



Global Development Network 1999 - 2009

GDN Working Paper Series

The Role of Urban Agriculture in Addressing Household Poverty and Food Security: The Case of Zambia

Godfrey Hampwaye, Etienne Nel, Lutangu Ingombe

Working Paper No. 19

September 2009

About GDN

The **Global Development Network (GDN)** is a leading International Organization of developing and transition country researchers and policy and research institutes promoting the generation, sharing, and application to policy of multidisciplinary knowledge for the purpose of development. Founded in 1999, GDN is now headquartered in New Delhi, with offices in Cairo and Washington DC.

This Working Paper has been prepared within the GDN's Global Research Project *Institutional Capacity Strengthening of African Public Policy Institutes to Support Inclusive Growth and the MDGs*. The project has been fully funded by the United Nations Development Programme's (UNDP) Bureau for Development Policy (BDP) and Regional Bureau for Africa (RBA). The views expressed in this publication are those of the author(s) alone.

The Role of Urban Agriculture in Addressing Household Poverty and Food Security: The Case of Zambia

Godfrey Hampwaye, Etienne Nel and Lutangu Ingombe¹

Abstract

Urban agriculture is now being recognized as one of the activities with the potential to contribute towards socio-economic development in urban areas of the developing world. In Zambia, urban agriculture has played a key role as one of the key community responses to the after-effects of economic restructuring and therefore has the capacity to contribute in alleviating food insecurity and poverty. Consequently, urban agriculture should be seen as an essential element which can help to achieve Millennium Development Goal number one. The major aim of this study was to show the significance of urban agriculture among households who practice this activity in Zambia. The paper draws from primary sources, more specifically the interview schedule which was conducted with 400 small-scale urban farmers in Lusaka, Kabwe Ndola and Kitwe. The major finding in this study is that urban agriculture does indeed contribute significantly towards household total income and access to cheap food, and consequently to poverty reduction. This observation holds true irrespective of the lack of support from all the levels of government and the numerous constraints which affect these farmers. The contribution of urban agriculture towards poverty alleviation can be further enhanced if the practice is recognized and supported by all key stakeholders.

¹ Godfrey Hampwaye is Lecturer at the University of Zambia, Geography Department, Etienne Nel and Lutangu Ingombe are Research Fellows. E-mails: hampwaye@unza.zm; lutangu2005@yahoo.co.uk

Table of Contents

| | |
|--|----|
| List of Figures | 6 |
| List of Tables | 6 |
| 1. Introduction | 7 |
| 2. Socio-Economic Profile of Urban Farmers in Zambia | 9 |
| 2.1 Intra-Household Relations, Size, and Age | 9 |
| 2.2 Gender Dimension of Urban Farmers | 11 |
| 2.3 Education..... | 11 |
| 2.4 Involvement in Urban Agriculture | 11 |
| 2.5 Extent of Farming Experience | 12 |
| 2.6 Other Job Status and Nature..... | 13 |
| 2.7 Categories of Urban Agriculture in the Four Case Studies | 13 |
| 2.8 Land Ownership | 14 |
| 2.9 Economic Situation and Food Security..... | 14 |
| 3. Significance of Urban Agriculture in Zambia | 15 |
| 3.1 Crop Production..... | 18 |
| 3.2 Animal Husbandry..... | 23 |
| 4. Contribution of Farming to Household Income | 24 |
| 5. Institutional and General Considerations | 25 |
| 5.1 Reasons for Engagement in UA | 25 |
| 5.2 Biggest Problems Experienced | 26 |
| 5.3 Ability to Market Produce..... | 26 |
| 5.4 Problems Experienced with Marketing | 26 |
| 5.5 Types of Support Desired from Government | 26 |
| 5.6 Support Received from Government Officials | 28 |

| | |
|---|----|
| 5.7 Technical Support Farmers Desire | 28 |
| 5.8 Circumstances Which Would Cause Farmers to Stop Farming | 29 |
| 6. Concluding Remarks and Policy Recommendations | 29 |
| 6.1 Concluding Remarks | 29 |
| 6.2 Policy Recommendations | 30 |
| References | 31 |
| Appendix..... | 35 |

List of Figures

| | |
|--|----|
| Figure 1: Location of Study Sites..... | 9 |
| Figure 2: Distribution of Household Size | 10 |

List of Tables

| | |
|---|----|
| Table 1: Relationship to Heads of Households..... | 10 |
| Table 2: Sex Distribution of Members of Households | 11 |
| Table 3: Distribution of Educational Levels by Location..... | 11 |
| Table 4: Involvement of Household Members in Urban Agriculture..... | 12 |
| Table 5: Extent of Farming Experience..... | 12 |
| Table 6: Categories of Urban Agriculture..... | 13 |
| Table 7: Ownership of Land by the Urban Farmers..... | 14 |
| Table 8: Food Security Situation | 14 |
| Table 9: Basic Commodity Basket December 2008..... | 15 |
| Table 10: Comparative Wages of Representative Categories-December 2008..... | 16 |
| Table 11: Mean Monthly Expenditure by Location | 17 |
| Table 12: Involvement in Crop Production..... | 19 |
| Table 13: Nature of Farming Land..... | 19 |
| Table 14: Proportion of all Crops used for Own Consumption..... | 20 |
| Table 15: Method of Financing Inputs | 20 |
| Table 16: Distribution of Total Urban Crop Output by Location | 21 |
| Table 17: Period of Consumption, Value of Sale and Costs | 22 |
| Table 18: Involvement in Livestock Production | 23 |
| Table 19: Quantity of Livestock and Percentage Loss per Annum..... | 24 |
| Table 20: Livestock Diseases by Location..... | 24 |
| Table 21: Contribution of Urban Farming to Annual Household Income | 25 |
| Table 22: Reasons for Engaging in Farming..... | 25 |

1. Introduction

Since the attainment of political independence in 1964, copper mining has been the mainstay of the national economy (Kaunga, 1982; Zambia, 2009). Efforts to diversify the Zambian economy by focusing on agriculture, tourism and manufacturing in the past have not been successful. Hence problems associated with the prices of copper on the world market have had direct impacts on Zambia's economy, as is presently the case. Although the emphasis has been placed on the promotion of non-traditional exports and positive effects have been recorded since the late 1980s, the impact has not been significant. Poverty levels have escalated in the country largely as a result of the negative impacts of the Structural Adjustment Programmes. Between 1998 and 2004, the incidence of poverty has fluctuated between 73% and 68% (Zambia, 2006). Regionally, the incidence of poverty declined from 83% to 78% in rural areas while in urban areas it declined from 56% to 53% (Zambia, 2006). These statistics indicate that the rate of reduction in the incidence of poverty was higher in rural areas than in urban areas. A series of interventions have been implemented by the central government in order to reduce poverty, *inter alia*, promotion of non-traditional exports (Zambia, 2006); Poverty Reduction Strategy Paper (PRSP) (Zambia, 2002); Zambia Social Investment Fund (ZAMSIF) and Social Recovery Project (SRP) (ZAMSIF, 2001), and more recently the national government and the United Nations agreed to implement another initiative called the Millennium Development Goals (MDGs) (Zambia/United Nations, 2005). The implementation of the PRSP and others in the past has been adversely affected by several constraints, especially inadequate and late release of funds by the central government. Due to the poor performance of the economy, with the resultant increasing poverty and unemployment levels, urban dwellers have become innovative by engaging in a variety of informal survival strategies including urban farming. This activity is critical in reducing hunger which forms part of the MDG 1.

UNDP (1996) has recognized urban agriculture as one of the activities with the potential to bring about positive socio-economic development in urban areas of the developing world. Urban agriculture is considered as one of the key community responses to economic restructuring in Zambia (Hampwaye *et al*, 2007; Hampwaye, 2008). According to available data on urban agriculture in Zambia, the practice seems to play a critical role in improving food security for vulnerable urban dwellers, particularly the elderly, women and children (Rakodi, 1985; Jaeger and Huckabay, 1986; Sanyal, 1987; Shah, 1997; Hampwaye, 2008). The central government has acknowledged the fact that agriculture is a central pillar in poverty reduction in Zambia, albeit the focus hitherto has been on rural areas (Zambia, 2009). In addition, urban agriculture is seen to provide income, employment opportunities for the unemployed, and a cheap source of food and improved nutrition to the poor urban households (Shah, 1997; Muchimba, 1999; Steckely and Muleba, 2003; Lubinda, 2004; Lupyani, 2004). The practice has also been found to be a profitable business in certain instances in Zambia (Lubinda, 2000; Simatele and Binns, 2008).

A survey questionnaire was administered to a total of 400 households in three cities and one town in Zambia, broken down in proportion to their population sizes as follows: 154 in the City of Lusaka, 100 in the City of Ndola, 100 in the City of Kitwe and 50 in Kabwe town (see Figure 1). All four urban centres have experienced economic downturns in the recent past to varying degrees.

The mining industry which has been the economic backbone of the Copperbelt Province, where Ndola and Kitwe are located, has faced several challenges. This led to retrenchment of mineworkers, especially after the 1990s. These challenges were not restricted to the mining industry but included industries that provided support services to the mining sector.

The local economy in Kabwe slumped following the closure of the lead and zinc mine which was the major employer of the town, thereby landing thousands of unemployed in the streets in the 1990s. This situation was exacerbated by the closure of yet another significant employer in Kabwe, the Zambia-China Mulungushi Textile Factory. This joint-venture ceased to operate in the 2000s as it could not compete with Asian imports (Carmody, 2008). Its closure had negative multiplier effects through the local economy, as not only were thousands of jobs lost directly, but thousands of local cotton growers were also affected (Carmody, 2008).

The City of Lusaka, because of its relatively stronger local economy when compared to that of other urban centres of a similar size, faces a high rate of migration from rural areas and from other towns as well, which has resulted in increasing unemployment rates

The selection of the farmers was done purposively. However, in order to ensure representative spatial coverage of each city/town, interviews were conducted in all four clusters of each urban city and town. The farmers were categorized as crop producers and livestock keepers. The majority of those who were interviewed belong to the former category. The crop producers were further divided into backyard farmers (on-plot) and those who grow crops in communal areas (off-plot). The disaggregation of farmers was necessary in order to capture a variety of issues that affect all urban farmers. The survey questionnaire solicited responses from farmers in the areas of basic farming profile, crop production and land ownership, animal husbandry, household expenditure patterns, food security, as well as general and institutional issues relating to urban agriculture.

The aim of this paper is to examine the role of urban agriculture in poverty reduction in Zambia. It is argued in this paper that urban agriculture can be an important tool in reducing urban poverty and in helping achieve Millennium Development Goal (MDG) One, which seeks to halve the proportion of people who suffer from hunger by 2015. It is the intention of this paper to show that if urban agriculture is supported by both local and central governments, it can play a significant role in terms of achieving this important developmental goal.

In terms of the structure, the paper is divided into two broad categories: the basic profile of the farmers and agricultural production. The former focuses on the socio-economic data and the latter on issues related to actual production of food and animals, as well as the contribution of this activity to household income, food security and provision of a cheap source of food.



Figure 1: Location of Study Sites

2. Socio-Economic Profile of Urban Farmers in Zambia

This section of the report discusses the basic profile of the respondents, focusing on the intra-household relations, gender, age and educational levels attained. The discussion later turns to analyzing the involvement of the respondents in urban agriculture, other job status as well as the extent of farming experience. Finally, the section analyses the economic situation as perceived by the urban farmers, and their general food security.

As already alluded to, a questionnaire² was administered to 400 households. The questionnaire was responded to by the heads of households or their proxies such as spouses and any competent member of the household. Each respondent had to provide data about all other members of households. On the whole there were about 2368 members of households about whom data was collected whose characteristics are discussed in various sections below.

2.1 Intra-Household Relations, Size, and Age

There were 404 households surveyed in total, wherein 2372 members of households resided. Out of these 951 were from Lusaka, 574 in Ndola and Kitwe while 274 were from Kabwe.

² See the questionnaire in appendix 1

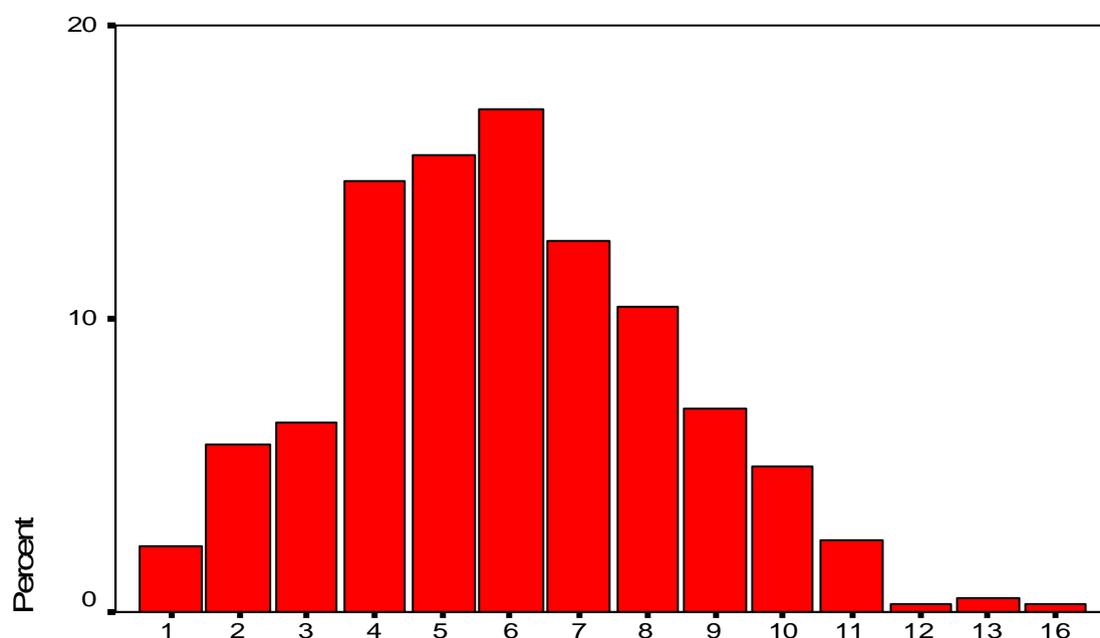
Table 1 shows the distribution of intra-relationships of all members of households with the heads in all four case studies.

Table 1: Relationship to Heads of Households

| Relationship to head | Ndola | Kabwe | Lusaka | Kitwe | Total |
|----------------------|-------|-------|--------|-------|-------|
| Head of household | 100 | 50 | 154 | 100 | 404 |
| Spouse | 71 | 37 | 114 | 70 | 292 |
| Son | 146 | 72 | 245 | 152 | 615 |
| Daughter | 154 | 67 | 236 | 133 | 590 |
| Brother | 19 | 2 | 26 | 16 | 63 |
| Sister | 9 | 6 | 26 | 7 | 48 |
| Nephew | 19 | 5 | 29 | 18 | 71 |
| Niece | 9 | 12 | 21 | 22 | 64 |
| Uncle | 0 | 0 | 1 | 2 | 3 |
| Aunt | 2 | 0 | 1 | 0 | 3 |
| Grandchild | 35 | 15 | 85 | 41 | 176 |
| Extended family | 9 | 8 | 13 | 13 | 43 |
| Total | 573 | 274 | 951 | 574 | 2372 |

Source: Field Data, 2009

The size of a household is an important variable that can explain high poverty levels in most households with lower income levels in urban areas. Given the level of income, a household with more members in it is likely to be poorer than one with only a few. Figure 2 shows the distribution of household size in the sample



A4. Household size

Figure 2: Distribution of Household Size

The results of the survey indicate that the for all four case studies households size ranges from 1- 16 persons, with an average of 5.92 persons per household. This is made up of average family sizes of 5.73, 5.67, 6.21, and 5.74 for Ndola, Kabwe, Lusaka and Kitwe respectively. This shows that most household heads have large families to look after. The age distribution of the household members ranges from 1-83 and the average age in a household is 23 years.

2.2 Gender Dimension of Urban Farmers

The survey revealed that there were more females than males in the sample and that females were significantly more in Kabwe than in any other town sampled. Table 2 shows the distribution of members of households in the four towns by gender.

Table 2: Sex Distribution of Members of Households

| Sex | Ndola | Kabwe | Lusaka | Kitwe | Total |
|--------|-------|-------|--------|-------|-------|
| Male | 48.6 | 44.5 | 48.9 | 48.9 | 48.3 |
| Female | 51.4 | 55.5 | 51.1 | 51.1 | 51.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Field Data, 2009

2.3 Education

In terms of educational levels, only 21.4% of all persons in all households in the four case studies have attained grade twelve and 9.4% have completed tertiary education. This implies that the urban farmers have relatively low educational levels and consequently this hampers their ability to get formal jobs. The majority of the members of households (i.e. 59%) have attained grade 9.

Table 3: Distribution of Educational Levels by Location

| Education | Ndola | Kabwe | Lusaka | Kitwe | Total |
|---------------|-------|-------|--------|-------|-------|
| < Grade 9 | 53 | 47 | 69 | 55 | 59 |
| Grade 10 | 5.8 | 5.9 | 5.0 | 5.1 | 5.4 |
| Grade 11 | 4.2 | 5.5 | 2.5 | 4.0 | 3.6 |
| Grade 12 | 25.3 | 23.9 | 15.7 | 25.7 | 21.4 |
| Post Grade 12 | 11.2 | 15.3 | 6.5 | 9.5 | 9.4 |
| None | 0.6 | 2.4 | 1.0 | 0.4 | 0.9 |

Source: Field Data, 2009

It can be argued that the combination of larger household size, low levels of education and more females than males can explain the high involvement of members of households in urban farming.

2.4 Involvement in Urban Agriculture

All households sampled in the four case studies were involved in one or more form of UA. However, not all members of households were involved in the activity as some had other jobs. Table 4 presents statistics showing levels of involvement in urban agriculture by

household members in all four towns, which is useful in assessing the extent of urban agriculture in the case studies.

Table 4: Involvement of Household Members in Urban Agriculture

| Location | Yes | No | Total |
|----------|------|------|-------|
| Kabwe | 65.5 | 34.5 | 100.0 |
| Ndola | 62.0 | 38.0 | 100.0 |
| Lusaka | 44.6 | 55.4 | 100.0 |
| Kitwe | 59.4 | 40.6 | 100.0 |

Source: Field Data, 2009

The data presented in **Table 4** indicate that, on average, 57.9% of the household members are involved in urban agriculture in the four case studies. This finding shows how important agriculture is in sustaining people's livelihoods as it creates job opportunities and provides cheap food. The comparatively low level of participation in Lusaka can be explained by the fact that there is a relative shortage of land in the capital city and that the local economy is the strongest among the four case studies. Suffice it to stress once again that Kabwe, Ndola and Kitwe have experienced severe economic downturns after the 1990s with the privatisation of the mining industry, in particular.

2.5 Extent of Farming Experience

There are variations regarding the period of involvement in urban agriculture among the households in the four towns. Table 5 presents statistics showing the length of farming for urban cultivators in the four case studies.

Table 5: Extent of Farming experience

| Number of years | Location | | | | Average |
|--------------------|----------|-------|--------|-------|---------|
| | Ndola | Kabwe | Lusaka | Kitwe | |
| Less than 1 year | 7.2 | 10.45 | 10.4 | 9.2 | 13.6 |
| 1-5 years | 41.4 | 54.5 | 54.5 | 40.8 | 44.9 |
| 6-10 years | 17.7 | 23.4 | 23.4 | 24.5 | 19.4 |
| 11-15 years | 12.7 | 9.1 | 9.1 | 3.3 | 6.6 |
| 16-20 years | 5.0 | 1.3 | 1.3 | 9.8 | 4.6 |
| More than 20 years | 16 | 1.3 | 1.3 | 12.5 | 10.6 |
| Total | 100 | 100 | 100 | 100 | 100 |

Source: Field Data, 2009.

The findings in Table 5 indicate that 44.9 % of household members who are involved in urban farming have been engaged in the activity for between 1-5 years, while 13.6% of urban farmers have been farming for less than one year. This is an indication that urban agricultural activities are becoming increasingly more significant than 20 years ago. This is because of high poverty and unemployment levels following the dramatic deterioration of the economy after the 1990s. Urban agriculture is currently becoming one of the common alternatives in the wake of economic crises.

2.6 Other Job Status and Nature

In terms of other job status, the findings demonstrate that household members are involved in a variety of jobs. In all four towns, these jobs range from those in the formal sector such as civil service, clerical work and teaching, to informal sector jobs including petty trading. Nonetheless, the majority (50.1%) of household members are not involved in any job activity other than urban farming. Regarding the nature of employment among some household members, the findings show that 83.4% are employed full-time, 14.9% part-time while seasonal workers constitute 1.3%. Overall, Lusaka has the lowest proportion (75.4%) of full-time workers in comparison with Ndola (92%), Kitwe (89.7%) and Kabwe (85.9%). Despite the high levels of full-time employment of household members with other jobs, there is still a high level of involvement in urban agriculture. It appears that incomes earned by workers in these households are not adequate to sustain the needs of households. Therefore, the high level of involvement by the employed in urban agriculture is aimed at supplementing their household incomes.

2.7 Categories of Urban Agriculture in the Four Case Studies

There are various types of urban agriculture being practised in the four case studies. The findings of the study indicate seven combinations of urban agriculture being practised by farmers in the four case studies as shown in Table 6. Mostly, urban farming can be in the form of backyard gardens, communal crop farming and animal husbandry or any combination of the three.

Table 6: Categories of Urban Agriculture

| Categories | Location | | | | Total |
|--|----------|-------|--------|-------|-------|
| | Ndola | Kabwe | Lusaka | Kitwe | |
| Backyard | 42.0 | 36.0 | 46.4 | 47.4 | 44.3 |
| Communal /other land | 22.0 | 26.0 | 34 | 13.4 | 25 |
| Backyard/Communal | 14.0 | 4.0 | 7.2 | 8.2 | 9.5 |
| Communal/Animal Crop Farming Husbandry | 2.0 | 6.0 | 3.9 | 0 | 8.8 |
| Backyard and Animal Gardens Husbandry | 9.0 | 10.0 | 1.3 | 11.3 | 2.8 |
| Animal Husbandry | 10.0 | 18.0 | 6.5 | 9.3 | 6.8 |
| All Forms | 1.0 | 0.0 | 0.0 | 10.3 | 2.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Field Data, 2009.

The findings in Table 6 show that 44.3% of the population cultivate vegetables or crop in the backyards and 25% grow crops on communal land. While 9.5% cultivate on both backyard and communal land. A combination of food gardens and livestock rearing was common among those surveyed, as follows:

- 2.8% of urban farmers are engaged in both backyard gardens and animal husbandry
- 6.8% of the population in the four case studies grow crops on communal land and are also engaged in animal husbandry.

- 8.8% keep animals and cultivate crops on communal land.

It is also noteworthy that the data in Table 6 shows that a small proportion of urban farmers are primarily engaged in animal husbandry. This is due to strict policies in place which prohibit the keeping of livestock in urban areas as they are a public nuisance. The high cost of livestock feed is another restrictive factor in promoting livestock farming, especially poultry farming.

2.8 Land Ownership

Table 7 presents statistics on land ownership in the four case studies. Lack of access to land is the most serious constraint affecting urban farmers in terms of agricultural production in Zambia.

Table 7: Ownership of Land by the Urban Farmers

| Location | Yes | No | Total |
|----------|------|------|-------|
| Ndola | 48.9 | 51.1 | 100.0 |
| Kabwe | 40.0 | 60.0 | 100.0 |
| Lusaka | 50.4 | 49.6 | 100.0 |
| Kitwe | 50.5 | 49.5 | 100.0 |
| Average | 48.9 | 51.1 | 100.0 |

Source: Field Data, 2009.

The majority of the respondents interviewed pointed out that access to land is a major problem faced by urban farmers. The findings of the study also show that on average 51.1% of the population do not own the land which they cultivate. These are mainly farmers cultivating crops on communal land. The majority of those who claimed that they own the land which they cultivate are backyard farmers. Of significance, however, in Table 7 is the large proportion (60%) of farmers who do not own land which they cultivate in Kabwe. This is an indication that idle land is available in Kabwe for off-plot cultivation.

2.9 Economic Situation and Food Security

When commenting on their economic situation, the majority (67.1%) of households in all four case studies indicated that it has worsened over the past two years, with the highest percentage (71.7%) recorded for Ndola and Kitwe and the lowest (59.1%) in Lusaka. These discrepancies in responses indicate that Lusaka normally is not affected as much as the other towns in the country. The economic vulnerability of the two Copperbelt towns to economic shocks, due to dependency on the mining sector, was explained in the introduction.

Zambia's deteriorating economic situation has had severe implications in terms of household food security, as indicated in Table 8. Respondents were asked to indicate whether they experienced any shortages in the previous month. The responses are shown in Table 8.

Table 8: Food Security Situation

| Responses | Location | | | |
|----------------------------|----------|-------|-------|-------|
| | Lusaka | Kabwe | Ndola | Kitwe |
| Never | 12.6 | 26.0 | 24.2 | 15.2 |
| Rarely (once or twice) | 21.2 | 24.0 | 21.2 | 24.2 |
| Sometimes 3-10 times | 35.8 | 42.0 | 41.4 | 42.4 |
| Often (more than 10 times) | 30.5 | 8.0 | 13.1 | 18.2 |

Source: Field Data, 2009

Regarding the responses to the question on the availability of food in the household in the previous month, the majority (40.4%) indicated that they sometimes experienced food shortages. Kitwe recorded the highest (42.4%), followed by Kabwe (42.0%), Ndola (41.4%) and Lusaka (35.8%). In respect of all towns, less than 25% of the respondents claimed to be food secure. Therefore, urban agriculture, if encouraged, can be a viable means of mitigating these food shortages in households that are food insecure.

3. Significance of Urban Agriculture in Zambia

This section discusses the significance of urban agriculture in poverty reduction in Zambia based on the results of the survey findings for the four case studies. In order to achieve this objective this section focuses on the contribution of crop production and animal husbandry to food security, household income and consequently on poverty reduction.

In considering the underlying context of this section, it is imperative to observe that most basic needs studies conducted in Zambia have shown that the cost of the basic needs basket is often much higher than the purchasing power of most households, as measured by average household income levels. This is an important motivating factor for the majority of households to engage in household production of some commodities they need, through urban agriculture.

The Jesuit Centre for Theological Reflection (JCTR)³ collects data on monthly costs of a basic commodity basket for an average family of six. The commodities are categorized into food and non-food commodities. In December 2008, the survey showed that an average family of six needs, on average, about K751,650 worth of very basic food items per month, while the same household needs nearly K1,183,300 worth of essential non-food commodities, bringing the total basic needs basket to about K1, 934,950. Table 9 below shows the composition of this commodity basket, quantities of each commodity needed and the average cost of each item.

The table shows that a household of six needs roughly K1, 934,950 (US\$400) in order to afford the most basic needs which ensure survival. However, as the results of the survey below will show, most households involved in urban agriculture have expenditures much below this minimum figure.

Whilst the total basic needs basket for December 2008 was estimated at K1,934,950, the comparative incomes surveys showed that most urban incomes were significantly lower than the estimated cost of the basket. Table 10 shows the range incomes for various groups of employees in the month of December 2008

³ JCTR is a non-governmental organization involved in research on poverty related studies in Zambia

Table 9: Basic Commodity Basket December 2008

| Cost of Basic Food Items for a Family of Six in an Urban Area | | |
|--|------------------------|--------------|
| Commodity - Food | Kwacha Quantity | Total |
| Mealie meal (breakfast) | 61,000 3 x 25 Kg bags | 183,000 |
| Beans | 11,900 2 Kgs | 23,800 |
| Kapenta (small type of fish) | 42,300 2 Kgs | 84,600 |
| Dry Fish | 42,500 1 Kg | 42,500 |
| Meat (mixed cut) | 19,000 4 Kgs | 76,000 |
| Eggs | 6,400 2 Units | 12,800 |
| Vegetables (greens) | 7,500 7.5 Kgs | 56,250 |
| Tomatoes | 4,900 4 Kgs | 19,600 |
| Onions | 4,200 4 Kgs | 16,800 |
| Milk (fresh) | 10,000 1 x 2 litres | 10,000 |
| Cooking oil | 32,700 2 x 2 litres | 65,400 |
| Bread | 3,600 1 loaf/day | 108,000 |
| Sugar | 5,100 8 Kgs | 40,800 |
| Salt | 2,300 1 Kg | 2,300 |
| Tea (leaves) | 9,800 1 x 500 g | 9,800 |
| Sub-total | | 751,650 |
| Cost of Basic Non- Food Items for a Family of Six in Lusaka | | |
| Charcoal | 58,300 2 x 90 Kg bags | 116,600 |
| Soap (Lifebuoy) | 2,000 10 cakes | 20,000 |
| Washing soap (Boom) | 3,700 4 x 400 g | 14,800 |
| Petroleum Jelly (e.g., Vaseline) | 7,500 1 x 500 ml | 7,500 |
| Electricity (medium density) | 125,000 | 125,000 |
| Water & Sanitation (med - fixed) | 99,400 | 99,400 |
| Housing (medium density) | 800,000 | 800,000 |
| Sub-total | | 1,183,300 |
| Total for Basic Needs Basket | | 1,934,950 |

Source: JCTR, 2008

Table 10: Comparative Wages of Representative Categories-December 2008

| Some Comparative Figures of Wages — "Take Home Pay" | Pay Slip |
|--|----------------------------------|
| Teacher | K841, 000 - K1,485 000 per month |
| Nurse | K936,000 to K2,624,000 per month |
| Guard with security firm | K250,000 to K750,000 per month |
| Secretary in civil service | K817,000 to K1,480,000 per month |
| Average Monthly Income in Urban Low-Cost Area (CSO) | 645,326 (2006) |
| Piece-worker on a farm | K90,000 to K450,000 PER month |

Source: JCTR, December, 2008

Table 10 shows that, on average, most workers in urban areas have lower incomes than the estimated cost of a basic commodity basket. For instance, in December 2008 the highest paid teacher was earning K500,000 less than the estimated cost of the basket in the same month. The Central Statistics Office estimated that between October 2004 and October 2005, the average income in urban low cost areas where the sampled households were located was estimated at K645,326, which is K1,300,000 below the cost of the basic needs basket.

The sharp divergence between incomes and the cost of a basic needs basket implies that most urban households, particularly those living in urban low cost areas, live below the poverty line. Most urban households living below this poverty line engage in other informal income generating activities, including crop production and animal husbandry, to supplement some of the food commodities in the basic food needs basket and also to generate additional income.

In order to gain more insight into the expenditure and income patterns of the sampled households, the survey also endeavoured to collect the actual expenditures on selected items of all the households in the four case studies. Table 11 presents findings for two types of expenditures, the monthly and other expenditures which are incurred annually, twice or three times in a year. The table presents the mean household expenditure for the four case studies.

Of the monthly expenditures, food constitutes on average the highest proportion (42%) across all the case studies. The survey findings indicate the following average household expenditure: K631,020 for Ndola, K608,562 (Kabwe), K701,537 (Lusaka) and K619,354 (Kitwe). These statistics are not significantly different from the basic food needs basket presented earlier. This can be attributed to the fact that for most households food is a necessity which needs to be met regardless of the poverty levels. Thus before meeting other basic needs food needs will be met. Efforts to promote urban agriculture would reduce household expenditure on food significantly.

For all four case studies the survey results show that the average total expenditure on basic needs is far below the JCTR standard. The total expenditure for Ndola, Kabwe, Lusaka and Kitwe was K1, 689,627, K1,614,209, K1,218,503 and K1,614,209 respectively. The other noteworthy observation in the expenditure pattern is the high sums being spent to repay loans. This implies that though most households are closer to meeting the basic needs, they do so through loans which can impact on their future consumption levels.

From the above observation it is argued that urban agriculture is and can be an important activity in alleviating poverty as it can provide certain kinds of foodstuffs needed in the basic needs basket, and as such, release funds which can be used for other non-food related expenditure. In addition, the activity can also be income generating and can complement other incomes for the households.

Table 11: Mean Monthly Expenditure by Location

| Regular monthly expenditures | Ndola | Kabwe | Lusaka | Kitwe |
|--------------------------------------|--------------|--------------|--------------|--------------|
| | Mean | Mean | Mean | Mean |
| Food | 631,020.41 | 608,562.50 | 701,537.41 | 619,354.84 |
| Housing: Rental | 285,000.00 | 307,375.00 | 252,325.58 | 308,947.37 |
| Water and Electricity | 167,104.48 | 131,552.63 | 96,694.23 | 190,492.31 |
| Health care | 43,120.62 | 58,023.81 | 17,392.42 | 52,780.49 |
| Paraffin/fuel | 59,035.29 | 235,642.86 | 129,960.00 | 95,243.33 |
| Drinking alcohol | 200,500.00 | 108,076.92 | 97,884.62 | 221,333.33 |
| Smoking | 202,950.00 | 53,200.00 | 69,400.00 | 115,000.00 |
| Transport | 181,430.56 | 191,300.00 | 154,037.74 | 209,652.78 |
| Telephone | 147,413.79 | 141,750.00 | 64,205.13 | 165,250.00 |
| Support of family outside household | 194,239.21 | 203,833.33 | 124,128.21 | 143,289.47 |
| Entertainment | 179,583.33 | 83,454.55 | 77,083.33 | 77,333.33 |
| Renting land | 29,250.00 | 100,000.00 | 135,392.59 | 83,333.33 |
| Average Monthly Total Expenditure | 1,689,627.29 | 1,614,209.10 | 1,218,503.85 | 1,662,655.75 |
| Occasional expenditures | | | | |
| Clothing /per year | 337,897.01 | 391,567.22 | 77,644.93 | 263,301.04 |
| Education: After-care per month | 166,666.00 | 50,000.00 | 215,000.00 | 60,000.00 |
| Education: Pre-school per month | 99,516.50 | 81,875.00 | 160,212.50 | 126,053.32 |
| Education: Primary school per term | 130,356.18 | 66,266.93 | 151,026.63 | 89,297.38 |
| Education: Secondary school per term | 153,185.87 | 240,976.39 | 542,851.55 | 300,290.29 |
| Rates per year | 48,254.80 | 14,584.39 | 50,114.58 | 328,514.88 |
| €€ Loan payment per month | 501,904.76 | 442,875.00 | 829,666.67 | 540,500.00 |

Source: Field data, 2009

3.1 Crop Production

Of all the household members who indicated being engaged in urban agriculture in four different locations in Zambia which were surveyed, 91.3% indicated that they were involved in urban crop production. However, there were variations within groups, with Lusaka recording the highest level of involvement (94%) in crop production. This is followed by Kitwe (91.3%), Ndola (90%) and lastly Kabwe which stood at 82%. Table 12 shows the levels of involvement in crop production by location.

Table 12: Involvement in Crop Production

| Involvement | Ndola | Kabwe | Lusaka | Kitwe | Total |
|--------------------|--------------|--------------|---------------|--------------|--------------|
| Involved | 90.0 | 82.0 | 94.7 | 91.9 | 91.3 |
| Not involved | 10.0 | 18.0 | 5.3 | 8.1 | 8.7 |

Source: Field Data, 2009

Holding assumptions of constant incomes in all the towns, the unusually high level of involvement in crop production in Lusaka could be explained by the fact that food prices are generally higher there than in other towns (JCTR, 2008), which makes the marginal benefit of own production higher. The town of Kabwe has many crop farmers in its rural–urban fringes making crop production relatively higher than most other towns; As a result, household production of crops is not so beneficial because the same commodities can be obtained at much cheaper prices on the market.

In terms of the location of urban farming, the findings indicate that out of those involved in crop production, 56% were primarily cultivating in their backyards, 29.9% were primarily involved in farming on communal land and only 13.2% were involved in both backyard and communal land cultivation at the same time. Thus the most common category of urban crop farming is backyards farming.

Table 13: Nature of Farming Land

| Nature | Ndola | Kabwe | Lusaka | Kitwe | Total |
|----------------------------|--------------|--------------|---------------|--------------|--------------|
| My backyard | 57.8 | 52.5 | 51.0 | 65.6 | 56.4 |
| Communal land | 25.6 | 35.0 | 39.3 | 16.7 | 29.9 |
| Backyard and communal land | 16.7 | 12.5 | 8.3 | 17.8 | 13.2 |
| Other | 0.0 | 0.0 | 1.4 | 0.0 | 0.5 |

Source: Field Data, 2009

There are output limitations when crops are grown in backyards as opposed to communal land. This is because backyards are smaller than communal lands and the level of crop production tends to be limited by plot size. These findings indicate that there is much scope for increased urban crop production if more communal pieces of land are made available in an organised way.

Regarding the use of the produce, the findings in Table 14 reveal that most of the crops cultivated in urban farming are used for own consumption. On average, 79.6% of all the respondents indicated that they consumed between 80-100% of their crop produce, with Lusaka recording the highest proportion (83.7%) of households consuming between 80-100% of the crops. The proportion of the crops not used for consumption is usually sold on the open market to raise some funds.

Table 14: Proportion of all Crops used for Own Consumption

| Proportion | Ndola | Kabwe | Lusaka | Kitwe | Total |
|------------|-------|-------|--------|-------|-------|
| 1-20% | 5.7 | 12.2 | 1.4 | 9.2 | 5.6 |
| 21-40% | 6.8 | 7.3 | 2.1 | 4.6 | 4.5 |
| 41-60% | 2.3 | 2.4 | 7.1 | 3.4 | 4.5 |
| 61-80% | 5.7 | 2.4 | 5.7 | 8.0 | 5.9 |
| 81-100% | 79.5 | 75.6 | 83.7 | 74.7 | 79.6 |

Source: Field Data, 2009

The high proportion of crops consumed in all towns can be ascribed to the fact that most households involved in urban crop production are poor and engage in crop production primarily for subsistence purposes. In addition, crops are harvested when prices are generally low, so that selling the crops might result in relatively low income when sold. Thus most households prefer to consume their output.

It is important to underscore the fact that production of crops requires basic inputs such as fertilizers, seeds/seedlings, hoes, shovels, spades and manure. These inputs enter the production function of these crops at a cost. With regard to the financing of crop production, 72% of the urban crop farmers indicated that they financed the production of crops by means of incomes generated from jobs other than urban agriculture, while only 12% indicated having financed the production from the profits of urban agricultural produce, as shown in Table 15.

Table 15: Method of Financing Inputs

| Method | Ndola | Kabwe | Lusaka | Kitwe | Total |
|----------------------------------|-------|-------|--------|-------|-------|
| Through profits from what I sell | 7.4 | 16.3 | 9.3 | 19.8 | 12.4 |
| By means of my state pension | 13.8 | 4.7 | 2.1 | 1.0 | 5.0 |
| By means of another job | 74.5 | 69.8 | 75.0 | 67.3 | 72.2 |
| Other (Specify) | 3.2 | 0.0 | 6.4 | 2.0 | 3.7 |
| Donations | 1.1 | 9.3 | 7.1 | 9.9 | 6.6 |

Source: Field Data, 2009

Financing crop production by means of other jobs and from profits gained by selling agricultural produce has several implications. Firstly, it shows that even though the incomes are low, some urban dwellers are able to postpone consumption and invest in inputs to be used in crop production. Secondly, crop production could be a reliable destination of savings for some urban dwellers who cannot earn significant returns if they were to invest part of their income in savings accounts in a bank. Thus it appears that the household decision to invest in urban agriculture by means of income earned from other jobs is an indication of the perceived good returns in terms of crop output and revenue to be generated after the harvest. Households generally engage in crop production if the perceived benefits are higher than the cost of doing so.

There are various motives for growing particular crops in urban areas. These could be to the desire to have adequate, reliable and regular access to food supplies; a lack of purchasing power; inadequate access to formal employment opportunities; the desire to raise funds from crops grown, and/ or farming because it is a hobby. These factors can interact with one another to the extent that, for each household, various types of crops can be grown in a single

backyard garden plot or on communal land. The survey sought to find out what crops were grown in backyards and communal lands. Table 16 shows the distribution of various crops grown in both backyards and on communal lands by location.

Table 16: Distribution of Total Urban Crop Output by Location

| Type of Crop | Location | | | | |
|-----------------|----------|-------|--------|-------|-------|
| | Ndola | Kabwe | Lusaka | Kitwe | Total |
| Maize | 34.6 | 50.7 | 52.2 | 29.6 | 39.5 |
| Pumpkins | 8.8 | 9.0 | 12.6 | 10.0 | 10.3 |
| Beans | 11.2 | 4.5 | 11.6 | 5.4 | 8.8 |
| Onions | 8.3 | 7.5 | 1.4 | 10.0 | 6.8 |
| Rape | 6.8 | 4.5 | 4.8 | 7.5 | 6.3 |
| Tomatoes | 6.8 | 3.0 | 1.4 | 7.1 | 5.0 |
| Groundnuts | 4.9 | 3.0 | 6.8 | 3.3 | 4.7 |
| Sweet potatoes | 3.9 | 3.0 | 4.3 | 2.9 | 3.6 |
| Chinese cabbage | 3.9 | 4.5 | .5 | 5.4 | 3.5 |
| Others | 10.7 | 10.4 | 4.3 | 18.7 | 11.5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Field Data, 2009

The findings in Table 16 show that for all towns, maize accounts for the largest proportion of the crops cultivated in urban agriculture and contributes to almost 40% of the total urban agriculture production. This is followed by pumpkins, which accounted for about 10.3% of the total urban agriculture production. Other crops in order of their importance include beans (8.8%), onions (6.8%), rape (6.3%), tomatoes (5.0%), groundnuts (4.7%), sweet potatoes (3.6%), and Chinese cabbage (3.5%).

The distribution of the crops grown across all the case studies partly indicates that households grow crops that can help in substituting some of the commodities in the basic food needs basket, such as, among others, mealie meal, vegetables, bread and tomatoes. Whenever home crop production is successful, an average household can make significant savings or restrict certain expenditures in the basic food needs basket. A survey of 400 households in four of Zambia's towns showed that for all crops grown by individuals involved in urban agriculture, the average period of consumption is about 3.2 months.

There are, however, variations in respect of towns, with the highest being in Kabwe and Lusaka, where on average, the output produced by urban farmers would last for 3.5 months. The savings enable these households to concentrate on purchasing non-food related basic needs such as education services, electricity and water. It is clear from these findings that urban agriculture enables low-income households to consume the minimum required for general nutrition. Savings from home production enable households to afford certain non-food related basic needs such as school fees, transport, health and education. Thus it can be argued that urban dwellers with incomes below the poverty line (below USD1p/d) can still maintain the minimum required nutrition intake if they are engaged in urban agriculture. This is true, particularly in Zambia, where the range of traditional and non-tradition crops available can provide most of the nutrients required to attain a minimum requirement in terms of starch, vitamins and proteins.

In addition to improving food security, urban agriculture also generates incomes for some households that sell surplus produce. In addition to the costs of purchasing inputs, these farmers incur the costs of preparing the produce for sale and transportation. The survey showed that, on average, the sum of input costs, the cost of preparation of the produce for sale and the cost of transportation are significantly lower than the values of returns. The implication is that for some farmers, in addition to improving their food security, urban agriculture is a good source of extra income that can assist in alleviating absolute poverty. For the 2008 farming season in Ndola for instance, an average urban farmer received K332,570 from market sales and spent approximately K187,565 on input costs, and costs of preparation for sale and transportation. In Kabwe, an average urban farmer earned K1,828,588 from crops and spent only K649,594 on input costs, and costs of preparation for sale and transportation. In Lusaka, an average farmer sold crops valued at K584,204 while K223,577 was spent on input costs, and costs of preparation for sale and transportation. In Kitwe, the value of crops sold was, on average, K895,594, and the costs of inputs, preparation for sale and transportation were approximately K483,240. Table 17 shows the distribution of value of sale, cost of preparation for sale, cost of transportation and the total cost of producing all crops for an average farmer in each of the four case studies.

Table 17: Period of Consumption, Value of Sale and Costs

| | Location | | | |
|------------------------------|------------|--------------|------------|------------|
| | Ndola | Kabwe | Lusaka | Kitwe |
| Period of consumption | 3.82 | 4.69 | 4.24 | 3.67 |
| Value of sale | 332,570.18 | 1,828,588.24 | 584,204.17 | 895,594.70 |
| Cost of preparation for sale | 31,304.35 | 164,938.46 | 86,547.62 | 170,166.67 |
| Cost of transportation | 90,000.00 | 309,090.91 | 65,384.62 | 270,000.00 |
| Total input cost | 66260.54 | 175565.22 | 71644.86 | 43073.33 |

Source: Field Data, 2009

Table 17 shows that urban crop production contributes to household food security as exemplified by the average period of consumption of 3.5 months for all the case studies. The findings also show that there is scope for earning significant profits which can be used to finance other expenditures of those involved in crop production. Therefore urban agriculture, if properly integrated into urban development plans, can significantly help in alleviating income poverty and consequently contribute to meeting the MDG goal number one.

Water is another type of cost which needs to be taken into account when considering costs of an urban farmer. The findings have shown that the major source of water for crop production is tap water from the municipalities (41.3%). This water has cost implications which should be taken into consideration. Other farmers use rain water (25.9%), especially those who cultivate off-plot (away from home). For this category of farmers, cultivation is only limited during the rainy reason. This type of cultivation has the potential to compromise the food security of the farmers. If communal gardens can be organised and serviced with water, farmers can afford to grow crops throughout the year and greatly enhance food security and consequently ensure poverty reduction.

3.2 Animal Husbandry

Of all the members of households surveyed only 31% indicated that they were involved in livestock farming. Table 18 shows the distribution of these individuals in all four case studies across the type of livestock kept.

Table 18: Involvement in Livestock Production

| Livestock | Ndola | Kabwe | Lusaka | Kitwe | Total |
|----------------|-------|-------|--------|-------|-------|
| Cattle | 0.0 | 0.0 | 4.0 | 0.0 | 1.0 |
| Goats | 0.0 | 10.0 | 4.0 | 5.0 | 4.0 |
| Local chickens | 27.0 | 5.0 | 44.0 | 38.0 | 31.0 |
| Layers | 11.0 | 5.0 | 11.0 | 0.0 | 7.0 |
| Broilers | 43.0 | 70.0 | 22.0 | 38.0 | 41.0 |
| Ducks | 3.0 | 0.0 | 7.0 | 8.0 | 5.0 |
| Guinea fowl | 3.0 | 0.0 | 0.0 | 0.0 | 1.0 |
| Pigs | 0.0 | 10.0 | 4.0 | 5.0 | 4.0 |
| Rabbits | 11.0 | 0.0 | 0.0 | 8.0 | 6.0 |
| Pigeons | 0.0 | 0.0 | 4.0 | 0.0 | 1.0 |
| Turkeys | 3.0 | 0.0 | 0.0 | 0.0 | 1.0 |

Source: Field Data, 2009

On average, across all four case studies, the majority of the animal husbandry farmers are involved in rearing broilers (41%), followed by local chickens (30.6%) and layers (6.5%). Whilst the broilers were the most common type of livestock kept in Ndola and Kabwe, the findings show that Lusaka and Kitwe had a relatively higher incidence of households rearing local chickens. It can be noted that Lusaka has a smaller proportion of involvement in animal husbandry due to less land for animal husbandry than in other towns.

The role of animal husbandry in poverty alleviation can be analysed by examining the motives of those who sell their animals on the market. The study findings indicate that the majority sell animals for the sole purpose of earning income. The majority (49.3%) of the livestock farmers in the four towns sell their animals in order to earn extra income while (36.6%) of those who keep livestock are motivated by the fact that this activity is their main source of income. Livestock farming is, therefore, a significant activity for at least 36.6% of the respondents who are involved in this activity in all the four towns.

In terms of actual quantities of livestock kept by those involved in livestock production, Ndola has the highest annual average number of broilers (744.67) while Kitwe has the highest average number of local chickens (98) and Kabwe leads in the average number of layers (360). Nonetheless, the poultry industry faces a number of challenges, as exemplified by the percentage of losses indicated in Table 19.

Table 19: Quantity of Livestock and Percentage Loss per Annum

| Broilers | Ndola | Kabwe | Lusaka | Kitwe |
|-----------------------|--------------|--------------|---------------|--------------|
| Quantity | 744.7 | 588.6 | 536.6 | 466.1 |
| %Losses | 10.7 | 7.56 | 21.56 | 11.7 |
| Local chickens | Ndola | Kabwe | Lusaka | Kitwe |
| Quantity | 23.5 | 20.0 | 26.9 | 68.7 |
| % Losses | 16.6 | 0.0 | 47.4 | 31.0 |
| Layers | Ndola | Kabwe | Lusaka | Kitwe |
| Quantity | 172.5 | 360.0 | 9.0 | 0.0 |
| % Losses | 8.3 | 19.0 | 20.0 | 0.0 |

Source: Field Data, 2009

Table 19 shows that for broilers, the percentage loss ranged between 7.5% and 21.6%. The highest percentage loss was recorded for local chickens. For this type of livestock the percentage losses ranged between 16% and 47%.

The percentage of livestock losses presented in Table 19 can be attributed to the diseases which are prevalent in the four towns, as shown in Table 20.

Table 20: Livestock Diseases by Location

| Pest/Disease | Ndola | Kabwe | Lusaka | Kitwe | Total |
|-------------------------------------|--------------|--------------|---------------|--------------|--------------|
| Trypanosomiasis (sleeping sickness) | 0.0 | 0.0 | 0.0 | 8.0 | 3.0 |
| Foot & mouth | 0.0 | 0.0 | 9.0 | 0.0 | 2.0 |
| Coccydiosis | 80.0 | 85.0 | 64.0 | 76.0 | 77.0 |
| Newcastle sickness | 20.0 | 15.0 | 9.0 | 8.0 | 13.0 |
| Ticks | 0.0 | 0.0 | 0.0 | 4.0 | 2.0 |
| Gall | 0.0 | 0.0 | 18.0 | 4.0 | 5.0 |

Source: Field Data, 2009

Coccydiosis was the most common reported disease with an average prevalence rate of 77%. Farmers in Kabwe experience the highest rate of prevalence at 85% while the lowest rate (76%) is for Lusaka. The next common poultry disease in all four locations is Newcastle disease (15.5%) with Ndola having the highest prevalence rate (20%). The other diseases affecting livestock in Table 20 do not seem to pose a serious problem among livestock farmers. The only plausible explanation for this disparity among the prevalence rates of these diseases is that the other diseases largely affect cattle which are rarely kept in the four towns. The high prevalence rate of animal diseases discussed in the preceding section is further exacerbated by the fact that the commonest disease control measure among the farmers is 'self administered local treatment'. On average for all the four study locations, 54.7% of the animal farmers depend on this as a control measure while only 37.5% of the respondents indicated that they received 'veterinary/extension service'.

4. Contribution of Farming to Household Income

The significance of urban farming was also assessed in terms of its contribution towards household income. This assessment is important because it gives an idea of the role urban agriculture plays in poverty reduction. The statistics in Table 21 demonstrate the proportional contribution of urban farming to household income.

Table 21: Contribution of Urban Farming to Annual Household Income

| Location | Mean | % contribution |
|---------------------------|--------------|----------------|
| Ndola | | |
| Contribution of other job | 2,147,539.06 | 51.0 |
| Contribution of farming | 2,032,698.41 | 49.0 |
| Kabwe | | |
| Contribution of other job | 2,646,607.14 | 52.0 |
| Contribution of farming | 2,399,805.56 | 48.0 |
| Lusaka | | |
| Contribution of other job | 5,127,647.06 | 82.0 |
| Contribution of farming | 1,136,250.00 | 18.0 |
| Kitwe | | |
| Contribution of other job | 2,494,810.61 | 47.0 |
| Contribution of farming | 2,775,215.43 | 53.0 |

Source: Field Data, 2009

Table 21 shows that farming contributed between 18% in Lusaka and 53% in Kitwe towards total household income in the 2007/2008 season. The average contribution of urban agriculture to incomes in the four towns is 42%. These findings further show that the significance of urban agriculture increases with the availability of land for farming. Hence, the contribution of urban farming to household income is less in Lusaka than in the other three towns. Overall, urban agriculture is a significant practice in terms of its contribution to total household income and can play a critical role in poverty reduction as income earned from this activity can be used to pay for other household needs.

5. Institutional and General Considerations

5.1 Reasons for Engagement in UA

The questionnaire results reveal two clear primary reasons why households engage in urban agriculture. As reflected in Table 21, the two primary reasons are the desire to produce food for the household and/or to secure household food security (averaging 38% of the cases and rising to 48% in the case of Ndola) and the objective of the acquisition of income from farming (44% of cases on average). The latter statistics reflects the degree to which farmers actually are able to produce for market and the reality in many instances farmers have gone beyond subsistence production.

Table 22: Reasons for Engaging in Farming

| Location | Food / Food Security | Income | Other |
|----------|----------------------|--------|-------|
| Ndola | 48.0 | 50.0 | 2.0 |
| Kabwe | 28.0 | 58.0 | 14.0 |
| Lusaka | 29.0 | 30.0 | 1.0 |
| Kitwe | 46.0 | 39.0 | 15.0 |
| Average | 38.0 | 44.0 | 9.0 |

Source: Field data, 2009

5.2 Biggest Problems Experienced

An examination of the survey data collected reveals two primary clusters of ‘problems’ experienced by the 400 farmers interviewed. In 75% of cases, problems are broadly related to the expense of the various inputs required to farm (i.e. water, fertiliser, seed etc). In the balance of cases (25%) problems were clustered into a range of themes, namely drought / disease / labour costs/ theft / climate/ and land access. Input costs are clearly a very real challenge which could negatively impact on the future of UA and are obviously an area in which government may be able to make a positive input.

5.3 Ability to Market Produce

Despite long held views that UA is primarily a subsistence activity, it is apparent from the survey results that significant numbers of farmers are actually able to successfully market at least part of what they produce. Statistics vary between the four centres investigated, as indicated below:

% of urban farmers marketing at least part of their produce

- Kabwe – 33%.
- Lusaka – 11%
- Kitwe – 33%
- Ndola – 27%
- Average 26%

The lowest score is that of Lusaka where it is apparent that agriculture is more of a survivalist practice and is a reflection of the extent of small backyard gardens, as opposed to the wider existence of larger peri-urban farms in the other case study sites.

5.4 Problems Experienced with Marketing

Of those who are able to market their produce two generic themes emerged in terms of the key problems experienced, namely:

- Transport and costs associated with marketing – Kabwe 20%, Lusaka 33%, Kitwe 33%, Ndola 25%
- Lack of storage and wastage - Kabwe 20%, Lusaka 10%, Kitwe 10%, Ndola 25%

It should be noted that many farmers did not respond to this question, suggesting either the limited nature of problems experienced, or more likely the reality that sales are of a limited nature and hence perceived problems are not that apparent.

5.5 Types of Support Desired from Government

In this section an overview of the main inputs the urban farmers would like to see from government / institutions is provided. Raw data as opposed to percentages have been utilised to emphasize the significance of the different variables which have been considered. In addition, owing to similarity of responses across the cities, a single combined list has been generated (see below):

Data fall within a series of broad categories as reflected in the sub-headings below. Under each sub-theme, several have clarifying points associated with them. Note: one comment per

respondent is listed as a whole number, but where a respondent provided multiple answers, a portion of one (e.g. half or quarter or a third) was utilised.

INPUTS DESIRED

Fertilizers required– 110.5 (of whom 12 also made comments about poor soil quality).

1 commented that co-operatives were not helpful with regards to fertilizers.

1 commented that ‘co-operatives steal our money for fertilizer and do not give us money for fertilizers’

Assistance with high price of seeds – 14 (of whom 2 commented that seed quality was an issue)
(fertilizer and seed comments were often made by the same interviewee)

Need for loans – 1.5

Need for financial inputs – 43 (many also made multiple comments re fertilizer and seed)

LAND

Land shortage needing to be addressed – 52.5 (includes 3.5 who worried about repossession of land, one requesting tilled land and 3 requesting deeds. 3 specifically requested larger plots and 1 a smaller plot)

Problems with communal land and lack of clarity about boundaries - 1

Transport distance to communal land - 1

ANIMALS

Stock feed costly -18 (1 commented about the quality of feed, 1 commented that human food was cheaper than stock feed)

Issues with animal diseases and vaccination costs – 13 (most comments were about chickens)
(stock feed and animal diseases often reported by the same interviewee)

WATER

Help with water – 24 (help with erratic water supply – 3.3)

Water-logged land – 3

Heavy rains causing the runoff of fertiliser – 2

Cost of water – 2.5

Drainage - 0.5

Water pipes broken but still have to pay the bill – 2

No water pipe at the well – 0.5

WEEDS / PESTS

Weeds or pests – 20

THEFT

Theft of crops – 15

LABOUR

Labour – 8 (2 mentioned the need to farm personally with basic implements only)

Age or ageing -1.3

Poor owner health – 1

EQUIPMENT

Lack of tools and equipment – 6

MARKET

Need to be closer to market – 2.5

Transport to market -1

Storage and market place – 2.5 (1 wanted cool storage)

OTHER

Lack of power / electricity – 1

Shade from tall trees -1

Issues with stock breeding – 1

Lack of stock - 1.5
Shortage of business skills – 2
Advice re business expansion 2.33
When business is slow –selling at lower prices – 1.5
Selling chickens on credit and not receiving money on time – 2
Council won't allow maize owing to malaria – 0.25

NO SUPPORT REQUIRED

No government assistance required – 25 (a few made comments about farming on very small plots of land)

While many of the above comments do not directly translate into requests for government assistance, in most instances clear themes emerge in terms of what farmers require. These themes include the basic inputs required to farm, e.g. fertilizer (26% of all respondents), seed, loans (10%) and secure land access (12%). A cluster of basic farming support also emerges, e.g. assistance with animals (8%), pests and weeds (4%), water issues (8%), equipment and labour. Market access, surprisingly, does not feature that prominently (2%). While there are a range of other issues, it is useful to note that 25 respondents see no need for support (6%) – it is to be noted that many of these respondents currently farm very small plots.

5.6 Support Received from Government Officials

It is interesting to note that only 16 out of the 400 farmers surveyed stated that they had received previous support from government officials. As the following list indicates, levels of support received are clearly very low, with the possible exception of Kabwe, where 7 out of the 50 farmers interviewed had received some form of support:

% of farmers that received government support

- Kabwe – 14%
- Lusaka – 3%
- Kitwe – 2 %
- Ndola – 2%

Of the 16 who had received support, 4 had received veterinary support and 12 received general farming advice. Very low levels of support (4% overall) suggest that UA is not receiving any significant attention from government and its agricultural extension staff.

5.7 Technical Support Farmers Desire

Despite currently low levels of government support received, almost all farmers would like to receive some measure of support from the government. Desired support takes the form of support for farming, marketing, training, disease control, and extension support. Survey statistics for the four centres indicate the following levels of desire for government support and assistance exist:

- Kabwe 100%
- Lusaka 80%
- Kitwe 82%
- Ndola 85%

A clear shortfall exists and, as indicated in 5.6 above, that shortfall is currently not being addressed by government, creating a clear challenge for the future.

5.8 Circumstances Which Would Cause Farmers to Stop Farming

It is apparent that most farmers consider stopping farming an inconceivable option, particularly in Lusaka where dependence on survivalist / subsistence farming appears to be the highest. In many cases farmers commented that only ill—health or death would cause them to stop farming. Of those surveyed, 35% indicated that they depend on farming for economic or food security reasons. The two major causes which farmers indicated would negatively impact on their future ability to farm were:

- Potential loss of access to land – approximately 10% of farmers
- Input costs / water access – approximately 40% of farmers

6. Concluding Remarks and Policy Recommendations

Based on the foregoing discussion, several conclusions and recommendations can be made with respect to the critical issues raised.

6.1 Concluding Remarks

Pertinent issues have been identified in the discussions in this paper. With regard to the profile of the urban farmers, it has been demonstrated that household sizes are nearly 6 persons per household and are related to the head of the household. The largest proportion of respondents have not completed the Grade 12 level of education. The majority of the farmers in the households are women. The practice of urban agriculture is not only for the young as the discussion has shown that the elderly, some aged 84 years, are involved in urban farming. Despite the fact that a significant proportion of household members have full-time jobs, nearly 60% of households are involved in urban farming. The discussion has also established that the majority of the respondents have only been farming for the last 5 years while the others have been involved in urban agriculture over the past 20 years. This implies that this activity has increased as a result of the effects of the SAPs. This observation is supported by the perception of the majority of the respondents that their economic situation has been worsening in the last decade and they sometimes experience food shortages.

In terms of the contribution of urban agriculture towards poverty reduction, the discussion has demonstrated that this practice plays a cardinal role in ensuring food security and household income, as indicated also by the period of consumption. Crop production is more common than animal husbandry and most households depend on this activity as a source of food, and maize is the major crop. However, accessing inputs for their activity is very challenging as the majority use income earned from other jobs to finance their inputs, whereas others use profits after selling their produce to purchase inputs. Measured against the costs of inputs, preparations for sale and transportation, urban agriculture is a profitable venture for farmers.

Most of those who practise livestock farming are involved in poultry farming, especially the rearing of broilers. The majority sell their livestock in order to earn extra income while a fair proportion of farmers consider livestock farming as a main source of income. Poultry farmers in all four towns experience many challenges in terms of diseases, as indicated by the percentage losses. This situation is exacerbated by the fact that most of these farmers treat the chickens themselves and only a small proportion receives assistance from veterinary extension officers. Likewise, livestock farming is also important with regard to poverty reduction. Overall, the discussion has shown that urban agriculture contributes significantly

to total household income. Therefore, this activity has great potential with respect to poverty reduction and consequently can help in meeting MDG One by 2015.

Findings gleaned in the general / institutional section reveal that most farmers engage in UA for food security and income reasons and that a large percentage are able to market at least some of their harvest. In addition, key issues such as land and water access and cost of inputs are key concerns, and many farmers report that they could not afford to stop farming. It is noteworthy that almost none of the farmers have received direct support or input from government officials. However, there is clearly a significant demand to access a range of government / institutional services and support, which currently is not being met. In terms of assistance required, farmers clearly articulated a need for assistance with key input considerations – land, seed, fertiliser, loans and help with animals. Assistance with access to markets did not feature that strongly. This could be a reflection of the institutional support, particularly in the research areas outside of Lusaka, for urban markets and through the efforts of some church organisations, such as St. Peters Anglican Church.

6.2 Policy Recommendations

Firstly, it is recommended that the Ministry of Local Government and Housing, and all the relevant local authorities in the country, should recognise urban farming as a legitimate part of urban land use. To this effect, part of the land within the perimeters of urban or peri-urban areas should be designated for urban farming. The municipalities should further provide these areas with necessary infrastructure services such as water, power, fencing and roads to facilitate farming in these areas.

Secondly, through the Ministry of Agriculture and Cooperatives, the central government should provide agricultural/veterinary extension services to urban farmers in order to improve their farming techniques. In addition, central government should provide urban farmers with subsidised inputs as is the case with their rural counterparts.

Thirdly, it has been established that one of the major constraints to urban farming is a set of by-laws and other pieces of legislation such as the Public Health Act which control this activity. It is being recommended that at both the central and local levels, government should review these laws so that they are supportive of urban farming instead of being prohibitive.

Fourthly, in order to show that urban agriculture is a significant activity with a potential to reduce poverty, it is important to introduce some pilot projects in selected urban areas where urban farmers will be given all the support required. Although instances of pilot projects do exist, in Ndola for example, local councils must ensure that these projects serve a broader purpose, as opposed to clustering in certain areas, and the benefits must flow through to the rest of the community.

Finally, as a starting point, there is need to convene a national workshop which all the stakeholders should be invited to attend to discuss the legitimisation of urban agriculture in Zambia. The stakeholders should include the Ministry of Local Government and Housing, the Ministry of Agriculture and Cooperatives, all local authorities in Zambia, academicians, Non-Governmental Organisations (NGOs) which support urban agriculture, and cooperating partners such as UNDP.

References

- Carmody P., 2008. An Asian Driven Economic Strategy in Africa? The Zambian Case, Department of Geography, Trinity College Dublin, Dublin.
- Jaeger, D., and Huckabay, J.D., 1986. *The garden City of Lusaka: urban agriculture*, in G.J. Williams (ed.), *Lusaka and its Environs: A Geographical Study of a Planned Capital City in Tropical Africa*, Zambia Geographical Association, Lusaka, 267-277.
- Jesuit Centre for Theological Reflections (JCTR), 2008. Basic Needs Basket-December 2008, JCTR, Lusaka.
- Hampway, G., 2008. 'Decentralisation, local economic development and urban agriculture in Zambia'. Unpublished PhD Thesis, University of the Witwatersrand, Johannesburg.
- Hampway, G., Nel, E., and Rogerson, C.M., 2007. Urban Agriculture as a local initiative in Lusaka. *Environment and Planning C. Government and Policy*, 25, 553-572.
- Kaunga, C. K., 1982. *Regional Development Strategy: A Case study of Zambia 1966 – 1976*, Unpublished PhD Thesis, State University of New York, New York.
- Lubinda, H., 2000. Household analysis of small-scale urban agriculture in Zambia: the case of Lusaka District, Unpublished Student Report, University of Zambia, Lusaka.
- Lubinda, R.M., 2004. The impact of urban agriculture on the labour market in Kalulushi, Unpublished Student Report, Copperbelt University, Kitwe.
- Lupyani, C., 2004. Accessibility and agriculture development in peri-urban Areas, Unpublished Student Report, Copperbelt University, Kitwe.
- Muchimba, N.S., 1999. Spatial aspects of urban agriculture in Zambia, Unpublished Student Report, Copperbelt University, Kitwe.
- Rakodi, C., 1985. Self-reliance or survival: food production in African Cities with particular reference to Zambia, *African Urban Studies*, 21, 53-62.
- Sanyal, B., 1987. Urban Cultivation Amidst Modernisation: How Should we interpret it? *Journal of Planning Education and Research* 6(3): 187- 207.
- Shah, N., 1997. The Importance of urban cultivation for Zambia's future, *Journal of Business*, 1 (1), 37-50.
- Simatele, D., and Binns, T., 2008. Motivation and marginalisation in African urban agriculture: The case of Lusaka, Zambia, *Urban Forum*, 19:1-21.

- Steckley, G., and Muleba, M., 2003. Facilitating land access for the Copperbelt's peri-urban farmers, *Urban Agriculture Magazine*, 11, 34–36.
- UNDP, 1996. *Urban Agriculture: Food, Jobs and Sustainable Cities*, United Nations Development Programme, New York.
- Zambia, 2002: *Zambia Poverty Reduction Strategy Paper, 2002-2004*, Ministry of Finance and National Planning, Lusaka.
- Zambia, 2006. *Fifth National Development Plan, 2006-2010, First Draft*, Ministry of Finance and National Planning, Lusaka.
- Zambia, 2009. *Budget Speech for 2009*, Ministry of Finance and National Planning, Lusaka.
- Zambia/United Nations, 2005. *Millennium Development Goals Status Report, 2005*, Ministry of Finance and National Planning, Lusaka.
- ZAMSIF, 2001. *ZAMSIF News*, (1) July, ZAMSIF, Lusaka.

APPENDIX 1

URBAN AGRIC QUESTIONNAIRE: A BASIC PROFILE

1. Name of Respondent (Farmer): **2. Location (Lsk/Kbw/Ndl/Ktw):**.....

3. Indicate whether this person is involved in any of the following (more than one answer is acceptable)

| | | | | | |
|--------------------------------------|----------|--|----------|-------------------------|----------|
| Growing crops in the backyard | 1 | Growing crops on communal /other land | 2 | Animal husbandry | 3 |
|--------------------------------------|----------|--|----------|-------------------------|----------|

4. Basic biographic / socio-economic data

| 1. Household Member No. | 2. Relationship to Head of Household | 3. Sex | 4. Age | 5. Education | 6. Involved in urban agric | 7. Other Job Status | 8. Nature of the Job | 9. Contribution of other job to total Household income (2008) (ZMK) | 10. Length of Farming | 11. Contribution of farming to total Household income (2007/2008 Season) (ZMK) |
|--|--|--------------------|--------|---------------------------------|----------------------------|--|--|---|---|--|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| List all members from the oldest to the Youngest | 1. Head of household 2. spouse 3. Son 4. Daughter 5. Brother 6.Sister 7.Nephew 8.Niece 9.Uncle 10.Aunt 11 Grandchild 12. Extended Family 13. Unrelated | 1.Male 2 Female | | Indicate highest grade achieved | 1. Yes 2. No | 1. Agriculture/ farmer 2.Civil Servant 3.Clerical 4.Artesian 5.Trader 6.Service 7. Prof. /Teach. 8.Other (Specify) 9. None | 1. Full-time 2.Part -time 3. Seasonal 4. Recreational | | . < 1 year 2. 1-5 yrs 3. 6-10 yrs 4. 11-15yrs 5. 16-20yrs 6. 21yrs & above | |

B. CROP PRODUCTION / LAND OWNERSHIP (2007/2008 SEASON)

1. Do you grow any crops?

| | | | |
|-----|---|----|---|
| Yes | 1 | No | 2 |
|-----|---|----|---|

If no go to C

2. Indicate the nature of the land on which you grow crops:

| | | | | | | | |
|-------------|---|---------------|---|-------------------------------|---|------------------|---|
| My backyard | 1 | Communal land | 2 | As part of a communal project | 3 | Other: Indicate: | 4 |
|-------------|---|---------------|---|-------------------------------|---|------------------|---|

3. Do you own the land (indicated above)?

| | | | |
|-----|---|----|---|
| Yes | 1 | No | 2 |
|-----|---|----|---|

4. What percentage of the crops is used for: 1 = 0-20%, 2 = 20-40%, 3=40-60%, 4= 60-80%, 5= 80-100%

| | | | |
|-----------------------------|--|------------------|--|
| Own consumption | | Selling for cash | |
| Exchange for other products | | Other | |

5. How did you finance the last inputs?

| | | | | | | |
|--------------------------------|---|------------------------------|---|-------------------------|---|-----------------|
| Through profits of what I sell | 1 | By means of my state pension | 2 | By means of another job | 3 | Other (specify) |
|--------------------------------|---|------------------------------|---|-------------------------|---|-----------------|

6. On average, how often do you water your crops during summer?

| | | | | | | | | | |
|-------|---|------------------|---|--------|---|-----------------------------|---|-------|---|
| Daily | 1 | 3-4 times a week | 2 | Weekly | 3 | Less often than once a week | 4 | Never | 5 |
|-------|---|------------------|---|--------|---|-----------------------------|---|-------|---|

7. What is the source of the water?

| | | | | | | | | | | | |
|-----|---|--------------------|---|----------|---|-------|---|------------|---|-------|---|
| Dam | 1 | Tap (municipality) | 2 | Borehole | 3 | River | 4 | Grey water | 5 | Other | 6 |
|-----|---|--------------------|---|----------|---|-------|---|------------|---|-------|---|

8. Do you pay for the water?

| | | | |
|-----|---|----|---|
| Yes | 1 | No | 2 |
|-----|---|----|---|

5. Complete the list below for the last year:

| No | Crop | Production/Annual | Unit of measure | Quantity | Value (ZMK) | Area Cultivated | Nutritional Value | No of beds/Plot | Name of the pest | Control measure | Cost of Control Measure |
|----|----------------|-------------------|-----------------|----------|-------------|-----------------|-------------------|-----------------|------------------|-----------------|-------------------------|
| 1 | Maize | | kg | | | | | | | | |
| 2 | Cassava tuber | | kg | | | | | | | | |
| 3 | Cassava leaves | | Tie | | | | | | | | |
| 4 | Sorghum | | kg | | | | | | | | |

| | | | | | | | | | | |
|----|-----------------|--|--------|--|--|--|--|--|--|--|
| 5 | Millet | | kg | | | | | | | |
| 6 | Sweet Potatoes | | kg | | | | | | | |
| 7 | Beans | | kg | | | | | | | |
| 8 | Okra | | | | | | | | | |
| 9 | Rape | | Tie | | | | | | | |
| 10 | Cabbage | | Balls | | | | | | | |
| 11 | Tomatoes | | Boxes | | | | | | | |
| 12 | Chinese Cabbage | | Tie | | | | | | | |
| 13 | Onions | | Bags | | | | | | | |
| 14 | Carrots | | Tie | | | | | | | |
| 15 | Pumpkins | | Number | | | | | | | |
| 16 | Pumpkins leaves | | Tie | | | | | | | |
| 17 | Rice | | kg | | | | | | | |
| 18 | Sugar Canes | | Tie | | | | | | | |
| 19 | Cucumber | | Kg | | | | | | | |
| 20 | Water Melons | | Ball | | | | | | | |
| 21 | Other 1: | | | | | | | | | |
| 22 | Other 2: | | | | | | | | | |

Pest: 1. Caterpillar 2. Rodents 3. Birds 4. Domestic Animals 5. Grasshopper 6. White Flies &. Beetles 7.Crabs 8.Ants 9.Other hazards (specify)

Control Measure: 1. Pesticides, 2 traps 3. Cleaning/ brushing/weeding 4.Other (specify)

6. Indicate the types of inputs required during the last year:

| No | Type | Quantity | Unit Cost | Total Costs | Source | Method of Acquisition | Purchased during the last year? |
|----|----------------|----------|-----------|-------------|--------|-----------------------|---------------------------------|
| | Seed/Seedlings | | | | | | |
| | Fertilizer | | | | | | |
| | Pesticides | | | | | | |
| | Ashes | | | | | | |
| | Chicken manure | | | | | | |
| | Pig Manure | | | | | | |
| | Cow dung | | | | | | |
| | Compost manure | | | | | | |
| | Hoe | | | | | | |
| | Shovel | | | | | | |
| | Rake | | | | | | |
| | Spade | | | | | | |
| | Watering Can | | | | | | |
| | Hosepipe | | | | | | |
| | Axe | | | | | | |
| | Mattock | | | | | | |
| | Other? | | | | | | |

Method of Acquisition: 1. Self Procurement 2. Family 3. Association/ Cooperatives 4. MACCO 5. NGO's 6. Others (specify).....

9. Indicate what you do with the products after harvesting?

| No | Crop | Unit of measure | Quantity consumed | Period of Consumption (Months) | Quantity Sold | Value of sale | Cost of Preparation of Sale | Method of transport | Cost of Transportation |
|----|-----------------|-----------------|-------------------|--------------------------------|---------------|---------------|-----------------------------|---------------------|------------------------|
| 1 | Maize | kg | | | | | | | |
| 2 | Cassava tuber | kg | | | | | | | |
| 3 | Cassava leaves | Tie | | | | | | | |
| 4 | Sorghum | kg | | | | | | | |
| 5 | Millet | kg | | | | | | | |
| 6 | Sweet Potatoes | kg | | | | | | | |
| 7 | Beans | kg | | | | | | | |
| 8 | Okra | | | | | | | | |
| 9 | Rape | Tie | | | | | | | |
| 10 | Cabbage | balls | | | | | | | |
| 11 | Tomatoes | boxes | | | | | | | |
| 12 | Chinese Cabbage | Tie | | | | | | | |
| 13 | Onions | bags | | | | | | | |
| 14 | Carrots | Tie | | | | | | | |
| 15 | Pumpkins | Number | | | | | | | |
| 16 | Pumpkins leaves | tie | | | | | | | |
| 17 | Rice | kg | | | | | | | |
| 18 | Sugar Canes | tie | | | | | | | |
| 19 | Cucumber | Kg | | | | | | | |
| 20 | Water Melons | ball | | | | | | | |
| 21 | Other 1 | | | | | | | | |
| 22 | Other 2 | | | | | | | | |

C. ANIMAL HUSBANDRY (2008)

1. Indicate the type of animals and answer the questions in respect of the last year:

| No | Animal | Quantity/ Head | Pest/disease | %losses | Control Measure | Quantity Sold in the last 12 months | Reasons for sale |
|----|-----------------------|-------------------|--------------|---------|--------------------|--|---------------------|
| | Cattle | | | | | | |
| | Goats | | | | | | |
| | Sheep | | | | | | |
| | Local Chicken | | | | | | |
| | Layer | | | | | | |
| | Broilers | | | | | | |
| | Ducks | | | | | | |
| | Guinea fowls | | | | | | |
| | Pig | | | | | | |
| | Rabbits | | | | | | |
| | Pigeons | | | | | | |
| | Other (specify | | | | | | |

Pest/ Disease: 1. Trypanosomiasis (sleeping sickness) 2. Foot& Mouth 3. Coxydiosis 4. Newcastle 5. Worms 6. Ticks 7. Trip s

Control Measure: 1. Self administered Local treatment 2. Vetenary/extension service treatment 3. Others (specify).....

Reason For Sale: 1. main source of income 2. extra income 3. family reason 4. hobby 5. others

D. GENERAL QUESTIONS

1. What is your main reason for being involved in farming / urban agriculture?

2. What is your biggest problem with regard to production?

3. Do you sell some of your products on the open market?

| | | | |
|-----|---|----|---|
| Yes | 1 | No | 2 |
|-----|---|----|---|

3.1 What is your biggest problem in respect of accessing markets (only if you sell on the market)

4. What type of support would you like to get from government (local/provincial or national)?

5. Have you been visited by anybody providing technical support / extension services?

| | | | |
|-----|---|----|---|
| Yes | 1 | No | 2 |
|-----|---|----|---|

5.1 If yes, what type of service was provided to you?

5.1 What type of technical support / extension services would you like to receive?

6. Under which circumstance will you stop cultivating land / keep animals?

E. HOUSEHOLD EXPENDITURE

1. Please estimate the amount of money spent by the household on the following expenses per month: [SHOW CARD]

| | |
|---------|---------------|
| | Kwacha |
| Housing | |

| | |
|--|--|
| Rental | |
| Other | |
| Clothing | |
| Education: After-care | |
| Pre-school | |
| Primary School | |
| Secondary school | |
| Tertiary training | |
| Rates | |
| Water and Electricity | |
| Pay back a loan | |
| Health Care | |
| Paraffin/fuel | |
| Drinking alcohol | |
| Smoking | |
| Food | |
| Transport | |
| Telephone | |
| Support of family outside your household | |
| Entertainment (general) | |
| Renting land | |
| Other | |

F. FOOD SECURITY

1. ***We would now like to ask you about the availability of food in this household in the last month. Please indicate whether the following happened never, rarely (once or twice), sometimes (3-10 times) or often (more than 10 times) in the past month: [SHOW CARD]***

| <i>Never</i> | <i>Rarely</i> | <i>Sometimes</i> | <i>Often</i> |
|--------------|---------------|------------------|--------------|
| <i>0</i> | <i>1</i> | <i>2</i> | <i>3</i> |

| | | | | |
|--|---|---|---|---|
| Did you worry that your household would not have enough food? | 0 | 1 | 2 | 3 |
| Were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources? | 0 | 1 | 2 | 3 |
| Did you or any household member eat just a few kinds of food day after day due to a lack of resources? | 0 | 1 | 2 | 3 |
| Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food? | 0 | 1 | 2 | 3 |

| | | | | |
|--|---|---|---|---|
| Did you or any household member eat a smaller meal than you felt you needed because there was not enough food? | 0 | 1 | 2 | 3 |
| Did you or any other household member eat fewer meals in a day because there was not enough food? | 0 | 1 | 2 | 3 |
| Was there ever no food at all in your household because there were no resources to get more? | 0 | 1 | 2 | 3 |
| Did you or any household member go to sleep at night hungry because there was not enough food? | 0 | 1 | 2 | 3 |
| Did you or any household member go a whole day without eating anything because there was not enough food? | 0 | 1 | 2 | 3 |

2. Compared to two years ago, how is your economic situation? [READ OUT OPTIONS. SINGLE MENTION]

| | |
|---------------------------|---|
| Better than two years ago | 1 |
| Same as two years ago | 2 |
| Worse than two years ago | 3 |

