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## A Survey of Urban and Peri-Urban Agriculture in Niamey, Niger

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### Abstract

Urban and peri-urban agriculture (UPA) contributes significantly to urban food security and income generation in developing countries. In spring 2004, a survey was conducted in Niamey, Niger based on structured semi-quantitative interviews. Major UPA crop and livestock activities were characterised for 130 households distributed evenly across 13 city quarters which were selected from a satellite-based map of gardens and fields within and around the city. Samples of irrigation water, manure and fodder were collected and analysed for concentrations of nitrogen (N), phosphorus (P) and potassium (K).

Animal husbandry, irrigated vegetable production and rain-fed millet cropping was practised by 82 %, 42 % and 58 % of the interviewed households, respectively. Sheep were kept by 74 % of livestock keeping households, followed by cattle (54 %) and goats (29 %). Cattle were usually herded on pastures around the city, sheep and goats were preferably kept in the courtyard. Meat, milk and manure were major products of livestock activities, whereby livestock keepers identified fodder shortages as the prime limiting production factor.

Irrigated vegetable gardens were mainly located near surface water sources within the city, especially near the river Niger (900 ha) and a wastewater stream (50 ha). A wide variety of vegetables was cultivated during two to three yearly cropping cycles. Vegetable plots were mainly fertilised with manure from gardeners' own animals or with purchased manure. The application of wastewater also provided substantial amounts of nutrients, namely 104 mg N, 7.5 mg P and 98 mg K per litre of water. Pearl millet, usually relay-cropped with cowpea, was cultivated outside the built-up areas. Although some farmers applied animal manure, nutrient inputs to UPA millet fields were not distinctly different from inputs to millet fields in the rural hinterland.

The survey highlighted the interactions between different UPA production sectors, especially the multiple directions of nutrient relocation through manure and livestock feed. Although these nutrient transfers need further quantification, it appears that nutrient inflows from external sources, such as purchased livestock feed and human food, contribute substantially to the nutrient supply for UPA cropping activities.

**Keywords:** Crop and livestock activities, Niger, nutrient transfers, urban agriculture