

# Improving Environmental Sanitation of Slum Habitats in Accra: The Case of Nima and Old Fadama

Eunice Yorgri<sup>1\*</sup> Prof. Leng Hong<sup>2</sup>

1. School of Architecture, Harbin Institute of Technology, No.66 Xidazhi Street, Nangang, Harbin, China
2. School of Architecture, Harbin Institute of Technology, No.66 Xidazhi Street, Nangang, Harbin, China

\* E-mail of the corresponding author: [eyorgri@yahoo.com](mailto:eyorgri@yahoo.com)

## Abstract

Slum dwellers are primarily faced with copious challenges including housing, water, sanitation and health. However, the prime challenge is poor sanitation which often de-faces the environmental aesthetics of the slum form. Albeit successive governments in Ghana are aware of this challenge, nothing significant has been done to improve the situation. This study used the survey method on a participatory sanitation improvement programme for the slum settlements of Nima and Old Fadama respectively. The study used SPSS and Originlab software for analysis of findings. The results indicate that 84% of respondents are self-employed and 86% are in the slums on temporal basis. We recommend that slum dwellers employed in the informal sector and the unemployed can be employed by the government into the local government system to manage environmental sanitation of their respective communities. This strategy will not only improve environmental sanitation of slum settlements but also create employment to very importantly the idle youth leading to poverty reduction. Also, the system of sanitary inspection of individual homes and communities should be reinforced in Ghana especially in the slums as a way of preventing temporal residents from pay less attention to environmental sanitation

**Keywords:** Environmental sanitation, Slum settlement, Improvement, Old Fadama, Nima

## 1. Introduction

Globally, Sub-Saharan Africa has the second largest slum population and also masses the largest percentage (71.9%) of the urban population living in slum settlement within the African continent. Out of the total urban population of approximately 231 million in Sub-Saharan Africa, about 166 million live in slum settlements (UN-Habitat, 2012). According to the statistics of the UN-Habitat, approximately 924 million people universally (31.6 %) in 2001 resided in slums, however, it is envisaged that by 2030 approximately 2 billion people will live in slums (Forbes, 2007). In Ghana, approximately more than five million citizens are living in slums and about 38.4% of the citizenry in Accra are inhabited in slums. (UN-Habitat: 2011, 2016). Slums are a spatial and physical manifestation of intra-city inequality and urban poverty (PSUP, 2011). According to the definition of the UN-Habitat, a settlement is classified as a slum when individuals live together under the same roof but lack one or more of the following conditions: access to proper sanitation; access to safe water, durability of housing, tenure security and overcrowded (UN-Habitat, 2003). This study defines a slum as a squalor compact habitat characterized by the lack of basic amenities and services in which city officials do nothing to salvage the situation but want to expunge from cities. It is not deniable when the scholar defined poverty as seeing what he is wearing as poverty. In the slum sense of Africa, seeing the conditions of living of slum inhabitants including tattered clothes, poor housing structures and sanitation may be misconceived as poverty, however, it is not all urban slum dwellers who are poor but then suffer from policy and social exclusion. The rapid growth of slums began in the 1990s (UN-Habitat, 2003) and has since existed especially in cities hence the need for tangible, well-founded and sustainable strategies to be implemented by governments of particularly developing countries in Ghana and Africa as a whole. Progressive strategies have been adopted by the international community including slum upgrading as a core in significantly improving the lives of at least 100 million slum dwellers by the year 2020 (UN-Habitat, 2003), however, the challenges of poor environmental sanitation still persist.

Slum settlements may differ in development, infrastructure and population but share common characteristics of inadequate access to water, inadequate sanitation facilities, overcrowding and poor housing structures. Improved sanitation comprises can be seen from of an angle of sustainable waste management and sanitation facilities in a country. According to a study conducted by Joseph (2013), the challenges of solid waste disposal faced by cities of Ghana can be attributed to frail implementation of environmental set of laws, insufficient equipment and facilities for piling up and transporting of waste, laxity on the part of establishments in charge of waste management and the public to deal with waste as a priority issue in communities, haphazard and careless dumping of waste in gutters, water ways, in between houses, on the streets and street corners, drains and

coupled with petite or even no enforcement by community authorities to make certain of proper management of solid waste. As shown in figure one below, the African continent hosts most of the worst slums in the world ranging from poor sanitation, overcrowding to poor housing structures.

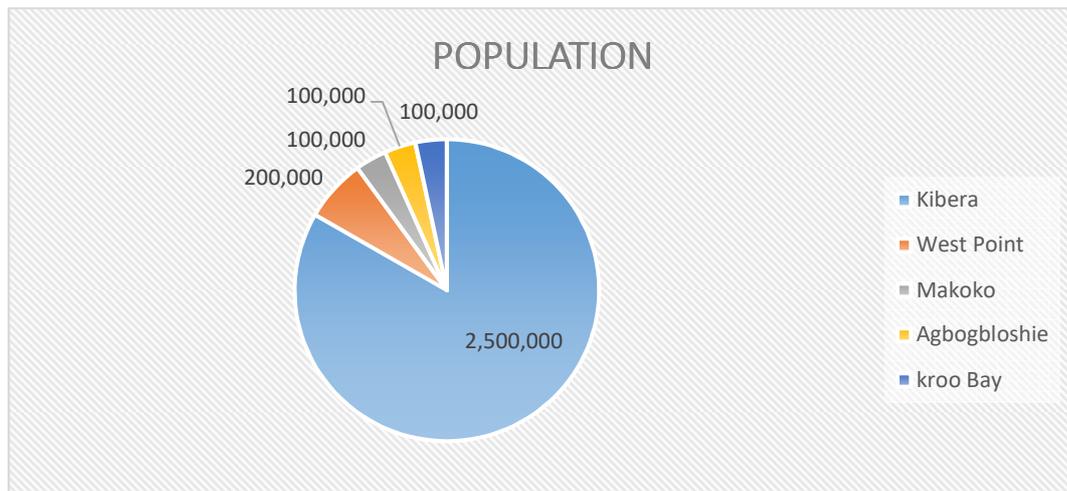


Fig. 1 Worst Slums in Africa

Increasing population coupled with high rate of urbanization reflects the unceasing challenges of environmental sanitation management in cities of especially developing countries such as Ghana.

However, the zeal of politicians from individual member countries in advocating, promoting and implementing the desire of the global community in elevating the lives of slum dwellers is not placed as a priority most especially improving the environmental sanitation challenges of slum settlements. The improvement of slum habitats as part of the development program by politicians is insignificant commonly with the premise that slum settlements are illegal, full of filth and the hide out for criminals. Buttressing the above observation from a report by UN Global Report on Human Settlements 2003, albeit urban slums are extrapolated as crime zones by many, the evidence of their report ascertain slum residents as victims rather than committers of crime (UN-Habitat, 2003). Granting that the assertion is true, what has been done so far to improve the environmental sanitation shortfall of slums especially in Accra?

The 2010 population and housing census district analytical report (2014) specified that the mostly used toilet facility in the city is the public accessed type (41.6%) which is galvanized with long queues from “dusk to dawn” and this is not different from the slums in the city. According to the report, the Kumasi improved ventilated pit takes 14.9%, public toilets (41.6%), water closets (31.9%) and households without toilets making up 2.3%. Extensively used systems of waste disposal include public dumps (32.9%), home (57.4%) for solid waste and for liquid waste, 26.6% are disposed through a drainage system into gutters, 48% into gutters and 7.8% in sewerages. A priori, can the inadequate facilities in the entire city be attributed to the environmental challenges of the slums of Nima and Old Fadama?

Therefore, this research also contributes to the body of knowledge and literature on how to improve the environmental sanitation conditions of slum settlement. Therefore, this research discusses the concept of sanitation challenges in the slum settlements of Nima and Old Fadama with empirical pictures taken by authors.

## 2. Study Area

Accra is Ghana’s national capital and also doubles as the Greater Accra regional capital with 78 slum pockets within the capital, consisting of juvenile slums and matured slums. Nima and Old Fadama are among the matured slums in the capital with the former being a legal settlement and the latter an illegal settlement. (PSUP, 2011).



Figure 2. The Satellite Map of Old Fadama (People's Dialogue on Human Settlement,2009)

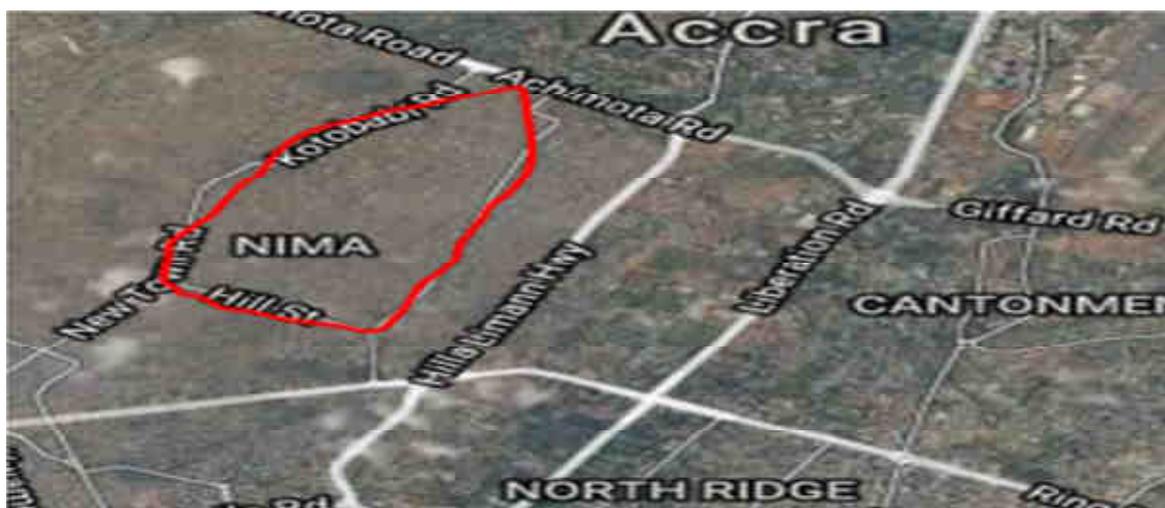


Figure 3. The Satellite Map of Nima( Google Map, 2017)

### 2.1 Old Fadama

Old Fadama was founded in the 1980s and the influx of migrants across board has since continued. Majority of the settlers emanate from the Northern part of Ghana (65.9%) and the Volta region (10%) respectively (People's Dialogue on Human Settlement, 2009). Community members who settled in the slum, fled from excessive conflicts which hit the Northern part of Ghana from the mid-1980s, 1994 and 1995 resulting in the displacement of many hence found solace in Old Fadama through the National Mobilization Programme (NMP) and also migrants seeking greener pastures and basic services. The community covers a land area of 106.03 acres. According to the enumeration of 2009 conducted by the People's Dialogue on Human Settlement, the area has a total population of 79,684 with a population density of 2424.18 persons per hectare. From a research conducted by Llyod (2009), this slum community has outwitted eviction and demolition attempts by successive government over the years.

### 2.2 Methodology

The central focus of any research is to achieve an objective, hence resorts to diverse methods, tools formulae and

strategies. Therefore for the purpose of attaining the set objective of improving the environmental sanitation of slums in Accra, a series of research tools and techniques were employed for both data collection and analysis. The study used both primary and secondary sources of data. Primary sources included questionnaires, observation and interviews. Questionnaires were designed for urban slum areas with large number of residents without access to basic amenities, poor environmental sanitation and inferior housing structures. Respondents were randomly selected with a total of 100 questionnaires administered consisting of 50 for Nima and 50 for Old Fadama respectively. The above mentioned study areas were selected because of their nature and constituents as well the state of deprivation. Secondary data sources include articles in journal, news and documents from people's dialogue on human settlement and the Accra Metropolitan Assembly's planning department.

### 3. Results and Discussions

Sanitation challenges has become one of the most predominant issues facing slum dwellers especially in this era of rapid urbanization. In-situ improvement which focuses on the environmental sanitation of Nima and Old Fadama has become necessary due the persistent filth resulting in persistent disasters and the epidemic of diseases. Man-made derived filth such as defecating into drains, throwing of rubbish haphazardly and uncontrolled littering of polythene bags and sachets has become rampant in the study area as shown in figure 2. According to the reports of the Population and Housing Census of the AMA, the commonly utilized sanitation systems in the Accra include, individual homes(57.4%), liquid waste are usually disposed into gutters and sewerage (34.4%) and 32.9% at public dump site.(Ghana Statistical Service 2014). This goes to affirm the general eyesore that greets people when passing in the slums. Poor sanitation has commonly become a landmark of slum settlements all over the world. One therefore begins to wonder if the same people will have this attitude when settled in more decent environment.



Figure 4. Flooded open drainage of Nima (Google Images)



Figure 5. Shallow Gutter filled with solid waste in Old Fadama (Author:2017)

This research work reveals that both Nima and Old Fadama respondents (48%) identified the AMA as being responsible for managing the sanitation of the areas whilst other respondents (8%) revealed that it is a responsibility of individuals, and further 15% cited community members. 4% of respondents do not know who is responsible for sanitation and 21% reported that nobody is responsible. This assertion as revealed in the study shows that the AMA is not keenly managing the environmental sanitation conditions of Nima and Old Fadama, hence the result for the poor conditions. As seen above in Figure 4&5, this can be breeding ground for mosquitoes and can easily lead to flooding during heavy rains due to the shallow nature of the gutters. Food vendors sell their food closer to these gutters. The renaissance of Sanitary Inspectors (Samasama) is vital by making people within the community responsible for sanitation especially in the disposal of bags and empty sachets. Community members who organize weddings, church programmes, parties and so on are given permits by the police with proof of managing environmental sanitation. Also it is imperative on government to construct good drainage systems and solid waste facilities such as mobile vans and containers to prevent stagnant drains seen above.

Turner (1977) opined that demolishing housing of slum dwellers is not the remedy to getting rid of slums in cities but improving the environment. He is certain that slum dwellers will gradually improve their housing condition with security of tenure. We equally agree in this assertion, as naturally individuals will stalwartly protect and save what belongs to them and also try to maintain them diligently. Security of Tenure for slum dwellers is vital since it affirms to slum residents that the place belongs to them. It is natural that assigning roles to individuals makes them bring out the best in them and same also applies to properties. According to a research by Jessica T. et. Al.(2015), the looming likelihood of eviction and tenure insecurity discourages slum households to invest their scarce financial resources on the physical structures of homes. The diagram above illustrates the link between security of tenure (slum Upgrading) to housing durability, sanitation improving and economic development. With tenure insecurity, most urban dwellers consider themselves sitting on a time bomb and so are always ready for eviction and demolition, albeit sometimes they try to resist. The definition of this slum in this regard can simply be referred to as a resilient habitat which makes and maintains her own and also serves as the life wire of most developing cities.



Fig 6. The Conceptual framework and interconnection with slum upgradings



Figure 7. Connected circuit of urban slum upgrading

More than half of Ghana's population resides in cities today, the first time in history since 1960 with Accra leading with the largest urban population of about 90.5% (General News, 2013). According to the report of UN-Habitat (2014) approximately 42.8% of Ghanaians live in slums.

Most slums in Accra are located in the core of the city, along river banks, railway lines and abandoned state lands and along drains. It was discovered during the study that city authority within the department of waste management oversee the issues of waste management and slum dwellers as well manage their waste by burning. Approximately over 761 million urban slum residence in developing countries such as Sub-Saharan Africa, South and East Asia depend on common sanitation facilities. Different strategies have been recommended by different scholars such as the improvement of cleaning behaviour among residents of three slum areas using the RANAS model (Innocent K.T et.al).

One major exegesis presented in this research work on the sanitation challenges of the two major slum areas of Nima and Old Fadama in Accra is viewed in the case of the educational status of the areas. According to this study, 20% of respondents have no formal education, 34% have primary education, 32% have secondary education, vocational (6%) and 8% have Tertiary education. The educational status of residents as shown in Figure 8 below can be seen as a weakness and an opportunity. The weakness is the present state of sanitation and as an opportunity for government is engage them as environmental sanitation agents through public partnership.

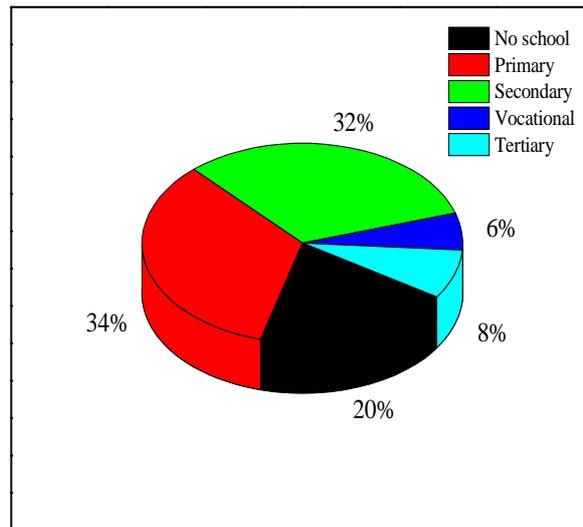


Figure 8. Pie Chart Showing Percentages of Education levels

The reason for this low level of education in the study areas may be due to poverty, lack of interest, lack of security of tenure, and the desire of the youth to make quick money hence prefer to engage in businesses. It is prudent for government to sensitize the community on the importance of education and cleanliness. One major advantage in the study areas is the youthful population as shown in Figure 9 below. Nima and old Fadama has high population of the working brackets which can be tapped into the public sector for the improvement of sanitation, invariably creating employment and reducing the high unemployment rate.

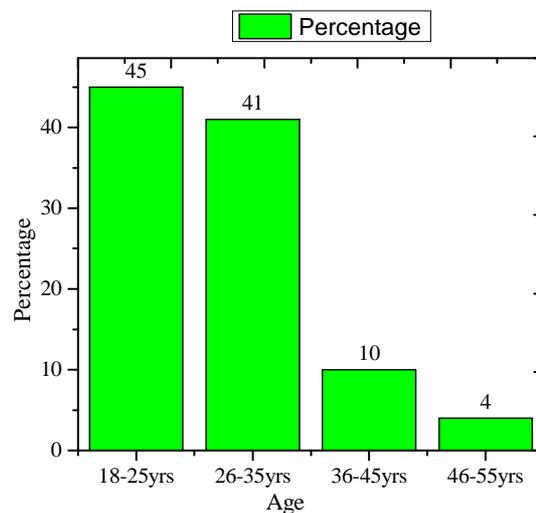


Figure 9. Age percentages of the Study Areas.

Private investors can visualize the great potentials of the youth which gradually can change the direction of the poverty circles towards the positive. This can be achieved as the majority of the population of the study area employed in the private sector and private informal sector. The research revealed that just 1% of the slums population is employed in the public sector, 11% private sector, 84% self-employed and 4% not employed. This iterates that it will be easier to migrate the population into the national employment grid. The reason for the high percentage (84%) of self-employment can be partly be attributed to lack of jobs, low level of education (as presented in Figure 8 above) and the high interest of most of the slum dwellers interest in business. Figure 10 shows the respective jobs of residents.

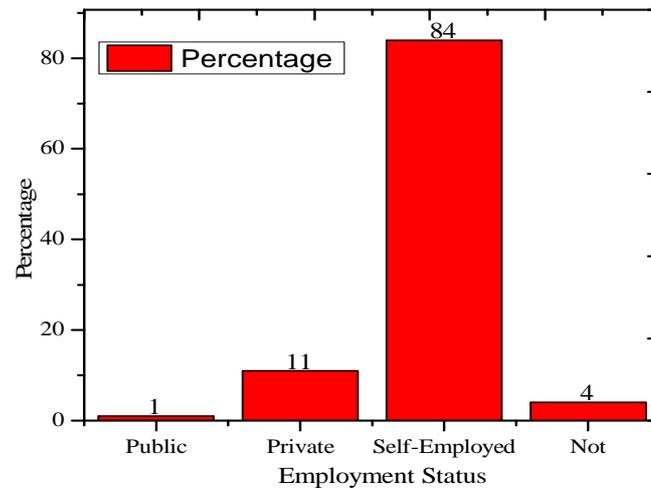


Figure 10. Employment status of slum residents

As depicted by the graph below, majority of the residence are much interested in business as 32% of residents are captured the brackets of trading with head porters representing 19% of the respondents. The represented figure bellows show that the slum dwellers are employed across board with politicians, nurses and spiritualists, which means that the settlement is not an area of crime, filth, but also have a basket of talents and skilled citizens all located there. Therefore, the slum should keenly be considered especially in the general development plan of the city.

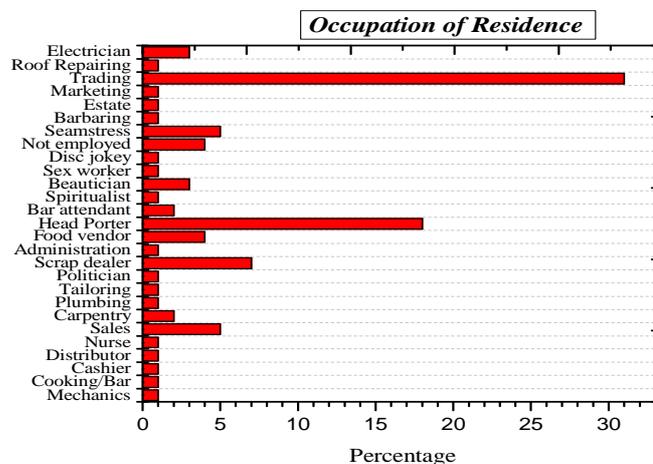


Figure.11 Occupation of Dwellers

From Figure 12 below, is can be clearly seen that 86% of the slum respondents are staying there temporally, which means that the condition of the place do not matter much to them but are concentrating on the purpose for which they migrated to the slum including jobs, cheap accommodation and also to experience city life. To some of them, albeit they are resident in the slum, they still enjoy better public services and utilities compared to their place of origin and are able to remit funds for personal development. According to a research by Larossi(2006), slum inhabitants mostly with rural links send remittances to them. Ghana is a country that attaches much priority to external relations that is the extended family system. Therefore, the percentage of permanent residents (14%) is minute and can create a tremendous impact on the temporal majority especially on the control of environmental sanitation. The 'I don't care' and it is not my property or it is for government must be debunk and discouraged to promote healthy living.

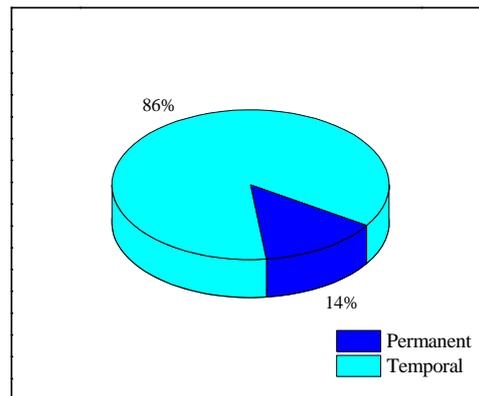


Figure. 12 Residents status of slum dwellers

From the argument presented above, the Ghana Statistical Service (GSS) should in the next population and housing census affirm the resident status of slum dwellers, this will aid in the future planning of the city. The present initiative by the government of Ghana to develop and implement the use of Identification card is a step in the right direction were the status of residents can clearly be stated in the event of sanitation default.

## 5. Conclusion

Slum dwellers are part of the urban populace, with the same democratic rights to environmental health and basic living conditions as all the citizens of a country. However, enjoying and getting access to basic amenities and services has metamorphosed into being a privilege and not a right. Most politicians and government have overlooked the state of slums and do not see their improvements as a priority.

The evolution of slum settlement can be likened to a social and economic shortfalls coupled with failing balance of spatial value and fairness of residence especially among developing countries. In order to improve upon the environmental sanitation challenges of slum settlement, it is prudent for all stakeholders to play vital roles in maximizing the desired results. Government needs to partner with private developers to provide infrastructure, human resource and expertise as well as create the avenue to sensitize community members on the essentials of clean environment. On the other hand, community members on their part need to compliment government's effort by maintaining the slum landscape. As observed by Jesse Shapiro, strategies should be tailored at improving specific groups or communities. Considering the heterogeneous nature of slum neighborhoods, a common strategy must not be implemented throughout all communities but the uniqueness and prioritized needs of each area or group must be considered.

Rudimentarily, people drift and influx cities for better livelihood including employment and basic services availability. According to a research statistic in Surabaya, India, 95.8% of urban migrants stated jobs to be the primary motivation for drifting into cities. However, poor rural migrants with lack of skills may not immediately find suitable jobs for their status hence often face financial constraints and resorting to the slums for shelter. Also from the report of the Population and Housing Census (2010), majority of the people living in the metropolis are employed in the private informal sector (74% private informal and 16.9% private formal). (GSS 2014). The above stated scenario is not far different from the problems of poor migrants in Ghana. According to the study, 84% of respondents out of the 96% of the population employed are self-employed and 11% employed in the private sector. This sector of the population, though are self-employed but they still do not find time to manage the environmental sanitation of the communities due to weak enforcement systems. Therefore any sustainable government policy aimed at improving the lives of urban slum residents must fully take into consideration the informal sector and their job securities. As clearly shown in the conceptual theory in figure 4 above, slum upgraded when implemented through the provision of tenure security, its resultant impact includes, improved housing, sanitation and economic development. The dominant source of livelihood in slums according to the UN-Habitat is the informal sector. Considering the fact that most slum dwellers are not employed in the formal sector and basing on the current high rate of unemployment in Accra and the country as a whole, finding informal employment within the confines of slum settlements will go a long way to eradicate stagnant poverty. For instance, employing the slum dwellers to be in charge of enhancing the sanitation challenges within their vicinity will help in reducing the environmental sanitation challenges of Nima and Old Fadama since the live in them and with them, they will understand the language of the slum.

In the dawn of good tidings in Ghana's housing sector, the National Housing Policy was promulgated in 2015 and it is envisaged by the poor urban masses that housing provision will be a guarantee for security of tenure. Improving environmental sanitation in slums especially of Nima and Old Fadama need both financial and political commitments. As revealed in the study, 86% of respondents are temporal residents hence can be a reason for their lackadaisical attitude towards sanitation in the research area. Therefore, planning and zoning of slum communities is very important especially in this era of rapid urbanization.

The poor environmental sanitation conditions of the slums of Nima and Old Fadama needs urgent attention as filth has engulfed the gutters, drains and rivers which has become a living castle for mosquito and also igniting flooding during heavy down pours. The condition is also appalling as havens of most dwellers lack toilet facilities, a problem which can be attributed to poor policy implementation.

In conclusion, the research recognized the improvement in the environmental sanitation of the study areas to be possible through government and private partnership, community participation and involvement and the involvement of Non-Governmental Organizations (NGOs) and tenure security for temporal residents especially those employed in the informal sector. Government should partner with the private sector to provide public facilities as well as come with a sustainable roadmap of upgrading the slums. NGOs which exist in the communities can be partnered on the campaign for a clean slum within a specified period of time through a meeting which involves all stakeholders. The study also concludes that government should capture slum habitats and slum pockets in the holistic planning of the wider urban fabric and the effective improvement of the environmental sanitation of slums be done on an incremental basis.

### *5.2 Recommendation*

Slum upgrading projects are designed to provide a package of basic services targeted at refining the living conditions of slum dwellers. These normally encompasses a variety of policy and infrastructure intervention including improved sanitation. During the National Environmental Sanitation forum in Accra in 2012, the government suggested a ban on the use of the non-degradable plastics as a way saving the country from "the epidemic of plastics" especially in drains which very often results in choked drains, unpleasant smells, mosquitoes abode and also enticing natural disasters such as flooding. Most often slums are not regarded as places particularly in city planning and zoning hence their improvements do not matter to officials.

The present administration is also keen on improving the lives of slum dwellers through the development of a slum policy and the recent creation of the Inner City Ministry. About 7 million more Ghanaians lack access to sanitation than in 1990 and, as a result, there are regular outbreaks of cholera in urban areas.

Government should implement strategy to employing slum dwellers who are generally employed in the private informal sector and having majority of them self-employed (84%) to be migrated on to the local government system as slum sanitation inspection agents and cleaners. This set of people will be working directly with the Inner City and Zongo Development Ministry and the Ministry of local Government and Development. This move will not only help resolve the environmental sanitation challenges but also reducing the rapid employment rate that has hit the country in recent times which inversely reduces poverty hence a step to meeting the millennium development goal on eradicating poverty and improving the lives of 100million slum dwellers by 2020. However, this agenda will only be possible if the responsible agencies take keen interest in it, therefore government for look for an anti-corruption antidote and mechanism.

Government can also allocate a dumping site which can be used as agricultural zones for urban agriculture which in turn will feed the urban masses and create financial stability for the farmers.

The innovation of Mobile toilets vans can also help in improving the environmental sanitation of slums. Open defecation and the challenge of "bagged toilets" or "flying toilets" will be controlled. Mobile toilets can be provided for households without toilets and those with congested toilet on condition that they will maintain them and as well used for the sole purpose of innovation and improvisation.

Public private partnership is a laudable strategy for a developing country like Ghana and adopting such a strategy to improve the environmental sanitation of slum dwellers in Nima and Old Fadama will be in the right direction. Government can partner with private investors for in-situ affordable housing projects. Eviction and demolition of slums serves as a catalyst for the evolution of new slums pockets. One of the major reasons for poor migrants from rural areas drifting to cities is the job opportunities it offers and the enjoyment of basic amenities such as schools, hospitals, water, electricity and exposure to city life, hence their place of residence will not matter since their main focus is available to them. Majority of slum dwellers will prefer to resettle on a fallow land in the city rather than migrating back to their place of origin. Therefore, as the findings of the research shows (86% temporal residents), for fear of eviction especially for the slum of Old Fadama, residents will not bother much

about sanitation issues but on what will keep them going.

Very intensive and sustainable public education on attitudinal change towards sanitation especially in slums should be promoted by the ministry of environment and ministry of health and this sensitization should be aired on TV, radio, schools, mosques, churches and bill boards and in different most known Ghanaian languages. Citizenship education on negligence of responsibilities should highly propagated.

The era of sanitary inspectors by a section of the Ministry of Health should be re-visited, those people were commonly referred to as 'Samasama' which means people who sue. Albeit it is the duty of government to provide the necessary infrastructure, amenities and facilities, it is also our responsibility to keep our surroundings and environment clean since we are those who live in it. Waiting for others to start will mean that no one is going to since you can be that someone to initiate the change.

## References

- UN-Habitat,(2012), State of the World's Cities 2012/2013: Prosperity of Cities, World Urban Forum Edition
- Elisabeth Eaves, (2007), Two billion slum dwellers, Forbes
- Owusu, G., Agyei-Meensah, S. Lund R, (2008), Slums of Hope and Slums of Despair: Mobility and Livelihoods in Nima, Accra, Norwegian Journal of Geography, 62(3),138-139
- Participating Slum Upgrading and prevention, Millennium City of Accra, Ghana, Slum Situation Analysis Report, Oct. 2011
- MacPherson L., (2013), Participatory approaches to Slum upgrading and poverty reduction in African cities, Interdisciplinary Journal of Social Sciences, Vol. 1(1), pp 86-88
- The Challenge of Slums, Global Report on Human Settlements (2003), UN-Human Settlements Programme, UN-HABITAT, Earthscan Publications Ltd., London and Sterling, VA
- Jessica Thorn, Thomas F. Thornton, Ariella Helfgott, (2015), Autonomous adaptation to global change in peri-urban settlements in Mathare Valley Slums, Nairobi", Biodiversity Change Institute, Department of Zoology, University of Oxford, United Kingdom, Global Environmental Change 31, Elsevier, pp 121-131
- Innocent K.Tumwebaze, Hans-Joachim Mosler, (2015), Effectiveness of group discussions and commitment in improving cleaning behavior of shared sanitation users in Kampala, Uganda slums, Social Science and Medicine 147, Elsevier, pp 72-79
- WHO/UNICEF, 2013-2014)
- Joseph Foray Jnr., (2013), Solid Waste management in Ghana. A comprehensive case for West Africa
- City wide informal settlements: Putting Accra Metropolitan Assembly's informal settlement on the map, Land, Services and Citizenship (LSC), September, 2016
- 2010 Population and Housing Census, (2014), District Analytical Report, Accra Metropolitan, Ghana Statistical Service
- People's Dialogue on Human Settlements, People's Dialogue, Ghana, (2009), Final Draft Report on Community-Led Enumeration of Old Fadama Community, Accra-Ghana
- General News, [www.ghanaweb.com.gh](http://www.ghanaweb.com.gh), June, 2013
- <https://www.theguardian.com/global-development/poverty-matters/2013/oct/28/ghana-slum-regeneration-housing-deficit>
- Llyod G.A Amoah, (2009), Deconstructing Ghana's Slums: Dystopia, Distressed Urbanism and Lessons from Asia, Ph.D, Strategy and Ashesi University
- Mariama Awumbila, George Owusu, Joseph Kofi Teye,(2014), Can Rural-Urban Migration into Slums Reduce Poverty? Evidence from Ghana, Working paper 13, Migrating out of poverty, research programme consortium
- Interview of John F.C.Turner, (2000) World Bank, Washington D.C. 11 September 2000 BY ROBERTO CHAVEZ with JULIE VILORIA & MELANIE ZIPPERER Audited by Rudolf V. Van Puymbroeck, Legal Department, and Assistant
- Nyametso J.K., (2012), The link between land tenure security, access to housing and improved living and environmental conditions: A study of three low-income settlements in Accra, Ghana, Norwegian Journal of Geography, 66(2), pp 91