

# Challenges Facing Construction of Affordable Decent Low Cost Housing in Turkana County

John Kiplagat Biwott, Wanyona Githae, Charles Kabubo

*Abstract: Housing problems in developed countries are characterized by overcrowding, dilapidated structures and shared bathrooms. On the other hand, developing countries like Kenya, the problem is largely complicated by lack of serviced land, lack of access to housing finances, rigid legal framework and over dependence on non-local construction materials, techniques and technologies. Although there have been significant interventions in the effort to reverse this trend in Kenya, some counties especially in marginalized areas like Turkana County have continued to lag behind in provision of decent and affordable houses for its residents. In an effort to establish where the problem is, this study, seek to determine and describe challenges faced by different stakeholders and residents of Turkana County in their endeavor to put up decent low cost housing.*

*Index Terms: Affordable housing, decent housing and alternative building technologies and Turkana County*

## I. INTRODUCTION

Besides being a basic necessity, housing is also a source of identity that has significant effect on overall psychological well-being of inhabitants. The problem of housing in developed countries is more of decency of such houses in that overcrowding, dilapidated structures characterized by shared bathrooms, not fully equipped kitchens or having bad electrical wiring, broken down or insufficient heat and cracks in ceilings and walls (Schussheim, 2004).

According to Department of Communities and Local Government of United Kingdom (UK), a decent home must meet the following four criteria: First, It should meet the current statutory minimum standard for housing. Secondly, it should be in a reasonable state of repair. Thirdly, it should have reasonably modern facilities and services and lastly, it should be able to provide a reasonable degree of thermal comfort (Housing Health and Safety Rating System, 2006).

In the United States of America, it is estimated that 600,000 persons sleep out in the open every night. This number has been increasing consistently since 1960's due to removal of many cheap hotels and rooming houses as a result of urban renewal, expressway construction and private development, the closing of state hospitals for the mentally ill as well as the surging of drug abuse cases. The problem of housing has also been aggravated by segregation of low-income groups. In the 1990's, the rural population of the US, about 3.6 million poor and near poor rural households had significant housing problems with the main problem being burdensome costs, (Schussheim, 2004).

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In Nigeria the biggest challenges to affordable housing have been classified into three categories: macro-economic and political environment, building material costs and finance (Ayedun & Oluwatobi, 2011). It was found that the major factors affecting shelter in Nigeria is basically on affordability. The factors are availability of land, affordable building materials and supplies that is being dominated by foreign building materials, income that is not distributed evenly and large family size among low-income groups.

## II. POLICY PROGRAMMES

In the past, the Kenyan Government took up the role of housing supplier by controlling planning, land allocation, development and maintaining housing estates through the National Housing Corporation (NHC). NHC was established immediately Kenya gained independence and was mainly tasked with the responsibility of providing subsidized housing and implementing government housing policies and programmes through tenant purchase, mortgages, rental and rural housing loan schemes to members of the public, (Hassanali, 2009).

However, continued decline of government expenditure towards housing development over the years, have derailed this dream. This is attributed to activities of the parastatal, price controls, inappropriate building regulations and codes as well as a lack of basic planning and provision of services (Otiso, 2003). In 2007, National Housing Corporation (NHC) completed construction of a paltry 309 residential units at an estimated cost of Kshs.507 million, with a further 394 units under construction at a cost of Kshs.1 billion. Approved Central Government Expenditure for housing for the year 2007/2008 fiscal year was only Kshs.2.2 billion, compared to private sector investments of approximately Kshs.10 billion (GOK, 2008).

In 2007 Kenya launched a US\$12 billion Kenya Slum Upgrading Strategy aimed at improving the lives of 5.4 million low-income earners over the next 13 years in Kibera and Mlolongo and ultimately to other towns in the country (GOK, 2007). Although these developments were welcomed, they soon run in to problems with “landlords” in Kibera Slum who felt threatened by the upgrading and thus pursued legal redress further slowing project implementation. Similarly, Mlolongo project kicked off but stalled midway due to lack of funds. The government initiatives in the provision public housing have proven to be painfully slow with many of the houses provided being economically and socially irrelevant, this further aggravating informal settlements menace (Macoloo, 1994).

Similarly, in a bid to address high building costs, the government through the Ministry of Housing established Appropriate Building Materials and Technology (ABMT) programme in 2006. The ministry in collaboration with

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Housing and Building Research Institute (HABRI) of University of Nairobi, development partners and other stakeholders were involved in the research development and dissemination of ABMT particularly stabilized soil blocks (SSB's), micro concrete roofing (MCR) tiles and pozzolanic/rice husk cement. The Ministry has been able to set up a Regional ABMT Centre at Mlolongo and eighty four (84) Constituency ABMT Centres across the country including one in Lodwar Town, which are focal points for collaborative research, technology incubation and dissemination of ABMT information.

Even with the forgoing, NHC could not make any tangible impact in Turkana County as it is one of the most underdeveloped counties in Kenya. The types of houses dotting this expansive county are deplorable as 93.7% do not meet the minimum criteria of decent shelter. (KIHBS, 2005-2010). Spatial characteristics of such dwellings are majorly single roomed (88.6%) with only 9.3% being double roomed.

Turkana County with surface area of 68,680 km<sup>2</sup> is the second largest county in Kenya with a population of 855,399 people. Based on Kenya Population and Housing Census of 2009, this translates to 13 people per square kilometer. According to Kenya Integrated Household Budget Survey (KIHBS) (2005-2010), the poverty rate of this county stood at 92% placing it as the poorest county in Kenya. People of this county cannot afford to buy or put up decent shelter. Turkana County has the third highest number of people categorized as homeless after Nairobi and Mombasa (KNBS, 2012). This is made worse by frequent cases of cattle rustling along its borders with neighboring counties and countries as well as harsh climatic conditions of this county. The main economic activity of Turkana people, which is pastoralism, makes them move from one place to another in search of pasture exacerbate the housing condition of these people.

It is evident that with numerous incentives and programmes to improve housing both in rural and urban areas across the country, Turkana County still lags behind in the uptake of new and appropriate technology meant to make construction of decent houses affordable to local population while the current stock is in deplorable state.

Kenya now has two levels of governments; national and county governments. With a big sum of devolved funds going to the county, there is a danger that the funds will not trickle down to housing improvement. So far, Turkana County Government has received Kshs. 38.6B (US\$ 378M) as part of their allocation of devolved funds for the last four financial cycles. This is the second largest allocation after Nairobi City County. However, little of these funds have trickled down to housing sector as other sectors of the economy which are perceived to be crucial tend to be preferred over housing. This study therefore sought to determine the challenges bedeviling the construction of decent low cost housing in Turkana County.

Devolution in UK has made tremendous impact on housing since the 1999 devolution settlement through promotion of housing supply, access and affordability, addressing and preventing homelessness as well as improvement of housing quality. For example for a decade (1996-2006), the section of unfit dwellings in the English housing stock fell from 6 per

cent to just 3 per cent Of these almost three quarters were in the private sector (in 2006), with slightly more numerically in the owner-occupied sector. Nonetheless, just over one in eight low-income households in the private rented sector were living in unfit dwellings (Wilcox & Fitzpatrick, 2010).

But devolution does not, in itself, mean that devolved policies will deliver better housing for low income households. The devolved governments have made different choices about the priority afforded to housing within their devolved budgets. Within a more constrained budget, Wales also gave a lower priority to housing than the other three countries of the UK. With its full decade with wider powers, Scotland has been able to make more of an impact in coming up with a unique policy agenda, filled with a broader vision for the public good (Wilcox & Fitzpatrick, 2010).

### III. METHODOLOGY

The study was carried out among households, contactors and built environment professionals living and working in Turkana County, Kenya. This county borders South Sudan and Ethiopia to the north and northeast respectively and Uganda to the west. It also borders Baringo and West Pokot Counties to the south as well as Samburu County to the southeast. Lake Turkana divides it with Marsabit County to the east. The county covers an area of 68,680 square kilometers and has six administrative sub-counties namely Turkana East, Turkana Central, Turkana West, Turkana North, Loima and Turkana South. Turkana County is made up of 123,192 households (KIHBS, 2005-2010).

According to Krejcie & Morgan (1970) in determining sample size for research activities, a population of more than 75,000 gives a sample size of 382 household respondents using this formula:

$$n = \frac{X^2 \times N \times P \times (1 - P)}{(ME^2 \times (N - 1)) + (X^2 \times P(1 - P))}$$

Where:

n = required sample size.

X<sup>2</sup> = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size.

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

ME = the degree of accuracy expressed as a proportion (0.05).

For the study, with a target population of 123,192 households, the sample size was determined as follows:

$$n = \frac{3.841^2 \times 123,192 \times 0.5 \times 0.5}{(0.05 \times 0.05 \times 123,192) + (3.841^2 \times 0.5 \times 0.5)} = 382$$

Similarly, all the 15 contractors listed in the National Construction Authority (NCA) register and 20 built environment professionals working in Turkana County were included in the sample for face-to-face interview.

Primary data was collected through the questionnaires and face-to-face interview while secondary data was collected through literature review sourced from books, publications,

Government reports and internet research studies. Research instruments for this study consisted of questionnaires to collect data from households and face-to-face interviews from the contractors and built environment professionals working in Turkana County. The questionnaires and interviews schedules were prepared and refined through pilot study with three contractors, two built environment professionals and ten households.

**IV. RESULTS**

Out of the 382 questionnaires distributed, 290 were returned while eight contractors and thirteen built environment professionals were interviewed. This gives a total number of 311 respondents, which translates to 75 per cent response rate. Most of the respondents (80%) were male with only 20% being female.

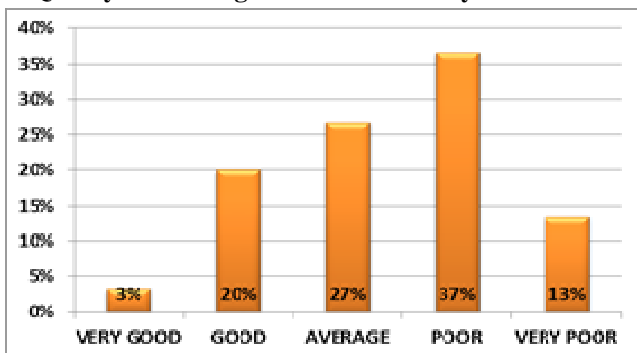
The study yielded both qualitative and quantitative data. Qualitative data was analyzed using content analysis based on analysis of meanings and implications emanating from respondents information and documented data. For quantitative data, simple descriptive statistics were used to analyze data by way of frequency counts, percentages, weighted mean and standard deviation. The results of data analysis are presented using frequency distribution tables and bar graphs, figures and tables.

**V. FINDINGS AND DISCUSSION**

Housing development in Turkana County shows higher percentage of masculinity involvement in the housing related activities in Turkana County at 80 per cent with about 20 per cent of femininity involvement. This is a departure from tradition where Turkana women were heavily involved in shelter provision. It should be noted that for ownership and realization of faster and decent housing in Kenya and at the global level, both genders should be equitably engaged at all stages in matters of shelter.

The distributions of the respondents by age shows majority of the respondents (48 per cent) were between the age of 21 and 30 years. This may be attributed to their awareness to the right to decent housing and desire to live in better shelter. Being the most proactive, productive and educated age group, they are the right people to drive the housing improvement in Turkana County. In spite of that, this particular group does not have the financial resources to build decent housing. Majority of this group are either still learning or are looking for employment.

**Quality of Housing in Turkana County**

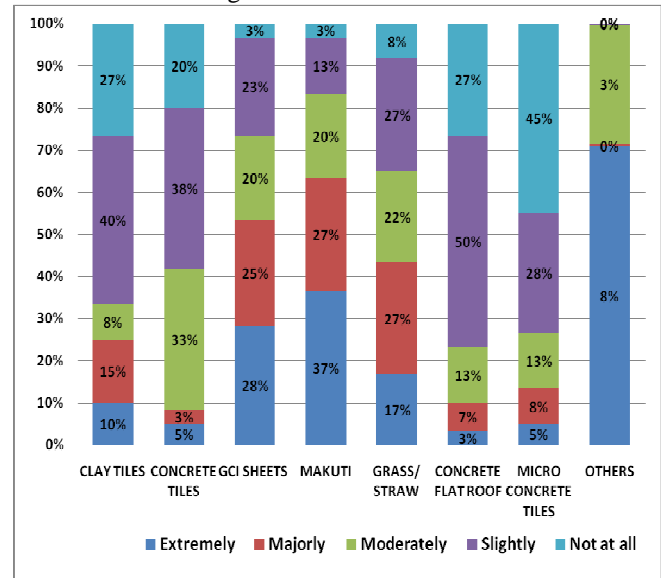


**Chart 1: Quality of Housing**

The respondents were asked to give their general opinion on the quality of existing housing in Turkana County. Majority of the respondents (37%) were of the opinion that housing in the county is of poor quality with significant number (27%) believed they are average quality. This confirms that the housing stock in Turkana County is not decent.

**Roof Construction Technologies/Materials in use in Turkana County**

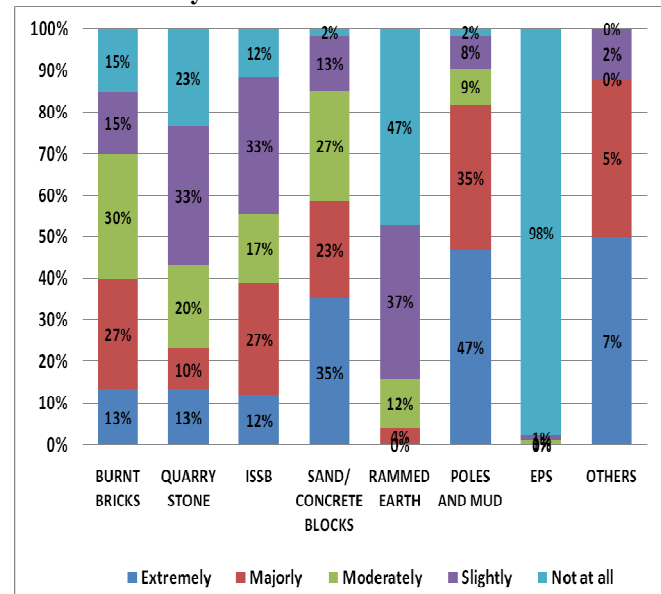
In order to gauge the quality of housing stock in Turkana County, the respondents were asked to rate the extent of use of each of the technologies or materials listed.



**Chart 2: Roof construction Technologies/materials**

As depicted in the chart above, the respondent data analysis revealed that makuti is the most used roof construction technology followed closely by galvanized iron sheets. Although makuti is not durable due to susceptibility to hash weather and pest attack, it is locally available materials especially along the rivers and shores of Lake Turkana. This therefore calls for adoption of alternative roofing solutions.

**Wall Construction Technologies/materials in use in Turkana County**



**Chart 3: Wall Construction Technologies/materials**

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On the part of walling, the respondent data analysis revealed that poles and mud are the most used materials as wall construction materials followed by sand/concrete blocks. These findings as depicted in chart above are consistent with the scenario of use of locally available materials in housing provision. This is informed by availability in Turkana County of poles, sand and clay. Alternative technologies i.e. rammed earth and EPS seems not to have penetrated this county. However, ISSB and burnt bricks are alternative technologies that have a significant presence in this county.

### Challenges Facing Provision of Low Cost Housing in Turkana County

The respondents were asked to list three challenges in order of prominence in which in their opinion if addressed will lead to increased stock of decent housing. Insecurity featured prominently (57%), followed by poor infrastructure (38%), poverty (37%) and lack of proper housing finance (28%). Lack of Information on alternative building technologies and government incentives are other challenges that if addressed will solve the issue of lack of decent house. This is as depicted below.

**Table 1: Challenges Facing Provision of Low Cost Housing in Turkana County**

S/No	Challenges	Frequency	Percentage
1	Insecurity	176	57%
2	Poor Infrastructure	119	38%
3	Poverty	114	37%
4	Lack of proper Housing Finance	88	28%
5	Lack of Government incentives	67	22%
6	Lack of Information on alternative building technologies (ABT)	67	22%

#### a. Insecurity

The single most challenge to housing development in Turkana County is attributed to insecurity experienced in the county. Frequent cases of cattle rustling along its borders with neighboring counties and countries have affected provision of housing. Insecurity has both direct and indirect impact on housing development. It scares away potential developers, cuts the supply of construction materials to sites, leads to migration of population to other places and also spiral the poverty already in place as the object of the strive in Turkana is always about livestock, the economic backbone of the people of Turkana County.

#### b. Poor Infrastructure

Another major challenge to providing affordable housing is the poor infrastructure Turkana County is vast with sparse population of 13 persons per square kilometre. Consequently, key infrastructure and services are only found in towns. The infrastructure and services that are key to decent living include water, roads, and power, communication and waste disposals. Lack of infrastructure also leads to high cost of transportation that makes construction materials expensive

for the locals. Ideally, the government provides land and infrastructural facilities such as access roads, drainage, water, sewage, electricity and a variety of other community services, while the community either as an individual or family who are allocated the serviced plot proceed to build their house in accordance with approved plans but of own choice.

#### c. Lack of Proper Housing Finance

The mortgage intake in Kenya is still very low and is almost no existent in Turkana because of lack of consistent income acceptable to the mortgage providers. In fact majority of the respondents believe that the best way to finance construction is through donor funding, an age long practice that this marginalized county have been used to. One way that can rope in the locals to the mortgage bracket is by letting them repay their mortgage with proceeds from the main economic income, which is pastoralism.

#### d. Poverty

According to Kenya Integrated Household Budget Survey (KIHBS) (2005-2010), the poverty rate of this county stood at 92% placing it as the poorest county in Kenya. Turkana County has the third highest number of people categorized as homeless after Nairobi and Mombasa (KNBS, 2012). This is made worse by frequent cases of cattle rustling along its borders with neighboring counties and countries as well as harsh climatic conditions of this county. The main economic activity of Turkana people, which is pastoralism, makes them move from one place to another in search of pasture which farther exacerbates the housing condition of these people. They cannot therefore afford decent housing as affordable housing is housing that is appropriate for the needs of a range of very low to moderate-income households and priced so that these households are also able to meet other basic living costs such as food, clothing, transport, medical care and education. As a rule of thumb, housing is usually considered affordable if it costs less than 30% of gross household income.

#### e. Lack of Government Incentives

If there is a county that need government intervention in terms of housing subsidies is Turkana County. However, despite the fact that it is disadvantaged, the housing subsidies are not forthcoming and where it is given, they do not favor the most deserving and thus has not been felt at the grassroots. Improving subsidy systems would allow systems to be more equitable in serving more households with affordable shelter. The housing success depended largely on the combined efforts of the community with the government playing merely a supportive role, providing public utilities and initial funding.

#### f. Lack of Information on Alternative Building Materials and Technologies (ABMT)

One of the challenges of housing development in developing countries is over dependence on non-local construction materials, techniques and technologies. Building materials often constitute the single largest input to housing construction in Kenya. The cost of building materials alone can take up significant percentage cost of a standard low-income formal housing unit. Despite the fact that Turkana County is endowed with abundant natural resources

that can meet their need for building materials production, the utilization is poor and looked down upon as inferior technologies. While considerable research is conducted in Kenya on local building materials, only few of these research initiatives have succeeded in disseminating findings to the potential users.

## VI. CONCLUSION

From the study men are taking more proactive role in issues of shelter than before. Similarly, the younger generation of 21- 30 years are also playing key role in the construction sector. However, this age group does not have the financial resources to build decent houses for themselves. The study also proves that the quality of housing in Turkana County is poor. On the material or technologies in use in Turkana County, there is close correlation with the report by KIHBS (2005-2010) where the dominant materials for roof are makuti while for wall is poles and mud. This means that since KIHBS carried out their study, there has been no significant improvement in the type of technologies and materials used in putting up shelter in this county.

From the study, high poverty rate standing at 92% (KIHBS 2005-2010) witnessed in the county is the biggest hindrance to the provision of housing in Turkana County. Based on this, it is very difficult to deliver housing since other pressing needs such as food override the need to have decent housing. Similarly, poor infrastructure in the county has greatly affected provision of decent housing. The infrastructure lacking in the county include good roads, reliable clean water supply and sewer trunk line. In a unique departure from other documented challenges experienced in the delivery of housing, insecurity is single factor that has come out strongly to be detrimental to provision of decent housing. Other challenges are high cost of building materials, lack of proper financing and government incentives in the housing development sector.

Housing problem in Turkana County will therefore be best tackled through devolution. The county government ought to play key role in ensuring the sector gets the attention it deserves. This is by allocating rightful share of the budget for housing development, putting in place legislative housing framework, encouraging locals and developers to invest in decent and affordable housing. Equalization fund should also be prudently be utilized to support housing development through infrastructure such as water, electricity and roads.

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