



APPRAISAL OF SUSTAINABILITY IN LOW-COST HOUSING DEVELOPMENT IN YOBE STATE

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Abstract – *Housing is seen as the provision of shelter which addresses the needs and satisfactions of the common man. These needs and satisfactions should be able to portray the quality of construction with availability of infrastructure, facilities and services that would be adequate, affordable and decent for the low income earners. Yobe State Housing Corporation and Property Development together with the Ministry of Housing has developed so many houses for low and middle income earners in order to address the shortage of housing in the state capital (Damaturu). This research was meant to appraise the sustainability of low cost housing development in Yobe State with a view to identify the associated constraints faced by government, this was achieved by examining whether low cost housing development meets sustainability requirement, to assess whether low-cost housing development is appropriate to the needs of the people and to identify the factors influencing against the provision of sustainable low-cost housing. The methodology adopted includes the use of primary and secondary sources. Primary source used are interviews, pilot study and questionnaires while the secondary source used are journals, seminars, textbooks, published and unpublished materials, internet e.t.c and the data was analyzed by the use of Statistical Package for Social Science (SPSS). The results obtained show that houses constructed were in good quality and therefore suggest that sustainability of low cost housing development is achieved provided regular maintenance culture are strictly adhere to by the beneficiaries and government. The research has shown that low-cost housing constructed in Damaturu is in line with sustainability requirements but were not constructed according to the needs of the people, the study revealed that finance and lack of government commitment are the major factors influencing against the provision of low-cost housing in Damaturu and only 25.3% of housing allocated to the low income earners has been achieved. The research also revealed that some estates are not constructed according to standard (lack physical quality, infrastructure, and services etc) as in Zanna Zakariya and Obasanjo Estates. The research therefore recommended that infrastructure, facilities, service, social, welfare, and health must be provided in order to sustain the natural environment.*

Keywords: *Appraisal, Development, Low-cost housing, Sustainability, WCED.*

1. Introduction

Housing is central to every one's quality of life and therefore the need for secure, safe, and adequately serviced housing cannot be over-emphasized. Housing being the next human basic need after food contributes to the physical, mental and medical well-being of people, it forms an indispensable part of ensuring human dignity (Bello, 2006). Housing is not limited to a shelter; it includes all facilities within and around it.

It is a bundle of services which entails both product and process. It is an economic and social process which eventually results to economic and social products and symbol. Sustainability of housing projects requires

government to provide housing with services, infrastructure, facilities, welfare, safety, healthy, social and economic development of the people and the natural environment are highly protected. Most of these houses provided with their infrastructures, facilities, services, etc are usually under maintained which denied sustainability. Housing initiated and constructed for low-income earners are normally allocated to high income earners but only few among the low-income earners benefit from such allocation.

However, it is in line with the significance of housing to the national development, that this study is been carried out to appraise the low cost housing delivery for sustainable development in Damaturu.

2. Theoretical Framework

Housing refers to both the physical product and the process of its attainment. Housing is perceived according to its performance and its usefulness varies with the level of comfort and hygiene it provides. The importance of people in housing is recognized not when housing complies with municipality by laws, but when people come to live in it and it has to be acceptable in a community. Housing also means privacy and is an expression of ways of life, aspirations and social relationships; therefore, housing is the provision of comfortable shelter with available infrastructure, services and facilities that address the people needs (Ngakan, 2004). Williams (2007) refers to it as a dwelling place, constructed as a home for one or more persons. It is a type of permanent shelter for man, which gives him an identity (Omoniyi and Jiboye, 2009).

Housing has become a critical component in the social, economic, cultural and political development of man (Listokin et al, 2007). It reflects the cultural, social and economic values of a society as it appears the best physical and historical evidence of civilization in a country and a reliable measure or indicator of economic development (Jiboye, 2009). Wasiu (2005) identifies the following as major problems militating against the attainment of low income housing viz: prolems of land acquisition from private land speculators, legal and technical hitches associated with land use decree of 1978, cost of building materials, eligibility of access to national housing fund loan and limited purchasing power of the national minimum wage. Affordable housing and low income means different things. The free dictionary (2012) give the meaning of low income housing as ‘any housing that is limited to occupancy by persons whose family income does not exceed certain preset maximum levels’. The US Department of the Treasury Internal Revenue Services defines low income housing as “any project in which 20 percent or more of the units are both rent restricted and occupied by persons whose income is 50 percent or less of the area median gross income” or “one in which 40 percent or more of the units are both rent restricted and occupied by persons whose income is 60 percent or less of the area median gross income”.

The term “sustainable development” has been giving some prominence by World commission on Environment and development (WCED), in its 1987 report entitled, “Our common future”. The commission defined it as “the development that meets the needs of the present without compromising the ability of the future generation to meet their own needs”. One fundamental premise for sustainable development is the recognition that environment and development is not exclusive of one another, but is complementary and inter-dependent and in the long run mutually reinforcing (Oriola, 2009). According to a special commission of the United Nations commonly referred to as Bruntland commission, sustainability is a goal that allows for the continuing improvement of standard of living without irreversible damage of resources we need to survive as species. Sustainable development is a goal that meets the needs of the present without compromising the ability of the future generation to meet their own needs (World commission on Environment and Development, 1987). To work towards the creation of sustainable housing development, one must understand the environmental impact of infrastructure on buildings.

3. Materials and Method

The population for this research includes the Yobe State Housing and Property Development Corporation. Yobe State Ministry of Housing, the beneficiaries of the low income housing scheme in the study area,

individual contractor as well as professionals involved in building construction. Data used for this research was obtained from primary and secondary sources. The primary source includes personal interview, pilot study and administration of questionnaire. One on one interview was conducted with purposively selected Staff of Yobe State Housing and Property Development Corporation, Staff of Yobe State Ministry of Housing in the role played in acquiring the land for the estate projects and payment of compensation, source of finance as well as allocation criteria used.

An interview was also conducted with Ministry of Land & Survey to collect information on the process of land acquisition for the estates project, title document of the site, map, site plan, floor plan, as well as developmental plan in relation to the research. A pilot study was carried out at the case study areas in order to ascertain the physical condition of the sites, housing design, infrastructure/facilities and services as well as environmental condition of the estates. Data was collected between the month of June and July 2017. The administration and collection of the questionnaires to the respondent's i.e. beneficiaries of the housing estates, Staff of Yobe State Housing and Property Development Corporation, Yobe State Ministry of Housing, individual contractor as well as professionals involve in building construction was carried out by the researcher.

The responses were analyzed between August and September 2017 respectively with the aid of a Statistical Package for Social Science (SPSS) Software. Two phases of questionnaire were used (phase I and II questionnaires). Phase I of the questionnaire was designed and administered to the beneficiaries of the housing estates to elicit information on personal characteristics such as Name of the beneficiary, Age, Marital Status, Occupation, State of Origin, Place of Work, Educational Background, income, quality of construction, infrastructure/facilities and services, housing design etc. while Phase II of the questionnaire was also administered to the Staff of Yobe State Housing and Property Development Corporation, Yobe State Ministry of Housing, individual contractor as well as professionals involve in building construction to obtain information on Name of the Organisation, Establishment year, Factors influencing against the provision of low cost housing, Sustainability requirement as well as constraints faced etc. Looking at the responses rates with regard to the sample size of the study areas, the response rate from the beneficiaries of housing estate was 81% and 49% for the Staff of Yobe State Housing and Property Development Corporation, Yobe State Ministry of Housing, individual contractor as well as professionals involve in building construction as contained in table 3.

A total of 324 questionnaires were administered to the beneficiaries of housing estates. 261 valid responses were used to analyze the information with reference to the facilities, infrastructure as well as services provided in the estates. Data was obtain on the estate from Staff of Yobe State Housing and Property Development Corporation, Yobe State Ministry of Housing, individual contractor as well as professionals involve in building construction. A total of 152 questionnaires were administered to the staff but only 75 were returned back as valid once.

Table 1. Questionnaire Administered to Respondent

S/N	Type	Respondents	Number of Questionnaires Administered	Number of Questionnaires Returned	Responses (%)	Rate
1	Phase I	Beneficiaries of Low Cost Housing	324	261	81	
2	Phase II	YSHPD, Ministry of Housing, Contractors & Professionals	152	75	49	

Source: Field Survey, (2017)

From each phase of the respondents, quite a number of questionnaires were administered in order to obtain responses from each group on the estates. Three Hundred and twenty Four (324) was sufficient enough to cover the appropriate minimum sample size of 261 as propounded by Small Sample Techniques 1960. In addition a total number of One Hundred and Fifty Two questionnaires were also administered to the Staff of Yobe State Housing and Property Development Corporation, Yobe State Ministry of Housing, individual contractor as well as professionals involve in building construction in which Seventy Five (75) was considered appropriate as sample size. A total number of Four Hundred and Seventy Seven (476) were administered, while 336 (representing 71%) were returned duly completed as phase I and II questionnaires. From table 1, it implies that response rate from the beneficiaries of housing estate was highly appreciating as eighty (81%) percentage success was achieved while in the second phase of the questionnaires; Fourty (49%) percentage success was also achieved. Secondary source of data used for this research includes official documents/records compiled in relation to the estates, journals, textbooks, Seminar papers, newspapers, reports and internet sources. To study the entire population in the study areas will be very cumbersome; therefore simple random sampling techniques was adopted in order to obtain reliable information that will be used in the research. The number of housing units at Bura-bura Estate, Don Etebet Estate, Obasanjo Estate, Red Brick Estate and Zanna Zakariya Estate are 2,04 7 and 250 representing the population size of Yobe State Housing and Property Development, Staff of Yobe State Ministry of Housing and to the professional involve in building construction. The sample sizes are 324 & 152 as suggested by Small-Sample Techniques: The NEA Research Bulletin, Vol. 38 (December, 1960), p. 99. The method of data analysis used for the interpretation of this research project is the Statistical Package for Social Science (SPSS) using Chi-square and Binomial Test. Descriptive statistics was also used in the research.

4. Result and Discussion

(a) Quality of Construction

The quality of construction was assessed through the use of attributes such as good, very good, excellent, satisfactory and poor as can be seen in table 5.

Table 2 Opinion on Quality of Construction in the Estates

Opinion on Quality of Construction					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	97	37.2	37.2	37.2
	Very Good	42	16.1	16.1	53.3
	Excellent	30	11.5	11.5	64.8
	Satisfactory	82	31.4	31.4	96.2
	Poor	10	3.8	3.8	100.0
	Total	261	100.0	100.0	

Source: Field Survey (2017)

Table 2 shows that respondents have the opinions that quality of construction is “good”, “very good and excellent”, “satisfactory” have 37.2%, 27.6% and 31.4% respectively are much higher than those that opine quality of construction is “poor”. The chi-square test result in the table above shows an asymptotic significance probability of 0.000 which is less than the level of significance ($X = 0.05$). This shows that the proportions of respondents for the four opinions are significantly different.

(b) Sustainability Requirement

Yobe State Housing Corporation and Property Development, Ministry of Housing, individual contractors and professional involve in building construction were asked to assess whether low cost housing in Damaturu meets sustainability requirement as indicated in table 3.

Table 3. Opinion on Sustainability Requirement

Is Low-cost Housing in Damaturu in Line with Sustainability Requirement?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	41	54.7	54.7	54.7
	NO	34	45.3	45.3	100.0
	Total	75	100.0	100.0	

Source: Field Survey (2017)

Table 4. Binomial Test on Sustainability Requirement

Binomial Test							
Is Low Cost Housing in Damaturu in Line with Sustainability Requirement?	Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (2-tailed)		
Group 1	NO	34	.45	.50	.489(a)		
	YES	41	.55				
Total		75	1.00				

a Based on Z Approximation.

Source: Field Survey (2017)

Table 3 shows that the respondents that have the opinions that low cost housing in Damaturu is in line with sustainability requirement is “Yes” have 54.7% much higher than those that said ‘No’ low cost housing in Damaturu is not in line with sustainability requirement. The binomial test result in the table above shows an asymptotic significance probability of 0.489 which is more than the level of significance ($\alpha = 0.05$). This shows that the proportions of respondents for the two opinions are not significantly different.

(c) Housing Needs

Table 5. Opinion on Household Needs

Are Houses Provided According to the Needs of the People?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	30	11.5	11.5	11.5
	NO	231	88.5	88.5	100.0
	Total	261	100.0	100.0	

Source: Field Survey (2017)

Table 6. Binomial Test on Housing Needs

Binomial Test							
			Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (2-tailed)
Are Houses Provided According to the Needs of the People?	Group 1	NO		231	.89	.50	.000(a)
		YES	Group 2	30	.11		
		Total		261	1.00		

a Based on Z Approximation.

Source: Field Survey (2017)

Table 5 shows that the respondents that have the opinions on whether houses are provided according to the needs of the people “Yes” have 11.5% much lower than those that said ‘No’. The binomial test result in the table above shows an asymptotic significance probability of 0.000 which is less than the level of significance ($\alpha = 0.05$). This shows that the proportions of respondents for the two opinions are significantly different

(d) Factors Influencing Against the Provision of Low Cost Housing

Table 7 Opinion on Factors Affecting Provision of low cost housing

Factors Affecting Provision of Low Cost Housing							
		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	Finance	44	58.7	58.7	58.7		
	Lack of Commitment From Government	31	41.3	41.3	100.0		
	Total	75	100.0	100.0			

Source: Field Survey (2014)

Table 7 shows that the respondents have the opinion on the factors affecting the provision of low-cost housing. 41.3 % of the respondents show that lack of Government commitment is lower than those that said finance. The binomial test result in the table above shows an asymptotic significance probability of 0.165 which is more than the level of significance ($X = 0.05$). This shows that the proportions of respondents for the two opinions are not significantly different.

Table 8 Binomial Test Statistics Factors Affecting Provision of low cost housing

Binomial Test		Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (2-tailed)
Factors Affecting Provision of Low Cost Housing	Group 1	Lack Commitment From Government	31	.41	.50	.165(a)
	Group 2	Finance	44	.59		
	Total		75	1.00		

a Based on Z Approximation.

Source: Field Survey (2014)

5. Summary, Conclusion and Recommendation

5.1 Summary of Findings

The research findings revealed that low-cost housing constructed in Damaturu is in line with sustainability requirements. It has been observed that low-cost housing constructed in Damaturu is not appropriate according to the needs of the people. The research findings revealed that finance and lack of government commitment are the major factors influencing against the provision of low-cost housing in Damaturu. It has been observed that allocation of houses to the low income earner revealed that only 25.3% has been achieved. The research findings revealed that some Estates are not constructed according to standards (lack physical quality, infrastructures, services e.tc.).

5.2 Conclusion

The research has attempted a description and explanation on the appraisal of the sustainability of low-cost housing development in Yobe State. The study revealed that low cost housing constructed in Damaturu is in line with sustainability requirements but were not constructed according to the needs of the people. The study also revealed that finance and lack of government commitment are the major factors influencing against the provision of low cost housing in Damaturu and only 25.3% of housing allocation to the low income earners has been achieved. The research has also revealed that some estates are not constructed according to standards i.e. lack physical quality, infrastructure, and services e.t.c

5.3 Recommendation

- i. Government should engage housing finance experts to develop a viable frame work for public private partnership for housing development and infrastructure as finance is the major constraint by Yobe State Housing and Property Development Corporation together with the Ministry of Housing.
- ii. Government should provide basic infrastructure such as road, drainage and electricity which are very essential to sustainable housing development, were tarred roads and drainages have not been provided. Institutional facilities like schools, clinics etc that provision were made in the master

- plan has not been developed. Beneficiaries of housing estates, government and property developers should devise a means of fulfilling their responsibilities in providing these basic infrastructures which are vital and taking necessary corrections in subsequent future development.
- iii. The design of houses for any estate development should consider not only the affordability of the target beneficiaries but should also take into consideration the peoples custom/culture of their housing design is very important. Planning of houses should also be considered important as lack of inadequate space between houses like the semi-detached type at Zanna Zakariya Estate is given a lot of problems in terms of fire and wind disaster that if it occurred on one unit of house, it would inevitable extend to the next house since houses shared the same roof.
 - iv. Yobe State is characterized with heavy wind and hot season. Planting of trees in the estates will serve as a wind breaker and will also enhance and filtered the atmospheric environment of an area to be conducive. In the absence of trees in an area, the more expose of the structure to wind and other element. Therefore, it is necessary to plant trees in an environment especially in the Northern part of the country. Government should encourage the planting of trees in housing estates by supplying the occupants with seedlings.
 - v. During the pilot study in the study areas, refuse collection and disposal in the estates have not been well organized. Residents resorted in throwing refuse anywhere without regard to general environmental quality. There is also failure on the part of the State Sanitation Board to establish some collection centre in the estates for final disposal, this will lead to the accumulation of heaps of refuse along the roads and in any available open place in the estates. Beneficiaries/occupants should be sensitized on the important of keeping environment clean as part of their health and Government should therefore establish some collection centre's for final disposal by the Sanitation Board.
 - vi. Basic building materials should be given tax and duty relief and government should develop incentives to encourage the public and private sectors to use indigenou building materials as in the case of red bricks estate in the study areas. See plates III and IX for more detail.

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References

- [1] Bello, N. A. (2006). *The Economics of Land and Housing*. The Academic Publication, Lagos Island, Nigeria
- [2] Ngakan, K. A. D. (2004). *Quality of Low Cost Housing Settlement*. Architecture Department, Faculty of Engineering, Udayana University. *Journal Permukiman Natah* Vol. 2 No. 2 56-107
- [3] Omoniyi, O. and Jiboye, A. D. (2009). *Effective Housing Policy and Sustainable Development in Nigeria*. Proceedings of International Conference on Research and Development. Cotonou, Benin. 2(15). 87-93. November, 24-27
- [4] Listokin et al. (2007). *Housing (Shelter)* Micro Soft Student (DVD) Redmond. W. A. Micro Soft Corporation
- [5] Jiboye, A. D. (2009). The Challenges of Sustainable Housing and Urban Development in Nigeria, *Journal of Environment Research and Policies*. 4(3). 23-27

- [6] Wasiu, A. O. A. (2005). Housing for all by the Year 2015 – A Realistic Point of View, Lagos QS Newsletter, Vol. 17 No. Small-Sample Techniques: *The NEA Research Bulletin*, Vo. 38 (December, 1960). p. 99
- [7] The Free Dictionary (2012). Low Income Housing Retrieved May 5, 2017, from [http://financial-dictionary.thefreedictionary.com/low-income+housing-income housing](http://financial-dictionary.thefreedictionary.com/low-income+housing-income+housing)
- [8] Oriola, E. O. (2009). Forestry for Sustainable Development in Nigeria. *International Journal of African Studies*. Euro Journals Publishing, Inc. 1-11 (online).
- [9] World Commission on Environment and Development (1987)