



Tropentag, September 17-19, 2014, Prague, Czech Republic

“Bridging the gap between increasing knowledge and decreasing resources”

## Farmers’ Soil Management Decision-Making and the Effects on Soil Fertility in Nyeri South District, Kenya

PIN PRAVALPRUKSKUL<sup>1</sup>, TANJA LÜBBERS<sup>1</sup>, PERNILLE NIELSEN SPANGSBERG<sup>2</sup>, ANNE DAMGAARD MØLLER<sup>1</sup>

<sup>1</sup>*University of Copenhagen, Agricultural Development, Denmark*

<sup>2</sup>*Roskilde University, Dept. of Environmental, Social and Spatial Change, Denmark*

### Abstract

Soil degradation is known to be a major challenge for agricultural productivity in the Central Highlands of Kenya, an intensive and high-potential food production area. This study investigates factors that influence smallholder farmers’ decision-making regarding soil management practices in Thuti Village, Nyeri South District, as well as the effects of their decisions on soil fertility. Questionnaire surveys, semi-structured interviews and participatory rural appraisal (PRA) tools were used to explore factors influencing soil management choices, while soil samples from six different maize plots were analysed to assess the existing state of soil fertility. Results showed that manure and fertiliser application were the most common soil fertility management practices, terracing and grass strips the most common soil conservation practices, and that intercropping was widespread. Factors found to influence the choice of practices include financial constraints in buying inputs and hiring labour, land fragmentation, and factors limiting awareness of and access to extension services such as old age. Women were found to have considerable decision-making power in the households surveyed, but some had less access to financial and extension resources; the role of gender calls for further investigation. Soil analysis results revealed that despite the restrictions farmers face in soil management, the current status of soils is fairly fertile and suitable for agricultural production. This is likely due to the widespread use of manure, which is a relatively affordable nutrient input for farmers. Findings suggest that continued land fragmentation and loss of labour due to increasing age of farmers and the movement of youth away from agriculture may limit investment in soil conservation, with future implications for greater soil erosion in an already erosion-prone area. Policy and extension recommendations for soil and agricultural management should address these trends and restrictions, such as by suggesting multi-purpose practices that require little additional inputs.

**Keywords:** Central Highlands, decision-making, Kenya, smallholder farmers, soil conservation, soil fertility, soil management