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## **Alternative Food Sources When Living in the City: Coping with Rising Food Prices in Kampala**

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### **Abstract**

With some of the highest urbanisation rates in the world, sub-Saharan Africa is facing serious challenges in providing sufficient and healthy foods for its growing urban populations. Fresh fruits and vegetables at urban markets are often too expensive for the poor. Alternative food sources can provide solutions to a rising urban demand for healthy, nutrient-dense foods, but only if recognised and treated as a fair alternative practice. In many countries urban farming is still considered controversial and non-metropolitan. Additionally, collection of edible wild species as an alternative food source in urban and peri-urban areas has only received scant attention in natural resource studies and development projects. Consequently, data on the importance of these alternative food sources for food security of urban communities are largely missing. This study aimed at assessing the extent and importance of urban homegardens and wild food sources for poor residents in Kampala, Uganda. A total of 96 urban and peri-urban households with homegardens were purposively selected, food plants in the gardens inventoried and respondents interviewed on socio-economic data, household food security levels, plant uses and food sources. In addition, respondents were asked about wild collection behaviour, in both urban and rural areas, as well as dependency on rural connections. The surveyed gardens can be considered highly diverse, with 73 edible plant species found, including 24 fruit, 22 vegetable, 14 condiment, eight root/tuber, four legume and one cereal species. At least a third of the identified species can be considered indigenous, species that are often underutilised yet can have important nutritional properties to enhance food and nutrition security. Furthermore, 25% of the respondents reported collecting edible species from the urban environment, 23% reported collecting in rural areas, and 33% reported being sent farm produce from relatives in rural areas within the six months preceding the interview. These findings indicate that wild and farm plant resources play an important role in the lives of Kampala's residents, which means that in order to ensure fair access to alternative food sources policy makers and urban planners need to be aware of diverse land use types and incorporate them in future development plans.

**Keywords:** Food security, natural resource management, nutrition, Uganda, urban farming, wild food plants

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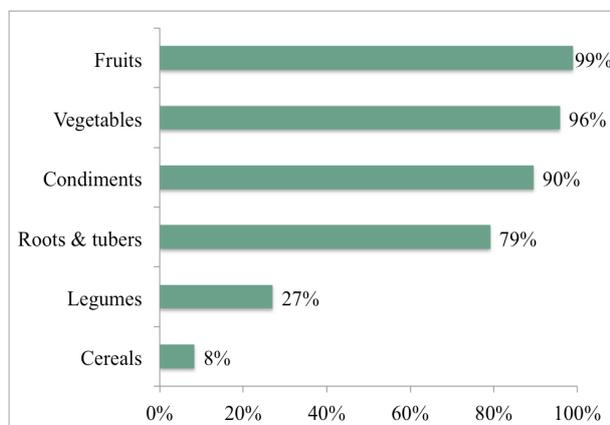
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## Introduction

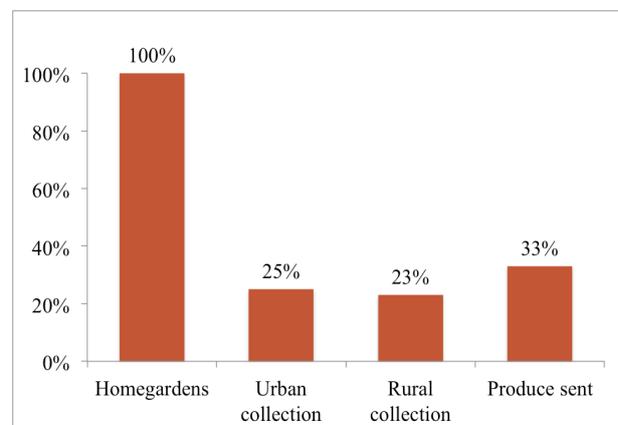
With some of the highest urbanisation rates in the world, sub-Saharan Africa is facing serious challenges in providing sufficient and healthy foods for its growing urban populations and Kampala, Uganda, is no different (The World Bank 2015). Food prices are growing disproportionately faster than those of other basic goods and services (Sabiiti et al. 2014). In urban areas, people are mainly dependent on markets (Benson et al. 2008), but many urban poor can't afford the high food prices at the markets, resulting in high levels of food insecurity. Urban farming and rural-urban linkages (when friends or relatives send produce from the village to the city) have been described as important alternative coping strategies (Maxwell 1995; Sebastian et al. 2008; Pottier 2015). Yet, studies of these alternatives are often focussed on food calories (carbohydrate-rich staple foods) and give little information on other food types and diversity. Collection of edible wild species as an alternative food source in urban and peri-urban areas has received even less attention in food security studies (Kaoma & Shackleton 2014; Schlesinger et al. 2015; Mollee et al. n.d.). These alternative food sources can provide solutions to a rising urban demand for healthy, nutrient-dense foods, but only if recognised and treated as fair alternative practices (Herforth 2010; Pottier 2015). Moreover, analysing food insecurity coping mechanisms separately for the different food groups, including for example fruits and vegetables, gives a relatively simple indication of how these alternatives contribute to a healthy, diverse and nutritious diet (FAO 2008). Data on the importance of these alternative food sources for nutrition security of urban communities are largely missing. This study aims at filling this knowledge gap by assessing the extent and importance of alternative food sources of different use categories for poor residents in Kampala, Uganda.

## Material and Methods

Fieldwork took place between February and September 2015 in Kampala, Uganda. A total of 96 households with homegardens were purposively selected in *inner urban*, *outer urban* and *peri-urban* areas of the city. In each area three neighbourhoods (clusters) were selected. All food plants in the gardens were inventoried and respondents were interviewed on socio-economic data and their use of alternative food sources during the six months preceding the interview. The alternative food sources included were: urban wild collection, rural wild collection and food plants sent from the village by friends and/or relatives. Next, all food plants were categorised into one of the following food groups: *Cereals*, *Condiments*, *Fruits*, *Legumes*, *Roots & Tubers*, and *Vegetables* (FAO 2008). Finally, relative proportions of food groups per food source were compared.



**Figure 1** Proportion of urban homegardens (n=96) in Kampala, Uganda, containing at least one plant species in a food group, separately for six food use groups.

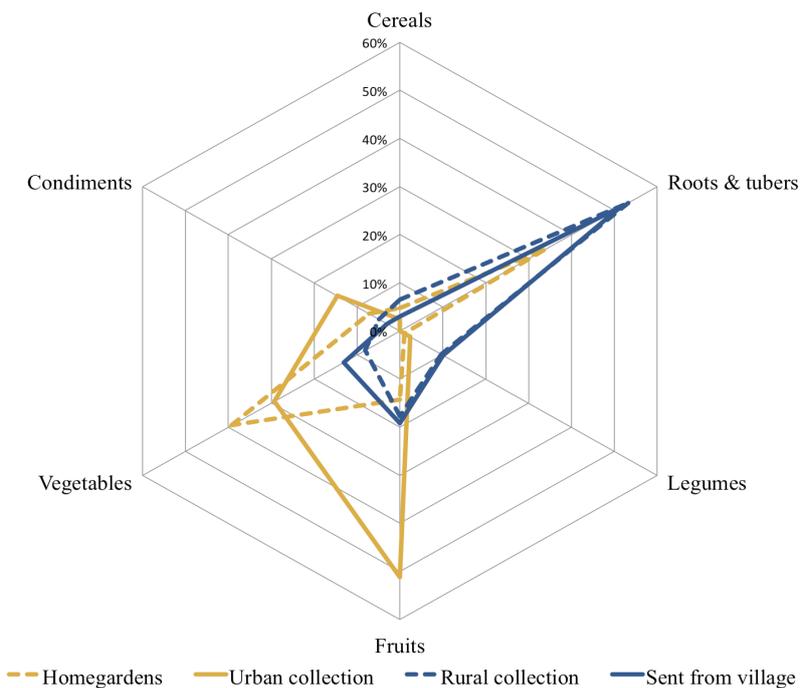


**Figure 2** Proportion of households included in this study (n=96) in Kampala, Uganda, that had used the alternative food source homegarden, urban collection, rural collection or produce sent at least once during the six months preceding the interview.

## Results and Discussion

The surveyed homegardens can be considered highly diverse, with 73 edible plant species found from six food groups (Figure 1). Almost all gardens provided the households with fruits (total of 24 plant species), vegetables (22 species) and condiments such as sugarcane and herbal teas (14 species). Roots & tuber, including the plantain (matooke) were found in 79% of the gardens (eight different species). Only 27% of the gardens provided legumes (four species) and even less, 8%, of the gardens had maize (one cereal species). At least a third of the identified species can be considered indigenous, species that are often underutilised yet can have important nutritional properties to enhance food and nutrition security.

Only 25% of the respondents reported collecting edible species from the urban environment at least once during the six months preceding the interview (Figure 2). Typically, these households collected leafy green vegetables (e.g. *Amaranthus dubius*) and fruits such as mango (*Mangifera indica*) and jackfruit (*Artocarpus heterophyllus*) from urban areas. Furthermore, a similar number of respondents, 23%, reported collecting food plants in rural areas at least once in that same time frame. This occurred mainly when visiting their village and comprised of starchy staples such as cassava (*Manihot esculenta*), plantain (*Musa* spp.; matooke), and sweet potato (*Ipomoea batatas*). A third of the households, 33%, reported being sent farm produce from relatives or friends in rural areas during the six months preceding the interview (Figure 2). These products, too, were mainly cassava, plantain and sweet potato.



**Figure 3** Radar diagram of proportions of food groups per alternative food source as given by 96 respondents in Kampala, Uganda. Total percentage of food group summed up for each alternative food sources equals 100%.

We compared the four different alternative food sources according to their proportional contribution to the six different food groups (Figure 3). Urban collection predominantly provided fruits (50% of all food items collected in urban areas were fruits) and vegetables (30%), while homegardens mainly provided vegetables (40%) and roots/tubers (35%), crops that don't use much space and are easy to cultivate. Urban collection predominantly focussed on tree fruits,

which can be found along the road, on vacant plots and given away by friendly neighbours. Vegetables were not often collected in urban areas and respondents considered their leaves as ‘dirty’. Contrarily, mainly starchy roots and tubers were collected from the rural areas or sent by relatives/friends (55% of all food items mentioned for these categories; Figure 3).

This study did not include frequency and amount of any collections made, therefore the actual contribution to household food and nutrition security should not be overestimated. Furthermore, because this study was part of a larger project that focused on urban homegardens, its main limitation is the fact that we excluded households without homegardens. Since homegardens are known to contribute to food security in a nutritionally diverse way (Bernholt et al. 2009), the frequency and importance of urban or rural food collection might be even higher for poor urban households without homegardens.

### **Conclusions and Outlook**

Alternative food sources play an important role in the lives of the surveyed households in Kampala and are used for different dietary needs, which can, when combined, contribute to a more diverse diet. Starchy staple foods are predominantly sourced from the rural areas, and fresh fruits and vegetables from the urban environment, including both private homegardens and public spaces. By comparing the different alternative food sources separately for different food groups we could better understand how the respondents cope with rising food prices by finding alternative sources for certain food groups, yet ensuring a diverse diet of their families. Urban cultivated and wild agrobiodiversity should therefore be considered as a potentially important food source, but more quantitative studies are needed to assess the actual contributions of these food sources to family nutrition. We encourage researchers, policy makers and urban planners to consider urban cultivated and wild food sources and incorporate them in future urban development plans for improved nutrition of the urban poor.

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