JRBE JOURNAL OF RESEARCH IN THE BUILT ENVIRONMENT
ISSN 2636-6363
JRBE 2025
VOLUME 2 ISSUE 4
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CONSEQUENCE OF INCOMPATIBLE LAND USES ON THE ENVIRONMENT IN ODO-ADO AREA OF ADO EKITI

[1]Aboluje O. B., [2]Daramola J. O & [3]Adeyemi O. O
[1, 2 & 3] The Department of Urban and Regional Planning, The Federal Polytechnic Ado Ekiti

Corresponding author email: oluwafemiaboluje@gmail.com

ABSTRACT
Haphazard development, unregulated, unplanned layout and uprising of unapproved buildings causes' environmental pollution. Incompatible land use means the present land use which negates the original planned use that pose treat to the natural environment. The aim of this study is to examine the consequence of incompatible land uses on the environment in Odo- Ado area of Ado Ekiti. The objectives are to: identify the various problems associated with incompatible land use and land use pattern, analyses the impact of government on land use control and management and provide reasonable policy recommendations to the problems identified. The study espoused majorly on primary source of data collection, which was carried out with the administration of structured questionnaire, personal observations of various land uses and land use theories that support the research procedures. Systematic Random sampling of 231 of 153,814 individuals within the scope of study was taken, secondary data were collected from related authorities and sources. The data collected were analyzed using simple descriptive statistical methods. Findings from the study revealed that the incompatible land use in Odo-Ado of Ado-Ekiti is as a result of urbanization process. Consequently, there are incompatibility problems witnessed in the study area, such as: environmental pollution, high traffic congestion, overcrowding of residential areas, pressure on infrastructural facilities and social amenities. Recommendations were proffered to guide the policy makers toward enhancing strict adherence to zoning guidelines, housing conditions and general environmental conditions of the study area. The recommendations include the provision of land use master plan, enforcing of zoning, building to approve building plan and standards, development control by town planning authorities responsible for land use matters. Public sensitization on the major consequences of incompatible land use on environment.
Key words: Haphazard, Pollution, Incompatible

1. INTRODUCTION

In contemporary physical planning literature, the term land use refers to the use to which a site, plot or building is put, it may be residential, commercial, industrial, public, recreational, agricultural or transportation (Obateru 2005) Haphazard and unplanned urban development are the common problem of all urban centers today. The uprising and escalation of this problem is inevitable in this order, where the economy-ecology balance is not taken into consideration and economic concerns always win (Cengiz 2013) Urban growth, in which there is geometric increase in the population that has taken place in urban areas in the recent years, leading to the extinction of an extremely limited number of natural resources and to the occurrence of irregular and unsound urban areas, along with impairing the agricultural lands (Brueckner et al., 2001).

It is impossible to make up for the natural resources which have been used up due to altered and eroded ecosystem; furthermore, the serious impacts of this process are increasing day by day with multiplier effect on the environment.

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The cities and industrial areas (techno ecosystems) which continue to develop on natural areas especially due to the errors and negletions in city planning are striking as one of the most important results of this situation, Beinat, (1998).

Considering the principle of integration of the urban landscape with the natural ecosystem, this study dwells on the impacts of improper use due to wrong urban development on the natural environment and the concept of ecological landscape planning. Within this scope, the subjects "Incompatible Land Use, Planning and the Planning Hierarchy in Ado Ekiti, Ecological/ Environmentally-Sensitive Landscape planning and its Importance were included in the study, and the legal and administrative gaps in the improper use of the land were investigated thoroughly. The importance attached, and the priority given, to the environment and to urban ecological planning varies by society. Furthermore, it is possible to see the variations in the perspectives of the environment at various stages. Urban development is defined with the increase in production and consumption following the industrial revolution with the assumption that the natural resources were endless and with intensive construction activities. This stage involves some extravagant energy and land use at this stage. The growth of the city against agricultural lands is regarded as an essential indication of development (Eke, 2000).

Especially the process of metropolitan advancement causes cities to grow rapidly in the space and sprawl over extensive areas and to predominate, economically and socially, in all surrounding urban and rural communities. As a result of this, the natural resources remaining within the metropolitan area enter the process of being used up rapidly. This manifest itself with the unplanned and uncontrolled growth particularly against the rapid population increase in the metropolises of developing countries (Sezgin and Varol, 2012). The reasons for improper use, meaning the use of agricultural land for nonagricultural purposes, included the gradual increase in urbanization, the rapidly developing industry and investments accordingly, and finally, the gaps in laws and regulations. The economic earnings that develop depending on the construction of houses in rapidly growing areas where urban development is intensively felt are always higher and less risky than the yield of the activities to be carried out in agricultural lands, which manifests itself as the most primary reason why such areas are preferred as urban settlements.

1.1 AIM AND OBJECTIVES.

The aim of this study is to examine the consequence of incompatible land uses on the environment in Odo- Ado area of Ado Ekiti. The objectives are to: identify the various problems associated with incompatible land use and

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land use pattern in Odo Ado area of Ado-Ekiti, analyzes the impact of government on land use control and management, and provides reasonable policy recommendations to the problems identified.

1.2 SCOPE OF THE STUDY

The spatial scope of this study is the Odo Ado area of Ado Ekiti as a whole particular reference to Ado to Ijan axial road from Iyana Emirin to St. Paul church, Odo Ado, while the disciplinary scope is on the study of incompatible land uses in the study area. Therefore, the effect of incompatible land uses on the environment of the study area will be critically studied and analyzed.

1.3 STUDY AREA

Since the creation of Ekiti state in 1999 from the old Ondo state by the then military head of state, the population of ado Ekiti was 313,690. The population of Odo ado, ado Ekiti is 98,620 according to the 2006 census. It is located along Ado to Ijan Road. It is dominated by major socio-economic activities which includes hotels, resort, event centers, filling stations, small scale business and other schools both at primary, secondary and tertiary schools. The major population of tribes in that area are majorly Yoruba and other minor tribes are Ebira, Ibo and Hausa. The major occupation of the people living in that area mostly small scale farmers, petty traders, entrepreneurs, government workers and student of the federal polytechnic of Ado- Ekiti.

Figure 1.1: Map of Nigeria showing Ekiti State.

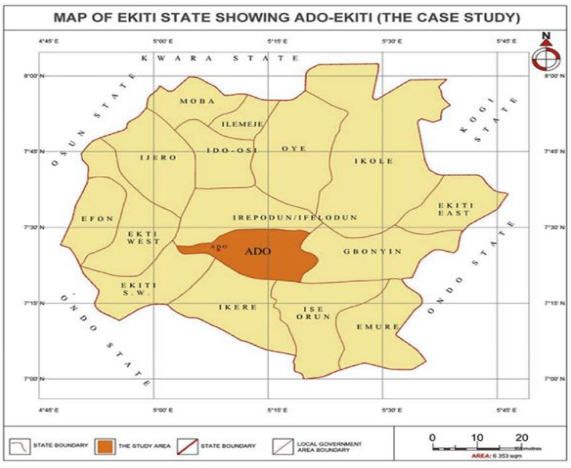

Figure 1.2: Map of Ekiti State showing Ado

Source: Ekiti State Ministry Of Lands And Physical Plannnig, 2024

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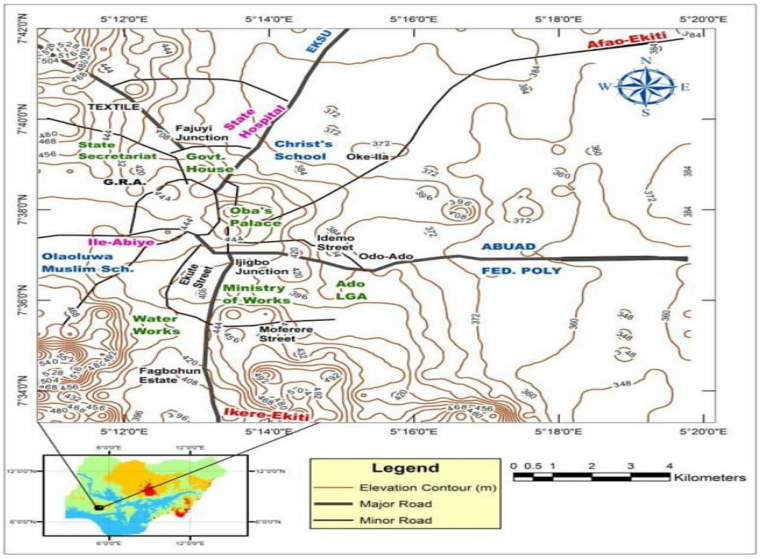

Figure 1.3: Map showing the street network in Ado Ekiti

Source: Ekiti State Ministry of Land, Housing and Urban Development, Ado-Ekiti, 2023

2. LITERATURE REVIEW

A lot of scholars have shared their views on the menace caused by the haphazard use of land resources which has thereby cause a societal confusion so as to which the original use of land is designed for, human consistence use of land and day to day urbanization process daily creeps to the diverse change in land use thereby changing original design of which the land use is put. The conflict of idea on an ideal residential pattern and commercial land use has caused the incompatible land use discovered in the study area.

By the phenomenon of urbanization which appeared in this process of growth, the sprawl of cities, the absolute necessity for establishing new settlements and the fact that urban lands could easily be turned into a matter of speculation resulted in the rapid including of fertile agricultural lands in urban lands (Keles and Hamamci, 1993).

Patterns of land use, land-cover change, and land management are shaped by the interaction of economic, environmental, social, political, and technological forces on local to global scales. An improvement understanding of historical land use and land cover patterns provide a means to evaluate complex causes and responses in order to better project future trends of human activities and land use and cover change Mackett (1994). We must understand the primary modern and future drivers of land use and their interrelationship with land management decisions and resource policies to develop projections of future land use and management decision outcomes under a range of

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economic, environmental, and social scenarios. This ability will allow better projections and hopefully minimize negative impacts, especially as related to climate change. This type of analysis will require the integration of various disciplines from the physical and social sciences.

2.1 THEORETICAL FRAMEWORK

Land must change to meet new demands yet change brings new conflicts between competing uses of the land and between the interests of individual land users and the common good. Land taken for towns and industry is no longer available for farming; likewise, the development of new farmland competes with forestry, water supplies and wildlife.

Planning to make the best use of land is not a new idea. Over the years, farmers have made plans season after season, deciding what to grow and where to grow it. Their decisions have been made according to their own needs, their knowledge of the land and the technology, labor and capital available. As the size of the area, the number of people involved and the complexity of the problems increase, so does the need for information and rigorous methods of analysis and planning. However, land use planning is not just farm planning on different scale; it has a further dimension, namely the interest of the whole community (Karikari, 2006).

Planning involves anticipation of the need for change as well as recreations to it. Its objectives are set by social or political imperatives and must take account of the existing situation cannot continue because the land itself is being degraded. Examples of unwise land use include: the clearance of forest on step lands or on poor soils for which sustainable systems of farming have not been developed; overgrazing of pastures; and industrial, agricultural and urban activities that produce pollution.

2.1.1 SECTOR THEORY

Homer Hoyt developed radial sector theory; he concentrated on aerial pattern of shifts in residential location. He argued that the different income groups or classes in a city tend to live in district areas describable in terms of sectors of a circle around a city center. Hoyts argued that the location and extension of high-quality zones tend to proceed along the fastest existing transportation and either toward another existing nucleus of building of trading centers or toward the section of the city with open country.

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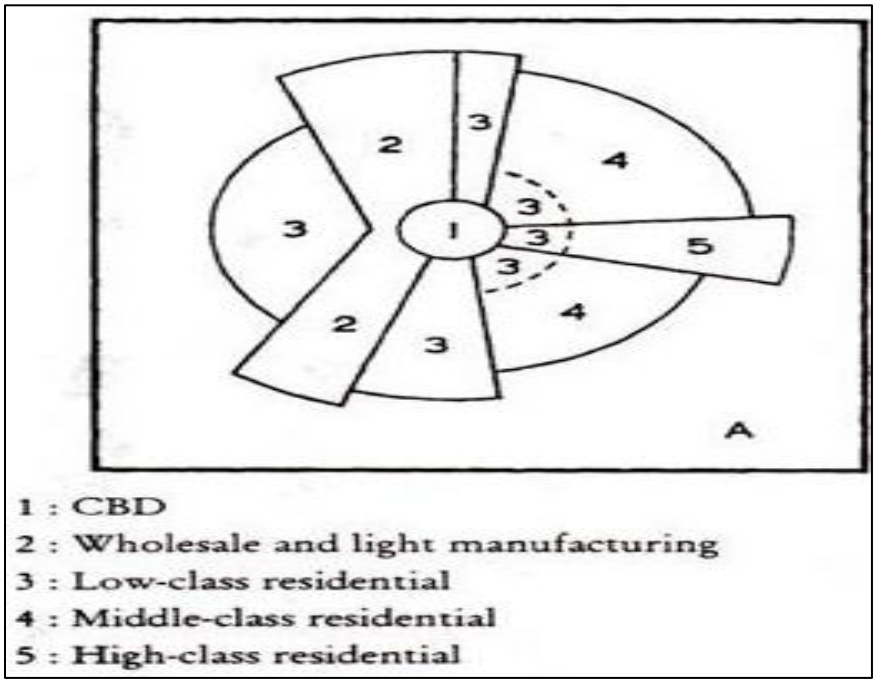

Figure 2.1: - The sector Theory

Source-Google.com

2.1.2 MULTI-NUCLEI MODEL

Cities often develop around several district nuclei rather than one center of origin. These other centers may be district center established in an earlier urbanization phase and which persist as centers as city growth fills in the space between them. According to the theory, the emergence of separate nuclei reveals four main factors, which include:

- Interdependence of some types of activity that have to be close to each other because of dependence on specialized needs.
- The tendency or complimentary activities to agglomerate such as retail shops and office buildings.
- The location antagonism between dissimilar activities such as heavy industry and high-class residential development.
- High rent and high land costs may attract or repel certain kinds of land use

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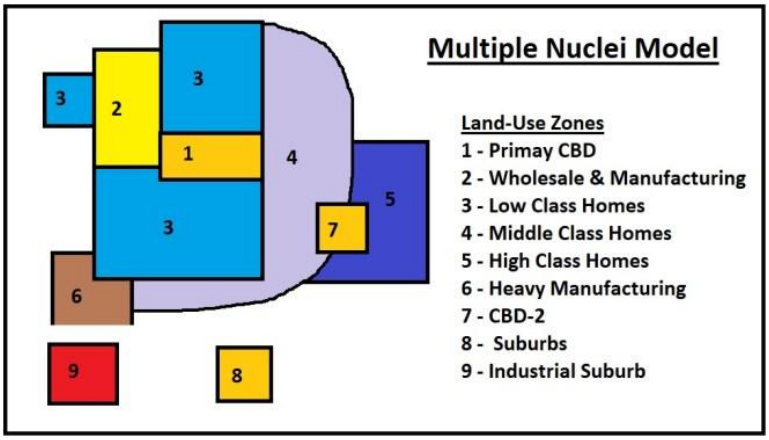
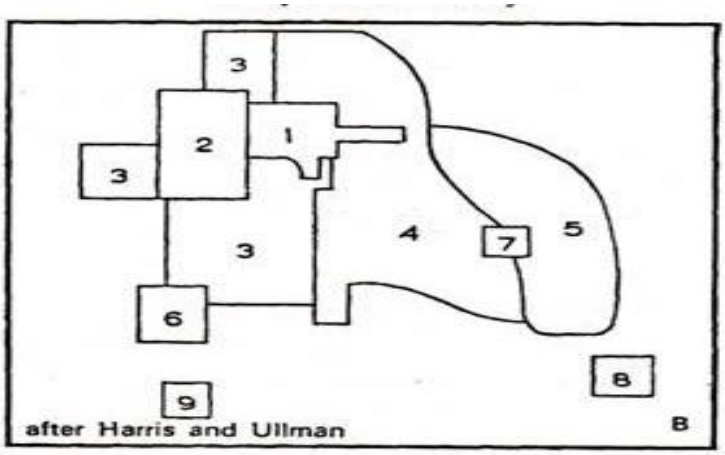


Figure 2.2: - Multiple Nuclei Theory



Source-Google.com

3. RESEARCH METHODOLOGY

The study espoused majorly on primary and secondary source of data collection, which was carried out with the administration of structured questionnaire, personal observations of various land uses and land use theories that support the research procedures. Questionnaire were administered to get information from resident in the study area,

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such information covers collection, transportation and final data analysis was done to determine the consequence of incompatible land use in Odo-Ado area of Ado-Ekiti. An interview was conducted randomly as an attempt to

cover the entire area concerned with incompatible land use system in the study area. The impact and the extent of damages. Photographs of some areas of interest will be taken. The source of information for secondary data included from internet (GOOGLE SEARCH), intellectuals, ministries, journals, conference proceedings, textbooks, theses and dissertations also. Data were collected with the aid of structured questionnaire which provides a broad spectrum of questions for residents in the sampled area 231 copies of the questionnaire were administered using systematic sample at intervals of 1:6 that is for every 6 buildings one was chosen to administer the questionnaire using 0.15% of the 153,814. For the purpose of this study, data were collected using the field observation technique, questionnaire, and oral interview.

4. DATA ANALYSIS

Respondents' Socio-Economic Characteristics

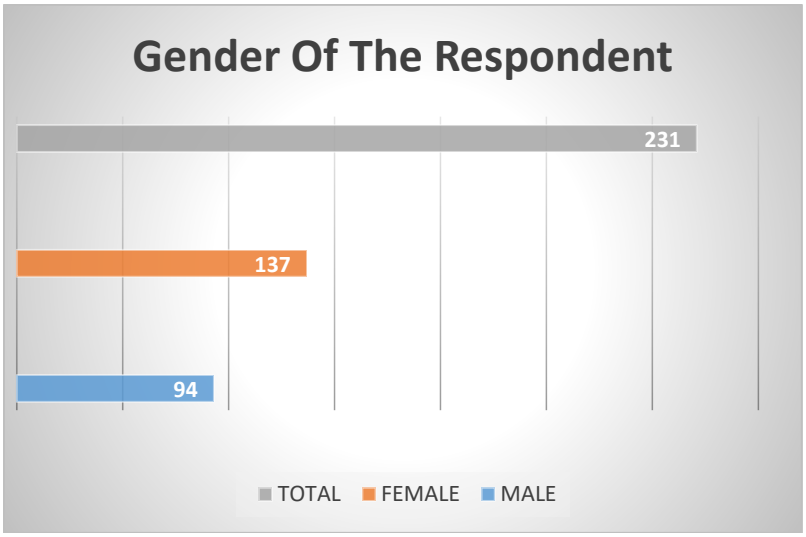

Figure 1 Gender of Respondents

Source: Author's field survey 2024

Figure 1 indicates that 94 of the respondents are male, 137 are female, and the total is 206. This implies that female has the highest in the study area.

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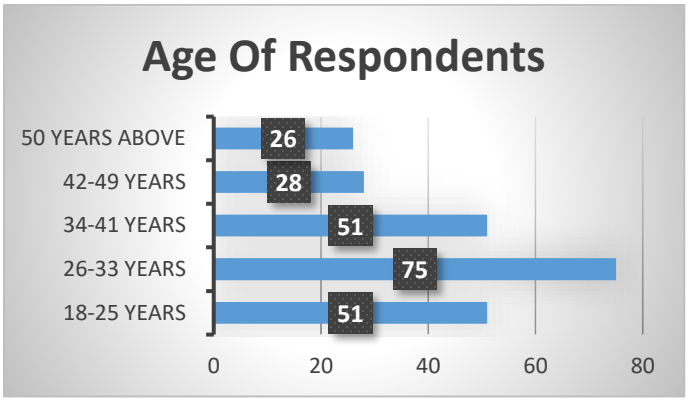

Figure 2: Age of Respondents

Source: Author's field survey 2024

Figure 2 shows that 51 of the respondents are less than 25 years, 75 are between 26-33 years, 51 are between 31-41 years, 28 are between 42-49 years, and 26 are 50 years and above. This implies that youth are more than the elderly in the area, which shows that they should be more involved in the knowledge of land use

Table 1: Marital Status of Respondents

FIELD	FREQUENCY	PERCENTAGE
SINGLE	101	43.7
MARRIED	85	36.8
DIVORCED	32	13.9
WIDOWED	13	5.6
TOTAL	231	100

Source: field survey 2024

The table 1 shows the marital status of the respondent 44% is single followed by the married which take 37% and divorced which is 14% and lastly widowed 6%.

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Table 2: Occupation of Respondents

FIELD	FREQUENCY	PERCENTAGE
FARMING	15	6
TRADING	120	52
ARTISANS	42	18
CIVIL SERVANTS	19	8
STUDENTS	30	13
OTHERS	5	2
TOTAL	231	100

Source: Author's field survey 2024

Table 2 above indicates that 8% are civil servant, 18% are artisans, 13% are students, 6% are farmers, 52% are traders, while others is 2%. This indicates that most people living in the area are traders and artisans. This implies that the commercial land use is common in the study area.

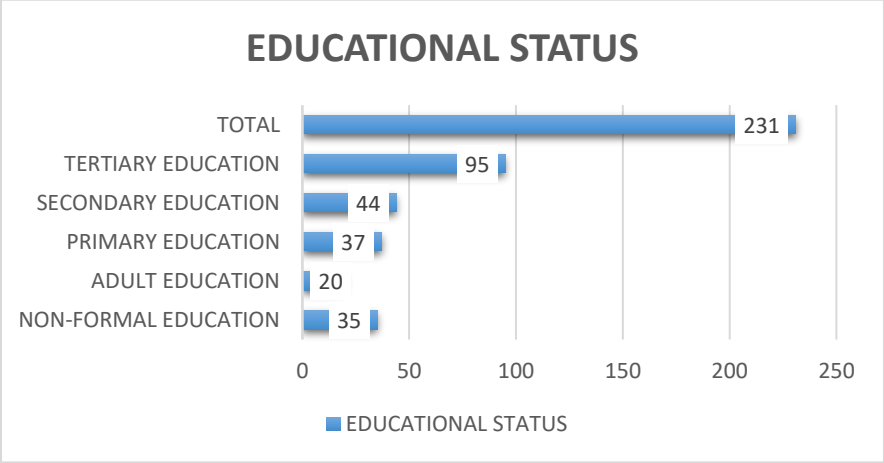

Figure 3: Level of Education of Respondents

Source: Author's field survey 2024

Figure 3 indicates that tertiary education is 95, secondary education is 44, primary education is 37, adult education is 20, and non-formal education is 35, above which implies that the majority of dwellers in the area are well educated.

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Table 3: Land Use Type in The Area

FIELD	FREQUENCY	PERCENTAGE
Residential	37	16
Commercial	92	40
Public utilities	20	9
Recreational	72	31
If others specify	10	4
TOTAL	231	100

Source: Author's field survey 2024

The table 3 indicate that the major land use in the study area is majorly commercial and recreational land use which takes 34% and 36% respectively this implies that incompatible land use is eminent in this area and also mixed use and misuse of residential apartment is possible.

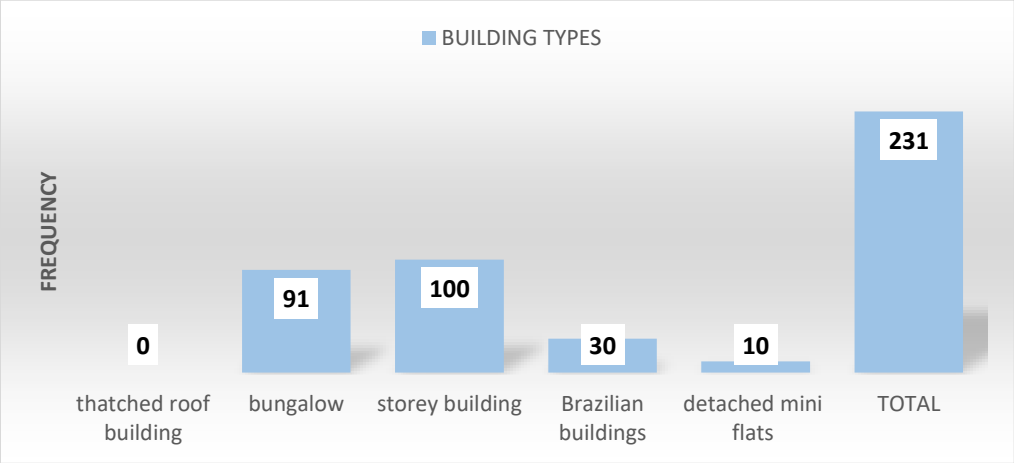

Figure 4: Building Types in the Study Area

Source: Author's field survey 2024

Figure 4 shows that most of the buildings in the study area are bungalows and high-rise buildings, with the frequency of 91 and 100, respectively. This implies that they are the most buildings where commercial activities take place along the major road in the study area.

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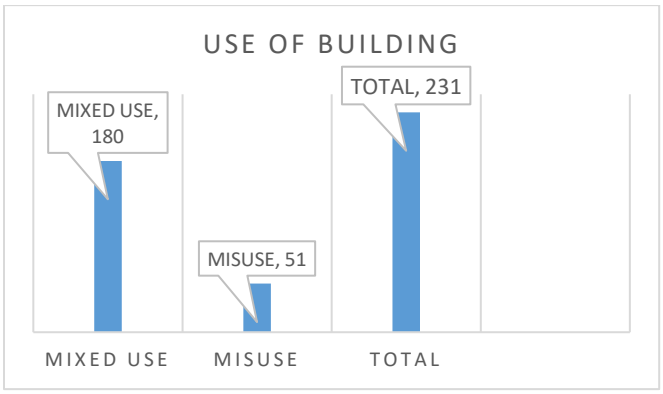

Figure 5: Various Building Uses in the Study Area

Source: Author's field survey 2024

Figure 5 shows the way the building is being put to use. It shows that most of the buildings in the area under review are used that is both commercial and residential purposes, which negates the purpose of use and gives rise to incompatible land use.

Table 4.4: Recommended Setback

FIELD	FREQUENCY	PERCENTAGE
YES	39	16.9
NO	192	83.54
TOTAL	231	100

Source: Author's field survey 2024

Table 4.4 above shows the obedience to the building regulations and safety measures provided as regulations to control the unforeseen impact of accidents and unnecessary traffic jams on the residents by following the recommended setback. Only 16.9% of the respondents claimed to have obeyed the recommended setback.

The impact of the government on land use control and management

Table 5: Do the Buildings Located In This Area, Built According To Building Regulations and Standards?

FIELD	FREQUENCY	PERCENTAGE
YES	42	18
NO	189	82
TOTAL	231	100

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Source: Author's field survey 2024

Table 5 above shows that 82% of the respondents claimed that most of the buildings in the area under review are not built according to regulations and standards of the constituted authority in charge of land allocation and building regulations. This implies that most of the land allocation do not pass through ministry of land and housing in Ekiti State.

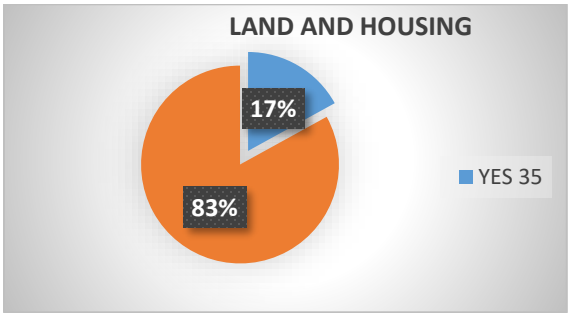

Figure 6: Do You Know of the Ministry of Land and Housing

Source: Author's field survey 2024

The figure 6 shows that shows that a large number, that is 83% of the respondents has no idea about the ministry and 17% of them claimed they were aware of the ministry, being one of the reasons for incompatible land use and hyper Hazzard development which do not give aesthetic look and modern environmental layout to the area under study.

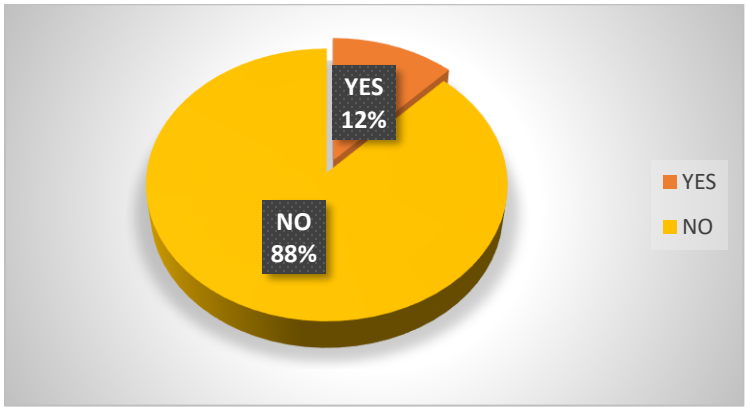

Figure 7: Awareness of Land Use Regulation

Source: Author's field survey 2024

Figure 7 shows that 88% of the respondents claimed no knowledge of land use regulation, and 12% claimed knowledge about it, which gives rise to unplanned layout and hyper-hazard development in the study area.

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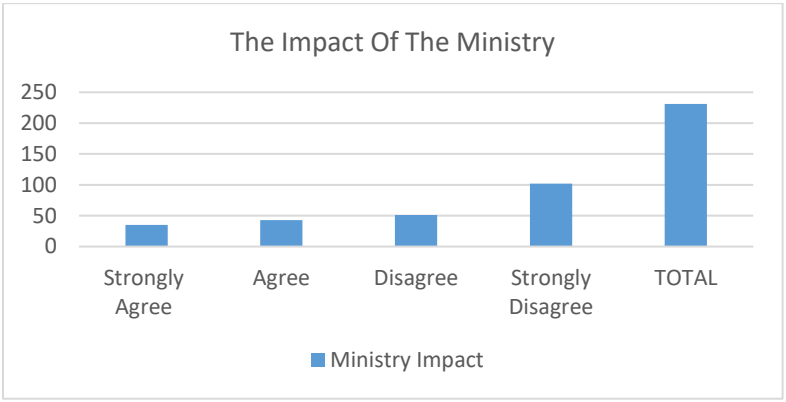

Figure 8: Is the Impact of the Ministry of Land and Housing felt in the Study Area
Source: Author's field survey 2023

Figure 8 indicates the low impact of and the effectiveness of the Ministry of Land and Housing in the area under review. 90 respondents strongly disagree that they felt the impact of the government in the regulations of land use, which gives people arbitrary power to develop structures without zoning and approval.

Figure 9: Pictures of various scenarios in the Study Area

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RECOMMENDATIONS

From the foregoing, the following recommendations were made:

The people of Odo-Ado area and also Ekiti state in general should be enlighten on the different land uses. The uses of media such as radio, television, newspaper, public journals, gazette, social media and whatever mean available to pass information to the general public. The master plan of Ado Ekiti should be made available through the ministry in charge of urban development to the public or to the internet for the use of both academic and industrial uses. There should be law enforcement in charge of regulating, implementing, ensuring compliance and prosecuting the laws guiding land uses. Most of the buildings along the main road should be given standard setback from the main road to avoid unforeseen accidents Government and other ministry should ensure the prompt approval of building plan and also moderate the charges to make a common man pay easily without going through the backdoor. Commercial use of land of the same type should be discouraged that is as we have in plate above whereby two filling stations and two event centers were built together. Land zoning should be encouraged to prevent encroachment of commercial land use into residential land use. Lastly all stakeholders in the building industry, government and environmental scientists should advise all prospective property developers against incompatible land uses and also encourage them to comply with building regulations and environmental policies. Observations made from of this study concludes that concerted efforts by government and relevant environmental organization to identify and set up the necessary machinery to prevent incompatible land use.

CONCLUSION

This study after careful appraisal and review on the consequence of incompatible land use on the environment of Odo Ado Area of Ado Ekiti, it was discovered that the study area is an obvious reflection and a clearer picture of incompatible land use in other cities across the country. The study revealed that the people need to educate on the various land uses and how it affects the social, economic and most importantly the dynamism of livelihood. In addition, findings also revealed that government policies on urban development lack institutional framework for successful implementation. Finally based on the reactions observed from respondents, the most unpredictable, elusive and complex of factors which were discovered in the course of the study as one of the major contributors of incompatible land uses is the human greedy nature. Observations revealed that even though Odo Ado dwellers faced numerous life-threatening conditions, especially those residing along poly road, they were unwilling to leave due to high commercial activities going on and in the same vein, some others are drawn to this environment and also engage in mixed use and misuse of both landed and structural properties as a result of the psychological conditioning

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from bad governance (corruption, sabotage and counter-productive behavior), sentimental socio-cultural ties and most importantly deviant behaviors.

REFERENCES

Beinat, E., & Nijkamp, P. (1998). *Multicriteria analysis for land-use management.* Springer Science & Business Media.

Brueckner, J. K., Fansler, D. A., & Brueckner, J. K. (2001). *Urban sprawl: diagnosis and remedies*. International Regional Science Review, 23(2), 160-171.

Cengiz, A. E. (2013). *Impacts of improper land uses in cities on natural environment and ecological landscape planning*. International Journal of Environmental Science and Development, 4(1), 51-54.

Cepel, N. (2008). *Consequence of incompatible land use on the environment*. Journal of Environmental Protection and Ecology, 9(1), 139-146.

Eke, P. N. (2000). *Analysis of factors that influence land use dynamics in Nigeria*. Land Use Policy, 17(2), 89-95.

Erdem, U., & Coskun, A. A. (2009). *Impact of improper land use in cities on the natural environment and ecological landscape planning*. African Journal of Agricultural Research, 4(10), 1030-1037.

Karikari, I. (2006). *Ghana's land administration project (LAP) and land information system (LIS) implementation: the issues*. In Proceedings of the 5th FIG regional conference On promoting land administration and good governance, Accra, Ghana, March 8-11, 2006 (pp. 1-15). International Federation of Surveyors (FIG)

Keles, R., & Hamamci, C. (1993). *Consequence of incompatible land uses on the environment.* Environment and Planning B: Planning and Design, 20(4), 463-471.

Mackett, R. L., & Edwards, M. (1994). *The impact of urban public transport systems: will the expectations be met?* Transportation Research Part A: Policy and Practice, 28(2), 167-182.

Neuman, W. L. (1991). *Social research methods: Qualitative and quantitative approaches*. Allyn and Bacon.

Obateru, O. I. (2005*). Planning implications for changing the use of residential buildings in Auchi, Nigeria*. Journal of Housing and the Built Environment, 20(4), 353-364.

Odame-Larbi, W. (1998). *Compulsory land acquisition and compensation in Ghana: Searching for alternative policies and strategies*. In Land reform and land tenure in Southern Africa (pp. 1-17). African Institute of South Africa.

Odum, E. P., & Barrett, G. W. (2008). *Fundamentals of ecology*. Cengage Learning.

Ricketts, T. H., & Imhoff, M. L. (2003*). Biodiversity, urban areas, and agriculture: locating priority ecoregions for conservation.* Conservation Ecology, 8(2).

Sezgin, E., & Varol, C. (2012). *Impacts of improper land uses in cities on the natural environment.* Procedia-Social and Behavioral Sciences, 35, 664-673.

Westoby, J. C. (1989). *Sustaining industrial forest plantations beyond the first rotation crop in Uganda.* Commonwealth Forestry Review, 68(4), 281-288.

Yli-Pelkonen, V., & Niemelä, J. (2006). *Use of ecological information in urban planning: Experiences from the Helsinki metropolitan area, Finland*. Landscape and Urban Planning, 77(1-2), 60-75.

Zhang, Y., Wang, L., Zhou, S., & Wang, J. (2010*). Land use change and land degradation in China from 1991 to 2001*. Land Degradation & Development, 21(4), 379-391.