

Assessing the Effectiveness of Urban Planning Policies and Regulatory Tools in Shaping Land Use Patterns on Property Development in Bonny Island, Nigeria

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Abstract: Urban planning policies and regulatory tools are essential for controlling land use patterns and guiding sustainable property development in urban areas. Though, weak enforcement of these regulations often results in uncoordinated development, inefficient land utilization, unauthorized structures, and environmental challenges. This study assessed the effectiveness of urban planning policies and regulatory tools in shaping land use patterns and property development in Bonny Island, Nigeria. A descriptive survey design and quantitative research approach were adopted for the study. Data were obtained through structured questionnaires and stakeholder interviews. Out of 350 questionnaires distributed, 300 valid responses were retrieved and analyzed, representing an 85.7% response rate. Mean scores, standard deviation and relative importance index (RII) were employed to evaluate the effectiveness of planning instruments in managing urban development. The findings revealed that zoning regulations and development control measures are the most influential planning tools affecting land use on property development in the area. However, their overall effectiveness remains moderate due to weak enforcement mechanisms and poor compliance with planning regulations. The study further showed that planning policies have contributed to improved infrastructure coordination and property values, but have been less effective in controlling unauthorized property developments. The study therefore recommended stronger enforcement measures, improved institutional capacity, enhanced monitoring systems, stakeholder awareness, and adoption of digital planning tools.

Keywords: Urban Planning; Regulatory Tools; Land Use; Property Development; Planning Compliance.

1.0 Introduction

Urban planning policies and regulatory instruments are essential mechanisms for controlling land use patterns and guiding property development in rapidly expanding urban areas. These policies include zoning regulations, land allocation systems, development control standards, building regulations, and environmental management guidelines established to ensure orderly urban growth, efficient land utilization, and sustainable development outcomes (Enisan & Aluko, 2025). Effective implementation of these planning measures contributes significantly to improved infrastructure provision, environmental sustainability, coordinated physical development, and enhanced property values within urban settlements (UN-Habitat, 2020). As urbanization continues to accelerate globally, urban planning has become increasingly important in addressing the challenges associated with population growth, economic expansion, and rising demand for land resources. However, in many developing countries, including Nigeria, the effectiveness of urban planning policies and regulatory instruments is often hindered by weak enforcement mechanisms, institutional inefficiencies, inadequate technical capacity, and uncontrolled urban expansion.

In Nigeria, urban development challenges have become more evident due to increasing pressure on land and inadequate compliance with planning regulations. Although regulatory frameworks such as the Nigerian Urban and Regional Planning Law were introduced to regulate physical development and ensure sustainable land use practices, development activities in many urban areas frequently occur outside formal planning control (Yahaya & Ishiak, 2024). This situation has contributed to the emergence of informal settlements, land use conflicts, poor infrastructure coordination, and environmental degradation in several parts of the country (World Bank, 2021). The inability of planning authorities to effectively implement and monitor planning regulations has therefore continued to undermine sustainable property development and efficient urban management.

Bonny Island in Rivers State represents one of the economically strategic areas experiencing rapid physical and economic transformation as a result of increasing oil and gas activities, maritime operations, and related commercial investments. The growth in economic opportunities within the island has intensified demand for residential, commercial, industrial, and infrastructural land uses, thereby altering existing land use patterns and increasing property development activities. However, the effectiveness of planning policies in Bonny Island is constrained by overlapping institutional responsibilities, inadequate monitoring systems, limited professional capacity, and weak development control mechanisms. These challenges have contributed to uncoordinated

physical development, inefficient land utilization, and declining environmental quality in some parts of the island.

Previous studies have established that effective urban planning policies and regulatory instruments can improve land use efficiency, promote coordinated development, and support sustainable urban growth (Enisan & Aluko, 2025; Yahaya & Ishiak, 2024; Ubaekwe, Chima, & Eguakun, 2022; Organization for Economic Co-operation and Development (OECD), 2017). However, limited empirical attention has been given to smaller but economically significant urban areas such as Bonny Island. Consequently, this study seeks to evaluate the effectiveness of urban planning policies and regulatory instruments in shaping land use patterns and property development in Bonny Island, Nigeria.

1.1 Statement of the Problem

Urban planning policies and regulatory instruments are designed to guide land use patterns and ensure orderly property development. However, the effectiveness of these policies in many parts of Nigeria is constrained by weak enforcement mechanisms, institutional limitations, and rapid urban expansion (UN-Habitat, 2020). In Bonny Island, increasing economic activities associated with the oil and gas sector have intensified demand for land, leading to uncoordinated development, land use conflicts, infrastructure pressure, and environmental challenges. Despite the existence of planning regulations, many developments occur outside formal planning control, resulting in informal settlements and inefficient land utilization (World Bank, 2021). Previous studies by Enisan and Aluko (2025), Yahaya and Ishiak (2024), and Ubaekwe, Chima, and Eguakun (2022) primarily focused on urban planning challenges in major cities, with limited attention given to smaller but economically strategic locations such as Bonny Island. Consequently, there is insufficient empirical evidence regarding the effectiveness of planning policies in shaping land use and property development in the area.

1.2 Aim and Objectives of the Study

The aim of this study is to assess the effectiveness of urban planning policies and regulatory tools in shaping land use patterns on property development in Bonny Island, Nigeria. The specific objectives of the study are to:

- i. Identify the urban planning policies and regulatory tools shaping land use patterns on property development in Bonny Island, Nigeria.
- ii. Examine the extent to which urban planning policies and regulatory tools shape land use patterns in Bonny Island, Nigeria.
- iii. Assess the proficiency of urban planning policies and regulatory tools in guiding and controlling property development in Bonny Island, Nigeria.

1.3 Research Questions

The study seeks to provide answers to the following research questions:

- i. What urban planning policies and regulatory tools shape land use patterns on property development in Bonny Island, Nigeria?
- ii. To what extent do urban planning policies and regulatory tools shape land use patterns in Bonny Island, Nigeria?
- iii. How effective are urban planning policies and regulatory tools in guiding and controlling property development in Bonny Island, Nigeria?

2.0 Literature Review

2.1 Urban Planning Policies and Regulatory Tools shaping Land Use Patterns

Urban planning policies and regulatory instruments are formal tools used by governments to control land use and guide development, and ensure orderly urban growth in cities (Yahaya & Ishiak, 2024). These include zoning regulations, land use plans, development permits, and building codes. In Nigeria, such instruments are designed to ensure orderly development, reduce land use conflicts, and promote sustainable urban growth (UN-Habitat, 2020). In many developing countries, planning policies are also expected to prevent unplanned settlements and improve infrastructure provision. However, their effectiveness depends largely on proper implementation and enforcement. In Nigeria, planning laws exist, but compliance is often low due to weak institutional structures and limited public awareness (Yahaya & Ishiak, 2024). Key frameworks include the Nigerian Urban and Regional Planning Law, zoning regulations, development permits, building codes, and environmental guidelines. These instruments are intended to organize land use into residential, commercial, industrial, and public spaces, thereby promoting orderly urban growth and reducing land use conflicts (UN-Habitat, 2020).

In practice, however, the influence of these policies varies across regions. Rapid urbanization, population growth, and economic pressures have led to increased demand for land, often exceeding the capacity of planning institutions. Studies indicate that weak enforcement of planning regulations has contributed to irregular land use patterns, including mixed and incompatible land uses in many Nigerian cities (Bloch et al., 2015). Furthermore, overlapping institutional responsibilities and inadequate coordination among agencies reduce the effectiveness of these regulatory instruments. Empirical studies show that Nigeria has a well-defined legal framework for planning; however, implementation remains weak. For example, Yahaya and Ishiak (2024) found that non-compliance with planning regulations and poor enforcement are major barriers to effective urban land use control. Similarly, Bloch et al. (2015) observed that fragmented institutional arrangements and weak governance structures limit the effectiveness of planning policies. Other studies highlight that land administration systems in Nigeria are characterized by weak legal enforcement, insecure land rights, and poor coordination among agencies, which negatively affect planning outcomes (Ige, 2024). These findings suggest that while planning policies exist, their effectiveness largely depends on institutional capacity, enforcement mechanisms, and stakeholder compliance.

2.2 Impact of Planning Policies on Land Use Patterns

Urban planning policies are expected to shape land use patterns by allocating land for residential, commercial, industrial, and public uses (Alegbeleye, Rotimi, Shomide, Oyediran & Ogundipe, 2024). When effectively implemented, these policies help to control urban expansion and ensure efficient land utilization. However, the extent to which urban planning policies influence land use patterns depends largely on the level of implementation and compliance. In theory, effective policies should ensure proper land allocation, minimize conflicts, and support sustainable development (Aribigbola, 2008). Empirical evidence suggests that where planning regulations are properly enforced, they significantly shape urban form and land use distribution (Organization for Economic Co-operation and Development, 2017). According to Enoguanbhor, Gollnow, Walker & Nielsen (2020), the actual influence of these policies is often limited in Nigeria. Many developments occur outside approved plans due to weak monitoring systems and non-compliance by developers. Informal settlements and unplanned developments are common, especially in rapidly growing urban areas. This indicates that while policies exist, their practical impact on land use patterns is moderate to low. In smaller but economically active areas such as Bonny Island, the situation is further complicated by industrial activities and land demand driven by the oil and gas sector. This creates a mismatch between planned land use and actual development patterns, highlighting gaps in policy effectiveness (Ige, 2024).

Empirical evidence from Nigeria shows mixed outcomes. A study in Akure by Enisan and Aluko (2025) found that land use planning plays a significant role in guiding urban development, particularly in residential areas. However, the study also identified gaps in coordination and implementation, which limit the full impact of planning policies. In Abuja, Enoguanbhor et al. (2020) demonstrated that land use planning scenarios significantly influence urban expansion patterns. Their study showed that proper planning can reduce environmental degradation, while weak planning leads to uncontrolled urban sprawl. Despite these positive roles, many Nigerian cities experience irregular land use patterns due to rapid urbanization and weak enforcement. Research indicates that unauthorized developments, land use conflicts, and informal settlements are common outcomes of ineffective planning systems (Bako & Balogun, 2022). These findings suggest that although planning policies have the potential to influence land use patterns, their actual impact in Nigeria is often limited by implementation challenges.

2.3 Effectiveness of Planning Policies in Guiding Property Development

Property development involves the process of improving land through construction and infrastructure provision (Enisan & Aluko, 2025). Regulatory frameworks are expected to guide this process to ensure safety, efficiency, and sustainability. Urban planning policies are also intended to guide property development by ensuring that construction activities comply with approved standards and land use plans. Effective regulation should improve infrastructure provision, enhance property values, and promote sustainable development (Ubaekwe, Chima & Eguakun, 2022). When effectively implemented, planning regulations can enhance property values, improve urban aesthetics, and support economic growth. However, evidence from Nigeria shows that regulatory systems often fail to achieve these outcomes. Weak enforcement, corruption, political interference, and inadequate funding limit the effectiveness of planning policies. As a result, many developments occur outside approved plans, leading to poor-quality infrastructure and inefficient land use (Bloch et al., 2015).

However, empirical studies in Nigeria reveal that these policies are often ineffective in practice. Weak institutional capacity, corruption, political interference, and inadequate funding limit the ability of planning authorities to enforce regulations (World Bank, 2021). As a result, many property developments occur without proper approval, leading to substandard buildings, poor infrastructure, and environmental degradation.

Aribigbola (2008) found that planning authorities focus mainly on granting development approvals without adequate monitoring of outcomes, leading to uncoordinated development. Similarly, Bloch et al. (2015) reported that weak enforcement, corruption, and political interference undermine regulatory effectiveness, resulting in widespread informal and substandard developments. These issues contribute to poor infrastructure, environmental degradation, and inefficient land use. Recent studies further show that rapid urbanization and increasing land demand have intensified property development pressures, often exceeding the capacity of planning institutions. This leads to unauthorized developments and reduced effectiveness of regulatory frameworks (World Bank, 2021). In addition, land use changes driven by population growth and economic activities have been linked to declining environmental quality and inefficient land utilization, further highlighting the limitations of existing planning systems (Alegbeleye et al., 2024).

2.4 Challenges of Urban Planning and Land Use Dynamics in Bonny Island

Urban planning in Nigeria faces several challenges, including rapid population growth, urbanization, and institutional weaknesses (UN-Habitat, 2020). The increasing demand for land has made it difficult for planning authorities to control development effectively. Studies have identified key challenges such as lack of data, insufficient technical capacity, and poor coordination among agencies (UN-Habitat, 2020). Additionally, non-compliance with planning regulations by individuals and developers further weakens the system. Government agencies often lack the capacity to enforce regulations, resulting in unplanned developments and environmental degradation (Yahaya & Ishiak, 2024). Land use in coastal and resource-rich areas such as Bonny Island is highly dynamic due to economic activities, especially in the oil and gas sector. Research on land use change in Bonny Island shows that human activities have significantly altered land use patterns over time, leading to increased built-up areas and environmental pressure (Ubaekwe et al., 2022). This rapid transformation often occurs faster than planning systems can respond, resulting in mismatches between planned land use and actual development. Investigation also shows that ineffective planning control contributes to inefficient land utilization and reduced economic returns from property development (Ige, 2024). In areas like Bonny Island, where land demand is high, ineffective regulation can lead to overcrowding, land speculation, and increased development pressure on environmentally sensitive areas. Such conditions highlight the need for effective regulatory frameworks to manage growth and ensure sustainable development.

The literature shows that urban planning policies and regulatory instruments are essential for shaping land use patterns and guiding property development. However, in Nigeria, their effectiveness is constrained by weak enforcement, institutional challenges, and rapid urban growth (UN-Habitat, 2020). Most empirical studies by Enisan & Aluko (2025); Alegbeleye et al. (2024); Yahaya & Ishiak (2024); Enoguanbhor et al. (2020) focus on major cities such as Abuja and Lagos, with limited attention to smaller but economically significant areas like Bonny Island. Furthermore, studies by Ige (2024); Bako & Balogun (2022); Blochet et al. (2015); Aribigbola (2008) examine land use patterns and property development separately, rather than evaluating the combined effectiveness of planning policies on both. Finally, the reviewed literature indicates that although urban planning policies and regulatory instruments exist in Nigeria, their influence on land use patterns and property development is not fully realized. There is a need for more context-specific studies that assess how these policies function in emerging urban areas. This study therefore fills this gap by evaluating the effectiveness of planning policies in shaping land use patterns and property development in Bonny Island.

3.0 Research Methodology

The study was conducted in Bonny Island, located in Rivers State, Nigeria; a coastal island in the Niger Delta where planning policies affect property development by influencing accessibility, zoning restrictions, and infrastructure availability. This study adopted a descriptive survey design that utilized quantitative research approach to collect data through structured questionnaires. The population of 400 property development stakeholders were identified during a pilot survey; including property developers, landowners, residents, estate surveyors and valuers and planning officials to assess how these policies function in emerging urban areas. The respondents were statistically determined to select a sample size of 350 respondents through simple random sampling technique. From a sample size of 350 residents; 300 respondents were sampled. Out of the 350 copies of questionnaires distributed, 300 were retrieved, yielding an 85.7% response rate. Data were collected using structured questionnaires based on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). And the data were analyzed using descriptive statistics; frequency distribution, mean score, and relative importance index (RII); as to ensure a balance among these land use patterns through effective planning.

4.0 Results And Discussion

4.1 Policies/Regulatory Tools Shaping Land Use Pattern

Table 1 showed policies/regulatory toolshaping land usepattern and guiding property development in Bonny Island.

Table 1: Policies/Regulatory Tools Shaping Land Use Pattern

Instrument	SD	D	N	A	SA	\bar{x}	SD	RII	Rank
Development control (permits)	12	18	30	120	120	4.06	0.96	0.81	1 st
Zoning regulations	15	25	40	120	100	3.88	1.05	0.78	2 nd
Building codes/standards	18	28	45	115	94	3.80	1.10	0.76	3 rd
Environmental regulations	20	30	50	110	90	3.73	1.15	0.75	4 th
Land use planning schemes	20	30	50	110	90	3.73	1.15	0.75	4 th
Bonny Master Plan	22	35	55	105	83	3.64	1.18	0.73	5 th

Source: Author’s Field Survey, 2026.

Table 1 results showed thatpolicies/regulatory tools shaping land usepattern and guiding property development in Bonny Island.The study revealed majority (RII>0.60) of the respondents agree that development control (permits),zoning regulations,building codes/standards, environmental regulations,land use planning schemes, and Bonny master plan are the policies/regulatory tools influencing land usepattern and guiding property development. Table 1 further revealed that development control (RII=0.81) ranks highest, showing stakeholders recognize permit systems as key. However, moderate means (~3.6–4.1) indicated partial effectiveness. In Bonny Island, zoning exists but industrial, residential, and commercial uses often mix, reflecting weak enforcement despite formal regulations. Environmental controls rank lower, aligning with observed ecological stress in coastal zones. The study indicated thatzoning and planning schemes exist but are not strictly followed, as industrial, residential, and commercial uses are often mixed without proper planningto show that environmental regulations are weakly enforced despite ecological sensitivity

The findings confirmed that development control measures (building permits) and zoning regulations are the most recognized instruments influencing land use patterns. This suggests that stakeholders are aware of formal planning tools and their intended roles.However, in practice, the situation in Bonny Island reflects a gap between policy existence and enforcement. Despite the presence of zoning regulations, land use is often mixed and uncoordinated, with residential buildings located close to industrial and commercial activities. This is largely driven by high land demand resulting from oil and gas operations and limited available land.In addition, environmental regulations, although present, are less influential. This aligns with the observable reality where coastal and environmentally sensitive areas are increasingly developed, often without strict adherence to environmental standards.

4.2 Extent of Planning Policies Tools Shaping Land Use Patterns

Table 2 showed the extent to which urban planning policies and regulatory tools influence land use patterns in Bonny Island.

Table 2: Extent of Impact

Variable	SD	D	N	A	SA	\bar{x}	SD	RII	Rank
Regulation of urban expansion	15	25	40	125	95	3.87	1.03	0.77	1 st
Control of land use allocation	18	30	50	115	87	3.74	1.12	0.75	2 nd
Promotion of organized development	18	32	52	115	83	3.71	1.11	0.74	3 rd
Environmental protection	22	35	50	110	83	3.66	1.14	0.73	4 th
Prevention of land use conflict	20	35	55	110	80	3.65	1.16	0.73	5 th

Source: Author’s Field Survey, 2026.

The results in Table 2 showed that the extent to which policies/regulatory instruments influences land usepatternis moderate.The study revealed majority (RII>0.60) of the respondents agree that factors influencing planning policies on land use patterns include regulation of urban expansion, control of land use allocation, promotion of organized development, environmental protection, prevention of land use conflict. The results further illustrated that the highest influence is on urban expansion control (RII=0.77), suggesting policies somewhat guide outward growth, while lower rankings for conflict prevention and environmental protection indicated weak practical control. In reality, Bonny Island shows irregular expansion, encroachment, and mixed land uses, confirming that policy influence is moderate but inconsistent. The study revealed that planning policies have a moderate influence on land use patterns. While there is some level of control over urban

expansion, the influence is not strong enough to ensure fully organized development. This finding is consistent with current realities in Bonny Island, where urban expansion occurs in a semi-controlled manner. Some planned layouts exist, particularly in newer developments, but many areas show irregular growth patterns, including encroachment into unsuitable or marginal lands, overlapping land uses, and informal developments without proper layout planning. Furthermore, the moderate influence on preventing land use conflict reflected the frequent occurrence of land disputes with ongoing litigations and incompatible land uses within the area.

4.3 Effectiveness of Planning Policies in Guiding Property Development

Table 3 identified the effectiveness of these policies in guiding property development in Bonny Island.

Table 3: Effectiveness on Property Development

Variable	SD	D	N	A	SA	\bar{x}	SD	RII	Rank
Enhancement of property value	15	25	40	120	100	3.88	1.05	0.78	1 st
Infrastructure provision guidance	20	30	50	115	85	3.72	1.13	0.74	3 rd
Improvement of property quality	18	30	55	110	87	3.73	1.10	0.75	2 nd
Compliance with building standards	20	35	60	110	75	3.62	1.18	0.72	4 th
Control of unauthorized development	25	40	65	100	70	3.50	1.22	0.70	5 th

Source: Author’s Field Survey, 2026.

The study revealed majority (RII>0.60) of the respondents agree that these policies in guiding property development can only be effective through enhancement of property value, infrastructure provision guidance, improvement of property quality, compliance with building standards, and control of unauthorized development. Table 3 also showed that policies are most effective in enhancing property value (RII=0.78); likely due to formal developments in high-demand zones, while lowest effectiveness is in controlling unauthorized development (RII=0.70). This aligned with reality that many buildings in Bonny Island are constructed without full approval, as the monitoring is weak, allowing substandard or informal structures; resulting in infrastructure often lagging behind development growth. The findings indicated that planning policies are partly effective in guiding property development, particularly in improving property values and supporting infrastructure planning. This is evident in areas of Bonny Island where formal developments have occurred, often linked to corporate or high-value investments. However, the policies are least effective in controlling unauthorized development and ensuring compliance with building standards. This aligns strongly with observed conditions, where many buildings are constructed without full planning approval, development often precedes infrastructure provision, and monitoring and enforcement by planning authorities are limited. As a result, some properties do not meet required standards, leading to poor building quality, congestion, and infrastructure stress.

Mostly, findings of this study highlighted a critical issue: urban planning policies in Bonny Island are present but not effectively implemented. The moderate influence on land use and limited effectiveness in guiding property development point to systemic challenges, including weak institutional capacity, inadequate enforcement mechanisms, high development pressure driven by economic activities, and limited use of modern planning technologies. These challenges result in uncoordinated urban growth, inefficient land use, and increasing pressure on infrastructure and the environment. The findings suggested that without improved enforcement and stronger institutional frameworks, Bonny Island may continue to experience; increased informal and unauthorized developments, environmental degradation, especially in coastal areas, reduced efficiency in land use planning, and long-term decline in infrastructure performance. Consequently, the study confirmed that while urban planning policies and regulatory instruments exist in Bonny Island, their practical effectiveness presently is not fully effective. While they influence land use patterns and property development to some extent, their overall impact is weakened by poor implementation and enforcement. The gap between policy design and implementation remained the major challenge affecting land use patterns and property development. Addressing this gap is essential for achieving sustainable, orderly, and efficient urban development in the area.

5.0 Conclusion and Recommendations

This study appraised the effectiveness of urban planning policies and regulatory instruments in shaping land use patterns and property development in Bonny Island, Rivers State, Nigeria. The study has shown that urban planning policies and regulatory instruments in Bonny Island play a significant but limited role in shaping land use patterns and guiding property development. Development control and zoning regulations are the most recognized tools influencing land use; however, their practical impact is reduced by weak enforcement and poor compliance. The extent of influence on land use patterns is moderate, as uncoordinated development and mixed land uses remain common. Similarly, the effectiveness of planning policies in guiding property development is

constrained, particularly in controlling unauthorized construction and ensuring adherence to building standards. Generally, the study highlighted a significant gap between the existence of planning policies and their actual implementation, which affects the achievement of sustainable and orderly urban development. As policy formulation and implementation remains a major challenge, leading to inefficient land use and suboptimal development outcomes. Therefore, there are the needs to strengthen enforcement of planning regulations, improve institutional capacity and funding, enhance monitoring and compliance systems, promote stakeholder awareness, adopt integrated land use planning, and use digital tools for planning and monitoring.

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