

# The contribution of smallholder agriculture to the nutrition of rural households in a semi-arid environment in South Africa<sup>#</sup>

**W van Averbeke\* and TB Khosa**

*Centre for Organic and Smallholder Agriculture, Department of Crop Sciences, Tshwane University of Technology, Private Bag X680, Pretoria 0001, South Africa*

## **Abstract**

The contribution of own food production to the nutrition of households in two neighbouring, rural, semi-arid settlements was investigated. A survey of a 10% probability sample (n=131) of households in Sekuruwe and Ga-Molekane in the Mookgalakwena Local Municipality, Waterberg District Municipality, Limpopo Province, South Africa, conducted in 2001, provided data on household composition, income (cash and kind), poverty status, expenditure and agriculture, including a detailed account of the types and quantities of food that were purchased during the month preceding the date of the interview. For each household the food obtained from the different types of agriculture they practised was quantified. Protein, iron and Vitamins A and C were selected as indicators to assess the contribution of purchased and own produced food to the food intake of households. Food composition tables were used to estimate the nutrient content of the different foods. To assess the contribution of irrigated home gardening to food intake of households, Drum & Drip micro-irrigation systems which enabled irrigated vegetable production on an area of 36 m<sup>2</sup> were installed on the residential sites of 10 volunteer households in the study area. The results confirmed that income is the most important determinant of household food security in rural South Africa. However, food obtained from various types of dry-land agriculture contributed significantly to household nutrition and without farming the food security of households would be reduced, especially among the ultra-poor. Small-scale irrigated vegetable production was shown to have the potential to substantially raise the amount of the Vitamins A and C available to households but did not address the lack of protein in the diet of ultra-poor households and the lack of iron in the diet of all households.

**Keywords:** household food security, nutrition, poverty, rural agriculture, semi-arid, dry-land farming, irrigated home gardening, micro-nutrients, protein, iron, Vitamin A, Vitamin C