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## Urban and Peri- Urban Farming Systems and their Utilisation of the Natural Resources in the North Ethiopian Highlands

YITAYE ALEMAYEHU AYENEW<sup>1</sup>, MARIA WURZINGER<sup>2</sup>, AZAGE TEGEGNE<sup>3</sup>, WERNER ZOLLITSCH<sup>2</sup>

<sup>1</sup>*Amhara Agricultural Research Institute, Ethiopia*

<sup>2</sup>*University of Natural Resources and Applied Life Sciences Vienna, Department of Sustainable Agricultural Systems, Austria*

<sup>3</sup>*International Livestock Research Institute (ILRI), Ethiopia*

### Abstract

The objective of this study was to characterise the urban and peri-urban dairy production systems and their level of integration with crop farming in the North western Ethiopian highlands. A field survey including 54 smallholder urban and peri-urban dairy farmers was conducted between July 2006 and March 2007 in the Bahir Dar milk shed areas. A structured questionnaire was developed to collect data in two different localities.

The results show that only 33.3 % of farmers undertake both crop and livestock farming. Mixed farming systems are mainly found in the peri-urban areas. Maize (*Zea mays*), tef (*Eragrostis tef*), finger millet (*Eleusine coracana*) and barley (*Hordeum vulgare*) are the most important crops cultivated which supply large amounts of crop residues as livestock feed.

An average of 14.2 livestock (73.3 % cattle, 22.1 % sheep, 1.1% goats and 3.4% equines) and 2.8 poultry were kept per household. Of the total cattle 68.2 % are crossbreds (Zebu × Holstein Friesian), mainly found in the urban areas (57 %). For local cows, nearly all farmers use mixed-species open grazing (76.2 %) and rotational grazing (23.8 %); due to the high number of livestock grazing in a concentrated area, this practice probably contributes to substantial soil erosion because of overgrazing. On the other hand, 74 % of farmers use cut and carry system of feeding for crossbred cows. This shows that having crossbred cattle encourages farmers to use zero grazing system for feeding.

An average amount of 7.2 tons of dried manure per household is estimated to be annually produced. The manure is mainly used for fertilising crops and as fuel in the peri urban and urban areas, respectively.

It is concluded that small holder crop-livestock farmers could benefit from efficient utilisation of crop residues for animal feed and manure for crop production. Moreover, zero grazing could be one important option for efficient utilisation and conservation of the natural resources.

**Keywords:** Dairy cattle, Ethiopia, livestock, peri-urban agriculture, urban agriculture