Evaluation of Housing Quality in Makurdi Town, Benue State

Ukula, Frederick Fanen
Seed Production Department
Prasad Remington Seeds Nigeria Ltd,
Abuja, Nigeria

Abstract—This study evaluates the housing quality in Makurdi town of Benue State with the view to determining the amenities, environmental conditions, sanitation facilities, and construction materials in the study area. Six locations; Wadata, High-level, Wurukum, North-bank, Logo I and II were randomly picked for this study. The study employed the use of a questionnaire to obtain the data needs. Twenty-five questionnaires were administered in each location picked; summing to a hundred and fifty. The data was analysed using descriptive statistics. The result revealed that the basic amenities such as water were majorly sourced from hand-dug wells (64.7%), and power sourced was from the public power supply 56.7%. In terms of access roads, the majority of the respondents' access roads were untarred. The major environmental problems encountered by respondents were indiscriminate waste disposal and noise pollution. The location of most respondents as uncovered in the study was the swampy area. Also, the respondents either had poor or no drainage. With respect to sanitation, most of the respondents had toilet facilities. Open dumpsites were the most used method of refuse disposal. Mud bricks (46.7%) were the most used in wall construction and corrugated iron sheets (54.7%) most utilised roofing material. In the aspect of building requirements and plans, the majority (55.3%) had their building plan designed by an architect. However, the majority (55%) did not seek approval from Benue state urban development board (BSUDB).

Keywords— *Housing Quality; waste; Makurdi; environmental issues;;*

I. INTRODUCTION

The provision of housing is regarded as a basic human need, it ranks second after food and thereafter clothing. It is a pre-requisite for the survival of man (Onibokun cited in Omole, 2010). Housing can be described as the provision of shelter in a decent environment for human habitation. Housing is not just shelter; it embodies the arrangement of social services as well as the physical attributes of the environment. Breese (1966) insisted that the provision of accessible and decent shelter is the right of every individual; it also reflects the level of development and capital formation of any nation. Onibokun, (1985) and Foster (2000) affirmed that adequate and good quality housing provides the foundation for stable communities and social inclusion, and that housing should reflect the cultural, social and economic values of a society as it is the best physical and historical evidence of civilization in a country. However, studies have shown that many residents of urban areas in developing countries live in inadequate housing and in neighbourhoods that lack the basic requirements of liveable environments (Dung-Gwom, 2007). It is estimated that over a billion of the world's city residents live in insufficient quality housing, mostly in the sprawling slums and squatter settlements in developing countries (UN–Habitat, 2006). Regrettably, most Nigerian cities have not been spared, they have experienced decay in both housing and physical infrastructural facilities over the past few decades, possibly due to the economic downturn in the nation (Coker et al., 2007). Unlike developed nations, in Nigeria, mortgage schemes are still very much at an infancy stage in their adoption (Vanguard newspaper, 2007).

In assessing the quality or suitability of housing, studies have identified some criteria as relevant indicators for quality evaluation in residential development. Among such is Abloh (cited in Yoade *et al*., 2018), who noted that housing acceptability should take into account, type of construction, materials used, and amount of space, services and facilities, condition of facilities within and outside dwelling, function and aesthetics among many others. Ebong (cited in Yoade et al., 2018) identified aesthetics, ornamentation, sanitation, drainage, age of building, access to basic housing facilities, burglary, spatial adequacy, noise level within neighbourhood, sewage and waste disposal, air pollution and ease of movement among others, as relevant quality determinants in housing. Thus, this study aims at evaluating housing quality in Makurdi town using some quality determinants.

II. MATERIALS AND METHODS

A. *Study Area*
The study was carried out in Makurdi, the capital of Benue state. It is the largest urban area in Benue State, located between latitudes 70 35'N – 7053'N and longitudes 80 24'E - 80 42'E, and covers a land area of about 800km2 (Ogwuche and Asobo, 2013). The estimated population of the area as of 2007 was 500,797 (Wikipedia.org/wiki/Makurdi). Benue state is an agrarian economy, however, the majority of the population are civil servants and artisans/traders in Makurdi town (Onu and Onu, 2012). Makurdi has eleven council wards. The study population comprised respondents from Wadata, High-level, Wurukum, Northbank, Logo I, and Logo II.

B. *Data Collection and Analysis*
Data collection for this study was through the use of questionnaire. For the purpose of this research, twenty-five (25) questionnaires were administered to the six selected locations, totalling one hundred and fifty (150) respondents for the study. Data collected were descriptively analysed and the results presented in the frequency and percentages tables, and chart.

III. RESULT AND DISCUSSION

A. *Socio-demographic characteristics*

Table 1 Socio-economic characteristics of respondents

Variable	Frequency	Percentage
Gender		
Male	99	66
Female	51	44
Total	**185**	**100**
Occupation		
Civil Service	80	53.3
Farmers	21	14
Others	20	32.7
Total	**185**	**100**
Income (Naira)		
< 50,000	59	39.3
50,000 -150,000	52	34.7
151,000 - 200,000	26	26
> 201,000	13	13
Total	**185**	**100**
Source: Author's field survey, 2014		

The socio-demographic characteristics of the respondents show that 66% are males and 44% are females. This distributions agrees with Onu and Onu (2012) and Owoeye and Ogundiran (2014).

The survey revealed that 53.3% of the respondents were Civil servants, 32.7% fell under others – which constituted traders, artisans, food vendors, motorcyclist. Farmers constituted 14%. At the time of the survey, the study area was civil service dominated.

At the period of the study, 39.3% earn below 50,000 Naira, and 8.7% of the respondents earn 201, 000 Naira and above. Majority of the respondents in the study area did not earn much. Minimum wage of the civil servants at the time of this study was below ₦ 20, 000.

B. *Physical infrastructural facilities in the study area*

Findings show that 70% had toilet facility while 30% did not have. This suggest that those without toilet resort to open defecation in the bushes, streams and drainage channels around, or sharing their neighbour's toilet. This predisposes the residents to impending danger of outbreak of a disease.

Findings showed that 66.7% of the total respondents had a Kitchen facility in their houses, only 43.3% lacked a kitchen facility. Cooking in the open air might expose one to diseases through wind and vectors such as houseflies perching on the food or cooking utensils. Also, it creates a smoky environment thereby reducing visibility.

Drainage systems are important as they channel/direct the flow of water. The majority of the respondents (70%) had no drainages around their homes while 30% agreed they had good drainages. This implies that residents in the study area are predisposed to erosion and pollution of water sources.

The major water source of the respondents was the hand-dug wells 64.7%. Dependence on well as the main source of water by Makurdi residence was highlighted by Tse and Adamu (2011). They opined that the public water works

which hitherto supplied water to all parts of Makurdi town became dysfunctional and moribund, hence, people depend on other sources of water – which is chiefly wells. However, studies conducted by Ocheri *et al* (2010) and Mile *et al* (2012) suggested that water from hand dug wells in the study area is not safe for drinking except, if some form of treatment is carried out.

The survey revealed 56.7% respondents depend solely on electricity [GENCOS and DISCOS formerly PHCN (thewillnigeria.com)], 32% respondents used diesel or gasoline powered generator while 11.3% used kerosene powered lamps.

Table 2 revealed that 64% of the respondents' roads were untarred, 22% respondents had tarred roads to their homes while 14% of the respondents lack proper access road to their houses. During the dry season especially, untarred roads tend to produce particulate matter (an air pollutant) that is deleterious on human health when inhaled; and on plants, the dust particles resting on leaves can reduce its photosynthetic activities as such, the tendency of having sparse vegetation could result. Nowak *et al.*(2014) suggested that trees remove air pollution by the interception of particulate matter on plant surfaces and the absorption of gaseous pollutants through the leaf stomata.

C. *Sanitation and Ornamentation*

Solid waste disposal revealed that 26.7% respondents used dustbins, 13.3% made use of dug pit, 14.7% dump refuse in gutters and drainages, 20% dump theirs on undeveloped plots which they term as 'bush around', while 25.3% burn their refuse.

Findings indicate that 42% respondents planted trees and/or ornamental plants around their houses, while 58% did not. The implication of vegetal cover cannot be

Table 2 Physical infrastructural facilities in the study area

Variable	Frequency	Percentage
Toilet availability		
Yes	105	70
No	45	30
Kitchen availability		
Yes	100	66.7
No	50	33.3
Drainage availability		
Yes	45	30
No	105	70
Water Sources		
Pipe-borne	10	6.7
Hand-dug wells	97	64.7
Bole-holes	21	14
Streams/River	22	14.7
Power/Lighting Sources		
Electricity	85	56.7
Generator	48	32
Others (Lamps, Candles)	17	11.3
Access roads		
Footpath	21	14
Tarred roads	33	22
Untarred roads	96	64
Source: Author's field survey, 2014		

underestimated, as it leads to modification of the microclimate.

Table 3 Sanitation and Ornamentation		
Variable	Frequency	Percentage
Waste Disposal Methods		
Open dumpsite	40	26.7
Pit	20	13.3
Gutter/drainage	22	14.7
Bushes	30	20
Burning	38	25.3
Planting of tree/Ornamental Plants		
Yes	63	42
No	87	58
Source: Author's field survey, 2014		

D. *Common Environmental Issues*

Table 4 Environmental problems around respondents		
Environmental problems	Frequency	Percentage
Noise pollution	36	24
Indiscriminate Waste disposal	50	33.3
Flooding	25	16.7
Erosion	21	14
Others	18	12
Source: Author's field survey, 2014		

The study showed that the common environmental problems were 33.3% indiscriminate waste disposal, noise pollution 24%, 16.7% flooding and erosion was 14%. Indiscriminate dumping is a common and prevalent though risky practice, especially among developed and developing communities (Olayiwola *et al*., 2017). Indiscriminate dumping is a major environmental and public health hazard prevalent (Ogedengbe and Oyedele 2006).

E. *Housing Condition*

The study uncovered that 42% of the respondents lived in swampy area, 26.7% in low-lying areas, and 20% in elevated area while 11.3% lived by the riverside. Swampy areas, riverside and low-lying areas are prone to flood and stagnant water. The resultant effect of stagnant water is a breeding site for mosquitoes and a high rate of malaria fever.

In terms of materials used in constructing the walls, findings reveal that 46.7% used mud blocks, 28.7% used cement blocks and 24.7 % of the respondents used burnt bricks. Majority used the Mud blocks, and if not properly plastered, does not endure high precipitation, and is easily attacked by termites.

The most used roofing material as revealed by the study is 16.7% went with asbestos roofing material, 54.7% used corrugated iron sheets and 28% used other materials such as thatch, aluminum and cast roofs. The roof plays an important

role to ensure the house is in a state insulated from the hot sun and rain (Rahman *et al,* 2015). Rahman *et al.* (2015) also asserted that the common use of corrugated zinc roofing material is due to economic reason.

Thermal condition of a house is one of the comfort factors. Findings showed that 45.3 % of the respondents had ceiling installed while 54.7% had not. Ceiling reduces the intensity of heat absorb from the sun by roof (corrugated iron sheets). With the findings of the study, buildings will be unconducive due to thermal discomfort caused by zinc's high heat absorbing property.

F. *Building plan and approval*

Table 6 indicate that 55.3% of respondents had their houses designed by an architect and 44.7% did the design by themselves or a builder who may have graduated from informal training. According to Olamide and Odeyemi (2013) the parameter for measuring housing quality could also be viewed from the control of environment by the design of architectural forms that may modify the effects of natural forces.

Findings point that 45.8% respondents sought approval

Table 5 Housing Condition		
Variable	Frequency	Percentage
Location of houses		
Low lying	40	26.7
Swampy	63	42
Elevated	30	20
Riverside	17	11.3
Materials for construction		
Roofing		
Asbestos	25	16.7
Corrugated Iron sheets	82	54.7
others (cast, thatch)	43	28.7
Wall Construction		
Mud blocks	70	46.7
Cement blocks	43	28.7
burnt bricks	37	24.7
Ceiling under roof		
Yes	68	45.3
No	82	54.7
Source: Author's field survey, 2014		

from Benue State Urban Development Board (BSUDB) before erecting their houses while 54.2% did not. Constructing buildings without permit may constitute town planning breach and may have negative environmental and health impacts such as building collapse, high risk of pollution in industrial area, flooding and many other.

Table 6 Building Plan and Approval

Variable	Frequency	Percentage
Architectural design		
Yes	83	55.3
No	67	44.7
Urban devt. approval		
Yes	69	45.8
No	81	54.2

Source: Author's Field survey, 2014

IV.   CONCLUSION

This study evaluated the housing quality in Makurdi town, Benue State. Findings show that the housing quality in the study area falls below the majority of the quality determinants examined. Thus, the quality of life of the people living in the study area is suspect.

The recommendations of this study are: that the government should invest in housing programme, by building more government quarters and issuing them out to her staff through a housing loan scheme. Encouraging the private sector to invest in real estate in the study area is recommended. The statutory body responsible for development control in Makurdi should take action against individuals that have violated housing development standard, including buildings without permits ac. In order to minimize waste dumps and indiscriminate burning of refuse, strategies such as more frequent collection of waste could be implemented, residents should be made to part-take in general cleaning weekly, bi-weekly or monthly. While continuous educational campaigns informing the public of the ills of dirty and unkempt area is also important way. Investors should seize the business opportunities in waste management in the study area.

ACKNOWLEDGMENT

REFERENCES

[1] Coker, A.O., Awokola, O.S., Olomolaiye, P.O., and Booth, C.A. (2007). Challenges of urban housing quality and its associations with neighbourhood environments: insights and experiences of Ibadan City, Nigeria. *Journal of Environmental Health,* 7(1). Via www.cieh.org/JEHR/ challenges_of_urban_housing

[2] Dung-Gwom, J. Y. (2007). Urban Renewal in Jos – Bukuru Metropolis. Paper Presented at the MCPD Workshops organized by the Nigerian Institution of Estate Surveyors and Valuers, October 25th, Jos, Plateau State, Nigeria.

[3] Foster, A. (2000). Putting your house in order: evaluating tenant satisfaction with improvements to social housing. Retrieved from: http://www.hmtreasury.gov.uk/media/092FE/239.pdf. [Accesssed April 8, 2010].

[4] Mile, I.I.; Jande, J.A. and Dagba, B.I. (2012). Bacteriological Contamination of Well Water in Makurdi Town, Benue State, Nigeria. *Pakistan Journal of Biological Sciences, 15:1048-1051*

[5] Nowak, D.J.; Hirabayashi, S.; Bodine, A.; Greenfield, E. (2014). Tree and forest effects on air quality and human health in the United States. Environmental Pollution. 193: 119-129. https://doi.org/10.1016/j.envpol.2014.05.028

[6] Ocheri, M.; & Mile,I and Obeta, M. (2010). Seasonal Variation in Nitrate Levels in Hand Dug Wells in Makurdi Metropolis. *Pakistan Journal of Nutrition.* 9 (6): 539-542 DOI10.3923/pjn.2010.539.542

[7] Ogedengbe, P. S., and Oyedele. J. B. (2006). "Effect of Waste Management on Property Values in Ibadan, Nigeria." *Journal of Land Use and Development Studies* 6 (9): 29–35.

[8] Ogwuche J.A and Asobo, V. (2013). Assessment of Socio-economic Factors Affecting Household Charcoal use in Makurdi Urban Area of Benue State, Nigeria. *Journal of Environmental Research and Management*, 3(7): 180-188

[9] Olamide, E.V. and Odeyemi C.A. (2013). Maximising Housing Quality for Comfortability via Harnessing Tropical Environmental Potentials. *African Journal of Scientific Research, 11(1):*642-652

[10] Omole, K. F (2010). An Assessment of Housing Condition and Socio-Economic Life Styles of Slum Dwellers in Akure, Nigeria. *Contemporary Management Research*, 6(4):273-290

[11] Onibokun, P. (1985). Socio-cultural constraints on Urban Renewal Policies in Emerging Nations. The Ibadan Case. Pp 393-405. In: Housing in Nigeria. P.Onibukun (Ed.). A Book of Reading (NIER), Ibadan.

[12] Onu, V. and Onu, A.J.C. (2012) Urban Residential Housing and Low-Income Earners: A Study of Makurdi Metropolis, Benue State, Nigeria. *European Scientific Journal,* 8 (2):231-246

[13] Owoeye, J.O. and Ogundiran, A.O (2013). A Study on Housing and Environmental Quality of Moniya Community in Ibadan, Nigeria. *Journal of Environment and Earth Science*, 4(13):51-60

[14] Rahman, R., Kaamin, M., Mohamad, M., Abd Aziz, A. Rahman and Nor, M. (2015). Comparison of Zinc Roofed House Temperature Distribution between Open Water Exhausted with Radiator Cooling System. Applied Mechanics and Materials. 773-774. 1178-1183. 10.4028/www.scientific.net/AMM.773-774.1178.

[15] Tse, A.C and C.I. Adamu (2012). Assessment of anthropogenic influence of groundwater in hand dug wells in Makurdi Metropolis in North central Nigeria. *Ife Journal of Science*, 14(1):123-135

[16] UN-Habitat (2006). Regulatory Framework and Strategic Urban Planning and Management, A Paper presented at the African Ministerial Conference on Housing and Urban Development in Nairobi, April 3 – 4, 2006. Retrieved from: http://www.unhabitat.org. [Assessed October 3, 2008].

[17] Vanguard Newspaper (2015). Owning a house under Lagos mortgage scheme.Retrieved from http://www.vanguardngr.com/2015/05/owning-a-house-under-lagos-mortgage-scheme/

[18] www.thewillnigeria.com/phcn_take_over_by_gencos_and_disco Accessed 10th October, 2014

[19] www.wikipedia.com/wiki/Makurdi. Accessed 20th October, 2014

[20] Yoade, A.; Adeyemi, O. and Yoade O. (2018). Assessment of Housing Quality in Ede, Nigeria Asian Themes in Social Sciences Research 1(2):76-83 DOI: 10.33094/journal.139.2018.12.76.83