

# ESTABLISHING SANITATION PROFILE OF SETTLEMENTS IN MINNA URBAN DIVIDE – NIGER STATE, NIGERIA

BY

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## ABSTRACT

*This paper examines poverty in our urban areas and its effects on the environment particularly the provision of adequate sanitation. Data collected through the use of structured questionnaires and administered using stratified random sampling, highlighted the state of the environment of Minna metropolis at both the central and peripheral parts of the state capital. Residents' socio-economic activities as well as activities relating to the observance of environmental sanitation were analyzed. Through this analysis, field findings shows that residents at the city fringes; although with less secured tenure and land value, are more conscious of their surroundings than their counterparts at the city core where; apart from having high density of structures and human activities, land value is also high. These unexpected trends at the urban centres especially the over 75 percent residents' disposal of refuse in open drains, have resultant effects on the general environment and might be among the factors if not the major one, contributing to urban peripheral land degradation. A remedy to this situation suggests a change of attitude of city dwellers and a refocus of policies by urban managers and professionals on the built environment.*

**KEYWORDS:** Degradation / Environment / Poverty / Sanitation / Urban

## Introduction

Poverty is a global phenomenon. This has informed the United Nations (UN) to declare 1996 the international year for the eradication of poverty and October 17<sup>th</sup> of every year as the international day for the eradication of poverty world wide. This is no doubt a welcome response by the world's largest organization. The menace of poverty and the ripple effects of its various colour of deprivation further strengthen the need to organize a world wide approach for its total elimination. Poverty, in its entire ramification can affect man and his environment in various ways. Prominent among these can be seen in the poor living conditions and the degraded state of environment in burgeoning cities of developing countries. This fact is much more in very poor countries where, through its various shades of deprivation, poverty has disenfranchised many and has continued to deny countless number of people adequate shelter, food, drinking water, education and voice, etc. poverty is not

confirmed to absence of material possession, it can manifest in social, cultural and environmental concerns of individuals and the society at large. According to Mabogunje (2005) being poor means that a person is marginalised in the decision making process of his community, is discriminated against in society, feels generally that he has no abiding roots in the community, is usually displaced to the more environmentally unsafe areas of societal space, and he and his family members, particularly his women and children, are vulnerable to various hazards and threats. This paper is aimed at highlighting the relationship between living conditions and the state of sanitation in urban centres. It also examined the environmental consciousness of inhabitants of the core and peripheral parts of Minna metropolis with the objective of enumerating factors of housing density as it affects sanitation among poor urban dwellers living in these areas with different structures and legal status.

### **Research Issue**

The deteriorating living condition in Africa, Asia, Latin America and similar regions of the world has generated a lot of literature on poverty and its linkages to poor environmental conditions. Poverty exerts undue pressure on the environment, because the poor with little or no access to capital, title to land, credit and transport are forced to use crude and inefficient tools and methods that often have negative impacts on land, water and air. Also worthy of consideration is the occupancy characteristics of these households which are capable of further exacerbating unhealthy living conditions in poor environment.

Urban dwellers are considered poor because of lack of adequate income and assets that enables them to afford better quality housing and basic services and infrastructure. This has increased the scale of urban poverty with most people living in cramped and overcrowded dwellings mostly built on illegally occupied and or unplanned lands, with many built on marginal areas having high risk of exposure to human and or nature induced disasters like floods and erosions (Gilbert, 1982; cited in Ozigis, 2006). It is often pointed out that poverty and its subsequent deprivation have multiple effects on both the poor and where they live. For example, high concentration of people and wastes in urban areas create opportunities for exposure to pathogens and a correspondingly greater need for the levels of hygiene that only adequate water and sanitation make possible. High pressure of population and poverty on our environment particularly forests and woodland and even urban enclaves can be expected to have serious negative consequences on the environment namely deforestation, degradation

and fragmentation of land (Mabogunje, 1996; Bartlett, 2003). Inestimable consequences of high concentration of people are daily witnessed in various urban areas of developing countries. High occupancy rates as it is technically referred to expose large number of people especially children and infants to diseases often at epidemic levels. This is worsened by the use of bio fuels or biomass as energy sources and crude heating system in poor homes and housing environment. As Hart-Davis (2006) observed, smoke from cooking fires kills more than one and a half million people every year, one person every 20 seconds! Children are particularly susceptible – a million die every year from diseases brought on by initialling smoke.

However, an investigation into the activities of the poor as regards environment consciousness and protection might warrant a rethink of the general conclusion that poverty and especially the poor are major contributors to inadequate sanitation and the degradation of their own living environment. This issue would be much more apparent if factors of land ownership and especially the location of these poor urban enclaves, instead of only levels of income, literacy and acquired skills, constitute the matrix that formed the established poverty-poor sanitation nexus. Furthermore, an analysis of poverty, the environment, living conditions and sanitation would give more insight into the aerial differentiations of the impacts of deprivation and its subsequent influences on policy and city management in general.

Also worthy of investigation is the issue of safe collection, disposal, and or reuse of urban wastes which can be affected by both human, housing/structural characteristics and density, particularly their proximity to disposal sites. This is of high consideration here, given the rising costs of transportation and safe handling. Thus the relationship between rising environmental degradation in the country and the incident of poverty reinforces the need to focus on the linkage between poverty and the prevailing sanitary conditions of living environment. The evident declining living conditions in urban areas in terms of poor environment, sanitation, waste generation and disposal have prompted an investigation into not only the link between this factor and poverty levels of urban residents, but also demands an exploration of their relationship with location in urban space, the empowerment and responsiveness of city councils, and management authorities, residents' awareness of the state of the environment and their willingness to partake in its management and sustainability.

## **Methodology**

**Data collection and analysis:** Information was collected from five (5) wards of the metropolis. These are areas mainly occupied by the low-income groups, located at the central and peripheral parts of the city. They include; Bosso and Shango at the northern and southern fringes respectively; Limawa, Minna central and Makera at the city core (see fig. 1). A hundred structured questionnaires were administered to randomly selected respondents/household heads in each of these sample areas. The collected data were analysed using simple statistical analytical tools like frequency tables, percentages and bars, etc.

**The Study Area:** Minna is a metropolitan area consisting of many small settlements that now form the main 23 wards of the state capital. It attained this status from a small hilly settlement in 1976 when it became the capital of the newly created Niger State. Located on latitude 9° 37'N and longitude 6° 33'E, Minna is quite close to Abuja the Federal Capital Territory, a situation that has continued to influence its rapid and seemingly uncontrolled growth just as its primary status as the state and regional capital for many governments and non-government organizations and business outlets (Longman, 2003; Ibrahim, 2006).

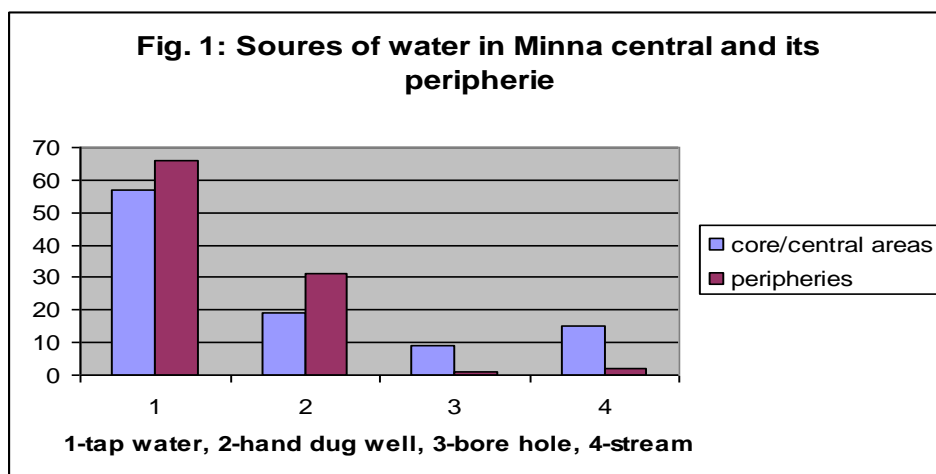
## **Discussion of Results**

It is among the objectives of this paper to analyze and highlight on the environmental sanitation variables of the central areas of Minna and those of its peripheries. These variables were identified to have strong relations between them and human health and wellbeing. For instance, Hardoy, Mitlin and Satterthwaite (2001) noted that the presence within the home and its immediate surrounding of disease causing agents (pathogens) because of a lack of basic infrastructure and services – for instance no sewer, inadequate provision for drainage and irregular or no services to collect solid wastes and their safe disposal result in very large health burdens from easily prevented diseases to high levels of infant and child death.

**Sources of Water:** For this case study, sources of domestic water, waste water disposal, provision of toilet facilities municipal solid waste collection and disposal are examined. Water is very essential in all human activities both at home and at workplace. Water is used for the preparation of food, personal hygiene and general cleaning at both domestic and industrial levels. This makes its adequate and safe provision quite critical to the maintenance of good health, human productivity and even environmental aesthetics. In fact, at any one time, close to half of the urban population in Africa, Asia and Latin America is suffering from one or more of the main diseases associated with inadequate provision of water and

sanitation. These diseases account for a high population of infant and child death (WHO, 1999; cited in Hardoy et al 2001). Adequate water supply and other elements of sanitation can impact a lot on any human settlement most especially in areas with high population. Bartlett (2003) observed that in cities well served by piped water, sanitation, drainage, waste removal and good health care, child mortality rates are generally around 10 per 1,000 live births, and few child deaths result from water related diseases. In fact, in cities and neighbourhoods with inadequate provision, mortality rates are commonly 10 to 20 times higher. In a well managed city, there is little difference in mortality rates for low and high income areas, in badly manage cities they can vary by a factor of 10, 20 or more.

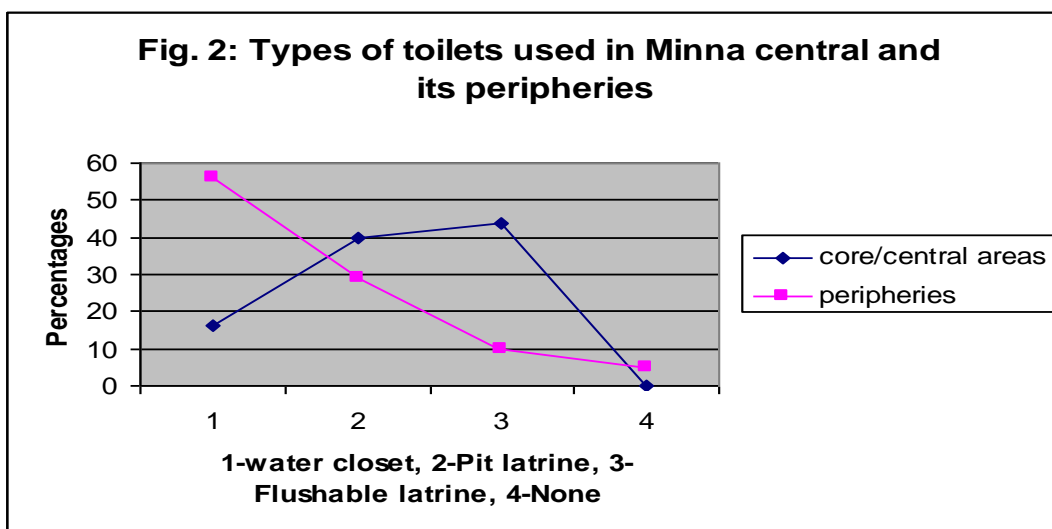
A critical factor in water supply is its adequacy and safety. This is in terms of regular supply and its freedom from disease causing microbes. This has effect on water usage and the transmission of water borne diseases in several ways and it makes water provision in conventional ways through pipes and secured wells a matter of top priority. Field surveys found that the peripheral enclaves of Minna are better off than its central parts in this aspect; with almost all its domestic water supply sourced from these two outlets (Fig. 1). This could be as a result of high prevalence of individual and community effort towards adequate provision of these infrastructures. This, in a way; supplements formal provision by government agencies which in many instances are inadequate and lagging behind in these parts of the city and whose records often rate these areas of the metropolis as highly deficient or totally unconnected.



*Source: Authors' Field Survey*

**Toilet Facilities:** Another aspect that is critical for provision and maintenance of good sanitation in human environment is the type of toilet facilities available to the people, the

nature of these facilities; their adequacy, reliability and maintenance. This is very important as inadequate disposal of excreta and other human wastes can present opportunities for the growth and increased activities of disease vectors like flies and rodents, in addition to the accelerated tolerance for disease causing germs. Inadequate and unsafe disposal of human wastes can also create ways for the contamination of domestic water supply especially from underground sources. A contaminated underground water source presents a multiplicity of effects on human health through the spread of water borne diseases like dysentery, cholera, diarrhoea and typhoid fever. Field survey shows that the peripheral parts of Minna could be safer than its interiors in terms of the disposal of human waste. In these areas over 5 percent of the residents use water closet system considered to be the safest and most hygienic toilet system. Majority of the residents of central area of Minna (over 80 %) uses pit latrine which is less safe in terms of water borne diseases (Fig. 2).



*Source: Author's Field Survey*

**Waste Water Disposal:** Waste water consists of used water either from domestic or industrial processes. It is a bye-product of bathing, washing, laundry, cleaning of machines or the general surroundings. Waste water otherwise known as sewage can be dangerous to human health if not handled with care. This is because of its ability to harbour disease causing germs and micro-organisms and further aiding the transmission of diseases, especially in places with high population density. Although in the peripheral parts about half of the households are not provided with these waste water disposal facilities, they still fair better than the central parts that have only four (4) percent of its households using sock away as against 28 % at the city fringes. Again, 75 % of the households at the city centre dispose of

their wastewater in open drains, while another 21 % have no facilities for sewage, that amount to 96 % of the households without sewers and hence disposing domestic wastewater in an unsafe manner (Table 1).

**Table 1: wastewater disposal systems used in Minna central and its peripheries**

Disposal through	Response in percentages	
	Core	Peripheries
Soak away	4	26
Open drainage	75	24
Not provided	21	50
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Authors' Field Survey

**Municipal Solid Waste (MSW) Collection and Disposal:** Table 4 below is an illustration of the collection and disposal of Municipal Solid Waste (MSW) at home and other activity areas. The use of dust bins is common in both areas but it must be emphasized that at the city centre, most of the materials so collected and disposed end up in the drainage system built across the city. The city fringes are not served by these drains hence the total lack of figures for these practices for both collection and disposal. Instead of this, they have much higher percentage for collection of waste by private waste collectors. The activities of residents of the city centre call for a deep evaluation. According to World Bank (2005), adequate MSW management encompasses the functions of collection, transfer, treatment, recycling, resource recovery and disposal. It is noted that public/formal or government owned waste collection machinery of the Niger State Urban Development Board (NSUDB) can be seen as the only outlet that can assure safe collection and disposal of MSW without dumping into drains as is the practice by many private collectors especially individual cart operators.

**Table 2: Municipal Solid Waste (MSW) collection and disposal**

MSW Collection through	Response in percentage	
	Core	Peripheries
Dust bin	76	75
Bags	18	19
Burning	3	6
Drainage	3	0
<b>Total</b>	<b>100</b>	<b>100</b>
MSW Disposal through		
Private firm	66	74
Public /Gov't. firm	3	2
Individual/cart operators	18	11
Community dump site	1	13
Drainage	12	0
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Authors' Field Survey

**Effects of living environment:** Poverty is another aspect to reckon with in poor urban environments its effect on poor city residents can hardly be overemphasized. It is about the sole factor that pushes the burgeoning population of the poor to marginal lands, exposes them to human and nature induced disasters and avoidable catastrophes. Poverty especially in its chronic fashion can render generations susceptible to health, social and environmental hazards at different stages of their life. One of such influence is in the number of people co-habiting together. Occupancy Rate; the number of people living in a house is of high significance here as it underlies the provision, efficiency or otherwise of urban infrastructures and services, as well as the use and or the misuse of the little provided. It is observed that occupancy rate at the urban peripheries ranges from 5 – 9 persons per house (PPH). Four (4) PPH in compound or roomy apartments, and five (5) PPH for self contained apartments. This average 5 PPH in the study area with over 82% of houses between 2–4 bedrooms. That is; two-bedroom (27.6%), three bedroom (32.8%) and four –bedroom (22.4%) apartments. This is quite low compared to those of the urban centres having twice or more number of people in these same categories of residential structures (Ozigis, 2007, Kafayat, 2007; Egberongbe, 2007).

### **Recommendations**

This write up is an attempt to examine the conditions of living and housing environment on poor urban dwellers. It is particularly out to ascertain if living environment and conditions have any significance influence on the poors' response to adequate sanitation. Field surveys have shown that residents at the peri-urban enclaves of the study area are very much concerned about their environment. This is illustrated by their full observance of the various elements and activities that maintain good and adequate sanitation in human environment. For example, safe disposal of Municipal Solid Wastes (MSW), provision of good toilet facilities, good and hygienic water supplies, safe and adequate disposal of sewage, etc. This cannot be divorced from the fact that most people in this part of the metropolis have high stake in the structures they live in. It was observed that many are owners or part-owner-occupier of these structures; hence, their unusual efforts towards the self provisions and sustenance of these facilities for dignified living and livelihood. It is also observed that those at the core areas of Minna metropolis are far behind in these practices, not solely because of



their economic status, but also due to the city authorities' ineffective response to their need and pursuance of good sanitation.

The efforts of these peri-urban residents are quit commendable, although; safe drinking water alone is not sufficient to prevent diarrhoea in a situation of unmet sanitation and hygienic needs. The combination of safe drinking water, sanitation facilities and good personal hygiene are prerequisites for disease prevention and the fight against poverty (Person, 2005). Field works have shown that these communities are daily carrying out these necessary activities and are in a way moving towards the achievement of the number one Millennium Development Goal (MDGs).

Private provision of urban infrastructures like water and waste disposal is a welcome development. Individual consciousness about the role of this vital resource and service to their well being is a global phenomenon which cannot be over emphasized. Data from 84 countries indicate that the best predictor of nutritional status, next to sufficient funds for food, is the level of access to water (Lechtig & Doyle, 1996; cited in Bartlett, 2003). These communities need to be supported by the authorities and stakeholders. As Borrini-Feyerabend, Pimbert, Farvar, Kothari & Renard (2004, XXIX) pointed out that their inventiveness and autonomy (should not be) brushed aside in the name of state rationality, economic development and conservation. Their viable, relatively simple to operate, modest and time-tested solutions to natural resource management problems, embedded in unique local knowledge and skills, (should not be) substituted by powerful and locally –untested solutions, based on a local ('scientific') understanding of how nature should be managed and conserved.

To extend these benefits to all city residents independent of which part of the metropolis they may be residing, urban planners and managers need to work together in other to achieve meaningful success. In particular; they need to be courageous, to recognize that with careful planning, communities can have the jobs, tax revenues, and other amenities that come with development, without the negative consequences of sprawl such as impacts on the environment, loss of open space and farmland, increases in local taxes, increases in traffic congestion and effects on the delicate social fabric of living communities. Planners must be concerned with all of these potentials effects. Planners bear the responsibility of ensuring that

the development in the region is sustainable, and that it has the ability to maintain services, a good quality of life and give the people what they want at financially reasonable costs (Kostielney, 1998; cited in Sierraclub, 2003).

## **Conclusion**

Many times, city authorities do invest in environmental sustainability programmes, which include sanitation of the living environment. Little do they however consider; what is the most effective approach to achieving a liveable environment in poor neighbourhoods who are often seen as squatters or invaders of private and government properties and daily breeding criminals and societal misfits. Sometimes it is even assumed that the poor are not paying much attention to their places of abode and most of their activities are detrimental to environment especially good sanitation. As Mabogunje (1996) observed that conventional wisdom about the region (Sub-Saharan Africa) treats its people as if they are mindless about the quality of their environment. It sees the international community as the custodian of the wholesomeness of the global environment whose role is to save Africa from the Africans.

Situations appraisals however do not favour this assertion. Field works have revealed that many of the so-called poor (even those at the peripheries who in some cases can be regarded as invaders) are quite aware of the need for a liveable environment especially through adequate sanitation. Adequate attention needs to be given to those at the city fringes, because, due to their increasing number and extent, they have inevitably become a major part of the city if not the city itself. As Badiene (2006) put it ‘these compounds (the slum enclave of cities) are called peri-urban but in reality it is the city proper that is the periphery’. What is lacking, and is continually portraying their surroundings as untidy, unclean and unsafe; is the city managers’ needed response and full involvement in environmental sanitation that would complement their efforts in a very big way. Their effort to create and maintain clean environment would yield little result if there are no efficient and effective municipal waste clearance department that collect these waste for safe disposal. The situation is further aggravated if these same authorities do not monitor the activities of private (MSW) collectors to ensure safe disposal of waste in environment friendly manner.

Among the major challenges facing Nigeria in the new millennium is that of transforming its ever-growing number of cities into functional entities that can cope with the rising demands

of contemporary urban life. Essentially, this involves devising ways of raising urban infrastructure to functional levels so that less money is spent by the users on maintenance and production costs, getting city residents to develop a sense of ownership in their cities through inclusive and participatory democratic practices that ensures social services function efficiently so that residents can readily assess challenges ahead. Provision of better health services that will enable them become more productive, and harnessing the huge untapped social capital potentials, which exist within the city to attract investments in this age of increasing rate of globalization; have become a matter of top priority. This can only come from the people and the avenues they suggest and recommend in a participatory decision making process –a free democratic setting, which is not only pro-poor but which at the same time encourages paying of taxes and further ensures accountability so that those representative can provide us with the service we desires. As experts (Mabogunje, 1999; Maqueen, Bose, Bukula, Kazoora, Ousman, Porro and Weyerhaeuser, 2006:1), observed - this would ensure that our cities become a beautiful, healthy, safe and economically stimulating home for all. In this regard full participation by the communities is highly recommended because ‘equity’ is highest where there is greatest investment in democracy’. Equitable associations formed by this people tend to pay attention to transparency over cost and benefit. Most of them also have in place sanctions for free riders or those who break their rules, and clear procedures for resolving conflict.

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