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URBAN AGRICULTURE AS A FOOD SECURITY STRATEGY FOR URBAN DWELLERS: A CASE STUDY OF MKOBA RESIDENTS IN THE CITY OF GWERU, ZIMBABWE

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N.C. drafted the original manuscript, acquired and analyzed the data and made interpretations. E.D reviewed, edited and critically revised the original manuscript and recommended the final version of the manuscript for publication.

Abstract

Urban agriculture is a common strategy used by urban dwellers in their endeavor to pursue sustainable food security. This article analyzed the practice of urban agriculture by urban dwellers in the city of Gweru in Zimbabwe, with a specific focus on Mkoba suburb. This qualitative study sought as its objectives, to discuss factors that have contributed to the growth of urban agriculture; to analyze how urban agriculture contributes to the well-being of urban

dwellers; to examine the legal framework governing urban agriculture in Zimbabwe; and, to ascertain challenges faced by urban farmers in pursuit of urban agriculture.

Purposive sampling was used and data were gathered from 26 participants through interviews and focus group discussions.

The findings were that the growth of urban agriculture is influenced by rapid population growth, high levels of poverty, high food prices, and high rate of unemployment. The study further found that urban agriculture promotes food security, provides employment and encourages savings. The Urban Councils Act Chapter 29:15; Regional Town Planning Act Chapter 29:12; Environmental Management Act Chapter 20:27; Public Health Act Chapter 15:09; Forestry Act Chapter 19:05; and, the Diary Act Chapter 18:08, all have a bearing on urban agriculture. These Acts do not support, but impede the practice of urban agriculture. There are also challenges that impede the practice of urban agriculture, including the absence of supportive legislation, lack of support from central and local governments, and lack of funding.

The study concluded that urban agriculture is an important practice that cannot be dispensed with, as strengthens food security of urban dwellers. The study recommends enactment of supportive legislation, provision of small grants to urban farmers, and creation of farmers associations. Future research should focus on ways of improving the livelihoods of urban farmers. Urban farmers and key stakeholders are largely expected to benefit from the study.

Keywords

Agriculture; Food Security; Urban; Urban Dwellers; Urban Agriculture; Strategy

1. Introduction

The practice of urban agriculture has been a major strategy towards improved food security for some major cities the world over. Whilst some urban local authorities have regarded this practice as a hazard to health, those practicing it have seen it as a good strategy towards improving food security at household level. According to Ackerman, Dahlgren and Xu (2013) urban agriculture is regarded as an additive form of economic development as opposed to it being substitutive. It entails growing of plants, raising of animals for different purposes including for consumption, within or close to urban areas, and undertaking similar practices such as the producing and delivering of inputs, as well as processing and marketing of products (Food and Agriculture Organization [FAO] 2007). The practice of urban agriculture is aligned to the

Sustainable Livelihoods theoretical framework. This framework is concerned amongst other things, about the improvement of livelihoods of the poor in human societies. Garcia-Yi (2014) observes that the framework may also be used to identify the potential determinants of farmers' crop diversity conservation, thereby improving food security. Orsini, Kahane, Nono-Womdim and Gianquinto (2013) observe that the food security contribution of urban agriculture is reflected in the 100 to 200 million urban farmers globally, who provide urban markets with fresh horticultural products. Estimates also reveal that 15% of food production worldwide through various landscapes is grown in cities through urban agriculture (Armar-Klemesu 2000; Smit, Ratta, & Nasr, 1996). However despite these statistics, the contribution of urban agriculture has been ignored and regarded as just a traditional practice smuggled by those migrating from rural areas to live in cities. Therefore, this practice has been anticipated to dwindle with time, when the rural migrants are absorbed into urban life. Urban agriculture has faced resistance from municipal governments, which have viewed the practice either as a violation to public health that should be stopped or as a low level undertaking. Such perceptions have been institutionalized in restrictive by-laws and regulations, at national and local authority levels, a move that has threatened food security for some urban dwellers. The Food and Agriculture Organization [FAO] argues that the underlying risk of food insecurity could be addressed by the application of prevention and mitigation measures in approaches to farming (FAO 2013), of which urban agriculture is one such intervention.

Despite the fact that urban agriculture is an undertaking that has existed for a long time in Zimbabwe, its practice has been shrouded in much controversy. Reports of battles between farmers and urban municipal authorities have been a regular occurrence. Most of the battles have resulted in council officials burning or slashing the farmers' crops. This scenario has posed a threat to food security situation of the city dwellers, the majority of whom are low income earners. Municipality authorities have regarded urban agriculture as an illegal practice that is incompatible with urban development. As such, not much assistance has been rendered to the deserving urban farmers in terms of land access for agricultural purposes.

In order to achieve its purpose, this study sought to fulfill the following objectives, which were to:

- Discuss factors that have contributed to the growth of urban agriculture amongst urban dwellers

- Analyze how urban agriculture contributes to the well-being of city dwellers
- Examine the legal framework governing the practice of urban agriculture in Zimbabwe.
- Ascertain challenges faced by farmers in pursuit of urban agriculture as a food security strategy.

1.1 Statement of the Problem

A myriad of socio-economic and political factors have contributed to food insecurity of Mkoba residents in the city of Gweru, leading to an unprecedented rise of urban agriculture. It is against this backdrop, that Mkoba residents have occupied open spaces in the city in a bid to acquire land for cultivation. This has led to numerous clashes between the residents and urban council authorities over the management of urban land. The clashes have disrupted the farming activities of those practicing urban agriculture, a move that has threatened their food security. It is clear that urban agriculture would remain a recurrent feature of the urban environment since urban residents are benefiting from it, hence the need for measures that support the practice. Related legislation in Zimbabwe has no direct reference to urban agriculture, but it refers to the control of farming activities in urban environments. As such, lack of proper interpretation of statutes on urban agriculture by local authorities has resulted in lack of understanding on the legal issues governing the sector. Such misinterpretation of the laws by local authorities in handling urban agriculture issues has hugely impacted food security. If no proper measures are put in place to assist urban farmers in their endeavor to get the best out of urban agriculture, their food security situation would be compromised.

2. Historical Development of Urban Agriculture

Urban Agriculture is not a recent phenomenon to occur in urban areas. For many years, urban farming has served as a vital input towards livelihood strategies of urban households worldwide (Bairwa *et al.* 2014). Countries like Cuba have effectively used urban agriculture as a strategy to alleviate shortages of food (Murphy 2004), whilst some countries have long practiced urban agriculture to generate income and for survival (Nugent 2001). In general, urban dwellers have relied on markets for food, but with the tremendous surge in food prices beyond the reach of many, the poor urbanites have intensified urban agriculture as a coping strategy. The most vulnerable human group has been urban poor households, whose sources of incomes are often inadequate and unreliable (Moyo 2013). Therefore urban agriculture is neither a new

phenomenon, nor a declining practice in urban areas, as it has always been the cornerstone of many urban dwellers.

In Africa, urban agriculture is understood to have a long history that starts from the establishment of the first colonial cities and it improved food security. The practice was embraced by people in many different socio-economic classes and for many different reasons that included addressing problems related food supplies, and employment opportunities (Nugent 2000). Lee-Smith *et al.* (1987) observe that 70% of urban farmers in Kenya are low-income agriculturalists, who produce food first for household consumption in urban areas. As such scholars have conceptualized urban agriculture as relating to the growing of food, processing and distribution, through massive plant growing and keeping of animals in and on the outskirts of urban zones (Bailkey & Nasr 2000). Put simple, urban agriculture is the practice that entails cultivating food crops and raising livestock in urban areas or cities. Such practice also entails employing urban dwellers to provide labor, and also using urban farming resources such as waste matter to improve soil fertility.

As urbanization started to dominate, agricultural activities in Zimbabwe slowly became part of urban developments. Around the mid-1950s, most urban areas had started to develop because of urban agriculture. However, urban agriculture still remained a low practice especially in the African townships, which were a high density of low cost housing units built for the Africans to provide labor that would sustain the urbanization process (Mougeot 2000). During the time, the concept of urban agriculture was largely confined to the growing of vegetables for household uses, and then extending to the growing of rain fed crops such as maize during summer season. As far as animal husbandry is concerned, the practice was mainly confined to poultry production. Of particular note, is that during the time urban agriculture was restricted to people's residential properties (Waters-Bayer 2000). In low density areas, urban agriculture largely took the dimension of floriculture, with the growing of fruits undertaken on a lesser extent. However, in some other urban areas the agricultural activities continued on a large scale, but slowly decreased as the plots became smaller after having been subdivided to pave way for residential areas (Waters-Bayer 2000).

2.1 Benefits of Urban Agriculture in Sustaining Lives of Urban Dwellers

Several benefits can be derived from urban agriculture in sustaining lives of many urban dwellers. According to Golden (2013), urban dwellers can benefit from urban agriculture through

accessing land, community development and building of social capital, cross-generational and cultural integration, job creation, and economic savings on food. Municipal authorities can also benefit from urban agriculture through savings. Land is often limited and scarce in urban areas. Therefore urban agriculture creates *Access to land* by creating space within cities for urban residents to cultivate. Urban agriculture can benefit urban dwellers through accessing land for them to call their own, thereby creating some sense of pride through ownership of the land (Armstrong 2000).

As far as *Community Development and Building Social Capital* is concerned, UA goes beyond the scope of just growing food in an urban set-up. It provides valuable community development potential (Holland 2004), through affording communities with the much needed spaces to converge for meetings and social events (Saldivar-Tanaka & Krasny 2004; Teig *et al.* 2009). This scenario improves networking, cooperation and spirit of oneness amongst communities important in development projects. Urban agriculture is also regarded as a means towards promoting *Cultural and cross-generational integration*. Many projects, including community gardens afford migrants with opportunity to grow food for consumption purposes and may even sell surpluses (Beckie & Bogdan, 2010). Migrants have important skills and culture which they can share with urban farmers. The essence of culture sharing in urban agriculture is supported by Matteson and Langellotto (2009), who argued that the growing of crops in community gardens is a reflection of the cultural heritage of the gardeners. Urban farming also provides opportunity where elders and youths share their experiences. This cross-generation interaction between youths and elders is important as most of community gardeners are elders with something to share (Armstrong, 2000; Schukoske, 2000), with important experience and expertise. Golden (2013), notes that urban agriculture gives an opportunity for elders to transmit their knowledge and work experience to youths.

Food access and availability are important dimensions that constitute food security. Therefore, urban agriculture has been viewed as an intervention to deal with the problem of food insecurity. It has been used as an effective means for improving food security in critical and insecure areas (Corrigan, 2011; Larsen & Gilliland, 2009). Through community gardens and farmers' markets provided through urban agriculture, residents can get fresh fruits and vegetables (Larsen & Gilliland, 2009; Park *et al.*, 2011). Matteson (2007) states that above 700 community gardens exist in New York City, which have increased food access and availability to

urban dwellers. Apart from improving food access and availability, urban agriculture is also important in job creation. Hagey, Rice and Flournoy (2012) argue that urban agriculture that offers packaging and processing, to complement crop cultivation is capable of creating many jobs for urban communities. Metcalf and Widener (2011) assert that through *Job Creation*, many urban agriculture projects engage youths to manage gardens and farms and this provides them with income above skills training. Availability of jobs for youths may ensure that they are detached from social vices and immoral behavior. Urban agriculture has been seen as beneficial as it can provide *Economic Savings on food*, as it can save participants money on food expenditures. According to Park *et al.* (2011) and Suarez-Balcazar (2006), urban agriculture provides food insecure communities with farmers' markets that have more affordable prices and quality produce. Lastly, urban agriculture can provide *savings for municipal agencies*. For example, the management of vacant lots by communities in San Francisco turned into urban farming areas benefited the Department of Public Works about US\$4,100 through preventing vandalism, dumping, and labor-intensive upkeep (SPUR 2012).

2.2 The Growth of Urban Agriculture Resilience

The most distinguishing feature of urban agriculture which differentiates it from rural farming is that it can be easily integrated into urban economy. Urban agriculture involves a number of actors and a large part of the people involved is the urban poor. Dubbeling, Bracalenti and Lagorio (2009) argue that compared with rural agriculture, the integration of urban agriculture into highly populated areas affords the opportunity to combine food production with cultural functions on urban green space. Although the urban poorer have largely been involved in urban agriculture, lower and middle income urban dwellers, government officials, as well as richer people are now actively involved in the practice. Women make up a larger part of urban farmers. To them, agricultural activities can be more easily done at the same time with other household tasks (Jacobi, Amend & Kiango 2000). Different types of products are produced under urban agriculture. These include fruits and vegetables, which are produced in gardens and other urban green spaces to improve food security for urban dwellers with high levels of poverty (Brown & Jameton 2000). One important aspect of urban agriculture is that it is mainly for self-consumption, since the scale of production and the level of technology involved are low.

A significant number of the low income urban households in Zimbabwe face serious difficulties in accessing adequate basic food items, as they are sold prices beyond their reach.

Hence the poor urban households have resorted to urban agriculture as a coping strategy to meet household food entitlements. This has seen the growth of urban agriculture resilience as urban dwellers try to improve their food security situation.

The concept of urban agriculture practice has in recent years grown bigger in magnitude and scope. The practice which is now being undertaken on a large scale has also diversified to include a number of new actors in the sector. A number of factors have contributed to its growth. Toriro (1995) observes that with the advent of independence in African countries, there was a rapid increase in population migration from rural to towns with people looking for employment. However, some were not fortunate to get jobs in urban life. In the end most urban dwellers turned to urban agricultural practice as a way of improving household food security situation. Das and Das (2017) assert that the lack of employment industry has contributed to the exploitation of natural resources by many people as they tried to improve their livelihoods. This move has resulted in the growth of the traditional form of urban agriculture, which took a different approach as urban dwellers diversified into other avenues, encompassing growing of different crop varieties and breeding of animals. In the long run, the practice grew as the number of urban farmers increased.

2.3 The rise of Urban Agriculture in Zimbabwe

In the yesteryears, urban agriculture used to be regarded as an illegal activity and practice in cities and towns in Zimbabwe. Analysis on the current thinking and review of the body of knowledge on urban agriculture, document the challenges associated with the practice of urban agriculture in many cities, in both developing and developed countries (Hamilton *et al.* 2013; Orsini *et al.* 2013). The practice was understood to be causing the drying up of water sources in urban areas and for exacerbating environmental degradation. Urban farmers were usually seen to be opposing urban land use regulations made under environmental protection statutes (Drakakis-Smith, Bowyer-Bower & Tevera 1995). In as a measure to protect the environment, municipal governments in Zimbabwe have statutes that allow them to consistently destroy crops grown in undesignated areas. Therefore, there is a need to pursue development, whilst protecting the environment as well. Rauf (2015) assumes that environmental degradation is a result of human activities through development processes. Therefore, the responsibility of caring and protecting the same environment should be the burden of everyone in the urban agriculture practice. Lovell

(2010) adds that because of the high value of land and other competing land use requirements, agriculture was not seen as a wise practice in urban set-ups.

Although it used to be viewed as an illegal practice, urban agriculture rose to prominence in Zimbabwe largely due to a number of reasons, including the harsh economic environment that impinged on food security. Food insecurity and poverty are permanent features in Zimbabwe due to persistent threats of drought (Moyo 2011; Zimbabwe Government & United Nations Development Program 2011), hence the rise of urban agriculture. However, urban agriculture affects all income and social classes of urban dwellers, as both the rich and poor have been carrying out the practice, largely due to Zimbabwe's declining economy and the resultant hardships. This practice is regarded as a survival strategy by households in urban areas in order to escape food shortages (Murphy 2004). Urban agriculture can be undertaken in front of houses or on backyards, as well as on open spaces around the built environment of an urban area (ENDA-Zimbabwe 1996). Backyard or on-plot practice is usually restricted to the growing of vegetables, whilst open space farming is mainly reserved for growing cereal crops, for example, maize.

One of the benefits of urban agriculture is in its ability to afford opportunities for resolving, or dealing with many development challenges. Urban agriculture can resolve numerous social problems such as urban poverty and food insecurity (Smit *et al.* 1996). It has received more urban recognition due to an increase in food insecurity in urban areas. Studies have also revealed urban agriculture as an essential and permanent feature of the urban social, economic and ecological systems (Van Veenhuizen & Danso 2007). Furthermore, urban agriculture is a crucial livelihood strategy of many people, especially the poor residing in urban areas. Another factor to drive the rise of urban agriculture is the increasing demand for perishable goods, together with the comparative advantages of producing in the proximity of markets and the access to soil fertility improving matter such as organic waste and waste, and access to unoccupied public land.

3. Research Methodology

This section deals with methodological issues, where the researchers discuss the procedure adopted in conducting the study. The study was qualitative so as to comprehensively grapple with the phenomena by capturing the salient dynamics. The research captured the views

of the research participants in order to deeply understand and explain phenomenon under study. The research was systematic and interactive in order to capture the views of urban farmers and describe life experiences of Mkoba residents in order to give them a meaning.

3.1 Study Area

The study was conducted in the city of Gweru in Zimbabwe, with a particular focus on Mkoba suburbs. The City of Gweru is located in the Midlands province in central Zimbabwe, and is the third largest city in the country. Its population estimate stands at 157 865 people, according to the Zimbabwe National Statistical Agency (Zimstat 2012). Mkoba is the largest high density residential area in the city with an estimated population of 80 427 (Zimstat 2012).

3.2 Procedure

This study was qualitative due to the fact that its aim was to learn from lived experiences of Mkoba residents. Qualitative approach also guaranteed validity and trustworthiness. The research was purposive and it dwelt on a small number of 26 subjects because of its in-depth analysis. King (2014) argues that qualitative research entails dealing with and analyzing a small number of research subjects in order to establish relationships of meaning. The researchers used literature, with unstructured interviews and focus-group discussions (FGDs). The interviews were administered to 20 urban farmers, whilst a total of 10 officials from Gweru City Council (GCC) and six officials from the department of Agricultural Extension Services (AGRITEX) undertook FGDs.

3.3 Ethical Considerations

The researchers observed ethical considerations so as to ensure the viability of the research. Ethical considerations promoted the accomplishment of the aims of the research, and promoted cooperation from the subjects. The ethical considerations observed by the researchers included respondents' right to confidentiality, informed consent, protection from harm and coercion, or deception of research participants. The researchers maintained accountability to the public, professionalism, responsible reporting and avoided plagiarism and fabrication of the research findings.

3.4 Trustworthiness

The research was largely qualitative which guaranteed high levels of trustworthiness. According to Kumar (2017), trustworthiness guarantees quality standard of the research process. The research participants were the actual urban farmers and City Council officials, whose lived

experiences contributed to the credibility and dependability of the study. Added to that, the researchers cross checked the findings with the research participants. This improved the confirmability of the findings, as well as increasing the study credibility.

4. Results and Discussion

This part of the article offers a narrative of the results of the study. The results are presented basing on the narrations given by the study participants. The presented results are further discussed and related to the findings from previous studies by other scholars.

4.1 The Growth of Urban Agriculture Practice in Gweru Urban

Quite a number of factors have contributed to the rise of urban agriculture amongst the urban dwellers in Gweru. From the narrations given by respondents, the practice of urban agriculture has been influenced by rapid population growth, increase in levels of poverty, unaffordable food prices, and unemployment. According to the respondents, many people have migrated from rural areas to the city of Gweru, resulting in the urban population soaring. Population figures from ZIMSTAT show that in 2002, the population of the city of Gweru stood at 140 806 (Zimstat 2002), and increased to (157 865) in 2012 (Zimstat 2012). Further narrations by respondents showed that increase in urban poverty also influenced the rise of urban farming in Gweru urban. According to some respondents, lack of basic needs amongst the urban poor forced some urban dwellers to resort to urban farming. As a result, many residents in Mkoba undertook urban agriculture to improve their food security. The increase in unemployment was mainly due to the scaling down of operations by the industrial sector in Gweru, which saw major companies that included Bata Shoe Company, ZIMCAST and ZIMGLASS either closing down operations or downsizing their workforce. As a result, many of those who lost their jobs shifted to urban agriculture for continued survival. According to the respondents, the major form of urban agriculture practiced in Mkoba is mainly off-plot cultivation in open spaces and public land. The major crops being grown include maize, sweet potatoes, groundnuts, vegetables and tomatoes. These findings support a study by the Hodgson (2012), which found that urban agriculture continued to grow in the United States of America, where many cities have considered including urban agriculture as part of their survival plans.

4.2 How urban agriculture can contribute to city dwellers' well-being

A significant contribution can be made by urban agriculture to the economic and well-being of urban residents. This study found that urban agriculture promotes food security of households living in urban areas. Through creation of production processes and marketing of produce, the study further found that urban agriculture provides employment and also promotes Savings for the urban population. This concurs with a study by van Veenhuizen (2006), who found that urban agriculture supports rural food production, and that it also contributes to the supply of food in the cities.

According to some farmers in Mkoba, urban agriculture contributed significantly in meeting their food requirements especially those who had no other means of survival. This is because people can obtain other food stuffs such as mealie- meal rather than relying on buying food stuffs. As narrated by some farmers, urban agriculture can save households income by eliminating the need to transport food from rural areas to urban areas. Some urban farmers narrated that urban agriculture also acts as a source of revenue as they can sell their surplus maize grain to the Grain Marketing Board thereby obtaining some revenue. Urban agriculture supports development goals such as the Sustainable Development Goals (SDGs) and the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET). The findings are in line with Game and Primus (2015), who stated that urban agriculture provides a mechanism for improving urban food security and providing entrepreneurship opportunities for low-income individuals.

4.3. Legislative framework governing urban agriculture in Zimbabwe

Despite the fact that urban agriculture has become a common practice in Zimbabwe, its legal framework has remained a controversial issue. Therefore, it is about time the pieces of legislation that govern urban agriculture in the country have been revisited.

Indeed there are many statutes impacting on urban agriculture in Zimbabwe, affecting the practice at the national and municipal levels. Through the study of literature on legislation, this study found that pieces of legislation governing urban agriculture include the Urban Councils Act Chapter 29:15; Regional Town Planning Act Chapter 29:12; Environmental Management Act Chapter 20:27; Public Health Act Chapter 15:09; Forestry Act Chapter 19:05; and, the Dairy Act Chapter 18:08. The *Urban Councils Act, Chapter 29:15*, which deals with urban settlements, is one important piece of legislation related to urban farming. This is the piece of legislation

through which settlements are designated or classified as an urban area (Government of Zimbabwe 2002). The piece of legislation is mainly about the running of urban administrations. However, it is not specific about the manner in which agricultural activities should be carried out in urban areas. As such, this is the main reason against which farming was viewed as an activity not in sync with urban life. The question of urban agriculture is therefore, mainly dealt with through regulations and by laws crafted under the Act. There is also the *Regional Town and Country Planning Act, Chapter 29:12*, authorizing the local planning authority, following available procedures to determine the nature of activity to be carried out on any piece of land under its jurisdiction (Government of Zimbabwe 1998). This can be done either through issuing of development permits or through master plans.

The *Environmental Management, Act Chapter 20:27* sets environmental principles, standards and practices that impact on urban agriculture. Literature further revealed that this Act emphasizes the sustainable management of the environment and deals with standards of environmental quality (Government of Zimbabwe 2002b). As such, the Act regulates to ensure that there is sustainable development. The *Public Health Act, Chapter 15:09*, deals with health related issues, including the regulation of slaughter houses. Section 76 of the Act, is concerned with the licensing of slaughter houses by local authorities within their areas of jurisdiction (Government of Zimbabwe 2002). The *Forest Act Chapter, 19:05* was promulgated amongst other things, to control, administer and manage state forests, to provide for the setting aside of state forests, trees and forest produce, to provide for the conservation of timber and to control the burning of vegetation (Government of Zimbabwe 2002; Mudekwe 2007). As far as urban agriculture is concerned, this Act is important as it relates to the protection of private forests and management of private land in urban areas. This means that the Act can regulate urban farmers' conduct to avoid unnecessary cutting down of trees. The *Dairy Act Chapter, 18:08* is crucial for urban agriculture in the sense that there are many dairy factories which are situated within the vicinity of urban settings. The Act regulates activities of dairy farms that are found within peri-urban areas. Thus, local municipalities have a crucial role to play as far as the administration of the Act is concerned. As far as Section 4(d) of the Act is concerned, dairy premises which are found within the jurisdiction of a local authority are mandated to follow the building by laws (Government of Zimbabwe 2002).

As far as the legal framework governing urban farming in Zimbabwe is concerned, the study concluded that there is need for the enactment of more specific enabling legislation towards the regulation of urban agriculture. These results compare with findings of Potutan *et al.* (2000) in Philippines, who noted that the passing of legislation to secure land to support urban agriculture was a positive move to urban farmers. Conducive legislation can help boost production by urban farmers.

4.4 Challenges faced by urban farmers in pursuit of urban agriculture

In a bid to fulfill this objective, the study sought to find out from urban farmers through interviews the challenges they face in pursuit of urban agriculture. From their narrations, some farmers indicated that amongst the challenges they faced were the absence of supportive legislation. According to the farmers, the current legislation appears to prohibit the practice of urban agriculture, instead of supporting it. As such the farmers' crop has at times been slashed down by municipal authorities. Respondents further stated that lack of central government and local government support, lack of associations to represent the interests of urban farmers are other major challenges faced by urban farmers. Farmers also stated that they have no source of funding for urban agriculture projects, since the local authority regarded the practice as illegal. A study carried in Toronto by Nasr, MacRae and Kuhns (2010) agrees with these findings. According to Nasr, MacRae and Kuhns (2010), costs of farming land in urban areas poses a big challenge to urban farmers. According to some respondents, theft of produce by non-farmers and stray animals eating crops, are other challenges to urban agriculture.

5. Conclusions

Having analyzed the research findings, the study arrived at the following conclusions. Urban farmers play a pivotal role towards improving food security of urban dwellers. Therefore, urban agriculture is an indispensable practice that can sustain food security of urban households. The practice is influenced by many factors in urban areas, including rapid population growth, increase in levels of poverty, unaffordable food prices, and unemployment. As such, the study concluded that urban agriculture can contribute immensely to the livelihood status of city dwellers through promoting food security, providing employment and also encouraging savings to the urban population. The study also concluded that wherever there is supportive legislation, urban farmers have a propensity to produce more. The current pieces of legislation in Zimbabwe,

which include the Urban Councils Act Chapter 29:15; Regional Town Planning Act Chapter 29:12; Environmental Management Act Chapter 20:27; Public Health Act Chapter 15:09; Forestry Act Chapter 19:05; and, the Dairy Act Chapter 18:08, do not support the practice of urban agriculture. Instead most of the legislation impedes its practice. Another important conclusion of the study was that, even with the presence of supportive legislation, urban farmers can still face numerous challenges in their endeavor to pursue the practice. Challenges such as lack of central and local government support, and lack of funding can derail an urban farmer's efforts. With a combination of proper funding and support from relevant authorities, urban agriculture can be a panacea to sustainable food security and development in urban communities.

Drawing on the results of this project, this study proffers some recommendations. The government of Zimbabwe should enact legislation that supports and promotes the practice of urban agriculture. The study further recommends that funding partners should consider the provision of small grants to urban farmers as a way to boost crop production. Furthermore, urban farmers should form associations, which can be an important platform for diffusion of ideas and advocacy. Such associations would keep the farmers abreast with the developments in the industry, as well as improve on advocacy and welfare. The study further recommends that future research should focus on ways of improving the livelihoods of urban farmers.

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Competing interests

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