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## Sustainable Dairy Development in the Kenyan Highlands: Effect of Market Quality on Smallholder Farming Systems

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### Abstract

Smallholder dairy farming systems in the Kenyan highlands show diversity in production resources and outcomes. Farms are spatially distributed at varying distances to urban markets. It was hypothesised that production outcomes are affected by market quality which depends on distance to urban markets. To test the hypothesis, interviews and discussions were held with smallholder farmers and other stakeholders in three locations with differences in proximity to the urban market of Nakuru town. In urban locations (UL), markets had good accessibility and prices of inputs, e.g. concentrates and labour, were slightly higher while milk price was considerably higher than in mid rural locations (MRL) and extreme rural locations (ERL). Farm resources differed among locations, UL had the least land while MRL had most grazing land available. Livestock number did not differ significantly among locations. Input use, milk yields and economic benefits were also not different among locations. On the basis of the hypothesis, it was expected that market quality would be high in locations close to urban markets, with high prices for milk, labour, land and forage and relatively low prices for concentrate that would create high concentrate use and high milk production per cow. In UL, the observed high milk price was in line with the hypothesis while the high concentrate price, low concentrate use and low milk yield per cow were not. This low production intensity in UL was attributed to forage limitation (which was caused by land scarcity), high cost for purchasing of forages and concentrate, low cash availability and the livelihood functions of dairy. Therefore, proximity to urban markets alone did not result in increased milk yield per farm or per cow. Improving forage availability provides an opportunity for sustainable dairy development in urban Kenyan highlands.

**Keywords:** Kenyan highlands, market quality, production outcomes, smallholder dairy systems