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Research paper



Problems affecting squatter settlements in Nampula, Mozambique

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Abstract

The global challenge to eradicate squatter settlements locally known as "rent free havens" in cities of Mozambique has been a challenging issue since the country gained independence. Successive governments after independence have not been able to adequately deal with the squatter problems. This study is carried out in the squatter district of Nampula, Mozambique. The data is collected from the residents at squatter settlements in Nampula, Mozambique. The data is analyzed using SPSS and Average Index. From the study the factors are identified and prioritized for improvement of squatter settlements needed in each case. There is no proper infrastructure such as paved roads, footpath, or sidewalk in place at the moment. The drainage system is very poor and during raining season results in heavy floods which destroy almost all squatter residents which is why they're rebuilt every year. The squatter residents built the houses by themselves, which is why there was a poor construction practice. The steps to be taken by the authorities to overcome the squatter issues are meeting the residents of the squatter areas and provide information and make them aware regarding the conditions of their respective areas through the studies that has been carried out, provide the options available like short term loan, rural investment, self-help schemes and self-involvement in Design and Construction.

Keywords: *Squatter Settlements; Mozambique; Low Cost Housing.*

1. Introduction

Africa is the world's second largest continent after Asia. It has a total surface area of 30.3 million km2, including several islands, and an estimated total population of 888 million [1]. Africa's population has been increasing rapidly, growing from 221 million in 1950 to 1 billion in 2009 & it has the highest population growth rate. Mozambique covers an area of over 800,000 sq. km, three times the size of Great Britain. Situated to the south east of the African continent, it shares borders with six other countries, Tanzania, Malawi and Zambia to the north, Zimbabwe to the west, South Africa and Swaziland to the south. The 2,500 km long coastline boasts numerous superb beaches fringed by lagoons, coral reefs and strings of small islands. Poverty is the principal cause of hunger in Mozambique and elsewhere. Simply put, people do not have sufficient income to fulfill their basic needs such as to purchase enough food, to live in a proper house, or even to wear descent clothes.

A large population of Mozambicans face the squatter issue. Whether they are the Favelas in Brazil, Barriadas in Peru, or Gecekondu in Turkey, squatter settlements typically consist of an urban residential area inhabited by very poor people who do not own any land. They simply "squat" on vacant land, either private or public.

Shrestha, R [1] Srinivas, H. [1] defines squatter settlements as a residential area which has developed without legal claims to the land and/or permission from the concerned authorities to build; as a result of their illegal or semi-legal status, infrastructure and services are usually inadequate.

Sixteen years after the end of the war Nampula City's economy is booming, but the benefits seem to be monopolized by a select few. Many of the plantations and factories that managed to survive the war and economic crisis of the socialist period were finally shut during the post-war structural adjustment programme, creating even more unemployment [1]. A frequent complaint heard from the well-off and the poor alike is that despite the developments, much of the economy is based on trade and commerce, which can create great wealth, but relatively few jobs for the poor and little stability for the better-off. [1]

The major objective of this study is to review the research carried out to date on identification of the factors related to squatter settlements problems in Mozambique. A thorough literature review was conducted using available scientific databases to identify previous researches on the topic. The findings of the study can be used, not only by academics, who are interested in the effect of the subject matter on the problems of squatter settlements, but also by both local and international industry practitioners, who may be further keen to venture into potential mega-scale projects to eradicate the cause of squatter settlements.

2. Research methodology

Previously, the study has been carried out in the squatter districts of Maputo & Beira. This study was carried out in the squatter district of Nampula, Mozambique. The target group for study were the squatter dwellers in Nampula, Mozambique as well as the local Municipality.

The relevant research publications for the study were selected from potential journals according to reputation and impact ratings following the methodology proposed by [1]. A preliminary survey,

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carried out adopting 'Google Scholar & Scopus Search Engines' using keywords ''squatter + settlements + Mozambique''.
Direct observations and interviews with the local residents were also conducted to understand their perspective on the squatter settlements and to identify the factors affecting squatter settlements in the district of Nampula Mozambique.
All the data collected through Questionnaires were studied, rearranged and analyzed using the IBM Statistical Package for the Social Sciences (SPSS) and the Average Index Method that suit to the objectives and scopes of study.
Frequency analysis used a tabular form to represent the result of data analysis of frequency of response that respondents gave to the different variables in the questionnaire. The result was tabulated in the form of frequency number and percentages according to total respondents.
This method has been adopted for the questionnaire survey whereby the answer from each respondent is numbered and summed up. In order to analyze the data gathered, average index analysis is used to gather the level of importance of the data [1].

3. Results & analysis

Mozambique suffered sixteen years of civil war and many people were forced to look for security in the neighboring countries or in the main cities of the country. In this way, people migrated from rural areas to Maputo City and established settlements in sensitive areas, such as wetlands and steep slopes, without minimum living conditions. At that time there was not enough technical capacity or political determination to address the problem of informal settlements. After the peace agreement in 1992 these people never returned to their native zones. The informal settlements located in the outskirts of Maputo City comprise low quality houses constructed from corrugated metal, discarded packing crates, brush, plastic sheets or any other scavenged materials [1]. Previous research carried out by Maria Mendez and a documentary by [1] focused on two important cities of Beira and Maputo. Therefore, this research will be carried out in the center of business in Northern Mozambique which is Nampula. What drives people to become squatter is that they can't earn enough in their hometowns. So they migrate to Nampula to find some sort of income to sustain themselves and their families and end up living in squatter settlements due to affordability issues.
Squatter settlements in Nampula is on a rise since independence. More and more people come every day searching for better life aspects. Successive governments haven't been able to adequately deal with this problem. Some NGO's such as UNICEF, SAVE THE CHILDREN, MBEU, and others have taken small projects such as to improve sources of water and provide proper sanitation facilities to reduce the population practice of open defecation. It is not sufficient and the government needs to prioritize the squatter settlement problems and increase the funding for this sector in order to eradicate it once and for all.
[1] Research states that clean water, sanitation, and hygiene are basic needs of human survival. Half of the urban population in Africa, Asia, Latin America and the Caribbean, where majority of squatter settlements are, suffers from one or more diseases associated with inadequate water and sanitation. The world is becoming more urban and less rural, with 1.3 million people moving to cities each week. Soon the majority of the world's population will be living in urban areas, most of which will be squatter settlements where squatters face the water crisis.
There are a lot of problems faced at the squatter settlements in the district of Nampula, Mozambique. First, the access of clean water & sanitation facilities for squatter settlers. There is a serious lack of utility services such as potable water, sewerage and drainage. Due to poor environmental condition and malnutrition, the infant mortality rate is high. Sanitation issues such as a lack of proper waste disposal methods are at the root of dozens of fatal contagious diseases, many of which are particularly prominent among children. Diarrhea, dengue fever, cholera, and tuberculosis are most common of these problems, and are often caused by limited access to clean water. From July 2015 to March 2016, hospital records show that 12,433 people have been treated for cholera, and 109 people have died. During the month of May 2016 alone, 1,840 cholera cases were registered, mostly in Nampula and Gaza provinces.
Squatter settlement building are poorly built. The houses often have no windows, asbestos roofs (which is dangerous if broken) and no planning to fit fire regulations. Rooms within houses have multiple functions, including living, working and sleeping. Characteristics of the houses are such that it can be easily blown away during heavy storms. Houses are assembled only to provide a basic shelter. They have a simple layout that may have a living area separate from a sleeping area. Parents and large families inhabit a small shack which is often overcrowded and the squatter settlements are very over crowded. There are no toilets, water must be collected from a nearby source – often at a cost – and carried back. The paths between the houses are irregular, narrow and often have a ditch running down the middle that has sewage in it.
Poor ventilation for inside cooking fires is a common cause of respiratory problems. There are no exit routes designed for fire outbreaks. No method designed to combat fire outbreaks. Furthermore, the building materials used to build the squatters are too weak to sustain against fire outbreaks.
Flood is another natural disaster against which the houses are poorly designed. Every year, Nampula is badly hit with floods and most of the squatter houses together with all the belongings of the dwellers are washed away. Thousands of Mozambicans lose their lives, children under age of 5 years suffer from water borne epidemics such as malaria and cholera. Poor drainage system causes soil erosion which destroys most of the livestock and farms.

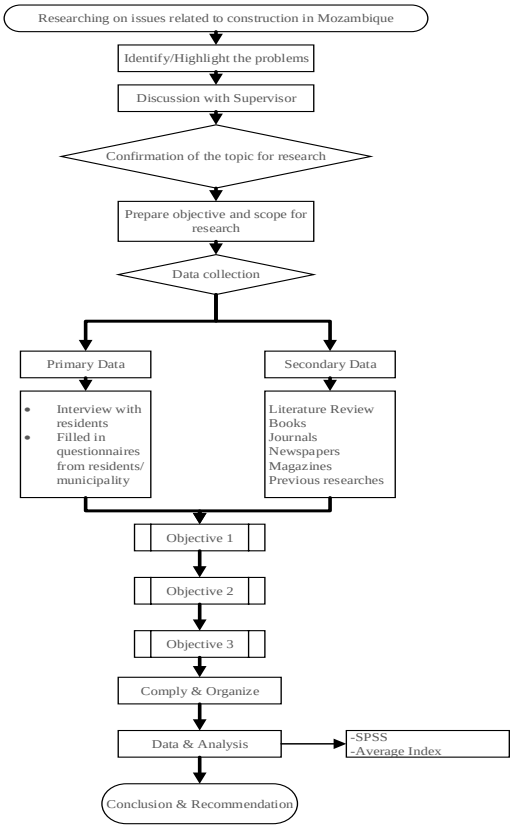


Fig. 1: Research Methodology for This Research.

Table 1: Collected Data on Mozambique's Squatter Settlements

S/N	Element	Average index
Objective No.1		
1	Main Method of Garbage Disposal is Burn	2.66
2	Main type of sewerage disposal used by residents of these squatter	

	settlements is	
	Public pit latrine	2.62
	Bush Gully	3.02
	Does the following infrastructure exist within this settlement	
	Unpaved footpath	2.86
	Unpaved Roads	2.68
	Grassed sidewalk	2.86
3	Earth sidewalk	2.62
	Earth drainage system	2.62
	Open drainage system	2.64
	Main source of water for the family	
4	Public standpipe	3.02
	Public tank	2.86
	Utilities available at your squatter settlement	
5	Electricity	1.62
	Telephone	1.70
	Environmental hazard the squatter settlement is exposed to	
6	Water Pollution	2.96
	Air Pollution	3.04
7	Distance of home from water source	
	More than 10km	1.88
	Medical problems due to bad quality of drinkable water	
8	Very seldom	2.70
	Quite often	2.86
	Frequency of taking bath or shower	
9	1 - 2 times a week	2.62
	3 - 4 times a week	2.76
10	Quantity of water brought home on a daily basis	
	10 buckets	2.02
11	Duration of water shortage in the area	
	Always	2.84
	Impact of water shortage on the squatter residents	
12	No water for domestic use	2.00
13	Duty for collecting water	
	Women	2.20
	Diseases suffered due to bad quality of water	
14	Cholera	2.78
	Diarrhoea	2.78
	Malaria	3.10
Objective No.2		
1	Squatter settlement built by	
	By the Resident	2.66
2	Site clearance was carried out before construction of the squatter settlement	2.20
3	Soil Investigation was thoroughly done before construction	1.66
4	Anti-Termite Treatment was carried out before construction	1.60
5	PE Sheet was laid at ground slab before construction	1.88
6	Footing was built using	
	Timber	2.14
7	Type of foundation is	
	Pad footing	1.88
8	Wall are built using	
	Mud clay	2.86
9	Column are built using	
	Timber	2.86
10	Roof is built using	
	Hay	3.02
11	Ventilation pipe to allow air circulation inside the squatter house	2.66
12	Apply waterproof layer at rooftop to block water penetration and crack on surface layer	1.20
13	Wall are plastered and painted	1.34
14	Doors and Windows are built using	
	Steel	2.52
15	Ceiling is built using	
	None	2.72
16	Presence of drainage pipes underground for water passage	2.64
Objective No.3		
1	Squatter settlement land is owned by	
	Not aware	2.44
	The informal settlement has been in existence since	
2	6 - 10 years	2.78
	10 years or more	2.94
3	Predominant tenure for the occupants of this squatter settlement	
	Squatted	2.54
4	Average household size	
	> 10 persons	2.60
5	Major type of land use within the settlement	
	Agriculture	3.02
6	Current water supply service	
	Poor	1.86
7	Condition of water and sanitation infrastructure	
	Poor	2.86
8	Any help provided by government or 3rd party to minimize the shortcoming of water access, sanitation facilities waste and electric	3.02
9	Government policies are very effective in minimizing the squatter issue	1.96
10	Squatter settlement has been increasing since independence	3.10

4. Discussion

Finding No 1: The priority areas for improvement for squatter houses and the extent of improvements needed in each case

Main method of garbage disposal is either open dumps/burning of the waste. The waste is thrown everywhere and there is no proper garbage collection carried out by the local municipality. A similar finding has been achieved by Sumich, J. [5].

Water access is very poor and the squatter residents have to travel for 10km or more in order to collect water and bring back home. Children/wife is always responsible for the collection of water. A similar finding has been achieved by Sumich, J. [5].

There is no proper infrastructure such as paved roads, footpath, or sidewalk in place at the moment. The drainage system is very poor and during raining seasons result in heavy floods which destroy almost all squatter residents which is why they're rebuilt every year. A similar finding has been achieved by Shrestha R. [1] Srinivas, H. [1].

Utilities such as electricity and telephone is available for the squatter residents but the service is very poor. It is very common for electricity to come and go every day.

River water is used by the squatter residents for taking bathe as well as washing clothes and dishes, and for toilet purposes as well which make the river water very dirty, smelly and a ground for deadly diseases such as malaria and dengue to breed. Most of the squatter residents die before the age of 50. We reached that conclusion because during our visit to the squatters, there was no elderly people seen.

Finding No 2: The structural safety of buildings in the squatter settlements

From the research, it was found that squatter residents were built by the resident themselves, which is why there was a poor construction practice.

In terms of poor construction practice, the residents remained neutral or did not agree that site clearance, soil investigation, or anti termite treatment carried out. A similar finding has been achieved by Bilotta, G. S. [10] [11].

The house were built using mud clay and the columns were built of timber. The roof was covered using hay.

Although no measures were taken in terms of ventilation, the house was cool and damp inside. The space for windows and doors was left hollow which allowed air movement to take place whereas at the same time, poor security which meant that the residents were very vulnerable to theft. But their argument was also justified as they claimed they had no valuable material which could be stolen other than the family members, especially women and children who could be kidnapped and sold to work in all sorts of wrong activities. A similar finding has been achieved by Shrestha R. [1] Srinivas, H. [1].

There was no presence of drainage pipes at these squatter residents which is why usually during heavy rain season, there is a high possibility of floods.

5. Conclusion

This study is carried out in the squatter district of Nampula, Mozambique. The data is collected from the residents at squatter settlements in Nampula, Mozambique. The data is analyzed using SPSS and Average Index. From the study the factors are identified and prioritized for improvement of squatter settlements needed in each case. There is no proper infrastructure such as paved roads, footpath, or sidewalk in place at the moment. The drainage system is very poor and during raining season results in heavy floods which destroy almost all squatter residents which is why they're rebuilt every year. The squatter residents built the houses by themselves, which is why there was a poor construction practice.

From the study, the steps to be taken by the authorities to overcome the squatter issues are as follows:

To adapt the low cost housing schemes from developing countries like Malaysia and attract foreign aids to construct in the vast lands of Mozambique for the citizens. To meet the residents of the squatter areas and provide information and make them aware regarding the conditions of their respective areas through the studies that has been carried out. Provide the options available like short term loan, rural investment, self-help schemes and self-involvement in Design and Construction.

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