



Characterisation of crop residues for livestock feed as an option for enhancing intensification on smallholder farms in Babati District, Tanzania

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Abstract

Babati district in Manyara region is a high potential mixed crop livestock production area producing crop and animal sourced foods for major urban areas in northern Tanzania. With expansion of arable land and resultant decline in grazing resources, crop residues are becoming an increasingly important component of livestock feeds and a key livelihood resource in these systems. Although farmers in Babati district already practice diversified farming system, the crop and livestock components co-exist more or less independently from each other. A series of studies were conducted to characterize the use of crop residues for livestock feed as an option for enhancing intensification on smallholder farms. In 2013, we used the feed assessment using the FEAST tool to document the availability and use of crop residues for livestock feed in three villages. In 2014, we conducted a study on selected farms to assess available types, quantities and nutritional quality of crop residues used for feeding livestock on farms. In addition, the study aimed to understand how cereal and legume crop residues are harvested, stored, processed and used in different farms. Overall these studies aimed to identify constraints and opportunities of enhancing the management and use of crop residues on farms. Results showed that crop residues contribute 34% of the total feeds available on farms in Babati district while grazing and collected feeds contributes 53% and 13% respectively. Crop residues contribute 14-16% CP and 14-14% ME respectively of the total nutrients in the system. The most dominant cereal crop residues are maize stover (57%) and rice straw (20%) while the most common legumes straws are pigeon pea (4%); bean (12%), groundnut (5%) and cow pea (2%) haulms. There is poor harvesting, storage and use of crop residues on most farms mainly due to knowledge gaps and lack of appropriate technology. Most of the cereal crop residues are of poor quality i.e. maize stover (5.9% CP; 39.8 INOMD), rice straw (4.3% CP; 28.8% INOMD) and sorghum straw (8.3% CP; 55.4% INOMD) while most cereal based crop residues are of high quality i.e. pigeon pea haulms (10% CP; 56% INOMD), cow pea haulms (13.9% CP; 64.9 INOMD) and bean haulms (8.8% CP; 55.6 INOMD). On average majority of farmers obtained maize stover yields of 1.5 and 4.5 t/ha. The yield of maize stover from a hectare of land can sustain one TLU of livestock for 247 days.

Key words: Crop-livestock systems, cereals, legumes, crop residues, maize stover, haulms,

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