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Supporting Farm Decision Making by Modelling the Impacts of Policies and Farm Strategies on Sustainability of Dairy Farms in Uganda

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Abstract

Studies on the priorities for agricultural research in Eastern and Central Africa concluded that milk was the most important commodity for research and development in the region, based on its potential contribution to the agricultural GDP (gross domestic product). According to ILRI (International Livestock Research Institute), the right policies, marketing systems and technical support must be sought for dairy development in Africa. In order to determine the right development pattern, appropriate analytical tools must be applied.

The TIPI-CAL (Technology Impact Policy Impact Calculations model) was used to analyse and rank the impact of various policies and farm strategies on the most typical dairy farming system in Uganda. Policy scenarios were identified and described by panels consisting of farmers, government officials, veterinarians, extension workers, NGO officials, milk processors, researchers and others. Seven influential policy areas were identified: provision of veterinary services, consumption promotion, marketing promotion, input provision, credit access improvement, milk quality improvement and genetic improvement.

In general, the policy impacts were very little on smallholder extensive dairy farms, having less than 10 local cows, which were the most typical farms in the region. These results could however be magnified up to threefold, if the farms had graded cows. Policies which improve farmers' accessibility to markets had the greatest impacts on the livelihoods of farmers, through improved income generation from dairying. Genetic improvement of cattle breeds was recommended as an initial strategy, which could improve the impact of other farm policies.

The adoption of graded breeds and appropriate technology could be facilitated by farm credits. However, at current interest rates of 4% per month, obtaining credits for genetic improvement will double the cash costs of the farm, hence discouraging farmers from this investment. It was concluded that, a set-up with a more incentive-based environment is required to support such private initiatives and the adoption of intensive farm technologies. This study further illustrates the role of various stakeholders such as the government, national and international organisations as well as farmers in the allocation of land, labour, capital and expertise to promote sustainable dairy development.

Keywords: Dairy farms, decision making, sustainability, TIPI-CAL model, Uganda