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Impact of Urban Agriculture on Poverty in Soweto, South Africa

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Abstract: This study explores the impact of urban agriculture on poverty, precisely on the contribution of the practice towards the generation of cash incomes, jobs and food security in the informal settlements of Soweto of South Africa. The study was quantitative in design. Simple random sampling techniques were used to draw the sample with a questionnaire being used for data collection. The major contribution of this study is typology of urban farming practice in Soweto characterised by the dominance of women often with low skill levels involving elderly people often unemployed with a low education background; big family size usually above 5 members; generating below poverty line incomes; dominated by crop over livestock farming; primarily using the backyard and communal land that is in public spaces such as schools, clinics, churches and or municipal office backyards and associated with poor land ownership patterns. Consequently, the study recommends that for profound impact on development, women in agriculture should be targeted to improve their livelihoods and ultimately their communities. There is need to use appropriate technologies to improve productivity. High value crops could be introduced. Land tenure can be revisited within the context of government leased or rented land for urban agriculture. There is need to also propagate water harvesting techniques such as trench gardening, water tanks and mulching to save water. As the projects grow, the initiation of agro-industries will improve backwards and forward linkages in the local area such that jobs will be created with the possibility of earning decent incomes.

Key words: Urban agriculture, poverty, food security, harvesting, livelihood

INTRODUCTION

In 2000, world leaders converged and adopted the Millennium development goals which were set to be achieved by 2015. The first international goal set being to reduce by half the proportion of people living in extreme poverty and hunger (UNDP, 2010). Since, the inception of these development goals, poverty alleviation and or eradication have been subject of attention for government, policy administrators, politicians and development scientists. At the same time, urbanisation is among the major pressing issues facing humankind today and development agents, government bodies, international, national and local governments, seem not well equipped to deal with the problem while none of them cannot afford to ignore the dilemma (Jacobi *et al*., 2000). The United Nations Population Fund (UNFPA, 2011) reports further highlights that the pace of growth poses enormous challenges for many of the poorest countries with sub-sahara singled out as the only remaining region of the world where the battle to escape from poverty and hunger appears insurmountable. This will be exacerbated not only by lack of resources to keep up with the demand for infrastructure, basic health and education services and job opportunities for the rising number of young people but also to adapt to climate change.

While the world population reached a milestone of 7 billion people on earth by 2011, the countries of Africa, Asia and Latin America will be home to some 75% of all urban dwellers as well as to eight of the anticipated nine mega-cities which will have populations of >20 million by 2020. For example in South Africa, the Gauteng city region is expected to grow to 14 million inhabitants by 2015, placing the region among the 15 biggest urban areas in the world (South African Cities Network, 2005).

While Johannesburg achieved the highest score on the Human Development Index (HDI) when compared to six other South African cities (City of Johannesburg, 2010), the HDI masks real inequalities. Johannesburg is a city of 3.2 million people (Statistics South Africa, 2007) with half its households earning below the national minimum of R1600.00 per month and with almost 20% of its inhabitants not accommodated in formal housing

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(City of Johannesburg, 2010). Jerome (2011) report further indicates that increasingly, poverty is manifesting itself in cities and millions of job seekers, men and women are resorting to the urban informal economy where they earn just enough to survive, without any form of social security for neither themselves nor their families.

Worldwide, urban agriculture is one among the strategies the urban poor can employ to cushion themselves from the hardships of poor economic conditions in cities but this raises issues of viability, relationship to pollution, its contribution to urban economic development and as well as its need for political support (Van Veenhuizen, 2006). There is thus an urgent necessity to comprehend the concept of urban agriculture in South Africa, Africa and worldwide. The link between poverty, incomes and household food security appear related but not so very obvious (Onyango, 2010; HSRC, 2009). South Africa is food secure as a nation but in contrast there is large number of its household that are food insecure (HSRC, 2009). There is distributional and accessibility problems that need to be understood. The World Bank (2000) defines poverty as a pronounced deprivation in well-being furthermore well-being measured by an individual's possession of income, health, nutrition, education, assets, housing and certain rights in a society such as freedom of speech.

Poverty in Johannesburg is probably the most pressing problem facing city planners this millennium and it is clear that much of the poverty experienced in Gauteng today is driven by migration. These urban migrants find themselves living in informal settlements because they are illiterate and struggle to find formal employment in the city (City of Johannesburg, 2010).

Studies in South Africa indicate that poverty has shifted from traditional rural areas to the urban areas in cities over recent years and large numbers of food insecure people are now concentrated in informal settlements. Johannesburg is not an exception. Land faces huge demands and carries higher prices as an area becomes more urbanised with infrastructure multiplying and density increasing. Given the fact that there is not enough land to cater for housing and infrastructure in Gauteng, urban agriculture competes with other land use activities for scarce urban resources which are required by other sectors such as water, land, energy and labour. Thus, it is important to establish whether urban agriculture can contribute meaningfully to urban welfare.

The aim of this research study is to explore the impact of urban agriculture on poverty, more specifically in terms of job creation, cash incomes and food security. Thus, the overarching objective of the study was to determine the contribution of urban agriculture to the general welfare of participating households to develop a typology of the urban agricultural farmer. The study area was the city of Johannesburg Metropolitan Municipality, Region G which includes informal settlements of Soweto, Thulani/Doornkop, Slovovile, Freedom Park and Chris Hani square in Gauteng province, South Africa. In the context of this study, urban agriculture will be defined as the practice of agricultural activities within the urban and peri-urban periphery to the exclusion of formal or commercial agriculture in the urban environments. This definition restricts the focus of the study to small-scale farming in urban environments as practiced by historically disadvantaged groups.

MATERIALS AND METHODS

This study used the survey technique to collect data. The survey employed in this study involved administering a structured questionnaire including direct observation. Secondary data was also used.

Population and sample: Neuman (2006) defines the population as an aggregate or totality of all units, subjects or members that conform to a set of specifications. The population in this study consist of individuals or households member practicing urban agriculture either in the backyard, open spaces and or community projects in the four informal settlements of Chris Hani, Freedom Square, Slovo Park and Doornkop/Thulani. The central common characteristics amongst the population were the engagement in the practice of urban agriculture. A simple random sampling was taken of 120 respondents out of a potential population of 38,000 households.

RESULTS AND DISCUSSION

Practitioners of urban agriculture by age: Respondents were asked to indicate their age. The age group of between 46 and 55 years is actively engaged in urban agriculture. The second largest group is between 56-65 years followed by 60 years and above. This is also confirmed by Onyango (2010) and Maswikaneng (2002) that older people tend to participate actively in urban agriculture due to family responsibilities and the need for food security at household level.

Gender distribution of respondents: In this study, women were the dominant gender in the practice of urban agriculture in the study area representing 56% of urban farmers and 44% of men. This correlates with the findings of Jacobi *et al.* (2000) and Urban Farming Magazine that women tend to dominate certain urban cultivation

(backyard garden, small scale animal husbandry) and men dominating commercial urban food production. HSRC (2009) argues that women together with children were historically disadvantaged and that any policies intending to reduce gender inequality should also look at urban agriculture as starting point to improve vulnerable group's social standings.

Respondents by level of education: Most household studied were found to have education levels below grade 12. In the study area of the informal settlements of Soweto, almost all respondents did not go post-matriculation. This observation supports arguments by Jacobi *et al.* (2000) and Rogerson (1993) that lack of or inadequate access to employment opportunities due to low skills levels leads to this. While in this study area it is observed that 100% of the farmers studied up to Grade 12, this contradicts observations made in Zimbabwe, Malawi and Dar es Salaam which show that educational levels are well distributed among the practitioners (Nugent, 2000). These low education levels have bearing on those development agents who advocate urban agriculture in the sense that education levels affect the rate of technological transfer and capacity building.

Respondents by family size: About a third of the households studied, 30% were found to be 5 or 6 in size, 28% to be >6 in family size, 17% to be 4 members in size, 15% consisting of 3 in size, 7% at size 2 and only 3% were living alone. The larger the household the more income per capita is required to sustain the household. It can be expected that larger households are compelled to supplement their food intake with urban farming as social grants are not adequate to support the families. This corresponds with the findings in this study where 43% of the urban farmers responding that the reason why they are engaged in urban farming is to provide food in the household.

Urban agriculture and incomes: One of the objectives of this study was to determine cash generated by urban farmers in the study area and asses its contribution to poverty reduction. About 85% of the respondents admitted to earning <R800.00 per month (Current exchange rate is at about R8 which is equal to US$1.00) and 10% earns between R900.00 and R1500.00 and 5% earning between R1600.00 and R2000.00. A majority of the respondents are generating below poverty line incomes per monthly basis and this supports the views of Nugent (2009) and Rogerson (1993) who argue that urban agriculture operates in the informal sector and is mainly undertaken by unemployed persons, generating below poverty line incomes and as such providing only minimum means to keep the unemployed and their families surviving. Respondents were asked to indicate whether they are formally employed elsewhere. About 95% of the respondents were not formally employed and only 5% were. A number of studies concur in that urban agriculture tends to be associated with lack of formal sector employment and aimed primarily at the production of food for home consumption which enables household to save on food expenditure.

Respondents were requested to indicate whether they have extra income to supplement their household incomes or depend only on urban agriculture. Data from the study show that 71% of the respondents do have extra source of incomes and 29% depends entirely on urban cultivation for survival. Of those who have extra income, 35% receive social grants. Thornton and Nel (2007) suggest that urban agriculture in South Africa is not as widespread as it's believed due to the fact that social grants and urban welfare contribute to household food production.

Average consumption and selling after harvesting of summer crops: The important summer crops that are widely cultivated include maize, pumpkins, China spinach, beetroot and covo based on the quantity produced. In this study, a majority of farmers cultivate staple food crops which assists to substitute expenditure on food and contributes to poverty eradication. Critics of the notion that urban agriculture contributes to poverty eradication often argue that only high value crops, not staple food crops, stand a chance to provide meaningful incomes, create employment and substantially contribute towards poverty eradication.

The study found out that in the study area urban agriculture is mostly geared towards household food security surplus harvest are sold locally to generate incomes. The emphasis on Summer crop production is due to the fact that farmers in open spaces and often do not have access to irrigation water. They depend more entirely on rain water. The winter crops harvested include spinach, lettuce, green pepper, beetroot, covo, onions and cabbages.

Crop versus livestock farming: In this study area, 65% of the urban farmers are crops producing farmers as compared to 12% livestock and 14% poultry farmers. This pattern might be explaining the city's bias towards urban agriculture and also explain why livestock farming is less practiced. In South Africa, as in other cities, municipal by laws are still negatively biased against livestock production in particular and urban agriculture in general.

About 81% of the urban farmers have never been assisted with extension service and only 18% of the respondents admitted to have received such assistance. Some studies highlights the constraints that limit the development of sustainable urban agriculture as lack of support services which includes extension services, access to credits, infrastructure development and lack of recognition by city authorities. In this study area few respondents agreed to be supported by government or city extension service.

The nature of land in which urban agriculture is practiced: Respondents were asked to indicate the nature of land where their farming activities are practiced. Respondents indicated that 38% of urban farmers do so in the backyards with 47% in the communal land or the open space and 9% of the activities taking place as part of communal projects. Communal projects in these study areas occur in public spaces such as schools, clinics, churches and or municipal office backyards. Some observers have hinted that one of the key stumbling blocks to advancement of urban agriculture is insecure tenure of the practice. This is correlated with the nature of land ownership which shows that 65% of respondents said they do not own the land where they practice urban agriculture. The ownership largely means backyards which are usually small in size.

Urban agriculture and food security: About 51% of respondents admitted to often worrying that food is not enough in their household, 40% admitting they sometimes worry about food availability in the house and 7% admitting to rarely doing so. Only 2% admitted never to worry thus this finding contradicts the above stance that the practice enhances food security in the urban environments. Furthermore, 50% admitting to often not eating preferred food due to lack of resources, 37% sometimes unable, 10% rarely so and 3% admitted not eating preferred food due to lack of resources.

Reasons why respondents engage in agriculture: About 43% of respondents are engaging in urban agriculture to provide food in the house, 27% did so for self-employment, 23% as a hobby, 5% take it as a business and 2% wanted to meet likeminded individuals. Providing food for the household corresponds with the findings of Onyango (2010) and Nugent (2000) that condition under which the majority of people farm in urban environments do so in response to a crisis associated with inadequate, unreliable and irregular access to food supplies, a lack of or inadequate access to employment opportunities. There is general consensus of the reasons creating impetus for urban farming as proving food for the household, self-employment and business ownership. Of the respondents who were taking it as a business, none were involved in value-adding and agro-processing activities.

Proportionately, more female than male respondents of the sampled population are involved in the practice of urban agriculture. This implies that interventions must target women if the benefits are going to be spread community-wide.

A majority of the of urban farmers fall within the older age groups. For example, 87% of the respondents are aged between 46 years and >60 years in the study area. This implies that age does matter in terms of who engages in urban agriculture. This seems to also insinuate that the practice is survivalist. Furthermore, about 70% of the urban cultivators do not have ownership of land. Those farmers having ownership of land are practicing at the household level. Large proportions of urban farmers are doing so to supplement food at home with no records of employment and value adding enterprises. All crop farmers cultivate staple food crops which are geared towards household food consumption. The crops widely cultivated are maize, spinach, beetroot, China spinach and pumpkin. The types of livestock found in the study area include goats, sheep, indigenous chickens and pigs. Many often worry about food availability in the household and also eating foods that they do not prefer because of lack of resources. This group forms what we term a food precariat as defined as those who are food vulnerable or food endangered.

The question whether urban agriculture has the potential to ensure that practitioners have better diets and access to nutritious food, subsequently contributing to poverty eradication remains uncertain. Evidence that urban agriculture provides employment and living wages to allow a household to survive above the poverty lines is weak in the study area. The low level of animal husbandry in the area limits the scope of urban farming, preventing access to protein sources that can be obtained cheaply.

Towards a typology of an urban farmer in Soweto, Gauteng of South Africa

The typical urban agriculture practice can be characterised as follows:

- Dominant gender is women
- Often with low skill levels
- Involves elder people
- Often unemployed
- With a low education
- Huge family size usually >5 members

- Generating below poverty line incomes
- Dominance of crops over livestock
- Primarily using the backyard and communal land in public spaces such as schools, clinics, churches and or municipal office backyards
- Poor land ownership
- Consisting of food precariats-food precariats are people researchers define as people who often worrying that food is not enough in the household. The word comes from precarious
- With the impetus for urban farming coming from proving food for the household, self-employment and business ownership

CONCLUSION

This study has given a typology of urban farmers' informal settlements of Soweto. This, to some extent, resonates with what chambers pointed out within the context of his five dimensions of poverty, namely: poverty proper consisting of inadequate income or assets, physical weakness due to under-nutrition, disability or sickness; isolation, physical or social due to location, access to goods and services; vulnerability to become poor and risk to crisis and powerlessness in the existing economic, cultural, political and social landscape. The study emphasises that there is scope for urban agriculture both for survival and business.

RECOMMENDATIONS

The impact of urban agriculture on poverty and food security to participating households in the study area appear to be weak in the sense that there is little evidence that practitioners of urban agriculture are generating above poverty line incomes and creating jobs. The only important findings are that the practitioners are able to save expenditure on food and food security is a possibility. The mere fact that people are still engaged in the practice of urban agriculture, its importance and relevancy cannot be refuted.

To inform practice, some recommendations are posited for use by policy administrators, city managers and development scientists. In order to make meaningful impact on development, women in agriculture should be a starting point for support to improve their livelihoods with the use of appropriate technologies to improve productivity. High value crops such as cotton could be introduced. Marketing cooperatives formed. There is the need to revisit issues of land tenure within the context of government leased or rented land for urban agriculture. There is need to also propagate water harvesting techniques such as rain water harvesting principles such as trench gardening, water tanks and mulching to save water. Utilisation of grey water and black water is reportedly producing good results worldwide. The initiation of agro-industries will improve backwards and forward linkages in the local area such that jobs will be created and increased incomes become possible. This will have a profound effect on multiplier effect and broader local economic development in the area.

Lastly, few farmers accepted to have received extension service from the city and government. It is recommended that urban agriculturist be provided with advisory services and appropriate technology to ensure that the practice emerges as a substantial vehicle to fight poverty, improve food security and create job for the citizenry.

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