

Impact of Urban Agriculture Practices on Livelihood in Minna, Niger State, Nigeria

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Abstract

The recent shift in attention from rural to urban agriculture is closely linked to the global transformation of humanity to a predominantly urban specie. Urban dwelling is doubtlessly associated with high cost of living, unemployment and poverty. This study aims at investigating the livelihood impacts of urban agricultural practices in Minna, Nigeria, with a view to establishing the contributions of urban farming towards job creation and poverty reduction, and the objectives were to determine the socio-demographic characteristics of the farmers, to identify the major agricultural practices and livelihood asset base of farmers in Minna. Stratified sampling technique was used to administer questionnaires to 384 urban farmers in Minna and the data obtained was descriptively analysed. The study reveals that urban farming reduces unemployment, contributes to livelihood securitisation, reduces food insecurity and ultimately leads to the attainment of urban and environmental sustainability. However, it indicates that lack of access to credit facilities of the farmers and inadequate markets are some of the major factors militating against the broadening of their livelihood strategy. The study recommends financial empowerment and human capacity building programmes for the urban farmers in Minna.

Keywords: Food security, Livelihood, Sustainable development, Urban farming, Urban sustainability

Introduction

The 21st century is a century of urbanisation. Presently, more than 50% of the total population of humanity lives in areas that has been classified as urban (UN-Habitat, 2008). This has shifted emphasis and attention from the rural space to the urban space. It is however, important to note that the current unprecedented pace of urbanisation is accompanied by several negative problems (Baud, 2000; Orsini, Kahane, Nono-Womdim and Gianquinto, 2013). One major impact is that human population growth is associated with a rise in food demand. The current spate of urbanisation requires cities to be self-sufficient in the production of its needs, including food. Urban agriculture can help towards reducing food security crisis in urban areas.

Urban agriculture may be defined as the production of crops and domesticated animals in and around cities for the direct consumption of the urban residents. In the opinion of Tornaghi (2014), it is the practice of animal husbandry, crop production and food distribution within the geographic boundaries of cities. The popularity of the concept and practice of urban agriculture has increases in the last few decades (Despommier, 2013; Orsini *et al.*, 2013; Tornaghi, 2014; Game and Primus, 2015). Urban agriculture is a self-sustaining approach of the city residents to produce the food it consumes in the city and or its suburbs. It helps towards improving the nutritional intake and food security status of urban residents (van Veenhuizen, 2006). Furthermore, Food and Agricultural Organisation ([FAO] 2010) opined that urban and peri-urban agriculture improves the possibility of attaining the target of greener cities.

Statement of Research Problem

From the foregoing, it can be seen that urban agricultural practices have been studied to a considerable extent at global and national levels. However, it is evident that city-level studies of urban agriculture in Niger State is relatively scarce. The only exception to this are Sanusi's (2014) study of the livelihood opportunities in peri- urban horticulture in Minna and Salami, Akawu and Abutu's (2020) study of the role of indigenous practices on sustainable urban agriculture and food security in Minna. In all, none of these studies assessed the livelihood effects of urban agricultural practices. This is so, despite the importance of urban agriculture in urban areas which had necessitated the allocation of agricultural land use as one of the major urban land uses. This presents a vital research gap that needs to be covered. This study, therefore, is an attempt to cover this identified research gap.

Aim and Objectives

This study aims at investigating the livelihood impacts of urban agricultural practices in Minna, Nigeria, with a view to establishing the contributions of urban farming towards job creation and poverty reduction. In order to achieve the aim, the following objectives will be adopted:

- i. To determine the socio-demographic characteristics of the respondents
- ii. To identify the major agricultural practices by farmers in the study area
- iii. To determine the major livelihood asset base of urban farmers in Minna

The Study Area

Minna, the study area is the capital city of Niger State, Nigeria. It is located between latitude 9°24'N – 9°48'N and longitude 6°25'E – 6°45'E. It was originally inhabited by the Gbagyis, an ethnic group known for their farming practice. However, owing to the present administrative function of the city, it has assumed the status of a multi-ethnic city – inhabited by diverse ethnic groups from across Nigeria. The location of Minna in Nigeria is shown in Figure 1.

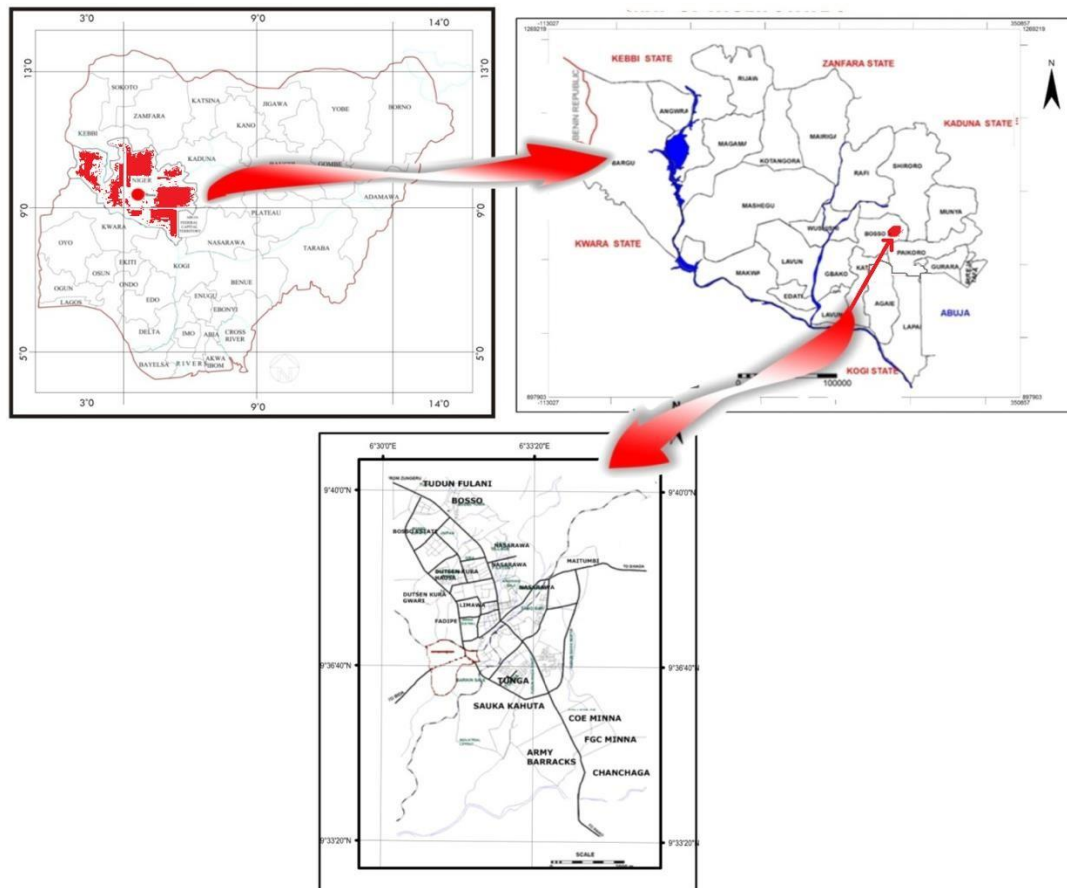


Figure 1: Location of Minna in Nigeria

Source: Authors' digitisation (2022)

Literature Review

It has been argued that urban agriculture is a global practice (de Bon, Parrot and Moustier, 2010; Tornaghi, 2014). However, the practice of urban farming is more pronounced in the cities of developing countries (FAO, 2010; Orsini *et al.*, 2013). It is important to stress that urban agriculture occurs at different levels and scales, involving backyard gardening, rooftop gardening, beehives, pens, poultry farms and the likes (Mougeot, 2005; Viljoen, 2005; Redwood, 2008; Nordahl, 2009). It has been argued by FAO (2002) that food security is attained when “all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”. This is hardly attainable with total dependence on the rural areas for food production and supply. There is a burgeoning need to participate, strengthen and enhance urban food production to achieve the goal of urban sustainability. In fact, Pearson, Pearson and Pearson (2010) noted that urban agriculture is a viable approach towards achieving all dimensions of sustainable development in cities.

In Africa in general and sub-Saharan Africa in particular, urban agriculture employs between 35-80% of the total urban (Cour, 2001; Parrot, Kahane, Nounamo and Nantchouang, 2016; de Bon, 2010), and there is no evidence to suggest a possible decrease in this figure (World Bank, 2007). This means that, like rural and mainstream agriculture, urban farming contributes significantly to job creation and livelihood development in African cities.

Methodology

This study adopts the longitudinal survey design approach to the collection of data required on impact. The present population of Minna is 439,612 (Population Stat, 2019). Out of this population, stratified sampling technique was used to select 384 participants (urban farmers) for this study using the sample size determination approach of Taherdoost (2017), primary data was used for this study. The primary data were obtained from the urban farmers in Minna with the aid of a well-structured questionnaire. The questionnaires were administered to the respondents by the researcher and his field assistants. The questionnaire was kept as brief as possible to guarantee optimal response and retrieval rate as too lengthy questionnaire may yield

little or poor responses. The descriptive approach was adopted to describe the impact and livelihood effects of urban farming in Minna. Thus, data presentation follows the use of tables and charts.

Results and Discussion

Socio-demographic Characteristics of the respondents

The socio-demographic attributes of the urban farmers in Minna are summarised in Table 1. 55.73% of the urban farmers in the study area that participated in this study are males, while 44.27% are females. This indicates a close range in participation in urban farming between men and women in Minna, Nigeria. Therefore, urban agriculture is adopted by every willing and able resident without gender discrimination. With regards to the age of the farmers, only those that are 18years and above were included in the survey. However, it was found that majority (44.01%) of the urban farmers in Minna are between 38-47years old. This explains the high proportion of married farmers (54.69%) in the study area. Being married implies that the farmers take additional responsibilities to their own. Therefore, participation in urban farming may be capable of providing the necessary inputs required for the upkeep of the farming households.

Table 1: Socio-demographic characteristics of the respondents

	Frequency	Percentage
GENDER		
Male	214	55.73
Female	170	44.27
Total	384	100.00
AGE		
18-27years	86	22.40
28-37years	74	19.27
38-47years	169	44.01
48-57years	38	9.90
> 57years	17	4.43

Total	384	100.00
MARITAL STATUS		
Single	41	10.68
Married	210	54.69
Divorced	89	23.18
Separated	28	7.29
Widowed	16	4.17
Total	384	100.00

Source: Author's Field Survey, 2022

The livelihood skills of the urban farmers in the study area are indicated in Table 2. It can be seen that majority (67.97%) of the farmers are skilled in crop processing. This indicates that they have the experience required to process their farm produce without incurring additional processing cost. What this means is that the farmers in the study area tries as much as possible to achieve higher output in terms of profit with little cost.

Table 2: Major Urban agriculture practices by Farmers

Major Urban agriculture practices by Farmers	Frequency	Percentage
Crop processing	261	67.97
Livestock/poultry treatment	55	14.32
Fish hatchery	12	3.13
Tractor driving	28	7.29
Handling of harvester	28	7.29
Total	384	100.00

Source: Author's Field Survey, 2022

Impact of new agricultural skills on the educational level of farmers

Table 3a shows the educational attainment of the urban farmers in Minna, Nigeria. The Table indicates that 10.16% of the farmers have acquired informal education. It should, however, be noted that informal education within the context of this study denotes Qur'anic/Arabic education. The result also indicates that 56.50% of the farmers in Minna have obtained secondary

certificate and above, with up to 11.46% of them reporting to have graduated from higher institution of learning. This indicates that participation in urban farming does not really denote low educational attainment.

Table 3a: Educational attainment of farmers before urban agricultural practices

Major Urban agriculture practices by Farmers	Educational Attainment of farmers before urban agriculture practices					Total
	Informal Education	Primary School Certificate	Secondary School Certificate	Diploma/NCE	HND/Degree	
Crop processing	24	61	55	101	20	261
Livestock/poultry treatment	8	11	21	5	10	55
Fish hatchery	2	3	3	2	2	12
Tractor driving	1	7	4	9	7	28
Handling of harvester	4	2	8	9	5	28
Total	39	84	91	126	44	384
% Distribution	10.16	21.88	23.70	32.80	11.46	100.00

Source: Author's Field Survey, 2022

Table 3b shows the educational attainment of the urban farmers in Minna, Nigeria. The Table indicates that less than 1% of the farmers are still having the informal education as their status, informal education within the context of this study denotes Qur'anic/Arabic education. The result also indicates that after participating in major urban agricultural practices, 52.09% of the farmers in Minna have obtained secondary certificate and above, with up to 45.31% of them reporting to have graduated from higher institution of learning. This indicates that educational attainment have influence in the level of participation in urban farming in the study area.

Table 3b: Educational attainment of farmers after urban agricultural practices

Major Urban agriculture practices by Farmers	Educational Attainment of farmers after urban agriculture practices					Total
	Informal Education	Primary School Certificate	Secondary School Certificate	Diploma/NCE	HND/Degree	
Crop processing	0	0	21	123	117	261
Livestock/poultry treatment	2	7	8	21	17	55
Fish hatchery	1	0	3	2	6	12
Tractor driving	0	0	0	8	20	28
Handling of Harvester	0	0	4	10	14	28
Total	3	7	36	164	174	384
% Distribution	0.78	1.82	9.38	42.71	45.31	100.00

Source: Author's Field Survey, 2022

Social Capital Base

Urban agriculture in Minna also improves the social capital of the farmers. Table 4 reveals that participation in urban farming helps in establishment of farming cooperatives (30.73%), creation of new ties (20.57%) and group membership (29.43%). Social capital is a very valuable asset whose importance to the existence and wellbeing of man cannot be overemphasised. By helping to establish and maintain social capital, urban agriculture is a highly sustainable livelihood strategy which has the ability to bounce back from shocks and stresses.

Table 4: Impact of Major Urban agriculture practices Social Capital Base of farmers

Major Urban agriculture practices by Farmers	Social Capital Base of farmers				Total
	Creation of new Ties	Strengthening of existing ties	Establishment of farming cooperatives	Membership of cooperatives	
Crop processing	41	60	80	77	261
Livestock/poultry treatment	19	8	15	16	55
Fish hatchery	3	2	3	4	12
Tractor driving	8	1	9	10	28
Handling of harvester	8	3	11	6	28
Total	79	74	118	113	384
% Distribution	20.57	19.27	30.73	29.43	100.00

Source: Author's Field Survey, 2022

Impact on Physical Capital Base of farmers

Participation in urban farming also expands the physical capital structure of the urban farmers in Minna. The result in Table 5 shows that urban farming has contributed to ownership of an automobile (33.85%), ownership of agricultural storage facilities (19.54%), ownership of farm machinery (13.54%) and ownership of residential housing (8.59%). These are viable assets that can be converted to liquid capital in times of livelihoods shocks. However, it is worthy of note that only about 24.48% of the urban farmers in the study area own a farmhouse.

This implies that the post-harvest management of their farm produce is done at home.

Table 5: Impact of Major Urban agriculture practices on Physical Capital Base of farmers

Major Urban agriculture practices by Farmers	Physical Capital Base of farmers					Total
	Ownership of farm machinery	Residential housing ownership	Ownership of an automobile	Ownership of a farmhouse	Ownership of storage facilities	
Crop processing	39	21	99	64	38	261
Livestock/poultry treatment	4	5	14	13	19	55
Fish hatchery	2	2	3	4	1	12
Tractor driving	4	2	5	7	10	28
Handling of harvester	3	3	9	6	7	28
Total	52	33	130	94	75	384
% Distribution	13.54	8.59	33.85	24.48	19.54	100.00

Source: Author's Field Survey, 2022

Impact on Natural Capital Base of farmers

The urban farmers in Minna (47.92%) reported that they own at least a piece of land for farming and (52.08%) of the farmers have a plot of land for residential housing construction as seen in (Table 6). This shows that participation in urban farming enhances their natural capital base. These natural capitals are valuable assets that can easily be converted to cash when the need arises. More so, these assets are very essential in livelihood development. For instance, farmlands are necessary for farming livelihood, while residential plots are valuable assets in real estate development. This implies that the farmers can easily diversify their livelihood into real estate development, thereby improving the chances of livelihood security (and consequently, reducing livelihood vulnerability) among the farmers.

Table 6: Impact of Major Urban agriculture practices on Natural Capital Base of farmers

Major Urban agriculture practices by Farmers	Natural Capital Base of farmers		Total
	Ownership of farmland	Ownership of building plot	
Crop processing	120	141	261
Livestock/poultry treatment	31	24	55
Fish hatchery	6	6	12
Tractor driving	10	18	28
Handling of harvester	17	11	28
Total	184	200	384
% Distribution	47.92	52.08	100.00

Source: Author's Field Survey, 2022

Impact on Financial Capital Base of Farmers

The result in Table 7a indicates the monthly income level of farmers before the commencement of urban agriculture practices, it shows that 13.80% of the farmers earn less than ₦20,000 monthly, while about 13.28% earn between ₦20,000-₦30,000 per month. On the aggregate, about 13% of the farmers earn below ₦30,000 which is the approved minimum wage of Nigeria. This indicates that most (87%) of urban farmers in Minna earn considerably above the national average minimum wage per month. Therefore, it is a viable way towards improving the financial freedom and advancement of urban residents.

Table 7a: Financial Capital Base of farmers before Urban agricultural practices using monthly income range of farmers

Major Urban agriculture practices by Farmers	Monthly income range of farmers before in Naira value					Total
	Less than ₦20,000	₦20,00 - ₦30,000	₦30,005 - ₦40,000	₦40,005 - ₦50,000	More than ₦50,000	
Crop processing	30	35	101	52	43	261
Livestock/poultry treatment	7	6	20	10	12	55
Fish hatchery	3	2	3	2	2	12
Tractor driving	7	3	5	9	4	28
Handling of Harvester	6	5	9	5	3	28
Total	53	51	138	78	64	384
% Distribution	13.80	13.28	35.68	20.57	16.67	100.00

Source: Author's Field Survey, 2022

The result in Table 7b indicates the monthly income level of farmers after the commencement of urban agriculture practices, it shows that 3.91% of the farmers earn less than ₦20,000 monthly, while about 5.73% earn between ₦20,000-₦30,000 per month. On the aggregate, less than 5% of the farmers earn below ₦30,000, the approved minimum wage of Nigeria. This indicates that the commencement of urban agricultural practices in the study area has led to advancement in the level of income of the farmers. Majority of the farmers (95%) of urban farmers in Minna earn above the approved minimum wage monthly. Therefore, urban agricultural practices in urban areas is considered to be a viable way of improving the financial status of urban residents especially in Minna.

Table 7b: Financial Capital Base of farmers after urban agriculture practices using monthly income range of farmers

Major Urban agriculture practices by Farmers	Monthly income range of farmers after in Naira value					Total
	Less than ₦20,000	₦20,00 - ₦30,000	₦30,005 - ₦40,000	₦40,005 - ₦50,000	More than ₦50,000	
Crop processing	10	14	34	51	152	261
Livestock/poultry treatment	2	4	10	24	15	55
Fish hatchery	0	1	2	5	4	12
Tractor driving	3	1	3	12	9	28
Handling of Harvester	0	2	4	7	15	28
Total	15	22	53	99	195	384
% Distribution	3.91	5.73	13.80	25.78	50.78	100.00

Source: Author's Field Survey, 2022

Major Obstacles to urban agriculture practices of farmers

Table 8 indicates that the major (28.39%) obstacle to urban farming is lack of access to credit facilities for by majority of urban farmers in the study area, this may be an indication of poor governmental and/or institutional support for urban farming. Inadequate markets (23.96%), Inadequate machineries (20.31%), inadequate finance (15.62%) and changing urban policies and regulations (11.72%). As Table 8 reveals, inadequate finance and changing urban policies and regulations does not constitute a hindering factor in the practice of urban agriculture in Minna. This implies that access to credit loans and available and viable markets for selling agricultural produce should be made available to all urban farming in the study area for effective delivery of agricultural produce to other places.

Table 8: Major Obstacles to urban agriculture practices of farmers in Minna

Major Obstacles to urban agriculture practices of farmers						
Major urban agriculture practices of farmers	Obstacles to urban agriculture practices					Total
	Inadequate Finance	Changing Urban policies and regulations	Inadequate machineries	Inadequate markets	Lack of access to credit facilities	
Crop processing	31	24	59	67	80	261
Livestock/poultry treatment	19	5	10	16	5	55
Fish hatchery	3	2	2	1	4	12
Tractor driving	4	4	3	6	11	28
Handling of harvester	3	10	4	2	9	28
Total	60	45	78	92	109	384
% Distribution	15.62	11.72	20.31	23.96	28.39	100.00

Source: Author's Field Survey, 2022

Conclusion And Recommendation

The rising pace of urbanisation in the Global South is accompanied with high rate of urban poverty and unemployment. The formal sector of the third world countries, particularly Nigeria, is incapable of employing all the urban residents. Yet, urban areas in Nigeria and elsewhere are characterised by high cost of living. Similarly, there is a rising recognition of the problem of urban food insecurity. This has engendered the adoption of urban agriculture as both a livelihood strategy and a way of offsetting the food security challenges of cities. This study has shown that participation in urban agriculture improves the financial, human and social capital base of the urban farmers, while contributing to the enhancement of their physical capital bases. More so, it reveals that the adoption of urban agriculture reduces urban food stress to a significant level. However, the urban farmers lack adequate policy and financial support to improve and widen their

livelihood strategy. Therefore, this study recommends empowerment programmes and establishment of government grants towards improving the production capacity of the farmers in Minna.

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