CONTRIBUTION OF URBAN CROP PRODUCTION TO HOUSEHOLD FOOD SECURITY: A STUDY OF URBAN AGRICULTURE IN WARREN PARK SUBURB OF HARARE

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Abstract

This study is an analysis of the contribution of urban crop production to household food security in Warren Park suburb of Harare. The study sought to establish the level of contribution of urban crop cultivation to household food security. A variety of research techniques were used to gather the relevant data including in-depth interviews, observations and official data. The results of the study confirm that urban crop production has a significant contribution to household food security for those who practice it. The research also identified key challenges faced by people engaged in urban agriculture and makes recommendations to the government and local authority to fully support urban agriculture through allocation of land, provide farmer input support and development of a comprehensive policy framework as well as coming up with relevant legislation.
CHAPTER 1: INTRODUCTION

1.1. Introduction

Much of the literature that is available on urban agriculture acknowledges that food production plays a fundamental role in meeting food needs of many households in urban areas (Mbiba 1995: Drakakis-Smith, 1992.; UNDP 1996; Linaries 1996; Enda Zimbabwe 1996, Mudimu and Bernstein 1998; FAO 2007 and FAO 2009). A report by the United Nations Development Programme (UNDP) highlighted the growing worldwide importance of urban farming. According to this report, one seventh of the world's food supply is grown in cities and there are some 800 million urban farmers globally. The majority of them are found in Asian and African cities. Of these, 200 million are considered to be market producers, employing 150 million people on a full time basis (UNDP 1996). People grow food on public and private lands, vacant lands, in and around homes, alone or in organized groups. Studies have also shown that the poor are not the only people who produce food in urban areas, but they are more dependent on it than their rich counterparts (Nugget 1999b). Richer inhabitants carry out urban agriculture for dietary diversity and a healthier food supply, and entrepreneurs have created thriving agricultural businesses. Urban agriculture is thus an important source of food in many developing countries. It is a critical food security valve for poor urban dwellers. Studies in Harare Zimbabwe, Kampala Uganda, and Nairobi Kenya have found that urban agriculture can improve the nutritional status of household members, as measured by caloric and protein intake, meal quality and children’s growth rates. Thus Phiri (2008, 114) states that, “in Hong Kong China, Harare Zimbabwe, Accra Ghana, Dar Salaam Tanzania, Blantyre Malawi and Maputo Mozambique, urban agriculture has been practiced to alleviate urban poverty…”
A household socio-economic monitoring survey conducted by ENDA- Zimbabwe for the 1996-97 seasons confirms the nutritional significance and economic benefits of urban crop production. The report found that farming households are better off in most respects than non-farming households. Even after subtracting direct input costs, the farmers have a positive net benefit, although it is a marginal one (ZERO 2003; Enda Zimbabwe 1994). In Zimbabwe, urban agriculture is practised within pegged residential stands (on-plot) or outside the pegged residential stands (off-plot). In the low-density areas, stand sizes are bigger and there is often enough space for limited agricultural activities. Some of the bigger low density areas are classified as agro-residential, meaning that occupants can legally practice urban agriculture. The Tynwald area in Harare is one such example. The situation is quite different in the high-density areas where stand sizes vary from about 150-300 square metres. There is hardly any space left for cultivation and yet the activity is most needed for the purposes of sustaining the livelihoods of people in these areas (ZERO 2003).

Hungwe (1994) notes that in Zimbabwe, urban dwellers scramble for land on which to grow food. However, land is a scarce natural resource. Thus, it is far from easy to produce enough food due to unavailability of arable land. In spite of this, people have risen to the challenge by clearing pieces of land on which they grow food for household consumption. Since 1990, the land under cultivation in residential areas of Harare has more than doubled (Gumbo and Ndiripo 1996). This can be attributed to the following factors among others: urban poverty, rural and urban migration as well as a wide range of economic challenges (Hungwe 1994). Crop production in urban areas is characterised by a very harsh economic environment. The economic structural adjustment programme (ESAP) which began in 1991 led to a high cost of living for many urban households. In a bid to minimise the effects associated with economic hardships, many urban households pursued alternative coping strategies -chief among them being urban crop production.
Studies conducted by ENDA-Zimbabwe show that between 1990 and 1994, land under open space cultivation in Harare increased by 92.6 percent (Cities Feeding People Report 2007).

1.2. STATEMENT OF THE PROBLEM

The problem of food insecurity in Zimbabwe used to be more prevalent in the rural areas than urban areas. However challenges in the socio-economic and political environment have worsened the situation even in urban areas thereby causing many urban households to try and navigate the problem through urban farming. The world over, authorities have acknowledged that urban crop production is important to household food security. This has also been recognized by authorities in Zimbabwe. However, the key challenge has been that the level of contribution of urban agriculture in ensuring food security in Zimbabwe has not been thoroughly investigated. In addition urban farmers have been facing some challenges including shortage of inputs and lack of land. This study thus aims to investigate the level of contribution of urban crop production to household food security. It also seeks to establish some of the challenges faced by urban farmers and come up with some recommendations on how the activity may be implemented in a sustainable way. In addition Zimbabwe has experienced a series of droughts since 2002, hence, the need to further investigate the significance of urban crop production.

1.3. JUSTIFICATION

The contribution of urban crop production to household food security is well documented in literature. However most of these studies have not been carried out in Zimbabwe. This study therefore seeks to articulate the contribution of urban agriculture in Harare.
Thus, this research will particularly address the activity in Zimbabwe taking into consideration the country’s socio economic and political environment and how this impacts on urban food security. The research findings may also encourage the government to formulate legislation in support of sustainable urban agriculture. It may also enhance Social Workers’ understanding of urban agriculture as a livelihood option which is key to the survival of the urban poor.

1.4. AIM OF THE STUDY

The aim of this study is to determine the contribution of urban agriculture to food household food security, highlighting factors hindering it.

1.5. RESEARCH OBJECTIVES

1. To ascertain crop production activities in Warren Park.

2. Assess the extent of crop production and its level of contribution to household food security in Warren Park.

3. Establish common challenges inhibiting urban crop production as a viable urban food security source and suggest possible ways of making it sustainable.
CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

For the urban majority of poor people in the developing countries, food has become very expensive. In 1990, households in nearly half of the developing countries’ largest cities were spending 50 to 80% of their average income on food. Surveys from the late 1980s in Kenya, Egypt, India, and cities such as Bangkok in Thailand, La Paz in Mexico, Bamako in Mali and Dar es Salaam in Tanzania, show that poor urban households spent around 60% -- and in some cases as much as 89% of their income on food commodities. When it comes to food, poor people in cities have fewer coping strategies than their rural counterparts. Price surveys of five developing countries showed that city dwellers paid between 10-30% more for their food than rural dwellers. The notion of urban privilege over rural neglect appears ill-founded when as much malnutrition prevails in large primary cities as in rural areas of some countries (International Development Research Centre, 2010).

The number of people living in cities is continuously increasing worldwide. Almost 90% of the urban growth is taking place in developing countries (Drechsel, et al 1999). In 1994, 45% of the world’s population lived in cities. The United Nations predicts that by 2030 60% of the world’s total population will be living in cities, (International Development Research Centre, 2010). As the cities grow, their ability to meet basic needs become compromised resulting in increases in urban poverty, malnutrition and hunger, (United Nations 1996). The high levels of poverty in most developing countries is a result of a number of factors, including high unemployment levels as well as limited access to productive resources like land and capital.
In view of the high levels of poverty, urban crop production within cities has become a significant activity. In the city, most of any cash income the poor might get is spent on food, (Nugent 1997). As a result, more and more people are attempting to grow at least some of their own food as a way of supplementing poor diets and meager incomes, (UN 1994, Nugent 1997, Rogerson 2001, Makhanya and Ngidi, 2001). Thus Bakker, et al 2000, contend that urban crop production could contribute to mitigating poverty in developing countries. According to these authors, it is one of several food security options for households; similarly, it is one of several tools for making productive use of urban open land, treating urban waste, saving or generating income and the creation of employment.

According to the International Development Research Centre 2010, the practice of producing food in cities dates back to Incaic, Aztec and Mayan cities, early Javanese and Indus settlements, and towns of the Tigris and Euphrates. Today more advanced urban agriculture is typically found in Asian cities, where policy-makers and planners have for some time accepted and promoted food production as a critical urban function. Urban crop production has been expanding since the late 1970s in many parts of the developing world (International Development Research Centre 2010). Despite that, most urban cultivation still remains largely unrecognized and unassisted if not outlawed or harassed, even in years of food shortages. But, more governments are creating agencies to manage this activity and actively encouraging it. Between 1975 and 1985 governments in at least 10 Asian, 6 African and 6 Latin American countries supported such initiatives in a variety of ways (International Development Research Centre 2010).

Research has found that between 1993 and 2005, urban crop production increased its share of world food production from 15% to 33% and the number of urban farmers producing for the market from 200 million to 400 million (Smit, 1996, Mougeot, L., et al., 1998). Urban crop production has
been viewed as one strategy where recent research suggests that food insecurity could be tackled
(Pothukuchi and Kaufman, 1999; Mougeot, 2001, 2005a). Urban crop production has been shown
to be an important source of food in developing countries and a critical food ‘insurance policy’ for
poor urban households (Mougeot, 2000; Nugent, 2000). Urban crop production also affects
household nutrition as it provides a source of fresh, locally grown crops that meets the
micronutrient requirements in poor households’ diets (FAO, 2001; Maxwell, 2001). Other benefits
have been documented, such as increases in household incomes due to the sale of urban
agricultural produce (Sanyal, 1985; Smit, 1996; Sabates et al, 2001; Henn, 2002).

The urban poor tend to be more vulnerable to challenges in the economic environment because
they are more integrated in the monetary economy and they often have fewer social safety nets as
compared to their rural counterparts who have home gardens and other coping strategies (Phiri
2008). A large volume of research on urban agriculture has its origins in seeking means and ways
of ridding urban areas of unemployment and food insecurity. This being the case, researchers have
viewed urban agriculture as a viable alternative source of income for those without regular and

Urban crop production is an activity carried out by people at different levels of income. For the very
poor, it provides good access to food. For the stable poor, it acts as a source of income and good-
quality food at low cost. For middle-income households, it offers the possibility of savings and a
return on their investment in urban property. For small and large entrepreneurs, it is a profitable
business (UNDP 1996; Nugget, 1996b). Since the mid-1980’s through to about 2000, a number of
concerned and informed researchers working in the food security field focused energies into
presenting the attributes of urban agriculture as a positive force for urban development.
There appears to be the belief that an effective articulation of the activity would enable increased inclusion and the support of the activity in urban planning to the benefits of the urban poor, in particular, and urbanites in general (Phiri, 2008; Mougeot 2005).

2.2. A theoretical framework of urban crop production

In recent years fierce debate has erupted on the significance of urban crop production in different parts of the world with two conflicting schools of thought taking the centre stage. Those who oppose urban crop production argue that cultivation should be discouraged because it is of no economic significance since it produces for subsistence purposes. Proponents of this school of thought argue that since urban agriculture is as backward and trapped in a vicious circle of poverty as rural agriculture which also provides food and self employment; it is no answer to the search for sustainable development, (Bibangabah, 1992). Bibangabah (1992) stresses that, proponents of the informal sector; especially urban agriculture enterprises who contend that urban agriculture is a viable activity should show what level and context of productivity they are talking about. Hyden, 1983, contributes to this debate by arguing that the activity of urban crop production should be discouraged in view of the fact that it contributes to the ugliness of the city in the same way as squatter settlements.

On the other hand, urban agriculture advocates often praise its positive effect on food security. They emphasize its role in ensuring food availability at all times; that all people have means of access to food that it is nutritionally adequate in terms of quantity, quality and variety; and that it is acceptable within a given culture (Koc et al., 1999). Armar-Klemesu 2001, asserts that it contributes, in no small measure, to the food security situation of many major cities.
(especially in developing countries), both as an important component of the urban food system and as a means for vulnerable groups to minimize their food-insecurity challenges. Thus according to Sachs (1995) urban crop cultivation is a survival strategy, a creative attempt to cope with very difficult conditions. It allows millions of urbanites in developing countries to cope with deprivation and marginalization and to subsist from day to day. Supporters of the informal sector argue that urban farming go beyond the employment and economic aspects. It provides social services for the well-being of urban poor especially during economic hardships. Those who castigate urban agriculture as being economically insignificant are, therefore, accused of failing to appreciate that work might not produce an income but is actually a part of an economic activity (Davies 1979).

Nugent 1999b, takes a more cautious view by noting that whilst urban crop production is potentially viable and productive it is not a panacea to solve the most severe problems of food security in cities. For Nugent (1996b) the question which must be asked is, to what extent can urban crop production contributes to the challenges of urban development. Thus, Nugent 1996b, concludes that, while urban crop cultivation occurs in all cities of the world, there are still many questions about whether and how to develop research and development activity for this particular type of agriculture. The tremendous and continuing urbanization process in Asia, Africa and Latin America raises questions about the employment of the new urban manpower, feeding the growing urban population, and the management of the continuously moving fringes of the cities of developing countries (Nugent 1999b).

2.3. A Global Overview of urban Agriculture

Globally, about 200 million urban dwellers are now urban farmers, providing food and income to about 700 million people.
In Dar es Salaam Tanzania in 1980, 44% of low-income earners had farms, but by 1987, 70% of heads of households engaged in some farming. During the 1980s, 25% of all urban households engaged in food production in the United States of America, compared to 57% in six Kenyan cities, with other city-specific figures ranging from 32.6 to 70% for Kisangani in Democratic Republic of Congo, Kampala in Uganda, Lusaka in Zambia, Moscow in Russia (1991) and Dar es Salaam in Tanzania (International Development Centre 2010). In many countries of the world, urban food production is growing rapidly. In Bangkok in Thailand, 60% of the land is under cultivation, 72% of all urban families are engaged in producing food, mostly on a part-time basis. In Moscow, Russia, the share of families producing food more than tripled between 1972 and 1992, from 20% to 65%. In Dar-es-Salaam, Tanzania, the number of households engaged in food production grew from 20% to more than 65% between 1970 and 1990. In Argentine cities the number of participants in the community agriculture programme grew from 50,000 to 550,000 between 1990 and 1994. At the same time the number of supporting urban farming institutions grew from 100 to 1,100, (Cities Feeding People 2010).

As earlier indicated, in most developing countries, the majority of the people who engage in urban crop production belong to the low income groups (Smit et al 1996; Mougeot, et al., 1998). They are relatively long-term city residents, moderately poor, and frequently females. They exist in all regions of the world, but face vastly different conditions and opportunities. Urban farmers are marginally better off than the absolute poor. They have dwelt in the city long enough to have acquired access to some land and other resources (Nugent, 1999b). A 1991 case study in Nairobi, Kenya, established that about 44% of the urban farmers belonged to the very low income group, and about 16% to the low income bracket. About 85% of these urban farmers had been residing in the city for more than 14 years (Foeken, et al., 2000).
Urban agriculture is capturing growing attention among international bodies. After the East-West Center's initial survey of the practice in the Pacific Basin, the International Development Research Centre (IDRC) held a seminar in Singapore and commissioned a worldwide literature search from the Urban Resources Centre in 1984. In the late 1980s, UNICEF implemented various projects and the International Development Research Centre (IDRC) funded four studies in Kenya, Uganda and Tanzania. By 1988, the UN University's Food-Energy Nexus Programme had published a series of research reports in selected regions, countries and cities. Related research was carried out by the Cities and Ecology Project of Man and Biosphere/UNESCO. Building on this, the United Nations Development Programme's (UNDP) Urban Agriculture Network surveyed 21 countries in 1991-92 and convened interested agencies to effectively promote urban agriculture development, including wastewater farming and hydroponics (International Development Research Centre 2010). In 1992, the Toronto-based Developing Countries Farm Radio Network released four radio scripts on urban farming for broadcast in developing countries. Major UN programmes (e.g. Healthy Cities of WHO and Sustainable Cities of UNDP/WB) now provide operational frameworks for urban agriculture research to guide better urban management. Since early 1993, International Development Research Centre (IDRC) Urban Environment Management Programme focuses on water-waste-agriculture linkages in cities. In mid-1993 various agencies and Northern and Southern country specialists met at the International Development Research Centre in Ottawa, Canada to identify key information needs and collaboration mechanisms. The International Development Research Centre has about one million Canadian dollars (CA$1 million) in active projects on urban agriculture production and urban nutrition; many past studies have tested links between waste treatment and recycling with farming, others have analyzed urban food circulation systems (International Development Research Centre, 2010).
2.4. Urban Crop production in Africa

Food insecurity remains a pressing problem in many parts of Africa despite continued economic growth around the world, (Garrett and Ruel 1999; Maxwell 1999; Mougeot, 2005a; UN-HABITAT, 2006). For example, the World Food Programme and Food and Agriculture Organization estimate that approximately 800 million people are unable to obtain an adequate and secure supply of food year round (FAO, 2001, FAO, 2003). Food and Agricultural Organization (FAO) 2002, further estimates that about 33 percent of people in sub-Saharan Africa are undernourished. The UN-HABITAT 2006, reports that the percentage of urban residents in sub-Saharan Africa is expected to rise from 30 to 47 percent of the total population. This will bring about new and very severe challenges for urban policy, especially when trying to ensure household food security (Huddad et al, 1998).

According to Maxwell et al, 2000, poverty, food insecurity and malnutrition in Africa were seen as mostly as problems for the rural people. However, the population of many African countries Zimbabwe included, is becoming more and more urban. According to World Resource Institute (WRI), 1999, the people residing in urban areas in Africa grew from 27 to 38 percent between 1980 and 2000 - it is expected to reach nearly 50 percent by 2020. The unfortunate truth is, however, that, the urbanization of the African continent does not mean economic opportunity and prosperity for the majority of its people. On the contrary, global poverty is becoming more widespread in Africa. Thus, Rabinovitch, 1999, notes that fifty percent of the world’s poor and 40 percent of Africa’s poor live in urban areas.

Research conducted in Zaire has shown that 60–80 percent of the total household budget of the poor people is spent on food commodities (Tabatabai, 1993).
This finding makes it likely that urban poverty will be manifested at least in part as a problem related to food security. As the food security situation continues to worsen in urban areas, households have turned to urban crop production as a coping strategy (Mougeot, 2006).

The independence period in Africa saw rapid urbanization and reduction of donor support and the re-development of urban crop production. Prioritized urban farming projects in many independent African countries included a mix of individual and co-operative efforts. The colonial period introduced titled land and as a result many people had little access to land. Much of the urban agriculture in this region is quasi-legal due to this title/access restriction and due to the lack of support from governments (UNDP 1996). Studies in, Zimbabwe; Ghana; Tanzania; Malawi and Mozambique have shown that urban agriculture alleviates poverty. Thus in many of these countries, most towns have legalized the activity (Chivinge, Machakaire and Mudimu 2001, Mabogunje 2002, Phiri 2008).

2.5. Urban Agriculture in Harare

FAO 2001 notes that fifty per cent of Harare's urban farmers initiated production activities in the early 1990s when maize became the main crop. At this time, since access to land was insufficient, these urban farmers began using public land. Thus, approximately 75% of the open spaces of public land were utilised for maize cultivation, and 25% used for sweet potato. Today, 94% of farming households in Harare grow maize and 25% grow sweet potato.

According to Environmental and Development activities- Zimbabwe (ENDA-Zimbabwe) 1984, some work carried by Mazambani has shown that Harare has a history of sustainable urban agriculture that predates independence.
As far back as 1955 some 267ha were cultivated and this rose to 4,762 in 1980 (Mazambani 1982). A survey by Environmental and Development Activities-Zimbabwe (ENDA-Zimbabwe) showed a dramatic increase of 92.6 percent of the open spaces area under cultivation in Harare from 1990-1994. Since 1990 land under cultivation in residential areas has more than doubled (Gumbo and Ndiripo 1996). In 25% of poor Harare households, urban crop production contributes 60% of food consumption. However, 80% of urban agriculture occurs on public land with no official recognition. Recently, though, farmers have lobbied for community participation in local governance and urban agriculture has gained legitimacy as a significant source of food security. In 1990, gardens covered 8% of land in the city; by 1994, 16% of land, and by 2001, urban agriculture pervaded 25% of Harare’s area (Mazambani 1982).

According to the International Development Research Centre (IDRC) 2010, from 1990 to 1994, the amount of land under cultivation in Harare nearly doubled to about 16% of the city’s area and has been rising rapidly ever since. The main reason for this phenomenal growth was the relaxation of by-laws governing urban agriculture in 1993, in a bid to alleviate poverty linked to the Economic Structural Adjustment Programme (ESAP),

**2.6. Urban Crop Production and Municipality Policy.**

Throughout the developing world, municipal policymakers are waking up to the fact that properly managed agriculture can make a major contribution to a city’s food security. It also has potential to provide employment, improve the environment, and make productive use of vacant spaces within the city (Mougeot 2006). The long-running conflict between urban dwellers and local authorities and mounting concern about impacts to public health and natural resources prompted Environmental and Development Activities- Zimbabwe (ENDA-Zimbabwe) an environmental
non-governmental organization, to undertake an extensive study of urban crop cultivation in Harare in 1994. The research established that, city managers and outsiders viewed the gains from urban farming as just marginal and, consequently, the activity has been despicably underrated. In fact, the study revealed that urban crop farming had become the main coping strategy used by poor households in Harare. It also showed that low income urban farmers are economically and nutritionally better off than their counterparts. For example, children under five from farming households were found to have better growth in weight and height than those of non-farmers.

The study also highlighted the issue of environmental damage. It found that conservation measures were not being used in practitioners’ fields. For example, all sites had unacceptable levels of erosion. In addition, almost 90% of Harare farmers use chemical fertilizers and nearly a third of off-plot cultivation takes place near streams, swamps leading to water pollution through runoff and leaching. Environmental and Development Activities- Zimbabwe (ENDA-Zimbabwe) research team concluded that urban agriculture will pose a serious threat to the urban environment if suitable conservation were not taken. The research team's central recommendation was that urban planners should develop policies to enhance sustainable urban crop production development, rather than seek ways to eradicate this practice. For example, it advocated stiffer penalties for stream bank cultivation, as well as, the encouragement of conservation practices including minimum tillage, and terracing on steep slopes and contour ridges. It also called for the formation of urban farming groups and the provision of agricultural extension services particularly to the most disadvantaged sectors of the urban population.

In Latin America Cities Feeding People (CFP ) has taken initiatives to influence policy, in conjunction with other partners.
To that end, a number of policy briefs for municipal officials interested in developing urban agriculture programmes in their respective cities have been completed. The objectives of the policy briefs are to raise awareness, mobilize support for, and strengthen the capacities of municipal governments to implement urban agriculture programmes and policies, Cities Feeding People (2010). Non Governmental Organizations (NGOs), research centres, and private corporations have been challenged to support the initiatives. A growing number of local and national governments are increasingly committed to developing urban agriculture. They are assigning local resources for its development and including it within the structure of relevant government bodies, at either the municipal or the national level. The City Hall of Rosario (Argentina), for instance, provides technical and financial assistance to peri-urban producers. The municipality of Cuenca (Ecuador), together with several local institutions, supports the production and marketing of products grown using ecologically sound practices. The State of Mato Grosso do Sul (Brazil) is implementing a programme for processing and marketing small agricultural products in support of family farming activities (Cities Feeding People, 2010).

2.7. Some benefits of urban crop production

Thousands of people in the growing cities of the developing countries have become urban farmers in recent decades. They grow vegetables, raise livestock, poultry and fish, and practise many other types of agriculture. Researchers are paying increasing attention to a sector often neglected by governments, one which can contribute greatly to the sustainability of cities. The practitioners of urban agriculture need no convincing about its merits. They enjoy better diets, higher income, employment or combinations of all these benefits (International Research Development Centre 2010, Phiri 2000, Hungwe 1994).
Recent research into urban farming shows that it also brings major benefits to the urban environment. Apart from improving local food supplies, urban agriculture puts marginal lands to good use and absorbs wastes in the form of compost and fertilizer. It can also have a positive impact in matters of water and energy management. Encouraging urban agriculture reflects a new vision of the city. It is seen as part of the natural resource base and as a producer of agricultural goods rather than only as a consumer. Planners and policy makers are presented with the opportunity to maximize the potential for food security, better nutrition, income generation, employment and more sustainable cities (International Research Development Centre 2010).

According to the International Research Development Centre 2010, apart from nutrition and health, farming in cities contributes to producers' well-being in a number of ways, including cash-saving and income generation. Among the lower-income groups, self-produced food can cover a considerable share of a household's total food intake and can save cash income that otherwise would be spent on food. Depending on the income group, self-produced food is found to account for between 18 and 60% of household food consumption in East Jakarta, Dar es Salaam, Tanzania, and Kampala, Uganda. Home-produced food enables families in Addis Ababa, Ethiopia cooperatives and Dar es Salaam, Tanzania's poor families to save 10-20% and 37% of their income, respectively. In Bolivia, urban food projects supply women producers with a quarter of their total income. The impact of this activity on households' nutritional status is under-researched but the data available is encouraging. According to a 1981 UNICEF survey of households with children in 13 low-income districts of Kampala, Uganda, partial reliance on intra-urban food production largely explained why supplementary feeding aid could be discontinued, despite dramatic economic decline.
Thus conventional urban food security strategies need to be reassessed in view of the potential of
city farming to augment the real income of low-income households at levels equivalent to food
subsidy programmes, doing so at much lower cost and with many other benefits (International
Research Development Centre, 2010).

Mwangi (1995) compares farming and non-farming households in low-income neighbourhoods in
Nairobi, Kenya. (Mwangi 1995) cited from Armar-Klemesu, 2000). He notes that, by growing their
own food, people produce food for personal consumption or for sale. Consequently, “real” and
“fungible” income is generated. Fungible income is defined as the substitution of goods or labour
for money that would have had to be earned to acquire these or equivalent goods. In any case,
they save money they would otherwise have spent to buy food. Studies show that savings from
home consumption and income from sales are spent on other basic needs or invested in other
businesses (Swindell, cited from Binns et al 1998, Nugent, 1999b; Mkwambisi 2010). This is
significant for poor women who must often juggle meagre household finances and face budgetary
constraints which prompt them to increase their income-generating activities in addition to existing
productive and reproductive tasks. Thus, urban cultivation can contribute significantly to municipal,
regional and national efforts to deal with poverty. Structural unemployment, currency devaluation,
inflation and elimination of subsidies for basic needs have all reduced the opportunity of the urban
poor and middle-class to acquire healthy food. Food and fuel absorb already a large part of the
poor household's income, and food insecurity is increasing. In 1990, households in nearly half of
the largest urban areas in developing countries were spending 50-80% of their income on food.
These percentages, which are higher for low-income households, are increasing (Nugent 2000;
Mougeot et al., 1998).
According to official data, urban agriculture does not make a substantial contribution towards urban employment or to the gross domestic product (Nugent 2000). Urban agricultural activities generally form part of the informal economy and are usually not included in official statistics. Furthermore, it is very difficult to determine the urban agricultural contribution towards a city’s overall economy as it is determined by the quantity and marked value or price of the goods created by this subsector. However, prices cannot be easily determined, because much of the output from urban farming is not sold on markets. According to Armar-Klemesu, 2000, women in Kampala, Uganda may not even let their husbands know the extent to which their crop production is relied upon in the household budget (Armar-Klemesu, 2000). While mean consumption is well below estimated requirements in all cases, farming households are better off in terms of both energy and protein consumption. Furthermore, farmers participating in an organised urban crop production support programme are significantly better off in both categories.

2.8. Urban Agriculture and poverty alleviation

Urban agriculture is very often believed to be a response to urban crises, a survival strategy of the migrants who come from the rural part of the country, and after being disappointed at not finding work in the city they become part of the growing population of the urban poor, (Phiri 2000). According to Nugget 1999b, the poor are not the only people who produce food in cities and towns, but they are more dependent on it than their rich counterparts. Richer inhabitants carry out urban agriculture for dietary diversity and a healthier food supply, and entrepreneurs have created thriving agricultural businesses. People often migrate to urban areas aimed at diversifying the possibility of maximising the advantages of combining farming and non-farming work (Swindell, cited from Binns, et al., 1998).
It must be emphasized that, in most cases the decision to migrate to the city is not taken by the individual alone, but rather on a family or household level to spread the risk over different regions, activities and persons (Tacoli, 1998).

According to CFP 2010, an increasing number of local and national governments are promoting urban crop production in response to serious problems of poverty, food insecurity, and environmental degradation. Urban agriculture complements rural agriculture in local food systems. It can also become an important income supplement for urban families and it is an integral component of urban economic and ecological systems. Obstacles such as limited access to land and water sources, as well as a lack of services and capital, are common among the urban poor, hindering their success in urban agriculture activities. Urban cultivation also poses potential health risks: for example, the use of agrochemicals, non treated organic waste and wastewaters, and lack of hygiene in food processing and marketing activities. To improve urban agriculture and make it more sustainable, governments should recognize the role it plays in local municipal development. They should also promote and manage urban agriculture through policies and incentives that meet public needs, while promoting gender equity and social integration. Producers, on the other hand, also need to adopt better production and marketing practices.

2. 9. Summary

The chapter starts by looking at a global overview of urban crop production zeroing it down to Africa and ending with a discussion on Harare, Zimbabwe.
A theoretical perspective of urban agriculture has also been provided. The insight gained through literature review forms the basis of this study.
CHAPTER 3: METHODOLOGY

3.1. Research design

This chapter explores the way the study was conducted. It focuses on research design, the sampling techniques, data collection and subsequent analysis. The researcher adopted the triangulation approaches, which utilizes a combination of qualitative and quantitative strategies of research as well as official data from various sources. The chapter provides the procedures which were followed in the collection, analysis, and presentation of data. This study was an exploratory study designed to establish the factors associated with urban agriculture in Zimbabwe. The study consisted of both qualitative and quantitative data which was collected from urban farmers in Warren Park, as well as, from other secondary stakeholders such as the Ministry of agriculture, Mechanisation and Irrigation Development (Agritex), Highfield Social Services Department, the District Administrator and an official within the City of Harare.

3.2. Target population

The target population included 253 households who engaged in urban crop production in Warren Park suburb of Harare. The District Agritex officer for Highfield (Warren Park falls under Highfield district), confirmed that there were 253 households engaged in urban crop production in Warren Park. A total of 50 households were interviewed and these constitute 20% of the study population. Key informants who were interviewed included an Agritex official for Highfield district responsible for Warren Park; the District Administrator (DA) for Highfield district who is responsible for Warren Park, an official for the City of Harare responsible for urban agriculture and Highfield district Social Services officer for Warren Park.
3.2. Sampling Methods

The city of Harare was conveniently selected as a study site for this study because of two different and yet related reasons. First, the city of Harare is the largest centre of urban agriculture in Zimbabwe, therefore, research findings in such a city are generally more likely to reflect on the subject more clearly. Secondly, the city of Harare was also selected because of its proximity and ease of reach for the investigator. Discussions were initially held with key informants who comprised of staff in the Department of Agricultural Technical and Extension Services (AGRITEX) of the Ministry of Agriculture, Mechanisation and Irrigation Development and the Harare City Council staff. This was done to determine the trends and issues in urban agriculture. Warren Park suburb was also conveniently selected because of the massive urban agriculture that takes place in that suburb. Non probability sampling was used to select respondents in Warren Park. With non probability sampling, the probability of each element being selected from the population is not known and it is impossible to answer research questions or to address objectives that require one to make statistical inferences about the characteristics of the population. One may still be able to generalise from non probability samples about the population but not on statistical grounds. Snow ball sampling was used for households engaged in urban agriculture in Warren Park. The researcher only interviewed respondents who were readily available and were willing to participate in the study.

3.3. Household sampling

A few households practising urban agriculture were initially selected and snow ball sampling was used to identify other urban farmers until the required sample size of 50 was reached.
This particular sampling method helped identify cases of interest from people who know other required cases. In this case it avoided going to every household in Warren Park and asking whether or not they practised urban agriculture. Instead urban agriculture farmers who were initially identified assisted in identifying their colleagues because they knew each other.

3.4. Research instruments

Both open and closed ended questionnaires were used to collect data from the people engaged in urban crop production in Warren Park. An interview schedule was used to collect data from the key informants. The research instruments used in the study were a combination of personal interviews, questionnaires and observation. Personal interviews were done to key informants of the Ministry of agriculture, the Department of Social Services; District administrator and an official of Harare City Council. These interviews assisted the researcher in getting the general information about urban agriculture in Harare and the emerging constraints. The researcher, however, used observation to see urban plots. This involved physical visitation of some plots, which were seen to have some crops.

A sample of the questionnaire that was used to interview the urban farmers is in Appendix 1. The main thrust of the questionnaire was to establish from urban farmers the following important issues:

1. Demographic information about the respondents,
2. Detail of their current and previous urban agriculture activities,
3. Household food requirements,
4. Level of contribution of urban agriculture to food security,
5. Sources of support,
6. Major challenges in urban agriculture,
7. Their views on how urban agriculture can be improved in Zimbabwe.

The questionnaire was prepared well ahead of time and in some cases options of answers were provided. The questionnaire design was such that it was long enough to collect all the required information and also short enough not to bore the respondent.

3.5. Data collection.

Primary data was collected by the researcher over a period of one week. The researcher used questionnaires with both open and closed ended questions which were administered to 50 households practicing urban crop production in Warren Park. The questionnaire was pre tested in Marlborough after which some modifications were made before the actual survey. Whilst questions have been designed in English they were asked in Shona which is the common language used in Warren Park. In addition, an interview schedule for key informants was administered in English since they understood the language.

3.6. Data Analysis

Raw data was validated, edited and cleaned, soon after the questionnaires were administered. This was done early so that any clarifications were sought while the researcher’s mind was still fresh. The researcher coded all unstructured responses. Coded data from both structured and unstructured questions was processed using the Statistical Package for Social Scientists (SPSS). Individual households that responded to the questionnaire constituted a unit of analysis. Some initial checks were done for obvious errors. Every effort was made to ensure that non-available data were not treated as zeros but they were given an arbitrary value.
Frequency distribution, graphs, charts, case summaries and cross tabulations were used for data presentation and analysis. A simple regression analysis was also used to see the relationship between various variables and urban agriculture. Qualitative data that were collected through observation and key informant interviews were analysed manually.

3.7. Ethical considerations

Confidentiality:
The respondent’s identity was kept confidential. Data collection and storage was done in strict confidentiality and was used for the purpose of the study alone.

Informed consent:
Respondents were informed of the purpose of the study and were free to tell the researcher if they were not interested to take part in the study.

3.8. Feasibility

Permission to carry out this research was granted by the City of Harare.

3.9. Limitations of the study

- Given the high levels of crime in Harare, some respondents suspected that the researcher was a thief and thus it was difficult to interview them. Whilst the research had the option to go to the next household, the impact of this was felt in terms of time. A major limitation of this study was its focus on people practising urban crop production only. This focus excluded the opinions of non urban farmers whose opinion of urban agriculture would have contributed immensely to the purposes of this study.
The study also confined itself to households in Warren Park only. This excluded many urban farmers in other suburbs whose opinions could definitely be useful for this study. These include even those who are situated as far as Chitungwiza city. This being the case, the study may not be representative of all the population in Harare. Thus it may not therefore be generalized to other populations because a small universe was used in the study.

The timing of the survey was also another limitation. The study was carried out in winter yet urban farmers are busiest in summer. This made it difficult for the interviewers to identify all farmers that practice urban agriculture. It was also difficult for households to remember everything, which happened during the summer season.

The busy schedule for some key informants made it impossible for the researcher to interview some of them- e.g. the councilor responsible for Warren Park ward.

3.10. **Summary of chapter**

This chapter explains how the research was done. It begins by explaining the target population, data collection tools and the sampling techniques that were applied. It ends by explaining the data collection and analysis done as well as the limitation of the study.
CHAPTER 4: RESEARCH FINDINGS AND DISCUSSIONS

4.1. Introduction

This chapter explores the major findings from urban farmers who were interviewed, as well as data obtained through observation and key informant interviews. Emerging constraints and concerns pertaining to urban agriculture in Zimbabwe are also discussed. The interpretation of the responses is linked to the literature review (Chapter 2). The chapter also looked at how the research objectives mentioned in chapter 1 were addressed.

4.2 Demographic information of Respondents

4.2.1 Distribution of respondents by gender of Household Head

Table 1: Percentage distribution of respondents by gender of Household Head

<table>
<thead>
<tr>
<th>Gender of HH Head</th>
<th>Frequency</th>
<th>(%) of total</th>
<th>(% of total) involved in urban agriculture</th>
<th>Average Household size</th>
<th>Monthly cereal consumption (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>33</td>
<td>66</td>
<td>100.0</td>
<td>6.4</td>
<td>33.2</td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>34</td>
<td>100.0</td>
<td>6.4</td>
<td>47.6</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>100.0</td>
<td>6.4</td>
<td>38.1</td>
</tr>
</tbody>
</table>

Respondents were asked the quantities of cereals they normally consume in an average month. This was done to assess whether or not households were able to produce enough quantities for their household needs.
Results from the table above show that female headed households consumed higher quantities of cereals per month (47.6 kg) compared to male headed households (33.3 kg). This may be because male headed households are more likely to have formally employed bread winners than female headed households and worked on their fields on part time basis. Households with formally employed heads are likely to have access to other non cereal meals and therefore consume lower starch meal levels. From the sample, female headed households were headed by widows and single mothers (Fig 1) with lower budgets and higher cereal (starch) consumption levels (Table 1). On average each household had an average of 6.4 beneficiaries.

4.3.2 Marital status of household head

Most of the sampled households were headed by married people (70 %) while 26 % of household heads were widowed with the remaining 4 % equally shared between divorced and single household heads. Most of the married household heads were males whilst the majority of widowed and divorced household heads were females (Fig 1).

Fig 1: Marital Status of Household Head
4.4 Household Food requirements

This section summarises the average money (in US$) which different households spent on different food items on an average month. Female headed households spent more money (US$16.83 per month) on vegetables than male headed households whose monthly consumption on vegetables amounts to US$12.13. Consequently, male headed households spent slightly higher amounts on meat than female headed households. This confirms the fact that male headed households are more likely to have alternative sources of income through formal employment, and therefore, afford protein diets rather than carbohydrates (Table 2). The difference between total monthly expenditures for male headed and female headed households is not significant. The results show that all households participating in urban agriculture are generally resource poor and food insecure households. This finding is in line with Nugget’s conclusions that whilst the rich city inhabitants participate in urban crop production, the poor are more dependant on it (Nugget 1999b).

Table 2: Percentage of household monthly expenditure vs gender of household head.

<table>
<thead>
<tr>
<th>Gender of HH Head</th>
<th>Average monthly Household Expenditure (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize Meal</td>
<td>Vegetables</td>
</tr>
<tr>
<td>Male</td>
<td>17.95</td>
</tr>
<tr>
<td>Female</td>
<td>22.15</td>
</tr>
<tr>
<td>Total</td>
<td>20.98</td>
</tr>
</tbody>
</table>
4.5 Urban crop production and utilisation

4.5.1 Annual household food requirement Vs annual production in urban agriculture

Fig 2: Annual household food requirement Vs annual production in urban agriculture

Households practising urban agriculture actually produce amounts closer to their annual requirement. For example an average household practising urban agriculture produce 456 kg of maize per year yet their average annual requirement is 447 kg (Fig 2).

4.5.2 Utilisation and consumption of the food produced

Fig 3: Households food utilisation as a percentage of total.
A larger proportion of households interviewed consume all the food produced (58.3%) while the remaining 41.7% share some with relatives and friends and/or sell small quantities to raise money for other household needs. However, most of the respondents who belong in the latter group indicated that they share food rather than sell it as summarise in the Table below.

Table 3: Household usage of food that is not consumed as a percentage of total number of households that share or sell food

<table>
<thead>
<tr>
<th>What happens to the rest of the food</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give to Relatives / Friends</td>
<td>84.2</td>
</tr>
<tr>
<td>Sold</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

4.5.3 Alternative utilization of food produces

Result from the survey show that money from urban agriculture is mainly used to purchase other food stuffs, such as bread, sugar, relish etc which help the household to be more food secure (Table 4). This is in line literature (Phiri 2000) which concluded that urban crop production allows those involved in it to generate income which is in turn used to purchase other food stuffs. The remaining money is either used to pay school fees, purchase farming inputs or pay rentals. According to these findings the major objective of urban agriculture remains household food security. However, as the literature reviewed (UN 1994, Nugent 1997, Rogerson 2001, Makhanya and Ngidi, 2001) confirms urban crop production has a lot of benefits- income realized from the activity assists those engaged in the activity to save money they would have used to buy other household needs.
The table below clearly shows that although the bulk of income earned as a result of urban crop production is used to buy other food items, it is also spent on other household non-food items.

4.5.4 Utilisation of money from urban agriculture sales.

Table 4: Percentage distribution of Utilisation of money from urban agriculture

<table>
<thead>
<tr>
<th>Use of money</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase food staffs</td>
<td>40</td>
</tr>
<tr>
<td>Pay school fees</td>
<td>20</td>
</tr>
<tr>
<td>Purchase farming inputs</td>
<td>20</td>
</tr>
<tr>
<td>Pay Rent</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

4.6. Alternative income sources

Table 5: Percentage distribution of alternative income sources to supplement Income from Urban Farming

<table>
<thead>
<tr>
<th>How would you supplement income from urban farming</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal Employment</td>
<td>76</td>
</tr>
<tr>
<td>Non Formal Employment</td>
<td>6</td>
</tr>
<tr>
<td>Petty Trading</td>
<td>2</td>
</tr>
<tr>
<td>Remittances</td>
<td>8</td>
</tr>
<tr>
<td>Vending</td>
<td>2</td>
</tr>
</tbody>
</table>
The results show that many farmers engaged in urban agriculture (76 %) still consider formal employment as their major alternative source of income (Table 5). Other sources of income such as non formal employment, petty trading, remittances and vending were not as significant contributing a total of 24 % of all respondents. This may also suggest that one of the reasons why people participating in urban agriculture are not willing to relocate to communal areas where they can access larger land sizes is because they still believe in formal employment.

4.7. Support to urban agriculture

Fig 3 Proportion of households receiving support from Government / NGOs

The research results show that 90 % of all respondents did not receive any support in urban agriculture and only 10 % of the total recipients claim to have received some form of support (Fig 3.)
Table 6: Percentage distribution of perceived reasons for not receiving support from government and other agencies in urban agriculture

<table>
<thead>
<tr>
<th>Reason for not receiving assistance</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban agriculture is illegal</td>
<td>48</td>
</tr>
<tr>
<td>Do not know where to get the help</td>
<td>18</td>
</tr>
<tr>
<td>Government has no money</td>
<td>12</td>
</tr>
<tr>
<td>Plot size too small</td>
<td>12</td>
</tr>
<tr>
<td>Assistance provided along political party lines</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

The majority of the respondents (48 %) felt that they did not receive any form of assistance on urban agriculture because it is an illegal activity (Table 6). Many of the interviewed housed did know of any assistance given to urban farmers (18 %) while some claimed that their plots were too small (12 %). However, some respondents (10 %) thought that government assistance to urban agriculture is given along political party line while another 12 % felt that the government did not have any money for that.

Table 7: Percentage distribution of the kinds of support received from government and NGOs

<table>
<thead>
<tr>
<th>Kind of support received</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer and seed</td>
<td>50</td>
</tr>
<tr>
<td>Fertilizer only</td>
<td>25</td>
</tr>
<tr>
<td>Seed only</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>
Of the 10% respondents who claim to have received some form of assistance from the government, 50% of them claim to have received fertilizer and seed together while the other half received either fertilizer or seed in equal proportions respectively.

4.9. Research Objective 1: To assess food crop production activities and their scale in Warren Park.

4.8.1 Household experience with urban agriculture

Fig 4: Number of years household has practised urban agriculture

The findings show that urban agriculture has been practised in Warren Park for the past fifteen years. The results also show that female headed households have practised urban agriculture for a longer time than male headed households (Fig 4). This may suggest that before the current economic and political challenges male headed households were concentrating on formal employment while female headed households participated on non formal sources of livelihood such as urban agriculture.
4.8.2 Acquisition of land for urban agriculture

Table 8: Percentage distribution of how land for urban agriculture was acquired

<table>
<thead>
<tr>
<th>How land was acquired</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First User</td>
<td>30</td>
</tr>
<tr>
<td>Inherited</td>
<td>54</td>
</tr>
<tr>
<td>Allocated by City Council</td>
<td>14</td>
</tr>
<tr>
<td>Cooperative allocation</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

More than 50 % of households interviewed in Warren Park inherited the land they were using for urban agriculture whilst 30 % were first claimers. This shows that a significant proportion of households have practised urban agriculture for a long time. This is similar to what Foeken, et al., 2000, found in Kenya. Chances are high that those who inherited the land did so from the previous generation. Most of these households were never given legal permission to use the land. Surprisingly about 14 % of the respondents claim that they were allocated land for urban agriculture by the Harare City Council while 2 % claim to have been through cooperatives.
4.8.3 Households access to alternative land for crop production

Most of the households practising urban agriculture (82 %) have no other access to land while 18 % claim to have access to other land for cultivation in the rural areas. Most of the people refer to alternative land in the rural areas while a few households have other pockets to cultivate within the city of Harare.

4.8.4 Types of crops grown

Table 9: Crops grown and average quantities produced per year.

<table>
<thead>
<tr>
<th>Crop</th>
<th>% of HH cultivating</th>
<th>Ave years Cultivated</th>
<th>Average production per year (kg)</th>
<th>Ave amount if purchased (US$)</th>
<th>% contribution to annual HH food security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>96</td>
<td>19.4</td>
<td>420</td>
<td>102.05</td>
<td>67.5</td>
</tr>
<tr>
<td>Beans</td>
<td>32</td>
<td>17</td>
<td>7.5</td>
<td>2.64</td>
<td>64.2</td>
</tr>
<tr>
<td>Ground Nuts</td>
<td>16</td>
<td>8.3</td>
<td>4.4</td>
<td>3.00</td>
<td>35.0</td>
</tr>
<tr>
<td>Small Grains</td>
<td>6</td>
<td>15.6</td>
<td>8.0</td>
<td>8.20</td>
<td>75.0</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>26</td>
<td>29</td>
<td>27.5</td>
<td>6.20</td>
<td>35.0</td>
</tr>
</tbody>
</table>
The findings show that 96 % of the sampled households cultivate maize while only 6 % cultivate small grains like sorghum, pearl millet and finger millet (rapoko). On average most households have cultivated in town for more than ten years. Chances are very high that all households started to practice urban agriculture after independence in 1980. On average households practising urban agriculture produce close to half a tonne of maize which is the Zimbabwean main staple saving an average more than US$100 per household.

4.8.5 Motivation for practising urban agriculture

Table 10: Proportion of households motivation for urban agriculture

<table>
<thead>
<tr>
<th>Motivation for urban Agriculture</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure HH food security</td>
<td>52</td>
</tr>
<tr>
<td>Supplement HH food requirement</td>
<td>44</td>
</tr>
<tr>
<td>Make Savings on Food</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

More than 90 % of respondents claimed that their motivation to practise urban agriculture is to improve household food security. Of these 52 % said urban agriculture helps them to ensure household food security while 44 % indicated that urban agriculture help them supplement household food security. The remaining 4 % claimed that urban agriculture helps them to save on their food probably for security in times of emergency and shortages. This finding is consistent with a number of earlier studies (Armar-Klemesu, 2000, Phiri 2000, Hungwe 1994).
4.9.6. Research objective 2: Assess the extent of crop production and its level of contribution to household food security in Warren Park

4.9.1 Contribution of urban agriculture to annual household food security

Table 11: Percentage of household food security met by urban agriculture

<table>
<thead>
<tr>
<th>Description of household</th>
<th>Annual average nominal household expenditure on staple maize meal</th>
<th>Money equivalent from own production of maize grain (US$)</th>
<th>Percentage of contribution of urban agriculture to staple maize requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male-headed</td>
<td>215.40</td>
<td>114.29</td>
<td>53%</td>
</tr>
<tr>
<td>Female headed</td>
<td>265.80</td>
<td>97.29</td>
<td>37%</td>
</tr>
<tr>
<td>All headed</td>
<td>251.76</td>
<td>102.05</td>
<td>41%</td>
</tr>
</tbody>
</table>

Table 11 compares the amount of money that households would spend on average per year to purchase cereals and the money that the urban farmers could raise if they had sold their maize produce. The results show that on average, 53% of the staple maize requirements for male-headed households can be met from urban agriculture while for female headed households the contribution is lower at 37%. For all the households that were interviewed the average contribution of the staple maize from urban production amounts to 41% of their annual requirements which is enough to cover their needs for a period of five months. This agrees well with finding of research carried out in East Jakarta, Indonesia Dar es Salaam, Tanzania, and Kampala, Uganda and Addis Ababa, Ethiopia which also concluded that that urban farming contributes significantly to household food security (International Development Research Centre 2010). However, as indicated in Table 3, only 15.8% of the households that do not use all production for household consumption confirmed selling to raise money to meet other household needs.
4.9.2 Overall Importance of urban agriculture

Fig 6 Percentage of households perceptions on the importance of urban agriculture

More than 80 % of households interviewed felt that urban agriculture is a worthwhile activity while 18 % felt that it as not worthwhile (Fig 6). Those who said it was not a worthwhile activity, but continued to engage in it indicated that they only participated in the activity because they just wanted something to occupy them.

4.9.3 Urban agriculture under stable economic conditions

This research went ahead to assess whether urban agriculture would remain viable in a stable economic environment. While 38 % of respondents felt that if the economic situation stabilized, urban agriculture would not be worthwhile, 62 % of respondents still felt that even if the Zimbabwean economy stabilised, urban agriculture would remain a viable and worthwhile activity. This suggests that there are some households who practised urban agriculture to cushion themselves against economic challenges but still there were some who took it as a permanent livelihood activity.
Fig 7: Percentage of households who perceived urban agriculture as worthwhile under stable economic conditions

If urban agriculture is not worthwhile, then why continue doing it? This question was addressed to households who claimed that urban agriculture was not a worthwhile activity especially if the economy changed.

Table 12: Percentage of reasons for continuing urban agriculture if it is not a worthwhile activity

<table>
<thead>
<tr>
<th>Reason for continuing</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing else to do / keep busy</td>
<td>66.7</td>
</tr>
<tr>
<td>Expensive to bring food from rural areas</td>
<td>16.6</td>
</tr>
<tr>
<td>Benefit from open land</td>
<td>16.6</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

This section assess why some households continued to practice urban agriculture even though they felt that it was not a worthwhile activity.
Most of these households (66.7 %) claimed that they had nothing else better to do while the remainder either wanted to benefit from open land or felt that it is too cumbersome to bring food from the rural areas.

4.10. Research objective 3: Establish common challenges inhibiting urban crop production as a viable urban food security source and suggest possible ways of making it effective.

4.10.1 Challenges households are facing in urban agriculture

Table 13: Percentage of challenges faced by households in urban agriculture

<table>
<thead>
<tr>
<th>Challenges faced</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortage of inputs</td>
<td>40.0</td>
</tr>
<tr>
<td>Shortage land</td>
<td>34.0</td>
</tr>
<tr>
<td>Lack of agricultural tools</td>
<td>22.0</td>
</tr>
<tr>
<td>Poor security of produce</td>
<td>4.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Most of the households interviewed have challenges with shortage of input (40 %) and shortage of land (34 %). Some however, lack agricultural tools (22 %) and a few (4 %) faced the challenges of poor security for their produce. This was mainly due to the presence of thieves who normally steal urban produce- they claimed that their produces were being stolen from the field.
4.10.2. Possible ways of making urban agriculture more viable

Table 14: Possible ways of making urban agriculture more viable

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocate bigger plots</td>
<td>10.0</td>
</tr>
<tr>
<td>Inputs support</td>
<td>22.0</td>
</tr>
<tr>
<td>Legalise urban agriculture</td>
<td>16.0</td>
</tr>
<tr>
<td>Allocate bigger plots and input support</td>
<td>34.0</td>
</tr>
<tr>
<td>Input support and tillage</td>
<td>16.0</td>
</tr>
<tr>
<td>NGO intervention</td>
<td>2.0</td>
</tr>
<tr>
<td>Total</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The majority of households interviewed (more than 50%) felt they needed to be allocated bigger plots and provided with inputs which would significantly improve urban agriculture. However, some felt like they needed tillage support (16%) and others to have urban agriculture legalised (16%). A few households (only 2%) felt like NGO intervention would improve viability of urban agriculture. The intervention of NGOs is other countries were noted as way of the ways to support urban agriculture, (International Development Research Centre 2010). For simplicity, only the results from the linear model will be interpreted. The results show that access to tools did not have a significant effect on urban cereals produced. Though this may somehow affect the households’ ability to till the land on time, the individual impact of access to tools on cereals produced is small and relatively insignificant in determining the quantity of cereals produced. The impact of this factor on cereals produced appears to be affected by other factors hence its individual significance in explaining quantity of cereals produced is low.
4. 10.3. Information from key informants

The key informants who were interviewed viewed urban crop production as a viable livelihood activity to ensure food security for those who practiced it. They submitted that the people in urban areas had very limited coping strategies unlike their counterparts in the rural areas. Studies by International Development Research Centre 2010, noted the same. This being the case, crop production is an easy way of addressing the issues of household food security. Phiri 2000, made similar conclusions. They all agreed that, the city council may need to promote the activity through allocating land for the activity. Consensus was that so far, the city of Harare had not done enough to promote the activity. The City fathers were thus encouraged to work with the Ministry of Agriculture, Mechanisation and Irrigation Development and provide land and also to monitor usage of that land. In addition, they reported that while the City of Harare had a policy on peri-urban farming, there was no such policy for open space crop cultivation within the City.

The key informants thus noted lack of land and lack of legislation to support urban crop production as the main challenges they faced. According to them, there was need to set aside land which would be used for the purpose of urban farming. Whilst they felt that some better off households were also engaged in urban farming, they felt that poor households were more dependent on it because it significantly contributed to their household food security.

On what should be done by central government to make urban farming more viable, the key informants suggested the following:

- Assist City of Harare to develop policies to support cultivation of open land.
- Come up with legislation which promoted urban farming
- Monitor the usage of land in order to address issues associated with environmental problems

4. 10.4. Summary

The chapter looked at the data presentation and analysis. The chapter helped the researcher to come up with conclusions and recommendations which is what the 5th and final chapter looks at.
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter points out the major findings linked to the objectives that were spelt out. It proposes recommendations to central government, local authorities and potential stakeholders like NGOs and the private sector.

5.2 Conclusions

This research has shown that urban agriculture can cover a considerable share of a household’s total staple maize intake accounting on average for as much as 41% or five months of total consumption which results in saving of cash that would be spent otherwise on food. The research findings also established that urban agriculture has become a livelihood strategy for the majority of households that practice it with 62% of the interviewed households indicating that they would continue practicing it even if the Zimbabwean economy stabilized. However, there are still a number of challenges associated with urban agriculture which threatens its viability and sustainability as a livelihood strategy. For instance respondents listed shortage of land, lack of inputs as some of the key challenges being experienced by households engaged in urban farming.

5.3. Recommendations

The majority of the households studied indicated that they have been engaged in urban agriculture for a long time (more than 10 years) and yet did not have official ownership to the pieces of land on which they grew crops. They just made a first claim on a piece of land by tilling it first. Only 14% of the respondents confirmed that they were allocated their pieces of land by the City council.
Given that Zimbabwe’s population is becoming more and more urban, food insecurity has become a major challenge to which an immediate solution must be found. The government and the City of Harare should thus support urban agriculture through an orderly land allocation.

The other challenge as highlighted by both respondents and key informants was shortage of input for urban agriculture. For instance 90% of the respondents indicated that they did not get any support in the form of input from government or any other organization. In view of that, NGOs and organization like UN Food and Agricultural Organisation should support urban farmers with the provision of agricultural inputs like seeds, fertilizer etc.

According to the key informants there are no regulatory mechanisms to fully support urban farming. It is therefore recommended that the City of Harare and the government should come up with a policy framework which will articulate issues of land use plan for open space cultivation. The policy framework should also fully support urban cultivation by allocating land to people in order for them to embark on urban farming. These recommendations were also suggested by key informant during the interviews.

The key informants also highlighted that there is currently no legislation to support urban agriculture. The government should come up with legislation on urban farming. This is particularly relevant, given that in most instances much of urban agriculture takes place in open spaces and on vacant public land. Both local and central government should monitor the usage of land so as to make sure that land allocation in an environmentally sustainable way
5.4. Direction for future research

Since the study focussed on Warren Park suburb in Harare only, future studies should aim to broaden study sites to include other areas and other towns. Broadening the sample sites could help in reducing bias and increasing the reliability of the findings as a generalisation of the study population.
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APPENDIX 1

Questionnaire

Date of interview:

Enumeration Number:

Interview Questions

1. Demographic information
   (a) Gender of respondent: [M] [F]
   (b) Age of respondent:
   (c) Gender of household head: [M] [F]
   (d) Marital status: [married] [divorced] [separated] [widowed] [single]
   (e) What is the size of your household?

2. Household food requirements
   (a) What is your household’s monthly total cereals (maize/sorghum/rapoko/pearl millet) requirements (in kgs)?
   (b) What other types of food would your household require for a balanced diet and how much do you spend on each of them per month?
   (i) Vegetables
   (ii) Meat
   (iii) Cooking oil
   (iv) Milk
(vi) Sweet potatoes
(vii) Bread
(viii) Beans
(ix) Others (specify)

3. Cultivation of crops

(a) Does your household engage in crop production? [Yes] [No]

(b) What type of food crops does your household produce? Use table below.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Yes</th>
<th>No</th>
<th>No. of years household has been producing the crop</th>
<th>Average amounts produced per year (kg)</th>
<th>Contribution to HH food requirements/ number of months</th>
<th>How much would you spent if you were to buy (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapoko/sorghum/pearl millet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground nuts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Cultivated land

(a) How did you acquire the piece of land on which you carry out crop production?

(i) I was the first one to till it

(ii). I inherited it from a relative/friend

(iii). I bought it

(iv). Others (specify)

(b). How long have you been practicing crop production on your piece of land? ..............................

(c). (i) Have you ever cultivated a piece different from you current one elsewhere? 

Yes/ No.

(ii) If yes, what triggered your change of piece of land for crop production?

Political reasons [ ]

land allocated to another household [ ]

Previous plot not suitable for crop cultivation [ ]

current plot is next to a water body [ ]

Council barred people from cultivating the land [ ]

other (specify) .................................

5. Motivation to engage or practice crop production

(a). What influences or motivates you to engage or practice urban crop cultivation?

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(b) Has your goal to engage in crop production been met so far as per your expectations? Yes/No

(c) If yes, can you elaborate the benefit?
6. Use of produced food

(a) (i) From the food you produce, do you use all of it for household consumption? [Yes.] [No.]

(ii) If no, what do you use the rest of the food you produce for? Choose from the list below.

• Give it to relatives and friends
• I sell it
• Others (Specify)

(b) If you sell some of the food produced how do you spent the money?

• Purchasing other food stuffs
• Pay school fees for the children
• Pay for medical services
• Others (specify)

(c) If the money gained is not used for the above purposes, what is it used for?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

7. Contribution to household food security

(a). By what percentage do you think urban crop production contributes to your household’s food security?

(b). If less than 100%, how do you supplement?

(i). Remittances

(ii).Gifts
(iii). Causal labour

(iv). Petty trade

(v). Formal employment

(vi). others (specify)

8: Level of production

For each of the crops you planted last season can you quantify the expected production (in kgs)?

<table>
<thead>
<tr>
<th>Type of commodity</th>
<th>Quantity</th>
<th>Are they enough for your household needs (yes/no)</th>
<th>If not enough</th>
<th>how many months will it last</th>
<th>how would you supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>a Cereals (maize, sorghum, pearl millet and rapoko)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b Beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c Ground nuts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d Other (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e Other (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f Other (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g Other (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. When would you consider that your household is food secure?

(a) When it has 3 meals a day

(b) When it has 2 meals a day

(c) When it has 1 meal a day

(Tick the appropriate)

10. Have you received any form of assistance from the government or non-governmental organisations or private sector to enhance crop production? Yes No

(a) If yes what kind of support was it and from which NGO/government ministry or department/company? And in your opinion how viable was it?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

(b) If no assistance was received, why do you think you have not received any kind of support?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

11. What are the challenges/main constraints that your household is facing in carrying out urban crop production?

(a) Lack of Inputs

(b) Shortage of land

(c) Poor security for produce
(d) Lack of agricultural tools
(e) Others specify

10. Do you consider urban agriculture a worthwhile activity in addressing household food security?
(a) If yes, in what way?
(b) If not, why does your household continue to engage in the activity?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

12. Suppose the Zimbabwean economy was stable, would you still consider urban agriculture a worthwhile activity in addressing household food security?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

13. In your opinion what do you think needs to be done to make urban cultivation more viable?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
APPENDIX 2

Key informants interview schedule

Interview schedule for key informants

Position of key informant:

Department of the informant:

1. Do you see urban crop production as a viable food security valve to for those who practice it?
Yes   No
b. If yes, in what way?

c. If no, why do you think people engage in it?

c. If urban crop production is a viable way of ensuring food security at household level, in what way should it be promoted?

i Through a proper allocation of land
ii. Through farmer support schemes like provision of inputs
iii. By introducing credit schemes for farmers
iv. Others (specify)

2. In your opinion do you think Harare City Council has done enough to promote the activity of urban crop production? Yes   No
b. If yes, in what way?
c. If no, what needs to be done?

3. To the best of your knowledge does Harare City Council has a policy on urban crop production?

Yes  No.  I am not sure.

a. If yes what are the main provisions of this policy?

4. What do you thinks are the major challenges faced by those who are engaged in urban crop production?

Lack of land

Lack of inputs

Lack of legislation to support urban agriculture

Others (specify)

b. How do you think these challenges could be resolved?

5. In your view which of the following social groups relies more on urban crop production than the other?

a. Poor households

b. Both poor and rich households

c. Why do you think it is like that?

6. What would you advise the government to do in order to make urban agriculture more viable?