herd size and land ownership, meaning that increasing the values of those variables decrease the probability of the adoption of conservation practices. This result evidences an opposite relationship between rural poverty and environmental degradation. On the other side, the education level of farmers was positively related to the likeness of adoption of soil conservation practices. Thus, there is no relationship between rural poverty and soil degradation in the case of the land reform settlement of Cachoeira Bonita, in Caiapônia (GO, Brazil). However, there is a clear positive relationship between the education level of farmers and the likeness of adoption of soil conservation practices.

**Keywords:** Crop rotation, land reform, soil erosion