



Tropentag, October 5-7, 2011, Bonn

“Development on the margin”

## Availability of Animal Feed Resources at Farm and Village Scale in Umurera, Rwanda

LOTTE KLAPWIJK<sup>1</sup>, CHARLES BUCAGU<sup>2</sup>, MARK T. VAN WIJK<sup>1</sup>

<sup>1</sup>Wageningen UR, Department of Plant Sciences, The Netherlands

<sup>2</sup>National University of Rwanda, Rwanda

### Abstract

Rwanda is the most densely populated country in Africa, resulting in agricultural intensification and overexploitation of natural resources, the latter leading to food insecurity. To improve the situation the government initiated the 'One farm, one cow'-program, to distribute cows to the poorest families. The viability of the programme was studied, using the research-hypothesis: 'Can each farmer in Umurera produce sufficient fodder to keep cattle?' Umurera-village is representative for Rwanda's Central Plateau area.

Land-availability per farmer ranged between 0.10–2.86 ha. Most important fodder for cattle were: grasses (56%), banana plant-parts (21%) and crop-residues (15%). One quarter (25%) of the feed consisted of uncultivated grass. The feed composition for cattle of wealth-category II and III is almost equal, while farmers from WC-I fed less grasses and larger quantities of marshland-herbs and crop-residues. The amount of fodder on offer for cattle ranged between 42–179 kg fresh weight per animal per day; some animals were underfed. Fodder-amounts for local cattle of WC-II were substantially lower than amounts on offer for improved cattle, agreeing with literature. Milk-yield ranged between 1.33–4.58 l d<sup>-1</sup>. The amount of refusals and the chemical analysis of plant samples indicated a low quality of some fodder.

Calculations on current possibilities for farmers to produce fodder resulted in negative conclusions for the poorest farmers (WC-I). The effects of five scenarios were also explored; the quantity of three cultivated fodder-species was increased, decreased or kept equal. The calculated fodder-production (kg DM/year) per farmer indicates that in several scenarios the two poorest farmer groups are likely able to keep local cattle. However, it might be impossible for farmers to realise the necessary investments and the annual fodder-production in Umurera likely differs from the calculated numbers. The programme uses only improved cattle and is therefore not viable in its current setup. The viability would increase if cattle-breed would be changed from *Bos taurus* to *Bos indicus*. Another more realistic option would be the distribution of milking goats.

**Keywords:** Feed composition, feed quantity, fodder production, one cow-program, Rwanda