

# AGRICULTURE PRACTICE IN LOKOJA AND ITS IMPACTS ON THE INHABITANTS

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**ABSTRACT:** This paper investigates the roles and implications of agricultural practice in Lokoja urban area, the capital city of kogi state. The specific objectives of the paper are to determine the nature and magnitude of agricultural practice in Lokoja area, and to attempt on evaluation of the contributions of agricultural practice in Lokoja area in improving the livelihood (benefits) of the inhabitants of Lokoja as well as the negative impacts resulting from the practice. Data on the socio-economic characteristic and agronomic practices by dry season farmers were used for this study. Dry season irrigated farming is done by both the indigenuous and migrants inhabitants. It is also observed that majority of the farmers have low or no formal education. The farmers use both chemical and non-chemical fertilizers to improve the crop production and these practice affect the soil in particular over time period.

## INTRODUCTION

Agriculture practice in an urban area simply defined as agriculture located inside and around the urban settlement area. Industry located within (intra-urban) or on the fringe (peri-urban) of a town, city or metropolis which grows, raises, processes and distributes a diversity of food and non-food products using largely human and natural resources, products and services found in and around Lokoja area, and in turn supplying human and material resources, products and services largely to that :okoja area (Mougeot2008).

Agricultural practice in urban are is increasingly becoming a means of livelihood for many urban and peri-urban inhabi5tants globally most especially in African cities(Lado, 2000; Lee, 2006; pots; 2009; Mbaye, 2011;Desmond; 2012; Smith;2013, Deelstra et al, 20011). A number of these authors explain the fundamental reasons for agricultural practice in an urban area in most of the cities are for improving the living standard of the people. Smith et al, (2013) noted the diversity of farming in urban area and observed

among others the following:

- (a) Farmer utilize available spaces which are not currently used for purpose originally designated and they tend to maximize the use of such open or abandoned spaces especially where such spaces are endorsed with production resources such as good soil, water, low land and labour costs.
- (b) Productions are both for family consumption and income earning, farmers are of low income.
- (c) Production tend to be recent arrivals and indigenes.
- (d) Urban producers cope with greater competition over resources, environmental stress which result in hazardous practices and consequently leading to environmental degradation.

The impacts of agriculture practice in Lokoja area on the people are many folds among which this paper focuses on, its contribution to improving the livelihood of the under-privileged class of urban dwellers as well as identifying the negative consequences of agricultural practice in Lokoja area. The positive contributions or benefits of agricultural practice in Lokoja area includes food security, jobs, environmental enhancement, education, beautification, inspiration and hope (Mong, 2008; Denmiger, 2009) the rapid benefits of horticulture modifying urban micro-climate through absorption of CO<sub>2</sub> and dust (Mcpherson, 2005) thereby reducing heat and noise as well as to break reduce erosion and floods, (Deelstra et al. 2011).

On the other hand negative expression against agriculture practice in an urban area like Lokoja include health risks resulting from soil, air and water pollution (Oche, 2008) and the increasing population especially rural urban migration. A typical analysis of costs and benefits involves 3 main stages, namely;

- (a) Identification of ranges of costs and benefits (including intangible spill over effects).
- (b) Evaluation in qualitative term the costs and benefits both for short and long term periodic costs and benefits.

(c) The resulting cost-benefits ratios are used as an input with the decision making.

The results and discussions emanating from this presentation hinge on the first stage of the costs-benefit analysis while attempts will be made to evaluate and explain the impacts of agricultural practice in Lokoja urban area on the people and their environment.

### **The study area.**

Lokoja is geographically situated in the north-central part of Nigeria. The town is located on latitude 10°N and longitude 09°E. Lokoja, originally called the confluence town, existed as a small farming settlement prior to the colonial administration period in the early 1800s (Bingel, 2004) and has grown to a big city popularly known as the confluence town of Nigeria. The town has experienced remarkable transformation resulting from agriculture activities, dredging and political development.



Figure 1 Lokoja the study Area

### **methodology**

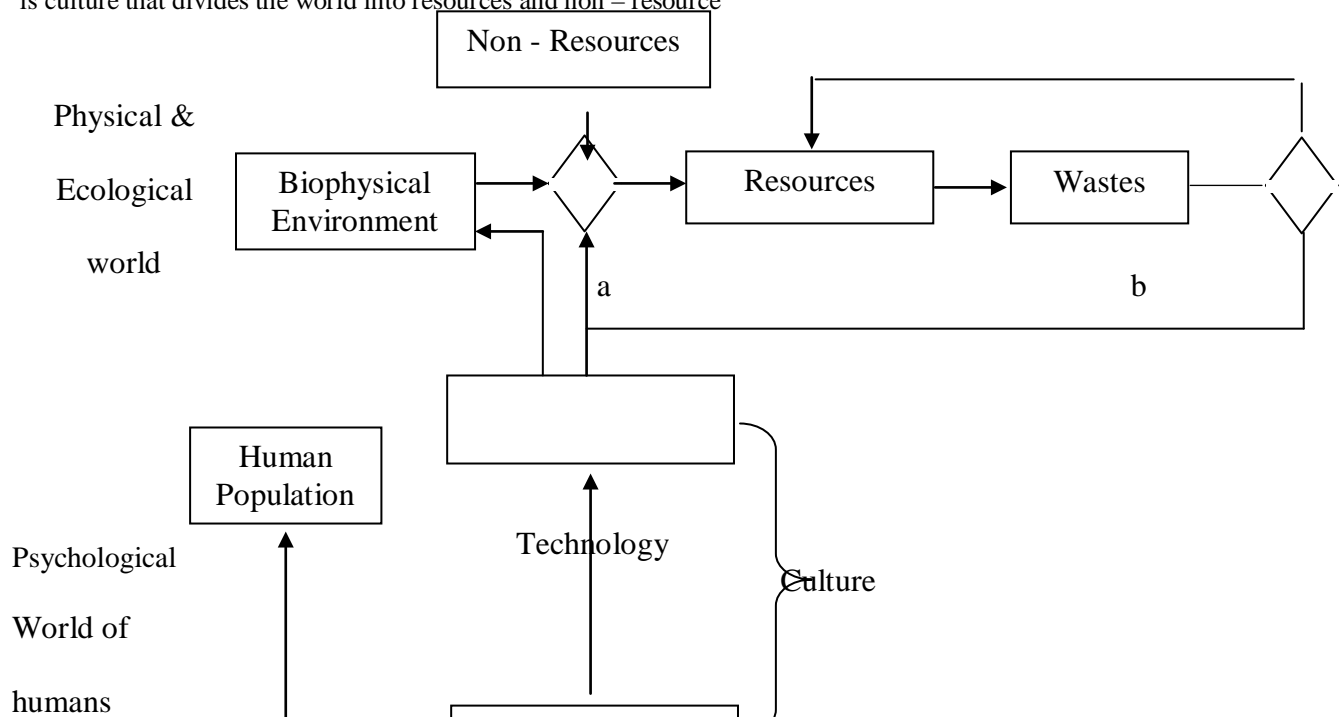
Data used for this study were obtained from field observation, questionnaire, interview.

Ganaja, Shintaku, Banda and Serikin-noma areas were used for this study within Lokoja

metropolis..32 farmers in the study area were interviewed based on the availability of sampling. Questions were asked on the socio-economic characteristics of the farmers. This presentation utilizes two qualitative sets of data containing information on the bio-statistics and the constraints or costs and benefits of the agricultural practice in Lokoja area.

## CONCEPTUAL FRAMEWORK

Through perception and cognition, facilitated by cultures, the environment is censored to determine what we can do, what we must do and what we ought not to do. What we actually do according to Simmons (1999), is often dictated by the tool we append to our bodies in order to move the components of the environment. In other words, we gain access to the various environmental resources through technology (figure 1). Furthermore, technology informs us about the content and components of the environment. It is culture that divides the world into resources and non – resource



**Figure 1. Human in two wonds (After Simmons, 1999).**

with increasing Western culture the list of non- resources gets smaller and smaller. As observed by Simmons (1999), culture can alter and make a material that is non-resource into a valuable item.

The vagaries of weather and poor technology development have in many cases rendered some supposedly natural resources a non-resource, but with the advent and adoption of western culture and technology as the case may be, barren lands are being transformed into fertile lands for various land use purposes and agricultural practices in particular. The some is the situation when irrigation technology is introduced most especially in the and semi-arid regions.

## **Literature Review**

### **IRRIGATION AGRICULTURE AND MANAGEMENT**

Irrigation agriculture can simply be described as the process by which water is supplied to the land or crops by means of streams, reservoirs, pipes and channel. For example, Omara-Ojugu (1992) viewed irrigation as a deliberate supply of water and surplus stored in a controlled manner, in order to supplement rain or groundwater to sustain or improve crop production. Shanom (1987) defined irrigation as “the application of water to the land for the purpose of supplying moisture essential for plant growth”. Punial and Pande (1978) viewed irrigation as a condition necessary for insufficient rainfall and or poor distribution of rainfall in agricultural producing area. Similarly, Daniel (1990)

observed a dry condition due to evaporative demand of the atmosphere which continuously create stress for plants and therefore require water supplements for the period.

Common to the various definitions and views is the involvement of an artificial or conscious effort to augment soil water supply during a period of deficit or in areas of deficit. Irrigation projects are therefore designed to help reduce the dependence of crop growth on precipitation, which to a large extent is uncontrollable by man. However, irrigation is not restricted to application of water to soil alone. According to Isrealson and Harison (1962) it extends further to the management and distribution of the water and drainage problems arising from irrigation activities.

Management of natural resource based projects such as irrigation schemes are often faced with the challenge of finding ways of stimulating the application of new or existing skills and or techniques for the use of natural resource. This is particularly important so that production is adequate for present needs and productive capacity is maintained beyond present use. According to Zoal et al. (1998), such a strategy must be carried out in collaboration with local resource users to identify ways of improving the management of their resources. Thus reveals clearly two goals of natural resource management that are fundamental to a new paradigm in this age (sustainable development). These includes:

- (a) Meeting present needs through agricultural production; and
- (b) Meeting future long-term needs through conservation of resources.

Irrigation management as defined by International irrigation management institute (I.I.M.I, 1988), is “the process by which organizations or individuals set the objectives of a system, determine appropriate conditions, identify, mobilize and use resources to attain the objective and ensure that all the activities are carried out without any adverse effect”. Irrigation system is primarily to stabilize the crop habitat particularly for highly productive herbaceous annual plants and to overcome the constraint of seasonality. It therefore, provides a supplement to the natural process of moisture availability and

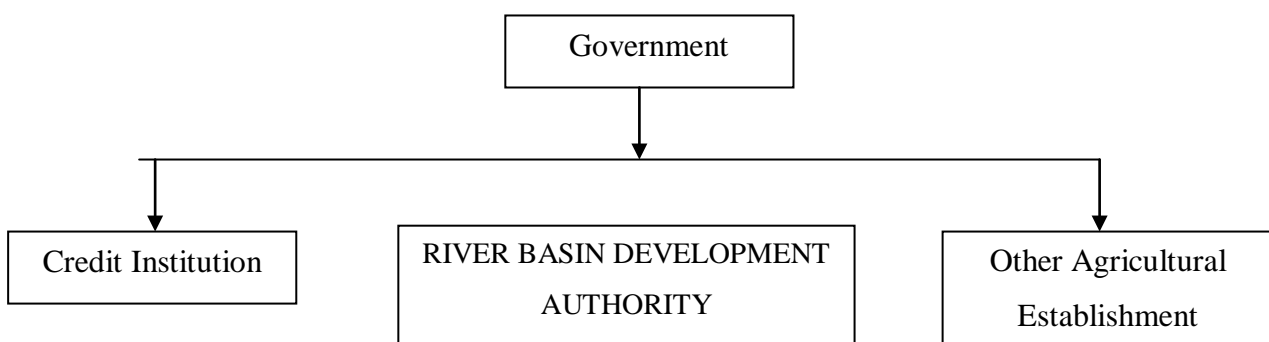
ondrainage where one or the other is deficient in sub-humid environment. Thus, irrigation creates soil moisture condition that is appropriate for optimum agricultural operations.

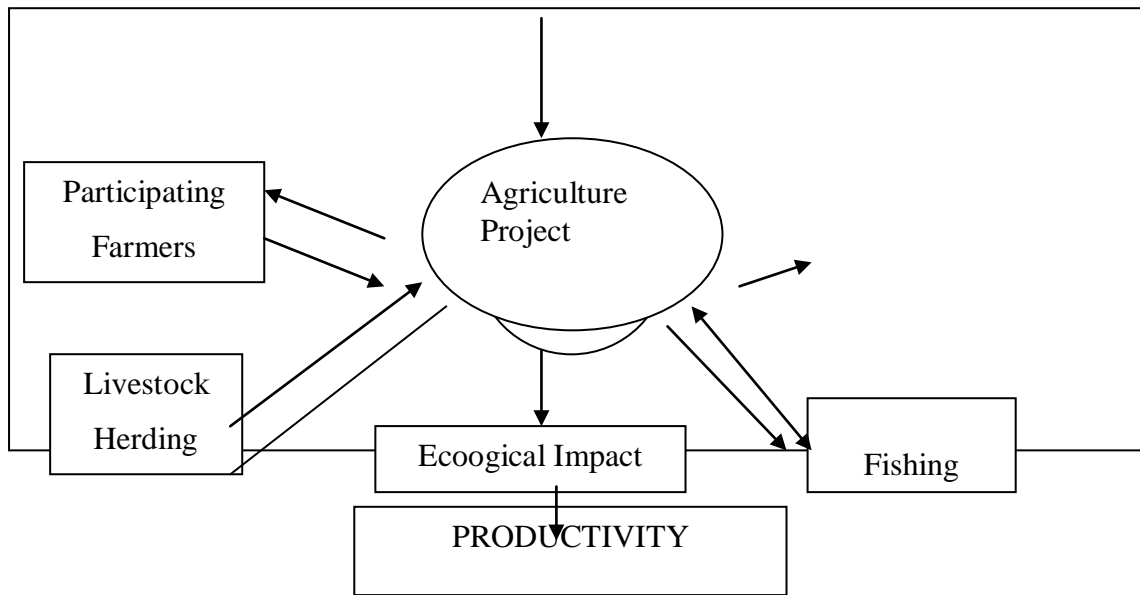
### **PARTICIPATION OF FARMERS IN IRRIGATION PROJECT**

Farmers participation in modern irrigation projects has been on the basis of tenant farming. They are only involved in cultivating the farmland which has already been prepared for the purpose. In most cases types of crops to grow are enforced on these farmers. The fact is that the irrigation infrastructures are provided by the government through River Basin Development Authorities. Currently, there are twelve of these Authorities in the country today. They spread over the thirty six states of the federation covering almost the entire country.

The fundamental issue in the farmers and irrigation agencies interaction is that the schemes were established, the infrastructures were designed and constructed without the input and contribution or knowledge of these farmers who are the end user or beneficiaries of the infrastructures and in fact stakeholder (See fig 2) there is no doubt that if these are capable of performing some functions in the operation, maintenance and management of irrigation projects in Nigeria after all, irrigation principles are not new to them. Many of these farmers are used to 'Fadama' farming and or traditionally cultivating river beds adjacent to their farms through flood recession.

Therefore, the farmers indigenous knowledge of irrigation, their ability and capability have been undermined before the establishment of most of the irrigation schemes. However, all these are now being appreciated and encouraged in the new move by the government public partnership participation initiative (Musa, 2006). But for these farmers to be effective and efficient in their new and additional role in irrigation agriculture, they have to be empowered





**Figures: 2 STAKEHOLDERS IN IRRIGATION PROJECTION SOURCE ORIOLA 2006**

**Result and Discussion**

The history of agricultural practice in Lokoja urban area reveals that fishing farming is the pivotal farming activity leading to introduction and growth of urban and peri-urban area of Lokoja metropolis. The need to grow foods for early expatrates mainly resident in Lokoja is worthy of note (pots, 2009). As observed from some of the earlier studies and the present one migrant population, particularly the dredgers and people with low level of formal education (table 3). The statistics vary slightly in the study area selected.

**Table 1: Demographic characteristic of the farmers.**

Age structure	F	percent
0-15	4	12.5
16-25	11	34.4
26-35	9	28.1
40 above	8	25
<b>Total</b>	<b>32</b>	<b>100</b>

**Table 2 Farmers respondents**



<b>Farmers domicile</b>	<b>F</b>	<b>percent</b>
<b>indigene</b>	<b>21</b>	<b>65.6</b>
<b>migrant</b>	<b>9</b>	<b>28.1</b>
<b>No response</b>	<b>2</b>	<b>6.4</b>

Similarly, the purpose for engaging in agricultural in urban area were evaluated qualitatively using the farmers responses. Table 4 shows that majority of the farmers produced crop for both commercial and subsistence. In context of this study, subsistence implies. Constraints to agricultural practice in urban area and reasons for choosing crops were rate on the basis of thier severity level.

**Table 3 Education status**

<b>Farmers education status</b>	<b>F</b>	<b>percent</b>
<b>Arabic</b>	<b>11</b>	<b>34.4</b>
<b>Primary</b>	<b>4</b>	<b>12.5</b>
<b>Secondary</b>	<b>2</b>	<b>6.4</b>
<b>Tertiary</b>	<b>none</b>	
<b>No formal education</b>	<b>15</b>	<b>46.7</b>

**Table 4 Land acquisition method and cost**

<b>Selected area study</b>	<b>Land acquisition</b>				
	<b>Inherit</b>	<b>Rent</b>	<b>Buy</b>	<b>Cost</b>	<b>Labour</b>
<b>Ganaja</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>N700</b>	<b>N400</b>
<b>Noma area</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>N500</b>	<b>N250</b>
<b>Banda</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>N450</b>	<b>N200</b>
<b>Shintaku</b>	<b>6</b>	<b>5</b>	<b>3</b>	<b>N300</b>	<b>N200</b>

**Table 5 Accessibility of farmers inputs in percentage**

<b>water</b>	<b>25.2</b>	<b>18.5</b>
<b>fertilizer</b>	<b>6.0</b>	<b>8.8</b>
<b>chemical</b>	<b>74.8</b>	<b>35.6</b>
<b>Agric credits</b>	<b>64.4</b>	<b>8.9</b>

In shintaku area and Banda, pest menace, lack of good access to fertilizer, agric credit and market related problems are associated in this area of study. Access to transport, economic gain and profit and soil conditions constitute the main reasons for choosing crops in the area of study.

#### **IMPLICATIONS AND STRATEGIES**

The privatization policy and the new PPP initiative of the Federal Government call for joint-management of irrigation projects. Such policy as observed by Bomuba and Omotowoju (1994) called for the transfer of increased responsibilities for operation and maintenance of irrigation system to users. According to Ayo (1992) the self-organizing propensity of the farmers must not only be acknowledged but must be enhanced. When the people are properly organized, recognized, mobilized and fully incorporated into the project they will become very effective in irrigation projet management and its improvement (Aremu and Ogunwale, 1994). In fact, the attitude and power of the irrigation management need a re-orientation. It is necessary to establish a partnership between the public and irrigation agency.

The success of this effort depends on how well the farmers are empowered. This is because they are poor hence they do have easy access to farming impacts that can yield desired result. In an study by Oriola in 2002 on the impact of an irrigation project on the soil environment and socio-economic status of farmers in Oke-Oyi community, Ilorin, Kwara state Nigeria, it was observed that irrigation far input such as agriculture credits, extension services and seedlings including irrigation water were not readily accessible to well over seventy percent of the farmers participating in the project.

Farmers empowerment for increased crop production implies that some institutional infrastructures are to be put in place. Such infrastructures include credit schemes which can be through Commercial banks, Agricultural development banks, and Cooperative thrift and credit societies. All these will facilitate easy access to agricultural credit to provide the necessary input for increase crop production.

There is no doubt that some of these are already put in place but they are yet to be effective due to bureaucratic bottleneck characterizing our financial sector and improper monitoring of some by irrigation agencies most especially River Basin Development Authorities. The fact is that most of the farmers engaged in the small scale often find it difficult to meet the condition and requirements the financial institutions.

It is necessary for government to vigorously monitor the financial institutions in the discharge of the mandate as prescribed for agriculture and irrigation in particular

Efforts at solving the accessibility to credit will definitely empower them to acquire other necessary inputs such as fertilizer, hired labour, pesticides and insecticides as the case may be, portable pumping machine and better seedlings.

For any meaningful impact, it will be necessary to train these farmers in the art and skill of modern irrigation technology. Enlightenment of both the participating and non-participating farmers on the processes, practices and management skills of modern irrigation technology/infrastructures are essential for desired result in this case. The irrigation agencies have qualified personnel that can adequately discharge these responsibilities. Agriculture extension services and regular training of farmers will go a long way to empower them.

The various studies and response on peoples' and organizations' participation in various irrigation schemes did not show that the people develop as stakeholders (Oriola, 2004).

They did not have input in the design and construction of the schemes more importantly the large scale irrigation schemes. Therefore, they are not committed to the maintenance and management of the schemes part of the empowering strategy is to recognize the participating small scale irrigation farmers as stakeholders and organize them into water

users association, cooperative societies and commodity Association (Wodi, 2006) and give them all the legality required and constantly monitoring their activities.

Efforts should be made to subsidize farm inputs at list for the first five years of the commencement of the transfer of the responsibilities. This can also be backed up by moratorium on some cost to the agency.

## CONCLUSION

It is clear from the presentation and explanation made above that majority of the farmers engaged in agriculture in an urban area like Lokoja have low or no formal education. Attempts made to obtain information on the farmers income levels failed for no reason at all. Even when questions on the farmers sale of crops were asked they refused to provide concrete answers. It is however obvious from my personal observation that majority of the farmers are of low income. Some ex-fishers and jobless individuals from the bulk of the farming population. Some of the farmers migrated from far places with majority coming from the Benue state and Niger state of the country. All the farmers interviewed are males while the retailing of the farm products in the city is dominated by the females. The culture of the people could be responsible for the gender participation differential in Lokoja urban agricultural practice in the study area. These observations compare similar to those postulated by Bernstein (2007), and as highlighted in the introduction section of this paper.

Lokoja urban agricultural practice in general contributes to improving the livelihood of mostly under privileged urban dwellers. There are negative impacts on the inhabitants of Lokoja resulting from pollution and misuse or conflicting land uses among others.

There is no doubt that there can't be any meaningful development in any society where there is hunger, poverty and low productivity, more importantly, where the people cannot feed themselves adequately. Therefore, recognizing the small scale irrigation farmers and their

contribution to food production in our society and empowering them will in no doubt improve our agricultural productivity immensely and to some extent energize our development process. This is on the premise that small scale family farming predominate agricultural production and contributes close to 20 percent of Nigeria G.D.P (FGN, 2006). And the fact that Nigeria potential for irrigation is between 2 and 2.5million ha out of which less than 1 percent of the 220,00 ha under irrigation is cropped.

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