Nutrient Management with Agroforestry:
A simulation model for Kenya
by
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Abstract
A farm simulation model was designed to assess the long-term impact of existing and improved soil management practices on farm productivity, profitability and sustainability. The model links soil management practices, nutrient availability, plant and livestock productivity and farm economics.

A case study is presented of the application of the model to Vihiga District, in the highlands of western Kenya. The model is used to assess the performance of the existing farm system for three farm types. The existing system is then compared to improved nutrient practices including the use of commercial fertilizers and the agroforestry techniques of improved fallows and biomass transfer.

In most cases, commercial fertilizers prove to be more profitable for farmers than the agroforestry technologies. Biomass transfer is less desirable due to the large labor costs of moving the leafy biomass from the trees to the field. The major drawback of improved fallows is the need to leave the field fallow for at least one season and lose that season's production. Despite the potential large returns to fertilizer use, fertilizers are still seldom used by poor farmers due to cash and credit constraints.

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