

# LEGALIZING URBAN CROP FARMING FOR SUSTAINABLE DEVELOPMENT OF THE LAGOS METROPOLIS

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## **Abstract**

Urban crop farming which is a variant of urban agriculture or urban farming is a source of job creation, poverty alleviation, fresh food supply, environmental protection and other functions. The study examines the legality of urban crop farming and also conceptualizes that security of tenure of land has no significant effect on farmers' productivity in the Lagos metropolis. Respondents of seven out of ten communities were selected through simple random sampling and administered with structured questionnaires. Government respondents in some ministries and parastatals were also served with questionnaires. Data collected were analyzed using descriptive statistics while the hypothesis was tested using linear regression analysis. The study established that most of the farming lands were government-owned (65.8%), 23.6% belonged to private organizations and 7.2% belonged to individuals. Also, 60.1% of the farmers were squatting or occupied land illegally, 28.7% rented, while only 0.3% made outright purchase. The regression analysis showed that security of tenure constraint accounted for 4.6% of farmers' productivity indicating that Lagos state government did not promote or support urban crop farming. The study opines that an inventory of public open spaces and greenbelts should be taken to determine the pool of land that could be available to enhance urban crop farmers' productivity.

**Keywords: Tenure security, informal sector, urban crop farming, sustainability, development, Lagos metropolis**

## **1. Introduction**

Although, Lagos has ceased to be the capital headquarters, it is still the hub of economic activities in Nigeria with numerous industries, factories, offices and other commercial activities thriving in the city. The available economic opportunities have also stimulated rapid population growth through external and internal population explosions. Even though it is small in size physically, it is the most populous city in Nigeria (WPR, 2015).

The pressure on land by residential, commercial and industrial uses is therefore over-whelming as there is a stiff competition for any available land in the metropolis. While the level of population has continued to rise, its economic base in terms of manufacturing industries has continued to decline with several industries closing down or running below installed capacity. This has precipitated large-scale unemployment and under-employment, closure of some manu-

facturing companies and job losses from the civil and other services. The unemployed and retirees are generally found in the informal sector participating as part time or full time urban crop farmers. The importance of the informal sector was stressed by the Federal Government (as cited by in Onyenechere, 2011) which stated that, “the share of informal economic sector employment out of total gainful employment in Nigeria rose from 27.3% in 1970 to 38.2% in 1989”. This was seen as arising from the high urban population and increasing demand for goods and services which could not easily be met by the formal sector (Tipple, 2005). For instance, between 50% and 75% of the Lagos metropolitan inhabitants were employed in the formal sector (Lagos State Government as cited by Lawanson, 2009). The informal sector comprises a wide sphere of informality that can have environmental, economic, social and spatial impacts on the sector itself. Urban crop farming is land-based and operates in the informal sector as it is not recognized nor controlled under any government policy. van Veenhuizen (2006) noted that land was for most part outside the reach of crop farmers as most were generally poor. Urban farming affords households self-sufficiency in food provisioning thereby enhancing food security, income and employment generation. It is a veritable source of local and fresh farm products and short-seasoned crops such as maize, yams, vegetables, tomatoes and ground nuts. It is also known to contribute to the sustainability of a city in terms of economic, environmental and social developments. UN-Habitat (2008) report noted that between 15 and 20% of the world's food was produced by some 800 million urban, peri-urban farmers and

gardeners showing urban crop farming as an important sub-sector of the informal sector. In Nigeria, the activity has been reported in a few studies (Lynch, Binns, & Olofin, 2001; Adedeji & Ademuliyi, 2009) but none has advocated it as an important urban land use in the sustainable development of a metropolis. The survival of urban crop farming is therefore left in the hands of market forces and its rising significance has come to the forefront because of its perceived contributions to sustainability of cities – an issue that has become very important due to continuous degradation and decay of cities of both developing and developed countries. Akinmoladun and Adejumo (2011) also stressed the importance of urban farming and listed socio-cultural and institutional bias, organizational constraints, post production constraints and, “problems of access to resources especially capital, inputs and services” as challenges facing urban farming. The study therefore examines theoretical and conceptual issues affecting urban crop farming in towns and cities in the next section..

## **2.0 Concepts and Issues**

### **2.1 Land Accessibility in Urban Crop Farming**

Land ownership, processes of land transfers and rights to land in Nigeria are quite complex because of the numerous hurdles faced in achieving land accessibility. The Land Use Act Cap L.5 2004 (Decree 6, 1978) promulgated in 1978 did not make any specific provision for land use for urban crop farming while the Nigerian Urban and Regional Planning Decree (No. 88) of 1992 in Section 72 emphasized the negative attitude of government policy towards the activity as it did not allow cultivation of annual and

perennial crops and raising of livestock in urban areas except to preserve existing trees or planting new trees by the imposition of necessary conditions. Notwithstanding these several statutory prohibitions, some urban crop farmers are known to acquire expansive land as well as invested in inputs to enhance their productivity. Ezedinma and Chukuezi (1999) identified commercial vegetable producers in metropolitan Lagos who invested in labour for land preparation, planting, weeding, irrigation and harvesting. They noted that the activity was affected by lack of access to land and insecure documents and further opined that their insecure status discouraged investments in the activity. Owing to lack of financial resources to acquire land, practitioners are found to be farming on marginal lands that are unproductive. Mubvami, Mushamba and van Veenhuizen (2003) succinctly stressed that the poor productivity of urban farmers was because land for the activity was, "either not available or when available it may not be accessible, and when accessible it may not be useable for a particular form of agriculture". Velez-Guerra (2004) identified multiple methods of accessing land for urban agriculture as formal, informal and semi-informal and that these modes of access were manifested through customary, statutory and hybrid laws. The study thus, hinged land access by urban farmers on renting, inheritance, borrowing, squatting, leasing and spontaneous occupation. Bello (2007) in his study noted that owing to the difficulties of accessing land by the informal sector, 86.95% of respondents resorted to squatting or illegal occupation but Nsangu (2009) found in Zaria that 44% respondents rented and 21% were on leasehold and there was no

description for squatting. However, the modes of accessing land identified by Velez-Guerra (2004) were supported by Crush, Hovorka and Tevera (2011) while Aina, Oladapo, Adebosin and Ajijola (2012) found that urban farmers accessed land through personal ownership (32.86%), borrowing (21.42%), renting (31.42%) and leasing (14.29%) which can be implied to have more renters (45.71%) compared with personal ownership or borrowing.

## **2.2 Sustainable Development in Urban Crop Farming**

Brundtland Commission (1987) defined sustainable development as one that, "meets the needs of the present without compromising the ability of future generations to meet their own needs". The urban areas have lived parasitically on rural areas as they depend on rural areas largely for their food supplies. Faced with wide-ranging evidence of urban degradation, increasing urban poverty, increasing unemployment, underemployment and squalid living conditions engendered by harsh economic realities, the cities of developing countries have become victims of numerous environmental problems. Deelstra and Girardet (2000) noted that the challenge was whether cities could transform themselves into self-regulating, sustainable systems and wondered whether there could be no sustainable world without sustainable cities. Also worried by the high rate of urbanization, Iaquina and Drescher (2002a,b) remarked that the process of urbanization had brought with it a host of problems and challenges, not least of which was the issue of urban food security. Barrs (2002) also remarked that, "our current unsustainable patterns of consumption and waste, and

persistent hunger and inadequate nutrition...are forcing us to examine some new approaches". The growing urban population has suffered considerable ecological, social and economic problems because of deteriorating national and global economies leading to drastic fall in income, food generation and consequent unemployment, poverty and social exclusion from societal activities. Barrs (2002) therefore stressed that sustainability was manifested by ecological, economic and social elements which could be addressed by urban farming.

The activity does not lead to over-exploitation of resources as it can be practised on small-scale basis and practically in any location such as backyards, balconies, roadsides, etc. The growth and importance of urban crop farming in the past years is undoubtedly a response by the urban poor and others to the problems precipitated by the sustainability questions that have arisen from urbanization especially in the developing countries. Woodsworth (2001) thus, stressed that urban farming could contribute immensely towards building socially, economically and environmentally sustainable cities. He listed several advantages such as wide-range contribution as converting waste products into food fuel, eliminating needs for long-distance transportation, facilitating converging of producers and consumers as well as farming on small-scale basis in backyards, balconies, rooftops and etc. Laurence (as cited in Woodsworth, 2001) also noted that, "city gardens mitigate storm water runoff, rejuvenate toxic soils, block the transmission of urban noise, clear the air by producing oxygen and absorbing carbon dioxide, and control temperatures via shade and transpiration". The study of

Dobyns (2004) on Toronto and Kampala disclosed that urban crop farming was looked at as a forerunning environmental sustainability measure in the developed nations but that it is more than a sustainability measure in the developing ones. The relationship of urban farming to sustainable development is important as van Veenhuizen (2006) averred that urban crop farming was a social security net for poor and disadvantaged urban households that enabled them to respond to urban poverty and food insecurity. It is further considered as a multifunctional activity with numerous sustainability goals. Mendes, Balmer, Kaethler and Rhoads (2008) listed some of these goals as environmental protection, public health and nutrition, poverty reduction, community capacity building, participatory decision making, social inclusion and community economic development. This agreed with the views of other writers that urban food production was a survival strategy especially of the urban poor and also, in line with Jacobi, Amend and Kiango's (2000) finding that urban crop farming was a very economic strategy for fighting urban poverty and improving sustainable city development. de Zeeuw, van Veenhuizen and Dubbeling (2010) also reiterated that national and city authorities had found need to strengthen the resilience of urban food production in city and national policies and programmes directed towards strategies for food security and poverty reduction. This present study examines the level of government support for urban crop farmers and their access to land. It also conceptualizes the hypothesis that security of tenure has no significant effect on farmers' productivity in the Lagos metropolis.

### **3. Study Area**

The study is limited to metropolitan Lagos which is home to many companies and industries and located in the south-western part of Nigeria. Oni (2001) defined the boundaries of metropolitan Lagos as consisting of the territory within Latitudes 6°23' N and 6°41' N and Longitudes 3°09' E and 3°20' E. The Lagos lagoon stretches through the eastern boundary; bounded in the south by the Atlantic Ocean while the northern boundary has the landmass of Ikorodu local government area and Alagbado towards Abeokuta axis in Ifako-Ijaiye local government area (Olayiwola, Adeleye and Oduwaye, 2005). Badagry and Republic of Benin define the Western boundary. Metropolitan Lagos constitutes over 1,140km<sup>2</sup> (or one-third) of the total land mass (3,577km<sup>2</sup>) of Lagos State. Lagos has since ceased to be Nigeria's capital but still has great impact on the nation's economic development. It is still the commercial nerve centre of Nigeria as more than half of Nigeria's industrial capacity is located here. After the 1989

structural adjustment programme (SAP) era, many of the companies and industries closed business and this led to continuous retrenchments by both private and public sectors, thus, increasing the population of people in the informal sector as well as making metropolitan Lagos a good location for this study. The pressure on land by the various uses is over-whelming and distribution of land in the metropolis is relatively uneven against urban crop farming. As regards spatial distribution of urban farming communities, the Lagos State Agricultural Development Authority (LSADA) demarcated Lagos State into three agricultural blocs as eastern, western and far western blocs. The western bloc which lies within the Lagos metropolis has a high population of urban crop farmers distributed in ten agricultural circles and each circle consisting of three cells or farming communities. Communities identified included Adiyin, Iju/Grailland, Ayobo/Aboru, Idimu/Powerline, PWD Ikeja, Volkswagen/Ojo and Festac Town. (Figure 1).

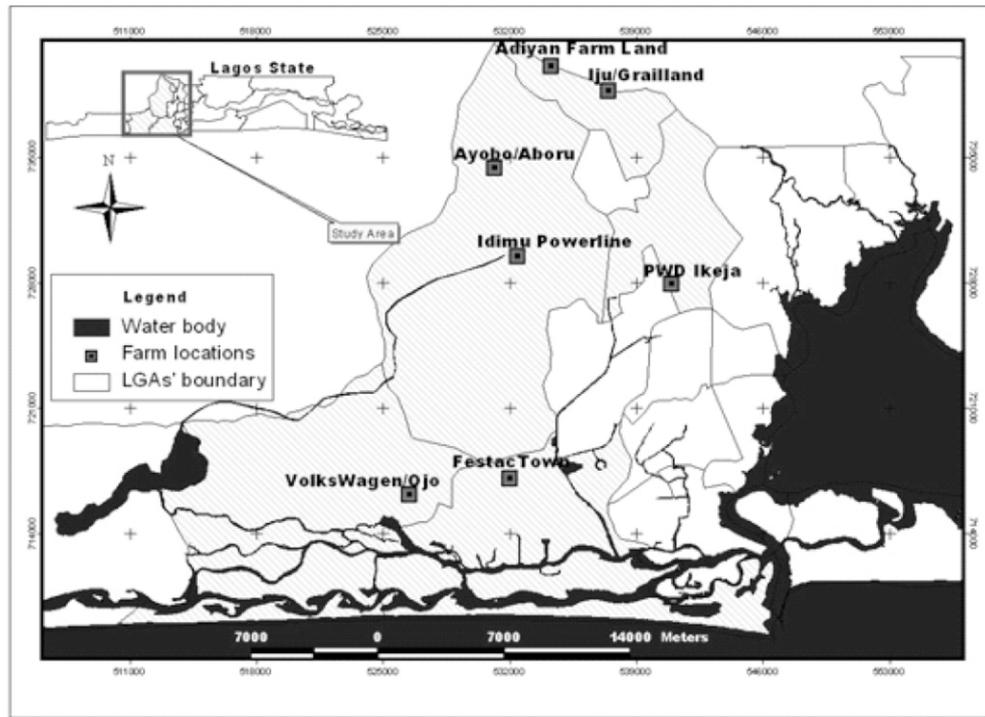


Figure 1: Metropolitan Lagos Showing the Study Locations.  
 Source: Geography Department, University of Lagos, 2012

**4. Methodology**

The study population consisted of all the practitioners of urban crop farming in the western agricultural bloc (Figure 1). Multi-stage sampling was adopted for the selection of sample size because of the complexity of the population of farmers which was distributed all over the Lagos metropolis. Purposive sampling was firstly used in this study to select seven agricultural circles from the ten circles in the metropolis (LSADA as cited in Anosike, 2008). Secondly, a cell or farming community was randomly selected from each circle of three cells. This gave a total of seven farming communities. Lists of registered urban crop farmers in each farming community were obtained from the Lagos State

Agricultural Development Authority Headquarters in Oko-Oba, Agege to enable the determination of the sample size in each farming community (Figure 1). The elements or respondents in each farming community were selected through simple random sampling from each stratum. Thus, the sample size for each population of farmers in a farming community was determined using Kish (1965) equation (Moore, McCabe, Duckworth and Sclove, 2003; Nirab, 2007) which noted as follows:

$$N = n' [1 + (n'/N)]$$

Where:

N = total population (of each farming community) is recorded in the register

n = sample size from finite population

n' = sample size from infinite population calculated from the formula  $[n'=S^2/V^2]$  in which,

$S^2$  = standard error of population elements,  $S^2 = P(1-P)$ ; maximum at  $P = 0.5$

$V^2$  = standard error of sample population equals 0.05 for the confidence level of 95%=1.96

$n' = S^2/V^2 = (0.5)^2 / (0.05)^2 = 100$ .

**Table 1: Urban farmers' population, sample size and response rate**

Farming Communities	Population	Sample size	No. of Respondents
Adiyan	120	55	26
Iju/Grailland	56	36	17
Ayobo/Aboru	45	31	17
Idimu/Powerline	55	36	17
PWD Ikeja	150	60	44
Volkswagen/Ojo	325	77	98
Festac Town	430	81	129
<b>Total</b>	<b>1,181</b>	<b>376</b>	<b>348</b>

Presented in Table 1 is the sample frame, calculated sample size and response rate of the farmers. Copies of structured questionnaire were administered to a total of 376 respondents in the farming communities. Administration of the questionnaire was carried out by the researcher and eight extension officers of the Lagos State Agricultural Development Authority which took place during meeting days of the various farming communities. Data collected were analyzed using descriptive statistics such as cross tabulations, frequency and percentages while the hypothesis was tested using linear regression analysis. Tenure security variable was investigated via gender status, threat of eviction, vacation of land, ownership of land and documentation of land rights. Vacation of land was measured in likert scale; gender status was measured in nominal scale, threat of eviction was measured in nominal scale, documentation of land rights was measured in nominal

scale while ownership of land was measured in nominal scale.

## 5. Findings

**This section presents data collation from the field study, data analysis and hypothesis testing.**

### 5.1 Land Ownership

The study established that 65.8% of lands in the farming communities were owned by public bodies except in Idimu-Powerline and Volkswagen-Ojo communities which had been heavily encroached on by individuals. Private organizations. However, occupied 23.6% of land in the study area especially the Volkswagen-Ojo community and slightly Iju-Grailland community. It would be noted that Volkswagen-Ojo had since fallen into private ownership following sale of the former Volkswagen of Nigeria Factory complex. This occurrence confirmed Hubbard and Onumah (2001); Asomani-

Boateng (2002) findings that government owned much of the lands used in urban crop farming in many cities in developing countries. This implies that many urban farmers do not have individual lands to carry on the activity and are rather

encouraged on unauthorized use of open spaces such as roadsides and undeveloped public and private sites. The land ownership structure is as summarized in Table 2.

**Table 2: Landownership Structure in Farming Communities**

	Frequency	%
Private organizations	82	23.6
Individuals	25	7.2
Public bodies	229	65.8
Other	12	3.4
Total	348	100

**5.2 Mode of Access to Land**

Having found that most lands in the farming communities were under public ownership, the study further established that 60.1% of respondents gained access to land through squatting, 28.7% rented while 8.1% occupied land through owner's permission and less than 1% was either on

lease or outright purchase. (Table 3). The finding on squatting obviously confirmed that of UNDP (1996) that farmers simply expand onto unused public or private land or work out an informal agreement with the owner, taking over land planned or set aside for other purposes.

**Table 3: Respondents' Extent of Use of Existing Methods of Accessing Land in Study Area**

Farming Communities	Occupation with owner's permission	Squatting	Renting	Leasing	Outright purchase	Other	Missing values	Total
Adiyan	9(34%)	15(57.7%)	0	1(3.8%)	0	0	1(3.8%)	26
Iju/ Grailland	1(5.9%)	16(94.1%)	0	0	0	0	0	17
Ayobo/ Aboru	0	17(100%)	0	0	0	0	0	17
Idimu/ Powerline	2(11.8%)	0	15(88.2%)	0	0	0	0	17
PWD Ikeja	5(11.4%)	34(77.3%)	3(6.8%)	1(2.3%)	0	1(2.3%)	0	44
Volkswagen/ Ojo	1(1%)	13 (13.3%)	81(82.7%)	0	0	1(1%)	2(2%)	98
Festac Town	10(7.8%)	114(88.4%)	1(0.8%)	1(0.8%)	1(0.8%)	0	2(1.6%)	129
<b>Total</b>	28(8.1%)	209(60.1%)	100(28.7%)	3(0.8%)	1(0.3%)	2(0.6%)	5(1.4%)	348

Source: Field Study

Further shown in the Table was that all the respondents in Ayobo/Aboru were squatters. Squatting was also very significant in Iju/Grailland (94.1%), Festac Town (88.4%), PWD Ikeja (77.3%) and Adiyin (60%). There were no squatters in Idimu/Powerline since access to land was by renting (88.2%) and owner's permission was 11.8%. It was also established that 88.2% of farmers in Idimu/Powerline and 82.7% of farmers in Volkswagen/Ojo had access through renting. These findings corroborated Velez-Guerra (2004) who identified multiple means of access to land for urban agriculture noting that practitioners were accessing land by renting, inheritance, borrowing, squatting, leasing and spontaneous occupation. The findings similarly corroborated Bello (2007) that, owing to the difficulties of accessing government land, 86.95% of respondents resorted to squatting or illegal occupation. They, however, contradicted Nsangu (2009) finding on Zaria that 44% respondents rented, 21% were on leasehold while there was no clear-cut description for squatting. The claim by Nsangu (2009) is trying to show that urban crop farmers have authorized or good access to land whereas the activity is still considered illegal in many cities of developing countries and is not captured in town planning designs.

**5.3 Government's Effort/ Support**

The question whether government promoted or encouraged urban crop farming was also resolved by a series of survey questions. The questions included subjective questions that asked respondents how they agreed with government promotion or encouragement of urban crop farming. Individuals were required to answer these questions using a 5-point likert scale ranging from “strongly agree = 5” to “strongly disagree = 1”. Table 4 shows respondents view on government's promotion of the activity. The study established that 48.2% urban crop farmers agreed that Lagos State government had been promoting the activity while 40.1% disagreed. The respondents were in agreement because they had been occupying their lands without disturbance through squatting or illegal occupation. In contrast, respondents in Volkswagen/Ojo and Iju/Grailland communities who accessed their lands through renting disagreed that government was promoting or encouraging urban crop farming. The findings agreed with Asomani-Boateng (2002); Tinsley (2003); Cisse, Ndeye and Moussa (2005) that there was a growing interest by public authorities in urban agriculture which had not translated into an effective inclusion in the legal and statutory provisions of African countries.

**Table 4: Respondents' View on Lagos Government's Promotion of Urban Crop Farming (N=337)**

<b>Responses</b>	<b>Frequency</b>	<b>%</b>
Strongly Disagree	104	30.9
Disagree	31	9.2
Neutral	40	11.9
Agree	78	23.2
Strongly Agree	84	25.0

Source: Field Study

**5.4 Hypothesis Testing**

To further establish the need for government's support for urban crop farming and the need to enhance farmers' productivity, the hypothesis that security of tenure of land had no effect on farmers' productivity was tested. The study showed a value of R<sup>2</sup> in Table 5 indicating that only 4.6% change in farmer's productivity was due to security of tenure influence. The t-value of -3.578 (p<0.05) indicated that the Null hypothesis be rejected thereby supporting the alternative hypothesis that, security of tenure constraint in land acquisition had a significant effect on crop farmers' productivity in the study area. Thus, the study indicated that a fall of 0.540

in farmers' productivity could be expected for a unit increase in security of tenure constraint while 4.726 represented the mean of farmers' productivity should security of tenure constraint be completely removed. It therefore implied that farmers' productivity could be greatly improved by removing all security of tenure problems. These include eliminating gender bias in land accessibility, removing threats of eviction or harassment, easy documentation of land transactions and non-restriction of crop-type or infrastructural developments such as planting of perennial crops, erecting of farm houses, erecting sandcrete block fence walls and sinking of boreholes.

**Table 5: Regression Result of The Effect of Security of Tenure Constraint on Crop Farmers' Productivity**

Variable	Estimate	Std. Error	t	Sig.
(Constant)	4.726	0.248	19.056	0.000
Security of Tenure	-0.540	0.151	-3.578	0.000*
R	0.215			
R <sup>2</sup>	0.046			
Adjusted R <sup>2</sup>	0.043			
Std. Error	1.218			
DW	1.527			
F	12.799			0.000

\* Significant at 0.05 level

The study showed that though most lands in the farming communities were government-owned and farmers were mostly squatting or on illegal occupation and lacking security of tenure. This major constraint of tenure security was found to be affecting urban farmers' productivity and thus, in agreement with the findings of other studies.

**9.0 Conclusion and Recommendations**

The study noted that Lagos has been witnessing rapid population growth and high unemployment rate as well as increasing retirements. It further revealed that the retirees and unemployed were found

in the informal sector where they were engaged in urban crop farming but had land accessibility problems due to tenure security constraint. The study also showed the importance of urban crop farming in sustainable development as it provided security for poor households. It further pointed out that there was no government support or policy provision of land use for urban crop farming leading to illegal occupation of land by the farmers. The study consequently established that lands in the farming communities were mainly government-owned with only a few private organizations and individuals and 60.1% farmers had been occupying land by

squatting without disturbance and thus, prompting 48.2% to agreeing that Lagos state government had been promoting urban crop farming. It also established that farmers' productivity would be improved by removing tenure security problems. It opined that there would be need for an inventory of public open spaces such as buffer zones and greenbelts provided by town planners that could be partly used for urban crop farming. The government should set up a committee to identify those involved and benefits derivable to enable it provide policy guidelines that will promote the activity. Finally, a more permanent solution is reviewing of existing land use policies that will legitimize urban crop farming as one of the known land uses in the metropolis.

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