Mitigating the Housing Deficit in Zambia

Strategies and Innovative Techniques

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Introduction

Zambia is facing an acute shortage of housing with an estimated backlog of over one million housing units. The rate of supply has since the mid 1990's been poor despite having in place a well defined housing policy and action plans to guide development in the sector . This can be attributed largely to inadequate funding to the sector and other factors such as; continued dependence on the use of traditional 'brick and mortar' housing technology; high construction costs and stringent planning and building regulations.

1 Shelter Situation Analysis

1.1 Basic General Data

Geography and Administration

Zambia is located in sub-Saharan Africa and has a surface area of 752,612 square kilometres. It shares borders with the Democratic Republic of Congo (DRC); Tanzania; Malawi; Mozambique; Zimbabwe; Botswana; Namibia, and Angola.

Administratively, the country has nine provinces and seventy two districts with Lusaka and Copperbelt provinces predominantly urban.

The remaining provinces- Central, Eastern, Northern, Luapula, North-Western, Western and Southern being predominantly rural provinces (CS0 et al 2009:1).

Source:http://www.londoloza.net/images/Africa

Demography and Health

In 2000 the national census reported a population of 9.9 million and was by 2009 estimated to have risen to 12,896,830. The population growth rate has risen from 2.5% in 2000 to 2.9% in 2009. Life expectancy stands at 51.2 years.

Table 1: Projected Mid-Year Population 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
TOTAL POPULATION(millions)	9.9	10	10.4	10.7	11	11.4	11.7	12.2	12.5	12.9
POPULATION GROWTH RATE	2.5	3.1	3.1	3.1	3.1	3.1	3.0	3.0	2.9	2.9
LIFE EXPECTANCY AT BIRTH	50.0	51.8	51.9	52.4	52.4	52.6	51.9	51.4	51.3	51.2

Source: CSO, Population Projections Report

Economy

Zambia has a mixed economy with a modern sector concentrated along the line of rail and a rural agricultural sector.

During the 2001 to 2007 period the performance of the economy has considerably improved with GDP growth averaging 4.8 percent up from an annual average of 2.2 percent in the preceding four years. Mining and Construction were the key drivers of growth during this period.

Copper mining continues to be the country's main economic activity, although efforts are being made to diversify the economy with an emphasis on Agriculture and Tourism (MOFNP, 2006 FNDP).

1.2 Shelter Related Fact and Figures

Access to Shelter

Housing stock

In 1991, the total national housing stock was estimated at 1,501,898. This increased to 2,311,988 in 2001 (FNDP 2006:197).

Housing deficit (quantitative and qualitative)

The National Housing Policy of 1996 estimated a housing shortage of 846 000 units, and common consensus is that this shortage has now grown to over a million units (at five people per household, roughly half the population) [David Gardner 2007:5].

Yearly increase in number of dwelling units

On-going efforts by the National Housing Authority (NHA), Zambia Low Cost Housing Development Fund Trust (ZLCHDFT) show an inconsistent delivery of housing units. Information on yearly increase in the number of housing units is very scanty.

Average Number of Persons per Room

Table 2 below shows the average number of persons per room in Zambia.

Table 2: Household Size, Number of Rooms, Average Number of Rooms per Household and Average Number of Persons per Room, Zambia 2000

Residence Household size	No. of Rooms %	Number of rooms 1	2	3	4	5	6+	Average Number of rooms	Average number Of persons per room
Zambia	100	15.3	41.2	25.3	12.5	3.7	2.0	2.5	1.9

Source: 2000 Census of Population and Housing

The average number of persons per room is 1.9. If two persons per room is taken to be an ideal number, then overall overcrowding is not widespread in Zambia.

Tenure of households

Tenure of housing units in Zambia with regard to ownership through acquisition is based on data pertaining to owner occupied housing units. Considering the method of acquisition of the housing unit for households occupying own units, the most commonly cited method was self-building. About 80 percent of housing units in Zambia are self built, 12 percent are purchased, 4 percent are acquired freely and 2.7 percent are inherited. Mortgaging is very rare in Zambia (CSO 2000:19)

Rental (formal and informal)

According to the 2000 census report, the majority of rented housing is from individuals. 91.8 percent of respondents indicated that they were renting from individuals. Urban areas have high proportions of housing units rented from individuals with 93.1 percent compared to 81.1 percent for rural areas. More than 80 percent of housing units are rented from individuals across the country

Ownership (formal and informal)

According to the 2000 Census of population and housing, about 78 percent of households are owned by a member or members of the household. In rural areas about 91 percent of the housing units are owned by a member or members of the household, while in urban areas ownership is slightly above 50 percent.

Housing affordability

According to FinScope™ Zambia is characterised by high levels of unemployment. A large proportion of formally employed people work for government, and in most cases earn very low incomes.

In the formal sector, demand for housing finance is extremely limited with low levels of affordability and eligibility for loans. Only 0.4 percent of the population currently has a loan from the bank, government scheme or employer to buy a house and only 0.1 percent have a loan from a bank (Finmark Trust, 2007). The informal sector which comprises of self-employed individuals and 24% earning no income at all, suffers from lack of security of land tenure and is often considered as being ‘high risk’ by housing finance institutions. The low life expectancy also places pressure on financial institutions with respect to the ability of the average Zambian to service a long-term mortgage.

House price to income

According to a 2006 Central Statistics survey on living conditions, the mean monthly income for a household is about US$108. Sixty five percent earn below the basic needs basket. This means that the majority of Zambians are not able to save for housing. Only 18 percent of Zambians earn above US$- 118,11 per month.

Land (formal/informal)

Under the current system of tenure, customary Land constitutes ninety-four percent (94%) of the total land area while State land constitutes only six percent (6%) of the total land area (Draft land Policy 1999:8).

Housing construction

Housing construction continues to be the responsibility of Government.Statutory organisations such as the National housing Authority are actively involved in the provision of housing. This coupled with private or individual efforts has empowered many with home ownership.

Building materials

Common Roofing materials are iron sheets, asbestos and tiles while walls are normally built of concrete blocks, burnt clay bricks and stone. Pole and dagga[1] walls are also common in informal housing.

Access to and cost of Basic Services/Infrastructure

Infrastructure services such as water supply, sanitation, roads, storm water drainage, electricity, etc. are inadequate and/or poorly maintained in most residential areas. Land that is provided by local authorities is seldom serviced. Roads are never provided for developers, thereby making it difficult for them to bring in building materials, while lack of water makes it even more difficult to undertake actual construction.

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[1] A mixture of mud and grass used to fill spaces between the poles when making walls

1.3 Housing Policy

The country's first housing policy was formulated in 1996. Its implementation would be the first step into a sustainable march with the rest of the world towards "shelter for all" by the year 2010 (National Housing Policy:2006). The Zambian National Housing Policy was awarded the 1996 "HABITAT Scroll of honour" by UN-HABITAT in recognition of the participatory and innovative manner in which the Policy was formulated (UN-HABITAT: 3). Its aim is to provide adequate affordable housing for all income groups in Zambia.

1.4 Actors in Shelter Delivery and their Roles

The following are the key players in shelter delivery in Zambia:

Ministry of Local Government and Housing

- Mainly Policy setting and supervision

Local Authorities

- Planning and regulation of actual development at city level

Local Planning Authorities

- To ensure that land for housing is identified and planned for in good time and that appropriate planning standards are in place for a quick and efficient development of housing

National Housing Authority (NHA)

- To advise government on matters pertaining to housing including housing policy
- To promote home ownership through provision of affordable shelter
- Construct, manage and maintain housing estates

National Council for Construction

- To promote the construction of affordable low and medium cost housing in consultation with the National Housing Authority, the Director in the Buildings Department and other stakeholders.
- To promote research into construction and the development and use of local materials and appropriate construction materials.

Habitat for Humanity and Zambia Federation for Poor Peoples Process

- Encourage community savings for housing needs of individual members
- Help members acquire land for housing development
- Encourage community participation in the development of neighbourhoods.

Private Sector Developers

- To participate effectively in the construction of housing for all categories of the population either for sale or rent.
- To participate effectively in the manufacturing and supply of building materials in the housing sector

1.5 Shelter Design

Physical Planning

The following planning authorities are responsible for physical planning:

- The Provincial Planning Authorities which are serviced by the Department of Physical Planning and Housing(MLGH) and;
- The Planning Authorities of Cities and Municipalities serviced by their respective City and District Councils.

However, these Planning Authorities are faced with many challenges such as absence of manpower, limited resources and political interference.

Population Density

According to the UN the population density in 2002 was 13 people per sq km.

Gender Issues

Gender issues are important in achieving sustainable economic growth, job creation, ensuring food security and reducing poverty. The 1998 Living Conditions Survey showed that persons in female headed households were more likely to be extremely poor than those in male-headed households. Furthermore, food poverty was more prevalent among female-headed households (61%) compared to male-headed households (52%).

With regard to land tenure most women in Zambia today, whether living in towns or rural areas do not enjoy the same rights to land as men. The National Land

Policy of 2002 provides that 30 percent of land, which is demarcated, is allocated to women and groups with special needs, while both women and men should compete for the remaining 70 percent.

2 Organisation

The National council for Construction (NCC) is a statutory body constituted by an act of parliament no. 13 of 2003 whose mandate is to promote, develop and regulate the Construction industry. With regard to shelter development, the NCC's function is to promote the construction of affordable low and medium cost housing in consultation with the National Housing Authority, the Director in the Buildings Department and other stakeholders. It also promotes research into construction and the development and use of local materials and appropriate construction materials. The mission of the NCC is "*to effectively contribute to sustainable national economic growth through the promotion, development, training and regulation of the Zambian Construction Industry*". The organisation in August 2009 launched its first ever strategic plan (2009-2015) to guide its operations and functions. It is envisaged that this will propel the organization to focus on its other functions including the promotion of affordable housing. The NCC sits on many steering committees and working groups as such it is highly influential on matters of policy and regulation.

3 Shelter Problem

Slow rate of housing construction

The problems associated with shelter are numerous and cross-cutting as has been highlighted in the previous chapters. The growing housing shortage is evidence that despite the many efforts being made by the various actors in shelter delivery, there still remains a lot to be done.

The National Housing Policy which is currently under review had envisaged 'shelter for all' by 2010. This year marks the end of the theme ' shelter for all' by 2010. It also marks the end of the Fifth National Development Plan. From the figures given on the housing deficit of 846,000 housing units in 1996 and now 1,000,000 plus units, it is clear that the country has not achieved its goal.

The major actor in housing provision which is the National Housing Authority is responsible for housing construction for all income groups but is only able to construct approximately 300 housing units yearly. These are all for sale as the institution has in the recent past moved away from rental housing. Low cost housing is no longer affordable by the low income earners as the institution now charges market going rates.

The NHA which relies on a government grant has had challenges meeting its objectives due to erratic funding and political interference. This has resulted in the organisation commercialising its operations.

The Zambia Low Cost Housing Development Fund Trust (ZLCHDFT) formerly Africa Housing Fund Project which specifically provides low cost housing has not made an impact perhaps also due to funding challenges. The table below shows the number of housing units delivered by NHA, ZLCHDFT and MLGH between 2002 and 2004.

Table 3: Housing Units Development 2002-2004

Year	NHA	ZLCHDFT	MLGH
2002	413	176	-
2003	265	212	-
2004	186	-	21

Source: MFNP, Economic Report 2002, 2003 and 2004

From the figures above it is evident that the progression of housing construction in Zambia has been extremely slow. This can largely be attributed to inadequate funding and lack of advancement in technological breakthroughs on alternative construction methods.

Pro-Poor Housing

Housing for the poor of the poorest has not been adequately addressed in Zambia. The mushrooming of squatter settlements is evidence that the housing problem is growing. Actors such as Habitat for Humanity and Zambia Federation for Poor Peoples Process have contributed by organising communities and creating a revolving fund to help house the poor who in many cases are orphaned children.

These efforts have not gone without challenges. These non-profit making organisations require technical input from professionals such as Architects and Quantity Surveyors whose services are expensive. Another challenge being faced is the beuraucratic land allocation system among other things.

High cost of cement

The cost of building materials is very high in Zambia. Cement, which is the most important material in construction is very expensive. The poor and low income brackets including most middle income earners cannot afford to build or buy a house owing to the price. Building materials are generally expensive due to the county's poor manufacturing industry. As such most products have to be imported. Cement remains the highest priced in the region in some cases three times the cost in other countries. This is because there is not enough competition among producers. In any industry, competition is good as it tends to lower prices.

Restrictive planning and building regulations

Planning and Building regulations which stipulate minimum requirements for housing were adopted from the colonial masters and to date have not been revisited to determine their responsiveness to today's housing challenges. Lack of flexibility in these important but outdated regulations makes it difficult for the informal sector and low income groups to afford building a house. More importantly, restrictive planning and building regulations hinder investment in housing construction by the private sector.

4 Proposal for Change and Improvement

Accelerating Housing Construction Using Prefabricated Components

In view of the current housing defict the Government in its Fifth National Development Plan had commited to increase funding to the housing sector and to construct more housing units for all income groups in an effort to mitigate the housing shortage. The FNDP comes to an end this year (2010) with very little progress made.

In the Sixth National Development Plan (SNDP), assuming that the funding of 15 percent of the national budget was allocated to housing as envisaged in the 1996 housing policy, a proposal by the author is to accelerate the delivery of housing by employing the use of pre-fabricated housing construction as opposed to traditional 'brick and mortar'. The benefits of using pre-fabricated units are as follows:

a) Speed of Construction
b) Reduced labour costs
c) Guaranteed quality control
d) Economies of scale for replicated units

One major disadvantage however of using this system is that it requires heavy plant and equipment to assemble the structure. Investment in heavy equipment such as cranes is vital in this case.

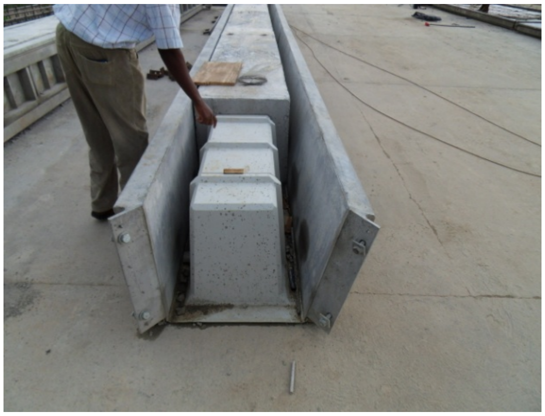
A case study of one company that has introduced prefabricated building components in Zambia was undertaken to establish the systems viability. Oriental Quarries Zambia Limited is one such company which is manufacturing prefabricated building components. A system called wafflecrete originally from the United States of America utilises standard size panels of reinforced concrete. The panels are cast in moulds at the factory and then transported to site where they are lifted into position by means of a crane and then bolted into position. A medium sized three bedroomed house can take only two hours to assemble.

Prefabricated panel and mould

Demonstration houses

In comparison to conventional brick and mortar housing, prefabricated housing can be 10 percent cheaper and 30 percent cheaper for replicated units exceeding four.

Wafflecrete technology can also be used in high rise buildings of up to five floors. Reinforced concrete colums can be moulded with economy in concrete use.



A Reinforced concrete column being moulded

In terms of output the company is capable of meeting the demand so far as it has an advantage in that it manufactures ready mix concrete with its own cement. The use of ready mix concrete ensures a consistent grade of concrete eliminating any doubts about strength which are usually inherent in conventional brick and mortar housing. This means that the government can be assured of value for money should they employ this technique.

Reviewing Planning and Building Regulations

Alongside accelerating housing construction to mitigate the housing deficit in Zambia also required is to review existing planning and building regulations. Minimum room dimensions, lintel levels, wall plate levels, ceiling heights etc must be reviewed. In addition planning regulations such as minimum plot sizes, building lines, side and rear offsets and plot ratios must also be reviewed. Other strategies include considering row housing instead of stand alone units. This can considerably reduce the cost of infrastructure in high density areas.

To this effect the Lusaka City Council has engaged the Ministry of Local Government and housing on this matter and a symposium comprising various stakeholders has been scheduled within the first quarter of this year. However planning and building regulations differ from city to city, thus the proposed symposium will only cover the city of Lusaka. It is hoped that once it is successfuly held, the other city’s and districts will follow suit.

Lowering the cost of cement

The biggest cost in housing construction is the cost of inputs such as cement. Currently cement is produced by three companies namely: Lafarge; Zambezi Portland and Oriental Quarries Limited. Of the three, Lafarge is the largest producer of cement. In 2008 the country suffered a huge cement shortage due to maintenance and expansion works that were being undertaken at Lafarge. This saw the sectors performance dwindle to a single digit of about 5 percent, the first in 5 years. The other producers of cement could not cope with the demand resulting in the government allowing suppliers to import the product at reduced import duty. This however did not help much as demand outstripped supply thereby raising the price even further.

The completion of the works at Lafarge led to a reduction in cement prices but only by a small margin.

If the cost of cement is to come down, more competition is required and a fourth producer would certainly add to the competition. There are huge deposits of limestone in the country thus requiring capital to mine. Investment in cement production would certainly lower its cost.

5 Conclusion

Zambia as a developing nation has seen a lot of foreign investment in the recent past especially in mining, tourism and other sectors. A corresponding demand for decent housing is undoubtedly critical as more and more people flock to the city to look for employment. Adressing the housing shortage is thus critical for Zambia as it strives to meet its ojectives of adequate and affordable shelter for all.

References

Central Statistical Office (CSO) [Zambia]. 2000. *2000 Census of Population and Housing, Housing and Household Characteristics*; Analytical Report.

Central Statistical Office (CSO) [Zambia]. 2009 *The Monthly;* volume 76, July 2009, Lusaka, Zambia

Central Statistical Office (CSO), Ministry of Health (MOH), Tropical Diseases Research Centre (TDRC), University of Zambia, and Macro International Inc. 2009. *Zambia Demographic and Health Survey 2007*. Calverton, Maryland, USA: CSO and Macro International Inc.

D. Gardner 2007 Access to Housing Finance in Africa: Exploring the Issues. FinMark Trust.

Republic of Zambia 2006 Fifth National Development Plan 2006-2010

Ministry of Finance and National Planning (MOFNP) 2004 *Economic Report 2004* Lusaka, Zambia (http://www/mofnp.gov.zm)

Ministry of Finance and National Planning (MOFNP) 2005 *Economic Report 2005* Lusaka, Zambia (http://www/mofnp.gov.zm)

Ministry of Local Government and Housing 1996 National Housing Policy

UN-HABITAT 2008 UPR Submission; *Overview of the current Housing Rights situation and related activities* (http://www.unhabitat.org)