

Development and adoption of technologies for improving dairy productivity and nutrition among smallholder dairy farmers in Malawi

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Abstract

This is as an action research project which will be conducted in the farming communities in Majiga and Chitsanzo Milk Bulking Groups in Central Malawi. The aim of the research is to develop feed technologies for improving dairy productivity; analyse adoption process of the feeds and the associated costs of the technologies. The feeding technologies will be promoted along other improved technologies such as breeding, housing and disease control. The milk and feeds value chain will be analysed and used to improve production and marketing of dairy products. Plans for up-scaling the feed technologies with farmers and the feed industry players will also be developed. The study will be conducted as part of a training and research undertaking for two MSc. students at Bunda College of Agriculture.

Key words: Dairy value chain, feeds, livestock

Résumé

Ceci est un projet de recherche-action qui sera menée au niveau des communautés agricoles dans les associations de producteurs de lait de Majiga et Chitsanzo dans la région centrale du Malawi. Le but de cette recherche est de développer des technologies d'alimentation pour améliorer la productivité laitière; d'analyser le processus d'adoption des aliments et des coûts associés des technologies. Les technologies d'alimentation seront promues parmi d'autres technologies améliorées telles que le contrôle de la reproduction, du logement et de la maladie. La chaîne de valeur du lait et des aliments sera analysée et utilisée pour améliorer la production et la commercialisation de produits laitiers. Les plans de mise à l'échelle des technologies d'alimentation avec les agriculteurs et les acteurs de l'industrie alimentaire seront également développés. L'étude sera menée dans le cadre d'une formation et de la recherche entreprise par deux étudiants de maîtrise du Collège Agronomique de Bunda.

Mots clés: Chaîne de valeur des produits laitiers, aliments, bétail

Background

Smallholder dairy farming is a potential alternative non-crop enterprise to raise household incomes, food security and reduce poverty among smallholder farmers in Malawi deriving almost all their livelihood from agricultural related activities. Despite the huge potential of smallholder dairy enterprises, participation in and adoption of smallholder improved feeds and other dairy technologies such as breeding, housing and disease control, is poor resulting in low dairy productivity. Although some farmers have received improved or crossbred cattle from government and NGOs, the high costs of improved feeds, poor dairy feeding and management practices, poor access to credit, and weak institutional linkages are major problems affecting dairy productivity. In addition, empirical studies have shown that the low rates in technology adoption among smallholder farmers may be due to transaction costs arising from technology attributes, socio-economic factors including gender, household size, labour availability, and institutional arrangements influencing technology transfer (Staal *et al.*, 1997). In this project, use of improved feeds and other technologies known to enhance dairy productivity will be tested. The role of stakeholder institutions including farmer organisations, especially the Farmer-Private-Public-NGO partnerships will also be analysed. This should facilitate wider deployment of selected technologies to increase incomes, household food security, nutritional and health status of the adopting and other rural communities.

Literature Summary

Poor adoption of improved dairy technologies such as feeding and others leads to low dairy productivity and incomes which in turn leads to food and nutrition insecurity. Mtimuni (2004) reported that a technology package for dairy cattle should contain a component of improved feeds to enhance milk yields. It has been observed that about 60% of the variation in milk yields and quality among animals is due to feeds and feeding related issues. Ingredients for improved supplementary feeds are normally commercial and thus, expensive for smallholder farmers. Locally available feed resources used by farmers that are cheap include maize, maize bran, and forages, particularly for ruminants. These unfortunately do not supply sufficient nutrients for the improved dairy cattle to increase milk yields and milk quality. Therefore, use of improved feed technologies is inevitable for improving milk quality and quantity. Chindime (2007) showed that farmers use low levels of feed concentrates because of their inadequate availability coupled with high prices. Therefore, ensuring accessibility and availability of

supplementary high nutrient content feeds at affordable prices should result in improved milk yields.

Study Description

The project will focus on locally available crop resources to supplement livestock feeding to improve dairy cattle productivity. The project will employ a concurrent research, training and outreach approach (action research) that will involve farmer-private-public-NGO partnership in the Central Region Milkshed Areas of Malawi. A value chain analysis for milk production and marketing will also be made. The project builds on ongoing efforts in the dairy sector and the collaborating institutions and partners working on improving dairy production in the country. The study will involve 2 MSc students.

Research Application

From the study, it is expected that: (i) low-cost quality dairy rations will be developed and adopted by participating farmers, (ii) there will be increased practice of scalable low cost locally developed dairy rations by dairy farmers, (iii) there will be increased milk yield and milk quality per dairy cow, (iv) overall production efficiency in smallholder dairying will be improved, (v) skills of dairy management among farmers and implementing partners will be improved, and (vi) smallholder dairy farmers will enhance their practical skills.

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