

## Identified constraints to improving forage utilization for milk production in three locations of Tanzania

N F Massawe<sup>1</sup>, E Owen<sup>1</sup>, L A Mtenga<sup>2</sup>, S D Ashley<sup>3</sup>, S J Holden<sup>3</sup> and D L Romney<sup>4</sup>

<sup>1</sup>Department of Agriculture, The University of Reading Earley Gate, PO Box 236, Reading RG6 6AT, Berkshire, UK

<sup>2</sup>Department of Animal Science and Production, Sokoine University of Agriculture, PO Box 3004, Morogoro, Tanzania

<sup>3</sup>Livestock in Development, PO Box 20, Crewkerne, Somerset TA18 7YW, UK

<sup>4</sup>NRI, Chatham Maritime, Chatham, Kent ME4 4TB, UK

### Introduction

There is a large demand for liquid milk in Tanzania and the current trend of milk production is not meeting the demand (Mdoe and Temu 1994). It is hypothesised that one of the constraints to increased milk production is inadequate nutrition due to lack of farmer evaluated strategies for better use of forages available on farms. Review of locally available literature has shown that research on forage production and utilization has given little or no consideration to socio-economic and other constraints of the farmer. The objective of the present study was to identify, together with farmers, the constraints to, and opportunities for, improved forage utilisation for profitable milk production on smallholder farms in Tanzania.

### Materials and methods

Three contrasting locations (Mwanza, Kilimanjaro and Morogoro) were selected. Mwanza is a fairly dry area (rainfall 900 mm) with extensive grazing of indigenous cattle integrated with a cotton/sorghum farming system, and is a priority area in Tanzania for the sponsor. Kilimanjaro (rainfall 1600 mm) is a high-potential area for dairying in a coffee/banana farming system, with milk coming from cows and goats. Morogoro (i.e. Mgeta, rainfall 1200 mm) is an area where milk production is entirely from goats in a vegetable/maize farming system. A PRA approach was used to allow scientists, extensionists and farmers to interact and identify constraints. Group meetings involved component scoring and ranking, and participatory mapping of resources. Key-informant meetings involved wealth ranking, confirmation of information gained from group meetings and identification of households for individual interviews. Secondary data from District Extension Offices and studies in the same area by other scientists were used to support the information collected.

### Results

Similarities and differences in identified problems in the three locations are shown in Table 1. Further results show that farmers have different strategies for tackling the problems and allocation of basic resources (land, labour and capital) to suit their objectives and solve the most pressing constraints. Milk marketing was found to influence feeding strategy in Kilimanjaro location more than the other two. Farmers in Kilimanjaro were exposed to research technologies on production and utilization of forages than those of Morogoro and Mwanza.

Table 1 The constraints and problems identified

	Mwanza	Kilimanjaro	Morogoro
Shortage of dry-season forage	xxx	xxx	xxx
Low quality forage	xxx	xxx	xxx
Lack of improved forage feeding strategies	xx	xxx	xxx
Lack of knowledge on forage conservation		xx	x
High transport costs of crop residues and loss of leaves		xxx	
Land degradation and decline in soil fertility		xxx	xx
Cost of concentrates		xxx	xx
Problems of milk marketing	x	xx	x
	xx medium severity	xxx high severity	

### Conclusions

The different objectives and strategies of keeping livestock, the ways of using the available forage resources and different degree of exposure to research technology shows great variability between and within location. In order to account for these variability there is a need for a range of interventions to address similar problems. It is therefore concluded that technologies for different options for the utilization of forage feed resources be developed together with farmers and allow consideration of incorporating farmers objectives, existing local strategies, accessibility to available resources and expected constraints to change. Developed options should be accessed for acceptability by farmers through PRA approaches.

### Acknowledgements

Financial support from Department for International Development (DfID) is acknowledged.

### References

Mdoe, N.S.Y. and Temu, A.E. 1994. Dairy Production and Food Security in Tanzania: Policies and Future Prospects. In: *Proceedings of the 21<sup>st</sup> Scientific Conference of Tanzania Society of Animal Production*. Volume 21:80-95. TSAP, SUA Morogoro, Tanzania.