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ENVIRONMENTAL CONSEQUENCES OF INFORMAL URBAN EXPANSION: AKURE'S INFORMAL LAND DELIVERY

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Abstract: In many developing cities, the acquisition of urban land occurs through either formal or informal means. While the informal sector offers a significant portion of land, its complex mechanisms often elude documentation and understanding, often leading to their oversight in developed nations. This study investigates the multifaceted dimensions of informality, spanning social, economic, spatial, and environmental aspects, encompassing neighborhoods, settlements, markets, employment, and business activities. Focusing on Akure, Nigeria, where a substantial proportion of urban households reside in informal settlements due to exclusion from formal land management systems, this research underscores the prevalence of informal land acquisition, particularly in rapidly urbanizing regions. Past and present development patterns within Akure are intrinsically linked to land administration laws. Customary laws historically guided land administration, granting equal access rights while designating a family head or community chief as the trustee. The 1978 Land Use Act subsequently vested land in Nigerian governors, who grant access through a 'right of occupancy'. However, this transition has generated controversies, especially in urban areas with high urbanization rates, such as Akure. The city's role as an agricultural trade hub amplifies pressure on land resources due to rural-urban migration trends. This paper focuses on the environmental challenges stemming from informal land acquisition, using Akure as a case study. Informal land acquisition primarily occurs among rural immigrants seeking land for subsistence. The stringent formal housing acquisition process further perpetuates informal land acquisition. Consequently, unplanned and uncontrolled developments arise, lacking essential infrastructural facilities that are crucial for healthy living. Through an analysis of the Akure case, this study unravels the intricate nexus between informal land delivery and environmental challenges in Nigeria. By shedding light on this complex interplay, it aims to provide insights for policymakers and urban planners to address the environmental consequences of informal land acquisition, thereby fostering sustainable urban development.

Keywords: informal land acquisition, urbanization, land administration, environmental challenges

I. INTRODUCTION

A. Background

There are two ways to obtain urban land in many cities located in developing countries: either through formal or informal means. In comparison to the formal sector, the informal sector offers more land. However, the mechanisms of the informal land sector are hard to document; understand and are typically ignored in most developed nations.

The informal sector encompasses an array of areas of informality, including social, economic, spatial, and environment, covering neighborhoods, settlements, markets, employment, and business activities. The majority of urban households in cities like Akure reside in informal settlements since they are excluded from land management's formal systems. More percentage of new housing is produced informally, and this has been the trend in Akure and greater Nigeria (Ige and Gbadegesin, 2021).

There is a need for planning administration and spatial planning, and land policy is an important tool to achieve this. The pattern and structure of a settlement reflect the laws that regulate land administration. The existing and past development patterns within Akure are a function of land administration and laws. Before 1978, customary laws usually guided the Nigerian land administration (Owoeye and Adedeji, 2015). This system acknowledged the interest of communities, families, and individuals on land. Therefore, everyone holds an equal right of accessing land, while the family's head or chief is the trustee who has the land for the people to use. Under the customary law, a grant by the head of the family or the chief of the community makes the acquisition of land for use possible. In fact, terms, transfer, or alienation of grant are limited to strangers. The Land Use Act of 1978 governs the land tenure in Nigeria, under which land in every state is vested in the governor (Kuma, 2018). The government grants access to land via a 'right of occupancy.' Unfortunately, this development has produced a range of controversies in land administration, use, disposal, and acquisition, especially in urban areas. This is because a high rate of urbanization has amplified the demand for land use.Due to Nigeria's rural-urban migration trend as epitomized by the situation in Akure being the agricultural trade centre for pumpkins, coffee, rubber, okra, palm oil and kernels, rice, bananas, corn (maize), and cassava (Oluwakayode, 2020). Therefore, observing unusual pressure does not come as a surprise, which has led to exceptional demand for land. Since the demand for land is creating a lot of pressure, seeing the majority of underdeveloped land being acquired through informal means is common among the residents. The majority of the people who do this are poor, rural immigrants who are just looking to meet their land needs. Also, the rigorous system of acquiring formal housing aids this form of land acquisition. As a result, such informal development or invasion causes unorganized and uncontrolled developments, while such communities and neighbourhoods lack essential infrastructural facilities, without which healthy living is impossible. Since the rate of development is rapid, one can observe quite a vast section of unplanned areas in Akure. Thus, this paper looks to elucidate the environmental challenges arising from the informal land delivery system in Nigeria, considering the case study of Akure.

B. Aim and Objectives

This paper aims to identify environmental challenges arising from the informal land delivery system in Nigeria in the context of Akure. Following are the objectives of this research:

1. To identify the main environmental challenges arising from the informal land delivery system in Nigeria
2. To analyze the challenges of informal land delivery

3. To recommend ways through which the challenges of the informal land delivery systems can be mitigated

II. LITERATURE REVIEW

Since the urban poor does not have enough means of access to shelter and land, the process of the informal land-use system has picked up the pace considerably. Therefore, these systems offer lands in an informal way to make the land delivery process simple, affordable, user-friendly, and accessible procedures. In emphasis to this process of the land delivery system, it is unquestionable that between 20-90% of all urban land delivery in developing countries is via informal means (Durand-Lasserve and Selod, 2009). However, the evolution of this land use is associated with several environmental, land, and socio-economic issues. Olusola et al. (2019) commented that its consequences comprise waste of agricultural lands, flooding, deforestation, and pollution.

Urban dwellers and the urban land management process face a lot of challenges as a result of the informal land delivery system. Since authorities do not recognize the informal land delivery system, they do not offer enough tenure security to people who reside in such informal settlements (Owoeye and Adedeji, 2015). Still, these settlements house a vast number of urban populations in developing countries.

A. Informal Land Occupation According to Wahab (2017), one of the main challenges of urbanization is informal land occupation by displaced families and poor migrants. Even if the land is regularized, ensuring the area complies with established zoning and land use standards is extremely difficult, especially with consolidated settlements. The informal delivery system has become very prevalent because there is no cheaper alternative for the poor. Since participating in the formal market of serviced and planned housing is costly. Unfortunately, like other developing countries, Akure is also experiencing this problem.One common problem associated with informal land use is lack of access. Due to the absence of regulatory machinery and layout plans, people living in such settlements usually build almost 100% of their plot size. Since there is no space to accommodate roads, building roads in these areas is an enormous challenge. Similarly, there is no space for playgrounds, hospitals, schools, or other social institutions. As a result, residents of these areas have to face these limitations and walk long distances to access essential services like transportation, education, and health (Changeh, 2016). Both the government and dwellers face a lot of challenges due to the informal land delivery system in Akure. In fact, there are multidimensional challenges of the informal land delivery system, including physical, environmental, cultural, economic, and social.

In Akure, the informal land delivery system is a common phenomenon. The dwellers occupy land outside the legal land tenure system through a variety of means: invading vacant infill public lands in central areas with almost no access to public utilities, directly invading public lands, occupying land in the periphery as illegal subdivisions by private agents. The informal settlements of Akure are characterized by a presence of urban poor, with a poverty profile that keeps on growing (Ige and Gbadegesin, 2021). Over the years, the informal settlements have amplified, and the poor are experiencing some of the worst living conditions. For example, the poor have been dealing with several issues like inadequate infrastructure, the absence of essential services, and environmental decline. Informal settlements, which range in size from whole districts to clusters of shacks, are dispersed across Akure. In fact, the number of informal settlements and their population is increasing at a rapid pace in Akure. Since these settlements continue to expand, they will become a massive problem to the inhabitants and policymakers, especially due to a plethora of planning, development, environmental, and health issues. Pelling (2012) has identified the urban challenges of developing countries: poverty, public and reproductive

health, natural disasters, and environmental hazards all-inclusive. These are clear in the numerous pockets of informal settlements located across Akure.

B. Childhood Diseases

The environmental components like air, water, and land which make a city liveable, prosperous, and healthy are polluted regularly in Akure due to the informal land delivery system. Due to inadequate access to safe drinking water, a number of childhood diseases have emerged. Moreover, the sewerage network of Akure has become non-existent (Ogunleye, 2013). When there is heavy rain, most of the dwellings in the city experience routine flooding, and a lot of households have to deal with knee-deep water. When this happens, the poor suffer the most because they usually live in ecologically vulnerable and environmentally hazardous areas.

C. Flooding

Due to unplanned growth, informal land delivery system, and the increasing population, flooding is on the rise, which is a serious problem that Akure must eliminate (Adedayo, 2018). The flat topography of Akure and the poor drainage systems have prevented rapid discharge into the sea and significantly hindered the surface water run-off flow. Both natural and human factors combine to cause flooding in Akure. For example, the natural factors include poor infiltration, flat topography, and rainfall. In contrast, human factors consist of poor sanitation and waste disposal practices (such as blocked drains by sludge, silt, refuse, etc.), which are prevalent in informal settlements. Usually, informal settlements occupy flood plains, swamps, riverbanks, and other types of marginal lands. Unfortunately, even moderately heavy rain floods these areas. The environmental aspect of flood has resulted in a number of problems, including the destruction of infrastructural facilities and the loss of properties and lives.

D. Other Challenges

Moreover, the informal land delivery system faces a lot of problems, including the absence of sufficient water supply and sanitation facilities, unplanned access, poor drainage, overcrowding, squatters, and uncontrolled use of land. Since these basic facilities are not provided to the residents, living has become very uncomfortable for them (Amao, 2012). The worsening environmental conditions, poverty, insecurity of tenure, lack of infrastructural provision, and increasing incidence of informal land use have made it difficult for the dwellers to enhance their homes and their surroundings without any external help.

The informal land occupation leads to the issues of vulnerability, exclusion, and marginality for the settlers. While residents in central areas can access urban services (such as education and health), infrastructure, and employment, living conditions are still deplorable (Ogunleye, 2013). Since the quality of houses is mediocre at best and the land's environmental conditions are dire, the residents are vulnerable to several health risks. Furthermore, these areas do not have recreational facilities and open spaces, and insufficient access to the residential units makes services like garbage collection and emergency provisions quite challenging. These cases are apparent in almost every informal settlement in Akure. If steps are not taken to eliminate or at least mitigate the process of the informal land delivery system, the health, sustainability, safety, and liveability of these settlements, and their residents will continue to worsen.

Rydin et al. (2012) state that a healthy city continually creates and improves social and physical environments, allowing individuals to mutually support one another in performing every function of life and in developing as much as they can. Therefore, health is not defined by the outcome but as a process. A city is not referred to as

healthy if it has accomplished a particular health status, but for the fact that it is conscious of health and looking to improve (Barton et al., 2015).

E. Mitigation Strategies

For Akure to be healthy, it must exude the following characteristics: low levels of diseases, high health status, accessible and suitable public health and sick care services, biological and cultural heritage of city dwellers, a vital and diverse economy, access to a range of communication, interaction, contacts, resources, and experiences, basic needs (such as safety, work, income, water, and food) for every city dweller, a great degree of control and participation by the public over the decisions that affect their wellbeing, health, and lives, a non-exploitative, mutually supportive, and strong community, a stable and sustainable ecosystem, and a safe and clean physical environment that offers great housing quality.

Since informal settlements are characterized by exclusion, lack of access to public infrastructural facilities, vulnerability, inequalities, low-quality housing, and do not meet basic needs of life, Akure is not a healthy city by any means. However, making it a healthy city is not impossible. Through constant efforts, the characteristics of informal settlements may be improved, which can transform the city of Akure.

Akure's environmental problems and unhealthy living can be attributed to the unavailability of land for urban development (especially by the low-income group). Excessive and uncontrolled population growth and insufficient infrastructural facilities are caused by intentional government neglect and poor maintenance culture, corruption, and lack of resources.

III. METHODOLOGY

The design of this methodology is survey research. This study conducted interviews with participants, studied photographs of properties in the chosen study area, Akure, and used a self-administered questionnaire to acquire vital information from real estate developers. In addition, a literature search was also done to collect appropriate information. This information was taken from books, journals, magazines, and seminar reports.

For this study, the target population includes property owners, valuers, and estate surveyors in Akure. The sample size for Akure's currently developed properties is derived through the demographic formula given by Otte (2006), which is typically adopted to determine sample size:

$N = P (100 – P) X Z/D2$ ---------- (i)

Where:

N = required sample size

P = anticipated prevalence

D = allowable error estimate (desired precision) and Z = appropriate value from the normal distribution for the desired confidence level

However, Otte (2006) commented that a readjustment is made when the sample size is very large.

$N' = N / (1 + N/T)$ ---------- (ii) Where: N' = adjusted sample size N = previous sample size T = total population

For this research, a minimum response of 25% was set, and an allowable error estimate of within 5% of the true prevalence was considered. Based on the formulas (i) and (ii), the total sample size of the property owners came out as 321. For the valuers and estate surveyors, since the sample frame is in a good range and reachable too, every estate developer in Akure was included in the sample size. This sample size was also used on the suggested

of Israel (2002), who advocated for the use of consensus for a small population (that is, 200 at most). In addition, a random sampling technique was used for the currently developed properties within Akure.

The gathered data was analyzed through inferential and descriptive statistics. To analyze the socio-economic backgrounds of the respondents, the descriptive statistical tools of the mean score, charts, graphs, tables, etc., were used. The weighted mean score was used to analyze the challenges and problems of informal land delivery and to highlight ways to minimize these challenges. The 5-point Likert ranking scale was also used. In this study, the following formula was used to determine the weighted mean score:

WMS= (〖5n〗 _5+ 〖4n〗 _4+ 〖3n〗 _3+ 〖2n〗 _2

+ n_1)/5N ----------(1)

Where n5 = number of respondent who answered strongly agreed/ very high/ highly used n4 = number of respondents who answered agreed/ high/ used n3 = number of respondents who answered undecided n2 = number of respondents who answered disagreed/ low/ less used n1 = number of respondents who answered strongly disagreed/ very low/ not used.

IV. ANALYSES

A. Introduction

The following section of the research study analyses the data that has been collected from the study area and further discusses the results yielded from it. The analysis was planned to include the background information of the participants, the numerous ways of the informal land delivery process in the study area, the existing characteristics and nature of informal land delivery in the study area, the challenges and problems of informal land delivery, and the different ways through which these challenges and problems can be countered and eliminated.

B. Preliminary Survey Details

In total, 24 (twenty-four) questionnaires were distributed to estate surveyors and valuers, among which 20 (twenty) were retrieved. This finding suggests that 83.33% of the estate surveyors and valuers were sampled. In addition, 278 (two hundred and seventy-eight) out of 321 (three hundred and twenty-one) questionnaires distributed to property owners were retrieved, thereby suggesting that 86.60% of the property owners were sampled. Thus, this study included a sizeable percentage to draw out inferences and opinions.

C. Background Information on Respondents This part discusses the socio-economic aspect of the property owners and the estate surveyors and valuers. It was found that 16.55% of the property owners are between 20-30 years, 20.50% belong to the age group between 31-40 years, 45.68% of the respondents are between 41-50 years, and 17.26% belong to the age group of 51 years and above. Moreover, the number of male participants in this study is more than the number of female respondents, as 63.31% of the participants are male and 36.69% are female. Furthermore, 16.19% of the participants hold Ordinary National Diploma certificate, 29.86% hold Higher National Diploma certificate, 34.17% hold either a bachelor's degree of Science or Technology certificate, and 19.78% hold an additional degree of either Doctorate or Masters in various disciplines. These findings suggest that the participants involved in this study are quite mature and well-educated, and therefore, their opinions can be considered reliable. In addition to this, the data regarding the sex of the respondents show that both genders have been well represented in this study.

In this study, 20% of the participants are managing partners/principals of their respective firms or companies, 30% of them are senior estate surveyors and valuers, and the remaining 50% are pupil estate surveyors and valuers. Moreover, 55% of the surveyors were associate members of the Nigerian Institution of Estate Surveyors and Valuers having an educational degree of either Higher National Diploma, Bachelor of Science, or Masters. In addition, 5% of the respondents were Fellow Members in addition to the educational qualification possessed by them. Lastly, 30% of the estate surveyors and valuers in Akure have been practising for 6 years, 15% have been in practice for 6 – 10 years, 25% have been in practice for 11-15 years, and 30% of the participants have been in practice for 16 years and above. These findings indicate that participants involved in this study are well-grounded in the practice and principles of estate surveying and valuation and are also well-acquainted with its ongoing related activities. It can, therefore, be said that the participants involved in this study are adequately qualified, and their opinions can be considered.

D. Interpretation of Objectives

The following part discusses the perspective of the property owners and the estate surveyors and valuers regarding the challenges and problems of informal land delivery. Every participant involved in this study admitted that informal land delivery leads to a continuous rise in the incidence of informal land use and, therefore, makes it difficult for the dwellers to improve their homes and environments on their end. In addition, 84.17% of the participants stated that lands through informal land delivery have poor drainage, 75.49% agreed that informal land delivery greatly contributes to pollution, and 71.94% concurred that lands through informal land delivery are mostly unplanned and leads to multiple environmental problems including pollution, flooding, etc. Further, 83.81% of the participants admitted that informal land delivery contributes to deforestation and pollution, and 70.14% agreed that it leads to flooding. However, 68.95% of the participants disagreed that land through informal land delivery suffers from a lack of sufficient water supply and sanitation facilities. It was further determined that 75.54% of the participants concurred that lands through informal land delivery have quite restricted access to services like transport, education, and health, as compared to others. 90.29% of the participants concurred that informal land delivery contributes to waste of agricultural lands, 87.41% agreed that lands through informal land delivery suffer from uncontrolled land use; 83.45% concurred that lands through informal land delivery suffer from uncontrolled squatters; 71.94% of the participants agreed that Informal land delivery does not offer adequate tenure security to residents of informal settlements; 82.01% agreed that lands through informal land delivery suffer from overcrowding; 85.97% agreed to the fact that Informal land delivery offers little to no information hence results in urban management system being neglected; 91.73% concurred that Lands through informal land delivery suffers from unplanned access, and 76.62% of the respondent agreed that lands through the informal land delivery system are almost impossible to comply with established land use and zoning standards. This section discusses the perspective of the Estate Surveyors and Valuers regarding the challenges and problems of informal land delivery. Every participant involved in the study concurred with every problem. However, 80.0% of the participants agreed that lands through informal delivery suffer from a lack of sufficient water supply and sanitation facilities, and 95.0% agreed to the fact that it is almost impossible for lands through informal land delivery to comply with established land use and zoning standards.

The following part discusses the numerous ways of militating the problems and challenges faced due to the informal land delivery systems in the study area. Every estate surveyor and valuer concurred with the measures. These measures include: At the time of policy formulation, informal land delivery should be acknowledged and

anticipated to working with it instead of against it; government agencies in charge of land and its allocation should have tolerance towards informal land delivery systems; residents residing in informal settlements should be provided basic short-term security by the government; the land market should be improved, and land management should be reformed by allowing its access to all income groups, specifically the urban poor; lands bought through the informal process should be regularized; occupiers in informal settlements should be registered by local governments to give the owners self-recognition and enable them to generate revenues, and infrastructure should be developed in unplanned areas gained through the informal land delivery system.

This section discussed the perspective of property owners on the ways of eliminating the numerous problems faced due to the informal land delivery systems in the study area. 60.07% agreed to the fact that at the time of policy formulation, informal land delivery should be acknowledged and anticipated to working with it instead of against it. 64.03% concurred those residents residing in informal settlements should be provided basic short-term security by the government. Moreover, 73.38% agreed that the land market should be improved, and land management should be reformed by allowing access to all income groups, specifically the urban poor, and 86.33% of the participants agreed that lands bought through the informal process should be regularized. However, 56.12% did not agree with the measure that government agencies in charge of land and its allocation should have tolerance towards informal land delivery systems; 52.52% also disagreed that occupiers in informal settlements should be registered by local governments to give the owners self-recognition and enable them to generate revenues, and 56.83% of the participants disagreed to the fact that infrastructure should be developed in unplanned areas obtained through the informal land delivery system.

V. CONCLUSION AND RECOMMENDATIONS

This paper has comprehensively discussed the environmental challenges arising from the informal land delivery system in Akure and the greater Nigeria. The literature review suggested that informal land use is rooted in irrelevant planning policies and land administration to meet land and housing demand of the poor, the inability of the formal sector or the government to offer affordable housing to the low-income group, and unplanned and uncontrolled urbanization. The findings of primary research showed that all of the property owners agreed that informal land delivery causes a continuous rise in the incidence of informal land use, which makes it very difficult for the dwellers to improve their homes and immediate environments on their own. For the estate surveyors and valuers, all of the respondents agreed to all of the problems that were given to them except for 80.0% that agreed to the fact that lands through informal land delivery suffer lack of adequate sanitation facilities and water supply and 95.0% also agreed to the fact that land through the informal land delivery system is almost impossible to comply with established land use and zoning standards.

A. Recommendations

Based on the following findings, the following recommendations are made:

1. Informality as a form of land delivery should be anticipated by the government and included in policy formulation to work with rather than against it.
2. Government needs to apply other assessment approaches to find ways of improving the informal land delivery systems.
3. Government should devise means to help the informal land delivery sector to work more efficiently to increase the land's supply and lower its cost or at least expand the range of alternatives available to the needy.
4. Government should also extend legality to informal land transactions.

B. Future Work

This paper would help the scholars who will be looking to do some research in this domain, as this paper emphasizes the need to address this problem through a sustainable and adequate urban land use management system. It is important to prevent the creation of new informal settlements, but that will require an adequate legal and institutional framework for land development regulation. If this happens, affordable land and housing production for all uses will be facilitated, thereby reducing the informal occupation of land while adding a significant dimension of institutional development to healthy, sustainable urban development.

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