

The Role of Maize Sub Sector as a Food Security Safety Net for Urban Households in Bindura Town of Mashonaland Central Province in Zimbabwe

EDWARD MUTANDWA and CHRISTOPHER TAFARA GADZIRAYI

Abstract

Macro-economic volatility characterizing most developing nations in Africa has resulted in transitory and chronic food insecurity among urban households. Urban agriculture is emerging as one of the alternative coping strategies for urban households especially against the backdrop of land and agrarian reforms sweeping the region. Thus the main objective of this study was to determine the contribution of the urban maize sub sector to household staple requirements in Bindura town of Zimbabwe.

A multi stage sampling approach was developed to select 50 households from high and low-density areas of the town. Data for this research was elicited using structured questionnaires and key informant interviews with stakeholders such as the local council and government departments.

The results of the study revealed that urban agriculture contributed about 57% of the households' yearly maize requirements. In addition, the gross margin was Z\$ 356,313 per hectare on an average land holding of 1.1 hectares. Despite the pre-eminence of this activity, most urban farmers were not aware of the by laws regulating the use of urban land. Extensive land degradation is largely attributed to institutional failure. There is need to align urban agriculture with the broader needs of agriculture through effective stakeholder involvement from implementing agencies to policy makers. It is also expedient to craft national environmental programs to promote long-term environmental sustainability.

Keywords: Urban Agriculture, Livelihoods, Environment, Urban poor, Zimbabwe

1.1 BACKGROUND

In most developing countries where structural adjustment programs (SAPs) have been introduced, most urban households continue to live under the poverty datum line. It is estimated that on average, at least 60% of urban households in African cities are marginalized as a result of social and economic decline (UNDP, 1996). A nexus of social, economic and political factors, in African economies, therefore affects the incidence of poverty.

In Zimbabwe, economic stabilization programs were enunciated in the early 1990s to redress problems such as economic stagnation, high budget deficit, high interest rates and shortage of foreign currency (GOZ, 1991). Anecdotal evidence hitherto indicates that, on the contrary, strategic sectors of the economy such as manufacturing, mining and formal sector employment have declined by an estimated 45%, since the introduction of ESAP (Intermarket Review, 2000).

Economic decline, coupled with the recurrence of drought in Zimbabwe, has resulted in most urban households living in abject poverty since formal employment was a significant source of livelihoods for them. In 1992, formal sector employment accounted for about 500,000 urban households. On the other hand, in 2002, formal sector employment only accounted for approximately 120,000 people in the country (CSO, 2002). This development has therefore resulted in the financial disenfranchisement of those people who previously depended on formal sources of income. Poverty assessment surveys carried out in Zimbabwe in 1992 revealed that about 30% of urban dwellers had incomes that fell below the poverty datum line. This scenario has compromised the food security situation among the urban poor as well as the resultant nutritional status of these households.

In response to the ever-increasing problem of poverty and food insecurity among the urban poor, a number of strategies have been developed both at household and government levels. The government of Zimbabwe put in place various social safety nets to stave off the negative effects of poverty. . Some of these initiatives include the public assistance program, social dimension fund, the grain loan scheme, food for work program, and child-feeding schemes (Kaseke et al 1998).

Households have also devised their own coping strategies to shield themselves against the effects of unemployment and the rising costs of food. Even though the coping mechanisms are wide ranging from cross border trade and informal employment, urban agriculture has emerged as an important source of livelihoods for the urban poor (ITDG, 2001). Urban agriculture is envisaged as that part of the economy that produces, processes and markets food and fuel in response to the daily needs and demands of consumers within a town, city or metropolis on land and water that is dispersed throughout the urban and per urban areas (Smit, 1996).

Even though urban agriculture has increased in importance over the years, with about 800 million producers' world wide, the same cannot be said in Zimbabwe. Prior to the enunciation of economic reforms in the country, the activity was illegal since it was not ratified in the legislation of urban councils around the country. This was despite the fact that this form of farming contributed significantly to the urban households and also to national output.

Studies done to quantify the contribution of urban agriculture in Zimbabwe revealed that the average earnings in this sector were 2% of an average industrial wage (Mudimu, 2000). In addition, it was estimated that this sector contributed about 50,000 tons of maize produce in 1999. It was also noted that urban agriculture was a significant source of income, food security and employment for the urban poor. Most studies found in literature used financial analysis in estimating the impact of urban agriculture to the economy. However, given that there are losses in the process of production such as environmental degradation (soil erosion, deforestation, dam siltation as a result of stream bank cultivation), it is important to include some of these non-market costs or items to assess the true economic value of urban agriculture.

The government of Zimbabwe recently embarked on the land reform program to redistribute land equitably. The scope of urban and peri-urban agriculture is likely to increase given that more agricultural land has been set aside for this form of agriculture. Given that the majority of urban households are faced with escalating costs of food (inflation rate of 300%, June 2003), it implies that they are more likely to rely on homegrown produce hence the significance and role of urban agriculture has increased. Hence, it is important for this study to ascertain the extent to which urban agriculture contributes to household welfare (incomes, food security, and employment). Furthermore since more agricultural land has been set aside for this type of farming new environmental challenges are likely to emerge. Zimbabwe is a signatory to the UN' s Agenda 21 among other protocols whose aims are to promote the sustainable use of natural resources such as land and water. Hence, this study will identify and characterize institutions responsible for the sustainable use of the environment among urban farmers in general. In addition, the study will also determine the levels of environmental awareness on the part of the producers to establish the necessary policy initiatives necessary to promote sustainable development in Zimbabwe.

1.2 Problem Statement

In recent years, urban dwellers have been faced with escalating costs of food and rising unemployment, which have compromised the food security and nutritional status of these households. Even though evidence from previous studies done in Zimbabwe revealed that urban agriculture is an important source of income, food and employment among the urban poor, the changing context ushered in by the land and agrarian reforms in the country imply that the contribution of urban agriculture to the national throughput is likely to increase creating the need for an in depth analysis.

Furthermore, the broadening of urban and peri urban agriculture, has also created new environmental challenges such as environmental degradation in the form of soil erosion,

deforestation, water pollution and dam siltation. Hence, this study will identify, characterize and assess the effectiveness of the institutional framework in place to ensure the sustainable use of land and water resources in urban areas.

1.3 Research Questions

The research questions that will guide this study are as follows:

- 1 To what extent does urban agriculture contribute to household economic welfare (income, employment, and food security)?
- 2 What is the level of environmental awareness among urban farmers engaged in both peri-urban and urban agriculture?
- 3 What institutional framework is in place to stave off environmental degradation and how effective is it?

1.4 Objectives

The broad objective of this study is to assess the role of urban agriculture as an industry to urban households and the economy. The specific objectives of the study are:

- 1 To determine the role of urban agriculture to urban households with particular emphasis on:
 - Household incomes
 - Food security
 - Employment (man hours spent in carrying out activities in urban agriculture)
 - Nutrition
- 2 To describe the institutional and legislative frameworks in place to reduce the incidence of environmental degradation in urban agricultural land.
- 3 To evaluate the level of environmental awareness among urban agriculture farmers.
- 4 To provide policy recommendations based on the findings of the study.

1.5 Justification of the study

Given that urban agriculture is now recognized as an integral aspect of agricultural production in Zimbabwe, the findings of the study will be important in three respects. Firstly, it the results of the survey will fortify the already existing body of literature on urban agriculture in Zimbabwe hence lobbying for urban agriculture on national agenda. Secondly, since Zimbabwe is a signatory to numerous protocols on the environment such as the UN's Agenda 21, the findings of the survey will

be relevant to the process of developing and enforcement of environmental policy so that urban farmers engage in production activities that also promote inter generational equity. Third, the study will contribute to the sharing of experiences in the SADC region and give the opportunity for governments to share experiences hence improve the outlook of urban agriculture in the region.

2 LITERATURE REVIEW

2.1 INTRODUCTION

In this section several issues are deliberated upon. Firstly, the conceptual framework upon which the study is based is presented. Secondly, the study reviews related studies done in Zimbabwe and the region, in terms of their methodologies and findings. Lastly, the survey will relate the findings of other studies to current objectives.

2.1 Conceptual Framework

Production and consumption decisions are made jointly within the household. However, the household is constrained by time, labor, cash or capital and land since these inputs have to be allocated among competing socio-economic activities. These activities will generate an income threshold necessary for the household to attain a source of livelihood. This in turn should translate into greater household economic welfare.

2.2 Zimbabwe's economic context: Implications for urban household food security

Zimbabwe's macro-economic environment has been volatile for the past few years. The economy has been characterized by high inflation rates generally above 100%, high unemployment rates, the emergence of parallel foreign currency markets, high domestic and foreign debts and high interest rates (RBZ, 2005). This situation has seen escalating costs of the consumption basket for both rural and urban households. The cost of a typical monthly consumption basket rose by 7% between January and February 2004 to Z\$907,055 (CCZ, 2004). During the same period, maize meal price increased by 54 percent while the non-food component of the basket grew by just over 19 percent (CCZ, 2004). The minimum wage for this period could only cover 13 percent of the CCZ basket's cost (CCZ, 2004). Therefore, faced with rising costs of maize meal and declining real wages, most households are increasingly turning to urban agriculture for domestic supplies of maize.

2.2 STUDIES ON URBAN AGRICULTURE IN DEVELOPING COUNTRIES

2.2.1 Perceptions on urban agriculture

Although literature on urban agriculture is varied in developing countries, very few attempts have been made to define the concept. Smit, et al, 1996:3 perceives urban agriculture as an industry that produces, processes and markets food and fuel, in response to the daily demand of consumers

within a town, city or Metropolis, on land, water sources dispersed throughout peri urban and urban areas, applying intensive production methods. In Zimbabwe, urban agriculture is defined as any agricultural activity that is carried out within the confines of areas designated or classified to be urban land by the Urban Councils Act of Zimbabwe (Mudimu, 2000). Conceptually, urban agriculture is depicted in Figure 2.

Figure 2 Components of Urban Agriculture



From Figure 2, it can be argued that sustainable urban agriculture consists of management of natural and physical resources in urban and peri-urban areas, production of crops and livestock and marketing of these products to meet the day-to-day needs of urban consumers.

2.2.2 Studies on urban agriculture in developing nations

The increasing importance of urban agriculture to the livelihoods of the urban populace has seen a concomitant increase in the literature on this concept over the years. However scrutiny of materials revealed that there are two strands of information of urban agriculture namely city case studies and descriptive accounts of the theoretical economic impact of urban agriculture. Studies done to quantify the contribution of urban agriculture in Zimbabwe revealed that the average earnings in this sector were 2% of an average industrial wage (Mudimu, 2000). In addition, it was estimated that this sector contributed about 50,000 tons of maize produce in 1999. It was also noted that urban agriculture was a significant source of income, food security and employment for the urban poor. In general urban agriculture has been shown to contribute positively to solid waste recycling, food security and human health.

3 RESEARCH METHODOLOGY

3.1 Study Site

This study was carried out in Bindura Town, which is located in Mashonaland Central Province of Zimbabwe. It is a relatively small town, whose main activities are mining, agriculture. Thus there are a number of agribusiness firms such as COTTCO and Cargill strategically located to collect crop output from farmers mainly cotton in the area. The town is located in natural region 2 and is considered one of the prime agricultural zones of the country with annual rainfall being approximately 700mm per annum. The soil types are varied but clays and sandy loams dominate in most parts of the Province.

3.2 Sampling Methodology

A sampling frame consists of the totality of the elements within a given population (Higson- Smith 1995) .The sampling frame of this study consisted of all urban households engaged in Bindura town. Areas included in the sampling frame included Shashi, Hospital, and Industrial areas, Chipadze, Aerodrome, Chiwaridzo and Kitsiyatota.

To ensure that data collection was as representative as possible, a multi stage sampling process was used to take into account the heterogeneity of the households found in the urban area based on the difference in income i.e. high-density suburbs, low-density suburbs, and industrial areas.

The second stage entailed the selection of suburbs within high and low-density areas of the town. Names of suburbs within each category were put in a crucible and a random sampling approach was used to select areas for inclusion in the survey.

The third stage was the selection for households for interviews. Given that not all urban households are involved in urban agriculture, a purposive snowballing approach was used where a household within a particular locality involved in urban agriculture also helped in the identification of similar subsequent households.

3.3 Data collection Instruments

Quantitative and qualitative methodologies were used to assemble data required by the research. Primary data was generated through the use of structured and unstructured interviews. Structured interviews were conducted through the administration of a structured questionnaire administered at household level. Key Informants interviewed included government departments such as AREX, and the District Administrators office and local councilors. Private organizations interviewed included non-governmental organizations such as Red Cross and SOS.

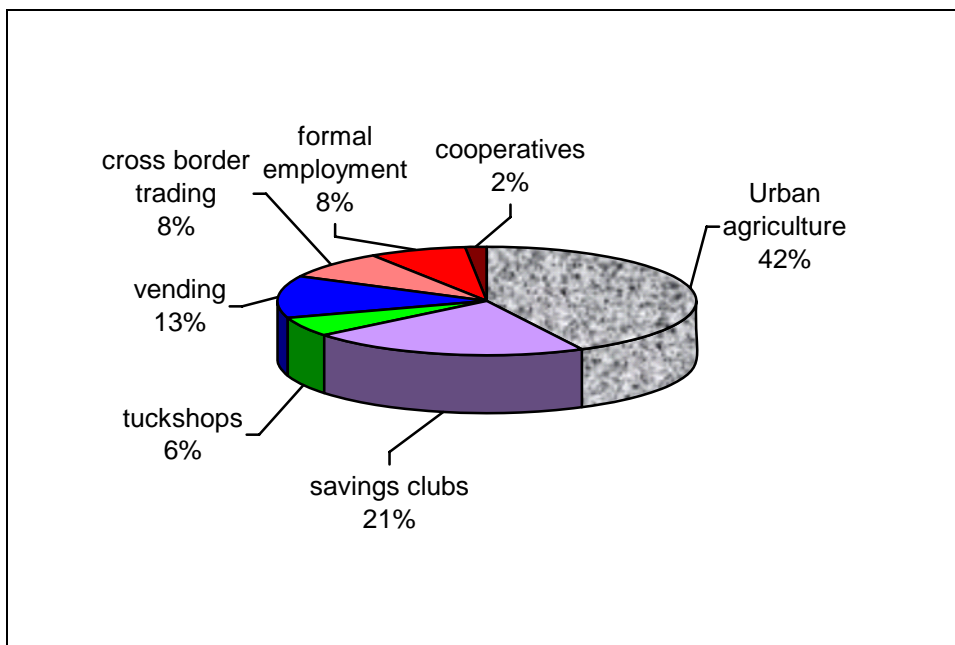
3.4 Data entry and analysis

Quantitative data was post coded, entered and cleaned using SPSS. Inferential and descriptive statistics were used to summarize the data.

4 RESULTS AND DISCUSSIONS

4.1 Importance of urban agriculture as a source of livelihood

Fig 4.1 Urban agriculture as a source of livelihood for urban households



The various sources of livelihoods for households in Bindura are depicted in Fig 4.1. The income base is generally varied but urban agriculture emerged as the most important source of livelihood for 42.5% of the interviewed households. The main activities within the urban agriculture sub sector included maize and horticultural production (tomatoes, onions and green vegetables). Most of these products were either for local household consumption or for sale at local markets in the town.

4.2 Contribution of Urban Agriculture to Households maize requirements

Households gave estimates of total amount of maize required per annum. They were also required to characterize the different sources from which they acquired maize for household consumption. Previous studies in Zimbabwe by Mudimu, et al, 1995 showed that urban agriculture contributed 34% of the households maize requirement. The results of this study showed that on average, urban agriculture (UA) contributed about 57% of the total maize requirement for households. The mean quantity of maize was 1325.09 Kilograms per household. The contribution of UA has therefore been increasing over time. Other sources of maize included the local Grain Marketing Board (GMB) and donors (NGOs).

4.3 Returns to Investment in UA

It was imperative to establish whether UA is economically sustainable. In this regard, a gross margin analysis was carried out and the results of the analysis indicated that the average land holding per household was 1.1 hectares. In addition, the gross margin per hectare was Z\$353,313. UA was also shown to be a source of seasonal employment with households engaged in this activity for about 55 man-days.

4.4 Awareness of environmental by laws and the institutional framework for safeguarding the environment

Direct observation showed that there was extensive land degradation especially in areas where stream bank cultivation was carried out. This is being exacerbated by gold panning activities, which are carried out in areas adjacent to cropping area. Dongas are evident in most areas in the town. Most urban farmers were not aware of the environmental by laws governing the UA in general.

Although the Urban Councils Act of 1995 governs UA, not much has been done to control environmental degradation in Bindura town. Organizations that were reported to be critical in environmental issues such as Agricultural Research and Extension (AREX), non-governmental organizations and the District Administrators office did not have management and training programs specifically for urban farmers to stave off resource degradation.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The role of urban agriculture as a source of food security and incomes particularly maize is significant in Bindura Town just like most urban areas of Zimbabwe. Its position is likely to be further consolidated given that a number of urban farmers possess tracts of land ushered in by the land and agrarian reforms in the country. However, long-term environmental sustainability of this sub sector is questionable since there is evidence of extensive land degradation. Although there are Acts and regulations regulating UA in Zimbabwe, there is institutional failure since most urban farming activities are done in a framework not consistent with the basic precepts of environmental sustainability.

5.2 Recommendations

- There is need to rationalize Urban Agriculture (UA) with the broader needs of agriculture in Zimbabwe. This can be achieved through effective stakeholders participation in environmental and resource issues and these include government departments such as AREX, District Administrators, local councilors, MPs, police enforcement agents among others.
- Enunciation of national farmer training programs should be considered to ensure that farmers use appropriate farming techniques that do not negatively affect the environment. Environmental programs can be promoted through print and electronic media to increase farmer awareness on the dangers of unconventional farming practices.
- Provision of a conducive environment for private sector participation (NGOs) in urban farming is key given the financial bottlenecks affecting government departments in the town.

REFERENCES

- CCZ 2004. Zimbabwe's Urban Consumption Surveys, CCZ Papers, Harare, Zimbabwe
- CSO 2002. Statistical Bulletins, Government Publishers, Harare, Zimbabwe
- GOZ 1991. Structural Adjustment Programs In Zimbabwe, Government of Zimbabwe Publications, Harare, Zimbabwe
- Higson-Smith. 1995 Social Science Research Methods: An African Perspective, JUTA Publishers, South Africa
- Intermarket Review. (2000) The Standard, Harare, Zimbabwe
- ITDG 2001. Knowledge and Information Systems in Epworth, ITDG Publications, Harare, Zimbabwe
- Kaseke et al, 1998. cited In: Urban Agriculture in Africa: A comparative analysis of the findings of Zimbabwe, Kenya and Zambia, Africa Urban Quarterly, pp 181-187
- Mudimu et al 2000. Contribution of Urban Agriculture in Harare, University of Zimbabwe Working Papers, Department of Agricultural Economics and Extension, Harare, Zimbabwe
- Smit 1996. cited In: Urban Agriculture in Africa: A comparative analysis of the findings of Zimbabwe, Kenya and Zambia, Africa Urban Quarterly, pp 181-187
- Strauss et al 1989. Agricultural Household Models, John Hopkins University Press, Baltimore, Maryland
- UNDP 1996. Urban agriculture, food, jobs and sustainable cities, UN Publications, New York, USA