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## URBAN AGRICULTURE: A NEW PERSPECTIVE IN FOOD SECURITY IN NIGERIA

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### ABSTRACT

*The purpose of this paper is to highlight and assess urban agriculture as a new perspective in food security in Nigeria. It deserves highlighting because its expositions and place in sub-Saharan economic history have been embedded in broader arguments, creating a heuristic need to give it a balance and lucid examination. Indeed it needs revision in order to realize more of its potentials than have been revealed to date. Specifically, it will be argued that urban agriculture is sui-generic to effective realization of food security in Nigeria. The paper will also explore the implication of improved urban agriculture for an understanding of food security in Nigeria. It will examine the investments in urban agriculture, and food security techniques that could be adopted in Nigeria.*

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### 1. INTRODUCTION

The challenges of the present decades are no doubt the high level of demographic growth and increase in urbanisation. Many countries have devised strategies to address this phenomenon, but like an albatross, they keep on rearing their ugly heads.

Recent statistics shows that in 1998, 57% of world population lived in cities; in 2000 and 61% lived in cities. According to Nugent (1999), “in 2025, the figure will have risen to 67%. Even more remarkable is the trend towards large metropolitan areas. Almost 90% of urban growth is about to take place in developing countries (Drechsel, etal 1999)

In Nigeria, the urban population keeps on enlarging due mainly to the migration of absolute poor to cities in search of means of livelihood, and the creation of new metropolitan area as part of government effort to develop the cities. The resultant effects were increase in

urban poverty as new urban poor emerged growing pressure on public infrastructure; labour, living conditions, and food. Environmental and sanitary problems were experienced in cities like Lagos, Ibadan, Aba, Kaduna, Jos, Abeokuta, Onitsha, Kano, etc. According to Dittrich et al (2000), "an uneven development with respect to geography and time (tendencies of spatial fragmentation) and social fractioning, are the consequences of these trends."

The question that looms large is, how can this trend/problems, which revolves round poverty and waste management be reversed or addressed? The only mitigating tool-very effective as it were is Agriculture. According to Bakker et al (2000) "Urban agriculture is one of the several food security option for household; it is one of several mechanisms for making productive use of urban open space, treating urban waste, saving or generating income and employment, and managing fresh water resources more effectively"

On a more specific note, urban agriculture is aimed at achieving the following purpose which are strongly linked to the problems of urbanisation and the managerial skills of the cities solving them; food security, poverty alleviation, public health, and sustainable resource management. In Nigeria as in elsewhere, the propelling force for farmers to engage in urban agriculture is income generation, which will enable them to cope with other social economic challenges of the cities and food security. According to urban Agriculture Network (TUAN) in Akinwale (2004), "of the roughly 800 million people currently involved in urban agriculture worldwide, 200 million produce for the market and 150 are full-time employees. Between 1993 and 2005, urban agriculture increase its share of world food production from 15% to 33%, its share of vegetable, meat, fish, and dairy product consumed in cities from 33%, to 55%, and the number of urban farmer producing for the market from 200 to 400million.

The view of Nugent (1999) on urban agriculture is very instructive "urban agriculture is potentially viable and productive but not a panacea to solve the most severe of problem of food security in cities.

Nelson (1996) and Smith (1996) provide a lucid picture of public health and sustainable resource management aim of urban agriculture.

The direct impacts are improving health condition amongst urban farmers, thanks to rich vitamin and protein diet. More appropriate waste management practices lead to a decrease in health risks. Sustainable resource management implies a more efficient use of resources, including a reduction and reuse of waste flows wherever possible. Closing the nutrient loop in the urban environment by reusing the so-called waste as fertilizers in urban system”

The aim of this paper is to gain an overview of urban agricultural practices in Nigeria and identify gray areas.

## **2. CONCEPTUAL DEFINITIONS**

Many expert views have been made on this subject and published in different journals, books and periodicals. It is imperative to define the concept so as to avoid morbidity in specificity and factualism. That apart, definition as, comprehended by scholars and researchers, are mental tools that enhance easy understanding of complex issues.

According to Abubarka (2001), ‘urban agriculture involves home gardening, horticulture of food and non-food product (ornamental plant) aquaculture, livestock and forestry’ this definition is rather too simplistic.

Aldington (1997); FAO (1999); Mongeot (1999) Nudent (1997); Quon (1999); Smith (1996); give a concise definition of urban agriculture as: ‘the production, processing, and distribution of a diversity of crops or foods including vegetables and animal products with (ultra-urban) or at the fringe (peri-urban) of an urban area.

Its main motivation is food production (for personnel consumption or sales) and or higher income.

For a more comprehensive definition of urban agriculture, it is necessary to take cognisance of the factor that influence urban agriculture. These factors are location and scale, activities motivation and stakeholders.

Food security has been defined by the Food and Agriculture Organisation (FAO) as: ‘access by people at all time to enough food for an active and healthy life (FAO, 1999). The definition comprises of many components.

some of (1) availability, which is achieved when both safe and nutritious as well as sufficient quantities of food are consistently available to all individual within the country; (2) access, when all person within a household have adequate resources to obtain appropriate foods for a nutritious diet; (3) adequate accessed in terms of quality, quantity cultural accessibility, and preferences (Bettina and Hassan, 2001)

### **3. BASIC FACT RELATING TO URBAN AGRICULTURE IN NIGERIA**

Nigeria is an agrarian society, 70 percent of its population reside in rural areas and are engaged in farming. The urban population is therefore, put at about 30%. According to study carried out by Ndubuisi (2002) on the dynamics of urban population in Nigeria about 26% of the urban population are engaged in urban agriculture.

Most often, urban agriculture is seen as agricultural activities that takes place within and around urban areas. But our peculiar situation provides a different scenario. Our perceived urban agriculture mostly takes place in the peri-urban areas and the size and shape influences, mainly by urban influence, official city boundaries, and distance to the centre e.tc.

The features of Nigeria's peri-urban are that, they contain both rural and urban element, strong urban influence and demands, easy access to market, services and other input, but a relative shortage of land, pollution risk and urban growth (Adam 1999).

The difficulty people encounter in urban agriculture in Nigeria is non-availability of sufficient agrarian land. Even when available, the various legal constraints and the land use act make it difficult for emerging urban poor in particular to secure access. And due to our low level of development, it has been difficult to attain different stages of urban agriculture such as acquisition of the necessary resources, input and services; production of goods on a large scale; post-production, including processing, packaging, distribution, marketing and recycling.

However despite the identified constraints, if the entire agric business with supplier of seeds, fertilizers and pesticides, as well as bank and credit agencies providing support ( as reflected in the present policy of agriculture ) to farmers, are out to support urban agriculture, The number of people that could engage in urban agriculture will increase appreciably.

In Nigeria, as in other developing countries, the urban farm mostly belongs to the low income group. This does not mean that high income earner is also not engage in urban agriculture. According to Olakunle (2003), the low-income urban farmers in Nigeria are mostly long-term city resident. They are scattered around cities like Lagos, Ibadan, Kaduna, Bauchi, Abeokuta, Kano, e.t.c where they are still relative urban landmass not yet for other development purposes some of them are also moderately poor.

According to Ukadike (2000), the urban farmers in Nigeria are relatively better off than the absolute poor, also residing in the cities. Recent report on urban poverty in Nigeria shows that about 63% of urban farmer in Nigeria belong to the very low income group.

It is imperative to note that women are mostly engage in small scale urban agriculture in Nigeria despite the gender role they performs in the home front. However, on a larger urban agriculture scale, men are mostly involved. They take over food and management of the plots. The cyber farms in Kaduna, Ogba investments in Lagos, are typical examples of large scale urban agriculture.

It is worthy of note that the public sector in Nigeria has no strong influence on urban agriculture. In some cities in the country, urban agriculture is illegal. In others were it is practiced, it is neglected by government, therefore making the performance low. Yet there is hardly government support and training for the urban farmers. The areas where the government has continually spent billions of naira are in FADAMA 1, 2, 3, project which cannot sufficiently address the problem of food shortage in Nigeria.

Clearly it should be stressed that urban agriculture in Nigeria is often a response to urban poverty crises a survival strategy of the difficult to secure the white-collar job, become part of urban population

Some known urban agricultural processes in the country include, agricultural practices, soil equality management, irrigation (Embedded in FADAMA project), animal feeding, public health management and urban planning. The product of urban agriculture also include, 'fresher, cheaper and more diverse food for the poor, more green space in the cities.(recreational value, well being, and air quality), better sanitation and improved health conditions. As have note in the preceding sub heading, additional income and household fold supply are other immeasurable benefits Nigerian derived from urban agriculture.

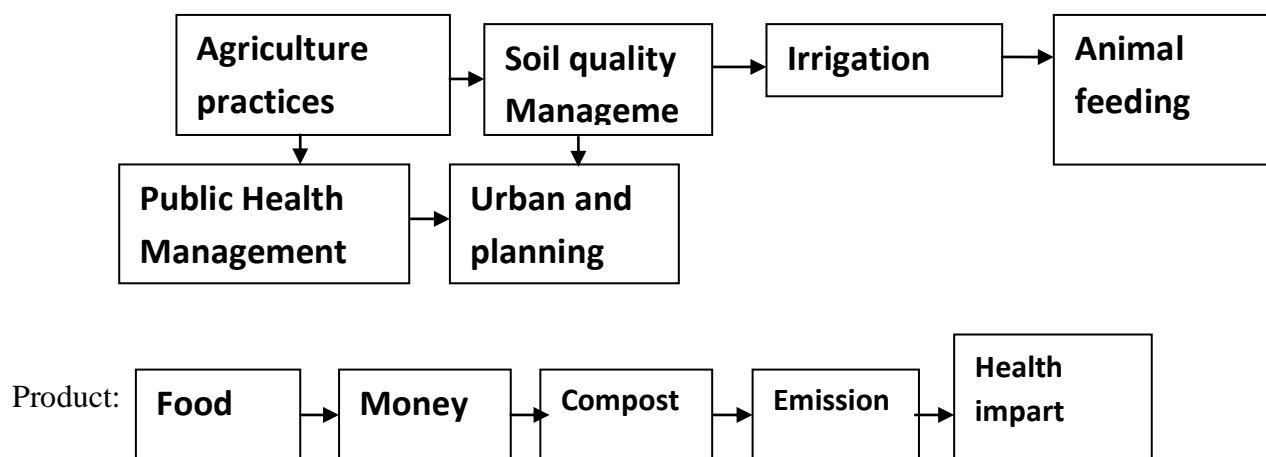
### 3.1. Horticulture.

Household garden has been found to be the most common form of urban horticulture in Nigeria the most important crop of urban farms in the area are perishable fruit and vegetables growth in near the city by small or large farmer for home consumption or sale in the urban market. Roughly four type of agriculture can be distinguished in the country. However, small-scale subsistence crop cultivation is by far most wide spread form of cultivation.

No doubt, access to land follow by variability of irrigation water re crucial element that determine the engagement of low-income city Fadugba (1998) revealed that the abuse of pesticides and consequently the risk of hazards for the consumes seems to be one of

These are illustrated below:

Processes



The major of constrain of home gardening in Nigeria. Similarly, Ukagua (2000) noted that the often inappropriate use of chemical product and their application methods cause health risk to both farmer and consumer and their application method cause health risk to both farmers and consumers and are responsible for environmental contamination in Nigeria according to Fadugba (1998), 58% of all surveyed household in Nigeria use chemical product for plant production: about 62% in urban and about 66% in peri-urban areas.

The practice of soil less horticulture is not common in the country. Even the simplest form which is crop grown directly on solid waste or compost without soil is rare because of non-availability of enough solid waste.

### **3.2 Aquaculture**

Production of fresh and, to some extent, water vegetable (macrophytes) in pound fertilized by human excreta or wastewater has long been and continues to be practiced in Nigeria. It is mostly practiced in the cities by both the poor and the rich. It constitutes a cost-effective way to treat waste and also provides food for the city.

### **3.3 Livestock Rising**

Livestock production or rising is practiced in many cities in the country but the livestock raised in the cities is mainly poultry, bird and smaller animals which are raised by less affluent in the dense city cores for example Pigs and other poultry are very common in and around the major town in plateau, kogi and eastern state of the country. Nigeria reputed to produce most of it poultry needs today.

Similarly, small livestock is produced cheaply in small space in the cities, and they have become increasingly important source of protein. According to Ukagbue (2000), poultry is the most important urban livestock activity, involving some 3.8million urban resident in Nigeria. It is no longer restricted to the upper class as both middle income and low income urban resident engage in production.

It is also important to note that Rabbit are a common form of urban agriculture in many cities in the country. This is possible because raising them does not require much space and can be fed on grass and leaves; for many low- income farmers in urban areas, they are the main source of meat.

In Nigeria, where cities shows a multi-centred, pluralistic structure with a scattered distribution pattern of raising livestock for milk and meat is becoming wider spread (afam, 1999)

#### **4. Urban forestry**

Nigeria like other developing countries have many urban forestry which are central in combating urban air pollution, especially carbon dioxide and particulate matter these forestry are very important for local water household; to ensure a clean water supply, prevent erosion, provide habitat for urban wide life and even disposal sites for liquid or solid waste. Furthermore, in the country wood is fuel for cooking and heating and low cost construction material. This could explain why urban green areas in Nigeria are decreasing annually for about 2.8% (Oladele 2001) it is however imperative to note that most of urban forestry are wholly controlled by government, which makes it difficult for urban farmers to access.

Apart from urban forestry, the street trees which are scattered all over our major cities serve primary aesthesis and climatic purposes. The amenity and recreational value of forests, trees and green spaces is widely recognised.

#### **5. Urban Agriculture and Public Health**

Public health is very vital in any society its aim is to promote physical and mental health of the people and at the same time prevent disease, injury and disabilities. Urban Agriculture, though geared at ensuring food security, affect human health if the right procedure and precautionary steps are not strictly imbibed by urban farmers. In Nigeria as I have rightly observed in the beginning of the paper, government at all level(state, local and federal ) give little attention and support to urban agriculture. And of course, practicing urban agriculture supply can increase the health risk, if the government can systematically integrate public health and safety concern into urban agriculture practices health hazard facing urban famer and their families, consumes and other would be diminished.

Adigwe (1999) observed that the contribution not urban agriculture to the improvement of the health status of urban famer and their families by consuming healthier food is yet to be quantified in Nigeria. Still, technical option for health, protection are yet to be taken intion account to prevent health hazards emerging through irrigation with wastewater. Adigwe (1999) attributes these lapses to our low level of development orchestrated by formulation of inappropriate agriculture policies that tends to down play the benefit of urban agriculture to national food security. Bamidele (2000) observed the absence



of effective management practice as a factor that increase the health risk related to urban agriculture in Nigeria.

As in other developing countries, Nigeria still contends with the problem of contamination of crops with pathogenic organisms (bacteria Protozoa, viruses) and agrochemicals (heavy metal), Persistent organics, Pharmaceuticals), including identification of polluted streams; Contamination of crops by unsanitary post harvest processing, marketing and preparation of locally produced food; and transmission of diseases and hazardous substance from domestic animals to people during meat consumption; transmission of disease from domestic animals to people (Zoonosis) during animal husbandry and processing of meat; inadequate maintenance of compost heaps which attract rodents (potential reservoir of diseases) and insect (potential vector of diseases). In appropriate handling of solid waste and waste water which oppose significant health risk to those who have direct contact with it. Despite all this difficult (problems), urban agriculture plays an important role in addressing poverty in Nigeria; it also runs the problem of food insecurity in the bud.

## **6. Food Security and Poverty Alleviation**

Although this system has been defined under concept defined, it needs elaborate examination particularly in light of Nigerians urban agricultural purpose. According to the food and agricultural organization (1996), “food security existence when all people at all time have access to safety nutritious food to maintain a healthy and active life” the main goal of food security is for individual to be able to obtain adequate food needed at all times, and to be able to utilize the food to meet the body’s need (Obamiro, 2006) The world bank (2006). The World Bank (2001) identified three pillars affecting food security. These are food available, food accessibility and food utilization.

Food availability simply means ensuring sufficient food is available for the people though own production but according to Obamiro (2006), “due to lack of adequate storage facilities and pressing needs, the people mostly end up selling excess produce during the harvesting period, and sometime rely on market purchase during hungry season”

Food access, on other hand, means ability to purchase food particularly by low-income group. It does not necessarily mean availability. Accessibility can also imply, on a moral

logical ground, poverty reduction. In Nigeria for example, pervasive poverty is an attestation to the prevalence of low agricultural productivity and low income (Abdullahi 1999). Absolute poverty is indeed a lack of access to resources required for obtaining the minimum necessity essential for the maintenance of physical efficiency. This connotes that the poor farmers will have little access to food, either produced or purchased. Farm with limited access to productive resources such as land, input and capital, required for attaining physical efficiency in land food production could be food insecurity i.e. resource poverty could lead to low productivity, food insufficiency, and lack of income to purchase the needed calories (2006)

Doppler (2002) asset that food utilisation ensures a good nutritional outcome, which could also mean food security. But having sufficient food will not ensure a good nutritional outcome if poor health result in frequent sickness. By growing their own food, the urban resident in Nigeria produces food for personal consumption, or for sale. Consequently, real and fungible income is generated. Fungible incomes the substitution of good or labour for money that would have to be earned to acquire these or equivalent goods.

In any case, they save money they would otherwise have spent to buy food. Studies have shown that saving from home consumption and income from sales are spent on other basic needs or invested in other businesses. this is mostly significant for the poor urban in Nigeria who most often juggle meagre household finance and face budgetary constraints, which prompt them to increase their income generating activities in addition to existing productive and reproductive task. Thus urban agriculture can contribute significantly to national effort with poverty.

It should be stated here that structural unemployment, currency devaluation, inflation and elimination of subsidies for basic needs have all reduced the opportunity of the urban poor and middle class to acquire healthy food. Food and fuel absorb already a large part of the poor household's income and food insecurity is increasing. In 2001, households in nearly half of the urban in Nigeria spend 50-60% of their income on food.

It is however, interesting to note that most government ( Nigeria inclusive) are beginning to recognize that policies designed to increase the output of crops and live stocks ( through urban agriculture) to meet national food requirement, desirable do not lead to improvement in nutrition, even when localised to areas of needs. What is required is a much

greater sensitivity to the considerable diversity of the population as regard available resources, occupation and incomes.

One striking example of this need concern the division of labour between men and women in the urban area household in juxtaposition with the sharing of income and food supplies-between them. These is considerable support for the view that the most important single contribution to alleviating poverty and malnutrition, which are found primarily among women and their children is the improvement in the resource base available to the women, even if they live in the rural or urban areas.

## **7. Contribution of Urban Agriculture to Food Security and Poverty Alleviation**

It is indeed difficult to presently quantify the contribution of urban agriculture to food security and poverty alleviation in Nigeria, yet it can easily be discerned that most of the urban poor and the middle-income earner in the city have benefited significantly from urban agriculture. Most of the benefit of this type of agriculture is embedded in our preceding discourse; they therefore, need not be rehashed again. It is however expected that the information gained through research activities would primarily raise the awareness of all stakeholders, particularly the urban farmers, to the realistic potential of urban agriculture in contribution to food security and poverty alleviation in Nigeria.

It would be to our advantage if a typology of system and mapping of nutrient flow in different farming systems in Nigeria are carried out. By so doing, the nutrient gap can then be quantified and the demand of fertiliser and waste stream product to improve soil fertility within these different farming can be identified. Also, specific crop and different geographical condition should be taken into consideration. Perhaps, it is necessary for the purpose of the exercise to also highlight useful appraisal techniques for assessing food security in Nigeria.

## **8. Appraisal Techniques of Food Security assessment in Nigeria**

The adoption of the following assessment techniques would go a long way to determine the extent at which urban agriculture has ensured food security in Nigeria.

### **a. Direct Observation**

Direct observation assesses among other things the physical condition of the surroundings, the condition of crops and lives stocks, the physical appearance of the people and their living condition and the location, seeking out premises or sites relating to food security (the mill, shop or the marketplace, nearby field) and to people in their homes.

### **b. Semi-Structured Interview**

Semi-structured interviews take place with key informant, who is purposely selected individuals. Interview preferable take place always from other people. A mental or written checklist of key area or open. Ended question is prepared in advance. Point of interest not previous considered are followed up.

### **c. Proportional piling**

Proportional piling is used to find out about the relative importance of different thing. In relation to food security, it can show the relative importance of different source of food, and are asked to identify their main source of food or ways of acquired food. They then select symbol representing these food source, put them on the grounds or on a table. Against these symbols they share out a fixed number of beans (usally 100), beads or stones showing their relative importance. So if there are 50 beans against crop production, this means it account for approximately 50 percent of the respondents source of food.

### **d. Timeless and chronologies**

These are particularly useful in describing event prior to a displacement, or a historical review of periods of farming and food insecurity and people and perception of their main features relative severity and underlying because this can give an indication of the relative severity of the current period of food insecurity and different causes from previous periods of food insecurity.

### **e. Seasonal diagramming**

With seasonal diagramming local people can desirable the seasonal factor relating to food security; such as the production cycle of different food crops (planning weeding and harvesting): the production of different livestock products labour demand, and periods associated with raiding or other attack. This is useful. In showing seasonal

defence in food supply and access to food and for identifying the ‘‘hunger season’’ the period of plenty and whether at a particular time of year the situation can be expected to improve or deteriorate.

#### **f. Mapping**

In mapping, local people are asked to draw a rough map of their surrounding showing feature like water source, religious meeting places, schools, shops market, fields, area where livestock are kept areas accommodation particular social or ethnic groups, new arrival and areas of scale, particularly where access is restricted. It is also useful in terms of planning visit and walks around the affected area.

#### **g. Activity Profiles**

Activity profiles are description of people’s activities throughout the day, and are useful in learning about gender defences and relationships, and the time spent acquiring in emergencies: a livelihood approach June 2001.

### **9. Conclusion**

In Nigeria, the most striking factors that propel urban farmer to engage in urban agriculture are food security and income generation. Yet it cannot be totally dismissed that government at all level in the country are aware of the benefit of urban agriculture to the sustenance of the nation’s economy. Urban agriculture activities no doubt contribute significantly to the nation’s public health by producing more food. It helps to improve resource management by reusing organic wastes. Considering these glaring and significant benefits, it is rational for government to come out with un-ambiguous policy on urban agriculture that would take cognisance of the new perspective already drawn up by the developed economies, to boost the sub-sector.

On a more lucid note, the time has come for Nigeria to reappraise the concept of food security and the role of urban agriculture. In fact, specific agriculture measures, both at the national, state, and local government levels, should be based on the concept of food security that set as the ultimate objective to ensure that all people of Nigeria at all times, have both physical and economical access to the food they need. It is essential for Nigeria to indeed evolve genuine national food security programme with clear-cut objectives, appropriate policies (not the present ‘over bloated’ presidential initiatives on agriculture) to achieve and adequate resources to implement the policies the long term aim of national food security programmes

should be double food production over the next four years. And to realise this, our development plan should be kept under close to ensure that sufficient domestic resources are committed to the food and agriculture sector. National policies should be re-examined to determine their incentive or disincentive–effect on food production. The urban food production process would need to be modernised through schemes to improve roads, storage, water management, market and credit services, extension and research. The productivity of the small urban farmer should be increased and employment opportunities for the landless urban farmer enhanced.

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