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EVALUATION OF SUSTAINABLE DEVELOPMENT PRACTICE ON PRIVATE RESIDENTIAL LAND: A CASE OF IPINSA, ILARA-MOKIN AND IBULE-SORO AREAS

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Abstract
Sustainable development is considered as one of the cardinal measures of the state of an environment with an important aim of ensuring adequate land use without compromising future needs. However despite efforts by statutory body on controlling the use of land through sustainable practices such as zoning, environmental conservation, land related issues still persists. The study assesses sustainable development practice of private residential land in Ondo state in order to enhance its suitability to the environment. A structured questionnaire was used to obtain information from landowners in Ipinsa, Ilara-Mokin and Ibule-Soro area of Ondo state, Nigeria. The obtained information was examined using Weighted Mean Score, Logistic Regression, Factor Analysis and Thematic Analysis. Weighted Mean Score is used to determine the probability associated with a particular event with its associated quantitative outcome. The findings of this study shows that emergence of adjoining land use, unguided market price, emergence of small illegal development amongst others were activities found on residential land in the study area. Therefore this study recommends the need for policy/guidelines on controlling the intense use of land for environmental sustainability.

Keywords: Evaluation; Sustainable Development Practice; Private; Residential; Land use; Ondo State.

Introduction
Sustainable development is considered as one of the cardinal measures of the state of an environment including social, economic and political aspect (Ebsen and Ramboll, 2000). Sustainable development as a crucial aspect to the environment play an important role in areas such as land scape, land planning, local economic development, resource efficiency and operational efficiency (Brandli, Kohler, and

Frandoloso, 2006). The desired result is a state of society where living conditions and resources are used to continue meeting human needs without undermining the integrity and stability of the natural system (Abubakar, 2017) Nigeria is regarded as a Land Surplus Economy that can sustain different land uses for various purposes. However, the residential use has an indisputable influence on spatial distribution of all other urban sub-system with a dominant emphasis on built environment (Brandon, and Lombardi, 2011). Obateru, (2005) viewed land use as the allocation of urban and rural land classified into residential, commercial, industrial and recreational (open space). This is for the purpose of creating economically, functionally, efficient and aesthetically pleasing residential environment. Sustainable development covers a wide spectrum of practices, ranging from zoning ordinances, conventional subdivision, sustainable site development, to environmental conservation and sustainable land planning laws (Adebayo, 2002). All these practices have a common objective of promoting environmental sustainability. However residential land use covers land related activities that disrupt sustainable development practice through pattern of use which often disregards the quality of the built and natural environment (Aribigbola, 2008). The most widespread and potentially damaging problems are: mismatch between land use and land sustainability, natural hazards and limitations, social problems and released rural planning problems (Robertson, 2005). Further, Study revealed that sustainable development was marred by lack of framework for proper residential land use, poor socio-economic development policy and lack of feedback mechanism for implementation.

Over the years, several researchers have offered different sustainable development practice for residential land use (Idowu, 2013). These approaches include innovation in land use methods, and planning to reduce environmental impacts, among other things. The study employed various land use assessment models and methods and multi-perspective assessment analyses based on the different residential land use types. It was discovered that some of the evaluation approaches was less helpful in developing strategies to sustaining residential land. Studies by (Yu 2018; Markiv, 2016) focus on sustainable development practices such as conservation development, and environmental conservation. The study employed future scenario analysis with diverse perspectives and dimensions that enrich research on land use. The findings discovered that sustainable development as a high level overview of comprehensive development takes into account multiple perspective from both natural and social aspects to improve land usage. However predicting future land use involves providing data for comprehensive reflection of the relationship between human economic activities and environment which creates many difficulties for the development, management, and sustainable utilization of residential land.

Therefore this study aimed at assessing sustainable development practices in the utilization of private land to enhance sustainable residential development in Ondo State. The specific objectives are to:

i. assess the current land utilization practices on private residential land in Ondo State;

ii. investigate the effects of the present residential land activities on sustainable development practice in the study area;
iii. examine the critical success factors influencing sustainable development practice on private residential land in the study area and;
iv. develop a framework for sustainable development practice on private residential land in the study area.

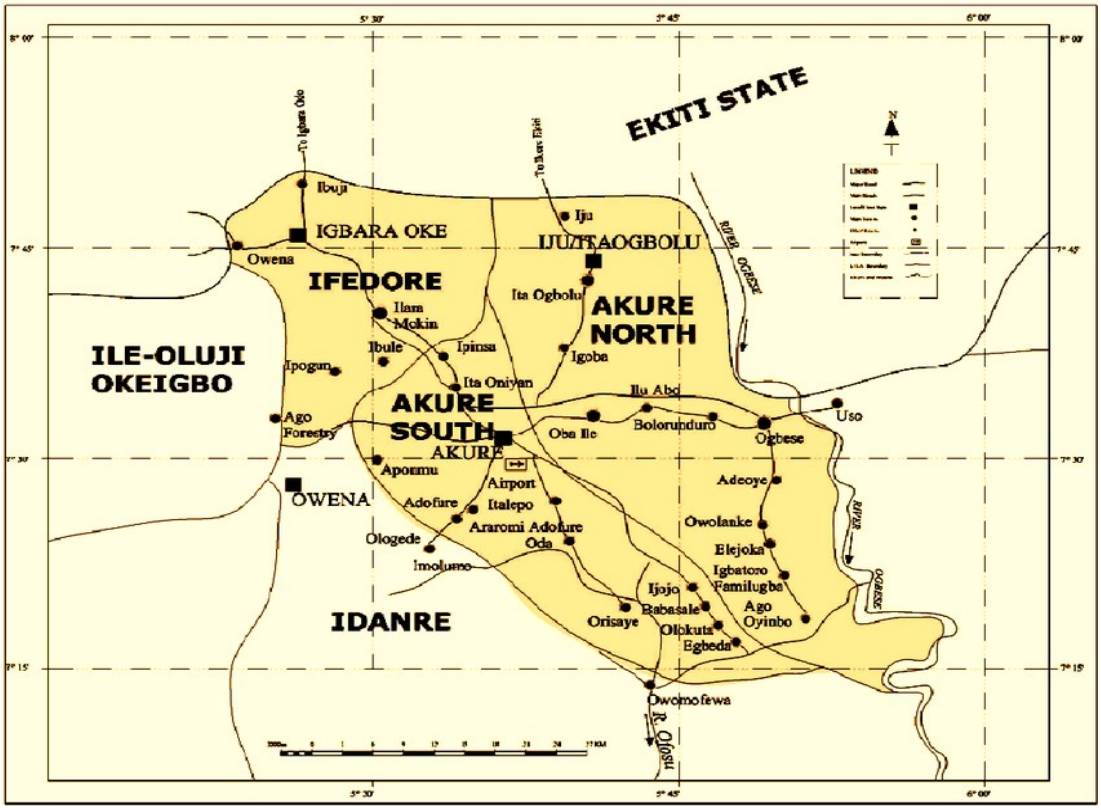
LITERATURE REVIEW

The residential land plays a physical, social and economic role in the planning and functionality of any country. Chang, (2000) while determining space allocation to the various land uses base on town planning standards reveals that residential land uses occupies 60% of the total land use while 40% represent the remaining land use. The residential land could either be private or public (Duruzoechi, 2001) however, due to complexities, political patronage involved in acquisition of land from the government, high population rely more on the private also known as informal land system for land ownership (Ahmed, 2011). The private land market, having no difference from the informal land market has been in operation before the enactment of the Land Use Act of 1978. This market is largely regarded as the market for the poor (Antwi, 2006). Land parcels are freely traded without any formal records and transactions, largely fraught with fraud, Sadly enough, this private land system remains the surest and fastest means of accessing land in Nigeria. Undoubtedly such an unguided practice produces an urban structure that compromises the principle of equity and convenience against sustainable development objectives (Mabogunje, 2002). The need to meet up with the current economic realities has brought about an imbalance in the social, economic and environmental activities on land. Unfortunately, nothing has more caused decay than gross inefficiency in land utilization and more than elsewhere Nigeria has visibly failed in paying attention to this component of urban structure (Aluko, 2005). The concept of land sustainability deals with the use, development, planning and management of land, however to achieve this, some factors known as the critical success factors are added to promote sustainability on residential land development process (Sivam; Karuppannan and Koohsari, 2012). Studies by (Kabir, 2012) and (Bustani, 2006) revealed that eight factors influence sustainable residential land use and they are: land development process, cost and time, project control, problem solving activities, risk management, adequate resources, planning/controlling and monitor performance. Studies by (Abubakar, 2009: Baccarini 2003 and Adediji, 2006) examined the factors affecting sustainable development on private residential land, four critical success factors were identified to be very critical for achieving sustainable residential land development in both mainland China and the Hong Kong region and they include effective procurement, implementation ability, favourable economic condition, and Regulation (Cheung; Chan, Lam and Ke 2012). As nations grow in size and rural areas become urban centres and urban centres become large metropolitan areas, there is always need for adoption of sustainable framework such as integrated, traditional, input/output intensity. This is to ensure harmonious development and functional efficiency of these uses and settlements (Chan; Scott and Lam, 2002).

STUDY AREA

Ipinsa, IlaraMokin and IbuleSoro are areas in Ifedore Local Government Area of Ondo State that have been in existence since 19th century. These areas comprise of a small population with

different occupational characteristics. They are villages in the traditional Nigeria city called Akure which existed long before the advent of British colonial rule. Ipinsa lies approximately on latitude $7^{0}19^{1}$(719159.98811N) North of the Equator, longitude $5^{0}9^{1}$(5910.00011E) East of the Greenwich Meridian, Altitude 395m and Greenwich Meridian Time of +1 hour.. Cities, towns and places near Ipinsa include, Ipinsa, OkeAtan, Ikota and Irese. IbuleSoro lies approximately on latitude 7°18′0″ N (7.3000001907349), longitude 5°7′0″ E (5.1166667938232), and elevation of 1,237ft (377 meters) above sea level while *IlaraMokin lies approximately on 7.349701 and the longitude is: 5.106731*. The closest towns and places include, Ipinsa, OkeAtan, Ikota, FUTA, Ijesha and Irese while major cities include Ondo, Owo, Ilesha, Ile ife and Osogbo. Major historical land marks includes; relics, shrines and festivals while the settlement pattern found here were linear type (along the road) and the dispersed type found in the interior. Notable developments includes; hospitals, churches, communication network, open stall etc. Lands owned by private individuals in the study area are surveyed and cut into standard plots of 18m by 36m, mainly used for residential purposes.



Source: Sambo, 2010

METHODOLOGY

The research design that was applied in this study is descriptive approach. The descriptive approach was used in collecting data to provide answers to the research questions and to test the hypothesis postulated in the study. The data used was collected from land owners in

IlaraMokin, Ipinsa and IbuleSoro as they are they are saddled with the responsibility of land acquisition and ownership. According to the National Housing Population Commision (2017), Ibulesoro and Ipinsa comprises of 1500 population while IlaraMokin comprises of 2500 population. However, in order for accuracy and optimum sample which fulfils the requirements of efficiency, representativeness, reliability and flexibility, 5% of the total population was administered on 200 residential land users/owners in the three locations under study.

The weighted mean score was used to generate ranking of the variables of interest based on the scores assigned by the respondents using the formula: $\text{WMS} = \frac{5n^5+4n^4+3n^3+2n^2+1n^1}{N}$

(n5=Strongly agree, n4=agree, n3=undecided, n2=disagree, n1=strongly disagree)

The factors are measured on a 5 point scale from 1 to 5, 1 for lowest and 5 for highest.

RESULTS AND DISCUSSION

250 questionnaires were distributed to residential land owners/users in Ipinsa, Ibule-Soro and Ilara-Mokin area of Ondo state, a total of 200 representing 85% of questionnaires were retrieved and found suitable for further analysis.

Table 2: Background Information of Respondents

	Ibule-soro		Ipinsa		Ilara-mokin	
Variables	F	%	F	%	F	%
Gender						
Male	40	67	45	75	60	75
Female	20	33	15	25	20	25
TOTAL	**60**	**100**	**60**	**100**	**80**	**100**

Source: Field Survey, 2023

The table reveals the dominance of male than female in the areas under study and this could be attributed to the fact that women in most cases prefer that husbands respond to interviews as they are considered the head of household. Secondly, investigation revealed that males were saddled with the responsibilities of land. In addition, nature of activities (residential land use) is mainly performed by males in the areas under study.

Table 3: Age range of respondents

	Ibule-soro		Ipinsa		Ilara-mokin	
Variables	F	%	F	%	F	%
Age range						
Below 25 years	-	-	-	-	-	-
25-34 years	10	17	-	-	-	-

35-44 years	5	8	5	8	-	-
45-54 years	20	33	28	47	26	32.5
55-64 years	15	25	17	28	38	47.5
Above 65 years	10	17	10	17	16	20

Source: Field Survey, 2023

It could be depicted from the result that the highest percentage constituted of the adult class age 45-65. It was also observed that the middle class of age 1-20 constituted of least percentage probably because of academics while the young adult class of 30-44 constituted the second highest due to nature of job mostly civil servants and few artisans workers.

Table 4: Current Residential Land Utilization Practice

Variables	M.S	N	R
The emergence of adjoining land uses	4.30	200	4
Optimal utilization without control	2.95	200	8
Unguided market practice	3.90	200	6
Emergence of small illegal development	4.40	200	3
Change of land use dynamism	2.60	200	9
Developing building without planning permit	4.45	200	2
Intense usage without controlled planning	4.25	200	4
Land encroachment	4.00	200	5
Uncontrolled residential development	4.75	200	1
Uncontrolled land use	3.85	200	7
High consumption rate	1.30	200	10

Source: Field Survey, 2023

The result show that all the factors contributed one way or the other in assessing the current residential land use practiced in the areas under study. The information on the table above reveals that uncontrolled residential development ranked 1st with mean score of 4.75, this could be attributed to the pattern of development in these areas. Residential land practice in these areas were either in a linear or clustered form and the quest to owe land and have a place of habitation has made such development pattern continue without control. It could also be attributed to values, beliefs, lack of awareness and perception of land owners on sustainable development.

Developing building without permit ranked 2nd with mean score of 4.45, Emergence of small illegal development ranked 3rd with mean score of 4.40, intense usage without controlled planning ranked 4th with mean score of 4.25. The information implies that the current land utilization has not in any way paved way for sustainable development but has brought imbalance in the form of haphazard and illegal development, land encroachment, intense use without control, amongst others.

Table 3: Factors influencing sustainable development practice on private residential land using WMS

Factors	Mean score	Standard deviation	Rank

Effective procurement	3.4800	1.551	1
Policy/Guidelines	3.4300	1.483	2
Landowner factors	3.4050	1.482	3
External Environment factors	3.2650	1.465	4
Land Zoning	3.1550	1.399	5
Institutional realities	3.0850	1.390	6
Implementation ability	3.0850	1.390	7
Development factors	3.0400	1.363	8
Master Development	3.0200	1.304	9
Town planning	3.0000	1.291	10
Favourable Economic Condition	2.9550	1.253	11

***Source**: Field Survey, 2023*

The result shows the mean score and standard deviation of each of the factors. Effective procurement ranked 1st with mean score of 3.48. It's no news that private land market is the surest way of acquiring land for residential purpose, its effective way of procurement (acquisition) unlike the public land that is filled with different bureaucracy makes a high percentage of the population opt for private land supply with implication on sustainable development practice. That is, the more acquisition, the lesser the control on use of land.

Policy/Guidelines ranked 2nd with mean score of 3.43, Policy/guidelines for effective sustainability is not practices as a small parcel of land meant for a particular purpose is used for different purposes at same time, this occurs as a result of lack of policy on the effects of such intense usage on sustainable development.

Landowner factors ranked 3rd with mean score of 3.40, the landowner is seen as one that influences the use of land and most times, landowner use are guilty of the fact that lands are used in a way that mismatch sustainability principles (environmental consciousness).

External factors ranked 4th with mean score of 3.26, Land zoning ranked 5th with mean score of 3.15, Institutional realities and implementation ranked 6th with mean score of 3.08. One of the most important practice that could enhance the proper use of land is zoning, arrangement of lands in a pattern that does not hamper future development. In addition to the above rankings, factor analysis was conducted to classify the 11 variables in Table 3.

Table 4: **Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Effective procurement	1.908	15.897	15.897	1.908	15.897	15.897
Policy/Guidelines	1.831	15.259	31.156	1.831	15.259	31.156
Landowner factors	1.483	12.360	43.516	1.483	12.360	43.516
External Environment	1.129	9.409	52.925	1.129	9.409	52.925

Land zoning	1.027	8.557	61.482	1.027	8.557	61.482
Institutional realities	.955	7.961	69.444			
Implementation ability	.875	7.289	76.732			
Development factors	.771	6.424	83.157			
Master development	.638	5.314	88.470			
Town planning	.563	4.694	93.164			
Favourable Economic Condition	.465	3.878	97.042			
	.355	2.958	100.000			

Extraction Method: Principal Component Analysis.

Source: Field Survey, 2023

The table revealed the factors influencing sustainable land use with the presence of five axes with eigenvalues exceeding 1.0, explaining 15.897%, 15.259%, 12.360%, 9.409%, 8.557%, 6.860% of the total variance respectively and resulting with a cumulative variance of 61.482%. The principal factors influencing sustainable development practice on residential land are: effective procurement, policy/guidelines, landowner factors, external factors and land zoning.

Table 5: **Rotated Component Matrix[a]**

	Component			
	1	**2**	**3**	**4**
Effective procurement	-.163	.081	-.055	.773
Policy/Guidelines	-.218	.588	-.206	-.440
Favourable Economic Condition	.027	-.082	.809	-.288
Development factors	.675	.369	.147	.111
External Environment	.048	.677	-.188	-.074
Landowner factors	.042	.030	.512	.464
Institutional realities	.013	.659	.117	.266
Implementation ability	-.268	-.060	.621	.238
Land zoning	.351	.457	.343	.197
Town planning	.747	-.095	-.030	-.178
Master development	.645	-.049	-.198	-.039

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

Source: Field Survey, 2023

With a correlation value of 0.5-1.0, the variables loaded under component 1 comprises of development factors, town planning and master development. Variables loaded under component 2 comprises of policy/guidelines, external environment and institutional realities. Variables loaded under component3 comprises of favourable economic condition, landowner

factors and implementation ability while the variables loaded under component 4 comprises of effective procurement.

RECOMMENDATIONS

Findings reveal that the current residential land development includes the following: here was the emergence of adjoining land use, informal development without planning, Land encroachment, and intense usage without controlled planning. Also, it was revealed that 5(five) factors influenced sustainable development practice on private residential land and they are: effective procurement, policy/guidelines, landowner factors, external factors and land zoning.

The following recommendations were made after analyzing the data collected aimed at reducing the problem to a considerable level;

1. Environmental sustainability; Haphazard development and land encroachment was one of the problems affecting sustainable development practice. The Ministry of lands emphasizes on the need to control the use of land. In this situation, there is need for supervision and the establishment of policy/guidelines for controlling the use of land for environmental sustainability
2. Zoning; It was revealed that residential lands were developed without putting in mind any sustainable development practice (zoning), this implies that there is no organ of government or body that is vested with the responsibility of determining how land is to be used for residential purpose that may detrimental to the environment. A body should therefore exist to plan the rate of land use.
3. Technological Innovation; Much research is needed to establish/define different important indicators, models, etc for different purposes of the land use system. As overall land use system/pattern is necessary for functionality of sustainable development.
4. Education/Awareness; Education should be provided to the land owners on negative impacts of uncontrolled land use to the environment.

CONCLUSION

Sustainable development offers outstanding opportunities to developing and developed countries. Despite the efforts of government and individuals on sustainable land use, the sector still has some short falls which affect other sectors through various activities involved. Though, there has been consensus of opinions among residential land owners on challenges of the current residential land use on sustainable development, one of which was imbalance in social and economic human activities, thereby hindering sustainable use of land. Some critical success factors affecting sustainable development practice on residential land were listed and they include: policy/guidelines, landowner factors, institutional realities, implementation ability, effective procurement and town planning.

There is no doubt that sustainable development practice is needed on land to control its usage for purposes different from what is designed to do. Therefore with careful planning, land reform system, technological innovation and adequate publicity on the effect of uncontrolled residential land development, sustainable development will play its role effectively through

patterns on use of land in different communities to meet the diverse needs of individuals and also retain it for the future generation.

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