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Full Length Research paper

Crop-livestock diversification patterns in relation to income and manure use: A case study from a Rift Valley Community, Kenya

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Abstract

Most rural households in the semi-arid regions of sub-Saharan Africa practise mixed crop-livestock farming. With population growth and the subsequent scarcity of land available for extensive farming, the only option available for these households is to intensify production. For this to be successful, one must understand the divergent patterns of intensification and their relation to the economic needs of households. In a Rift Valley community in Kenya, inter-household heterogeneities in adopting distinctive combinations of particular crop and livestock productions (they are defined as 'crop-livestock diversification' or CLD patterns) were observed. Principal component analysis was used to identify the dominant CLD patterns which reflect complementarities between crop and livestock types. This was followed by an assessment of the association between the CLD patterns and the economic returns and manure use of the households. Among the five dominant CLD patterns identified, households that kept improved cattle and grew fruits were found to earn higher incomes and apply more organic manure. Conversely, households that grew staple crops with or without indigenous animals were found to apply less manure. Education, participation in farmers' groups, access to the training centre, and family size were key factors affecting the adoption of CLD patterns.

Key words: Crop-livestock integration, sustainable intensification, income, manure application, rural Kenya