A Survey on Housing Conditions inside Informal Dwellings in Kigali City – Rwanda

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Abstract: In Rwanda, rapid and uncontrolled urbanization started after the independence from European powers in early 1960s; due to rural-urban exodus emanating from newly created job opportunities. Since then, unplanned residential districts expanded at such rate that recent census revealed that 70% of Kigali city inhabitants live in informal dwellings. This survey dealt with housing conditions from foundations to roofs building materials, present structural state and units of houses. Analysis of questionnaire and interviews with residents of the selected sample district is the basis of this research. The survey revealed that a considerable number of families live under structurally critical states health endangering shelters. Moreover a good number of low income categories of residents are under deprivation from the acceptable minimum of basic daily life needs like bedding and bathing. Nevertheless well-equipped high standing houses with good living environment were also recorded during the survey, which makes informal dwellings a complex matter. This mix-up of critical low cost and high cost housing is the direct consequence of the lack of adequate urban planning policies that characterized Rwanda until late 1990s. According to the complexity of the situation, this research suggests that, in areas with high dwelling units, some houses be relocated in order to open an accessibility path, to allow the “Land Readjustment” approach as a tool of housing upgrading be implemented throughout the district. This approach is, in principle, feasible given that already 95% of lands are registered to owners, 83% of land owners are under 50 years old with 74% of them being income generators; and around 30% of the district area are still open spaces. With a comprehensive coordination among inhabitants, planners and authorities; implementation of this approach will serve as a comparative model to many other districts with almost similar conditions.

Key words: housing conditions, informal dwellings, residential environment, land readjustment, housing, upgrading.

1. Introduction

Kigali city (hereinafter “the city”) is kind of mixture of both planned and unplanned housing. This survey was carried out in Gatsata district (hereinafter “the district”); one of many others informally settled areas. By the time of creation of the city by German colonialists in 1908, the district was left out of the city circumscription, devoted to agriculture activities by native farmers.

In early 1980s, the Government of Rwanda decided to include the district within the city area. At that time, considerable portion of agriculture lands were already converted into informal dwelling proliferation sites, due to the high rate of accommodations demand caused by the rural-urban exodus that followed the industrialization of the city.

In Rwanda context, informal settlement can be defined as a dwelling created without authority of land ownership, without formal design and not conforming to any specification of rules and regulations related to planning and construction standards. Such kind of dwellings most often do not have easy access to public utilities like road, electric power, clean piped water, sewerage and drainage. Social services like schools, hospitals, entertainment, markets, etc, are scarce.

Informal settlements are densely populated by communities housed in self-constructed shelters under conditions of informal land tenure. Their rapid proliferation is an indicator of an urgent need of shelters by the urban poor. These dwellings occur when the current land administration and planning policies fail to address the needs of the whole community.

The district has been subject of increasing and disorganized dwellings since the last four decades with a considerable decrease within last ten years, due to the strict policy set by the city council prohibiting illegal habitat.

A panoramic view at the district reflect a disordered mix-up of houses ranging from high standing story houses to critical state mud houses (most often health endangering shelters by their structural conditions). The district is the foot of a steep mountain which has been subject of environmental and ecological degradation, caused by people seeking both construction materials and fire
wood. These actions contributed to a considerable increase of erosion intensity, sometimes washing away mud houses on its passage.

Nevertheless, efforts have been made by the city council to try solving the issues from their origin. It is in this context that lands have been legally registered to owners and further illegal housing strongly prohibited by the law enforced by periodic field inspection by the city staff and national police.

The land ownership issued is the right to own for a period of ninety nine years. This period of time offers enough security for possible housing upgrading tentative.

Sustainable development solutions will involve multiple roles playing including inhabitants, administrators, planners, opinion leaders, developers and financial institutions. To remedy the present conditions into habitable environment will require land readjustment techniques which, on return, will cause in-situ upgrading and relocation of some dwellings.

2. Materials and methods

1.1. Study area

Informal settlement whose area is 35 Hectares.

1.2. Study population

1508 residents from 217 families

1.3. Sampling procedure

Non-probability sampling [1], carried out door to door by questionnaires and interviews with a respondent rate of 84%.

1.4. Study scope and limitation

The aim of this survey was about collecting reliable information on current housing conditions in the selected study area. Findings from the surveyed sample will be highlighted and extrapolated to many other areas of similar conditions. A separate study to propose appropriate and sustainable upgrading and improvement plans is highly recommended.

3. Results and discussions

3.1. Respondents identification

According to figure 1, more than 90% of total respondents fall under the age of 50 years; while
figure 2 shows that the rate of employment of people under the age of 55 years is around three times higher than the rate of unemployment. From figure 3, 95% of the district lands are registered to owners; and from the same figure around 90% of lands are registered to active aged people under 55 years [2].

Observation at figure 4 shows that more than 85% of owned houses fall in hands of middle aged people under the age of 50 years. The combination of above results reveals that the pressure on housing demand by active aged people has been the main cause of informal dwellings proliferation. In other words, the high rate housing demands and the lack of properly defined housing policies resulted to the high growth of informal settlement.

3.2. Houses’ structure

![Figure 5. Foundation materials](image)

![Figure 6. Elevation materials](image)

![Figure 7. Elevation by foundation materials](image)

![Figure 8. Walls' cracks by foundation materials](image)

![Figure 9. Walls' cracks by foundation depth](image)

![Figure 10. Excess settlement by foundation type](image)

While the foundation is the house supporting structure, figure 5 shows that 67% of surveyed houses are either supported by weak foundations [3] or no foundation at all [4]. Both cases are sensitively subject to house damages from simple wall cracks to complete collapse. Houses elevated by wood and mud can relatively be securely stood for a period of around five years [5], after which woods are partially or completely destroyed by termites and/or other wood parasites, so that the house remains standing only on mud. This fact is proven from figure 8 where wood and mud elevated houses present around double cracking rate compared to those supported by stone and mud foundations.

According to figure 9, more the foundation is shallow or do not exist more walls will crack and vice versa. Figure 10 shows that there is no record of excessive settlement among houses supported by stones with cement foundation type; this fact proves that a strong foundation acts as a bridge to imposed charges on weak soil locations.
3.3. Houses’ units

From figure 11, the most occurring bedrooms number is 3 and, from the same survey, the most occurring family size number is 6; this makes an average of two people per bedroom. However, there are some extreme cases where one bedroom is shared by more than three people (figure 12).

According to figure 13 and figure 14, 30% and 20% of houses are deprived of bathroom and kitchen units respectively; these results roughly correspond to the number of weakly elevated houses (wood and mud cases represent 21% from figure 6). This can be explained by the fact that the construction of kitchen and/or bathroom is expensive in cost because it requires strong cement coating and/or tiles not affordable by low income people.

3.4. Infrastructure and public utilities

According to figure 15, single connectivity to water, electricity, telephone and internet are relatively high and go on considerably decreasing for overall connectivity. Accessibility to all utilities is mainly found along the main road passing by the east side of the district. From figure 16, residential houses that can be accessed by cars (88 houses≈47%) roughly correspond to the rate of houses connected to two basic utilities (figure 20, houses connected to both water and electricity are 42%). In other words, the road is the key infrastructure to other public utilities.

4. Conclusion and recommendation

Upgrading the housing and infrastructures poor conditions would be the act of improving and installation of a sense of orderliness in the way settlement is handled. Therefore one has to overcome numerous challenges ranging from legal, economics, financing and funding, land, materials, standards, workmanship and technological, cultural and social. Legal challenges have been the concern of the
government by granting the formal license of land ownership; this step is a milestone to overcome financing and funding challenges as the government had initiated the Housing Development Bank, which is mandated to grant long term loans at low interest rates. However, other mechanisms should be initiated to support people with very low income (about 20%) who cannot cope with the banking system; their plight should be brought to national and/or international forums having a platform with the UN habitat or any other organizations that can help alleviate the problem of informal settlements. Technological challenges call for setting up standards under mutual agreement among the professionals, the builders, the local authorities and the settlers. This might call for systematic consultation and new way of doing things to match with the problem to be solved. Environmental challenges like dust, air pollution, wastewater disposal, solid waste disposal, sanitation, sewerage, drainage, etc. should be well thought out in order to create a sustainable and suitable living environment.

Finally, once infrastructures put in place and settlements formally recognized people will feel sufficiently secure to start investing in their dwellings.

5. References


