

## **Environmental Problems as a Threat to Sustainable Urban Development in Kano Metropolitan- A Review**

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### **Introduction**

Environment can be seen as all physical, non-physical, external, living and non-living situations surrounding living organism that determine its existence, growth, development and survival at a particular time. It also encompasses constantly interacting sets of physical elements and non-physical, living and non-living such as social, cultural, religious, political, economic systems, which determine the characteristic features, growth and sustainability of both the component elements of the environment and the environment itself (Muoghalu, 2004). Hence, sustainability in this context relates to the ability of the ecological, economic and socio-cultural systems in a manner that does not limit the possibility of meeting the present and future needs of the various components and aspects of the environment. It can also be viewed as the carrying capacity of the supporting ecosystems (Marcuse, 1998).

Environmental challenges may be broadly grouped into major and minor types depending upon their potential to cause damage to human life and property (Joseph, 2009:1). Also, environmental challenges are classified under the broad titles of natural and artificial, based mainly on their mode of occurrence. Natural events occur suddenly and swiftly and consequently cause severe damage to the society and surrounding (Santra, 2011:560). Artificial challenges are influenced or induced by man. They have some elements of human error, negligence and or intent. The earth as an ecosystem, has a threshold or terminal borderline within which it can effectively absorb or withstand the impacts or effects resulting from circumstances within and without it, if dangerous deterioration and overstrain is to be avoided (Uche, 1995:9).

In Nigeria, the environmental problems are characterized by soil erosion, high population pressure and increasing congestion in urban centres, which are further compounded by unplanned growth, and increasing problems of domestic and industrial wastes disposal and pollution. Human related activities since 1980s, especially in the developmental projects of the oil and gas sector, led to the loss of the topsoil and deforestation; loss of habitat, species and biodiversity; and degradation of wetlands (NEST, 1992). Environmental problem has resulted in the deterioration of Nigeria's urban and rural environmental quality, which is characterized by water shortages and floods that play a major role in the transmission of communicable diseases. These worsen the condition of the poor. Also, drought and desertification threaten food security and nation's ecological

integrity, and are drivers of population displacements (Nwafor, 2006).

Kano is one of the ancient cities of the Hausa Land of northern Nigeria with longest history dated to transaharan trade. This make it to be the most popular and populous city in the country. The city is contineously becoming the dwelling centres of diverse people from all nooks and crannies of the country, the city growth is not only in terms of population but also in terms of function and scale of problems. It manifest both positive and negative dimensions. It is equally theplaces of cultural life, political activites and power. Similarly, it is the centre of poverty, unemployment, crime, human right abuse and great environmental and health problems. Hence, city bring lots opportunities and challenges to which all stakeholders needs to put hand on desk to coped with challenges and improve the potential opportunities.

”Sustainable development” is the term use to describe the development that met the needs of the present without compromising the ability of future generation to meet their own needs. Environmental problems are caused mainly by natural forces and human influences. (Coenraads, 2009) identified the major causes of natural disasters such as geological events, meteorological incidents as well as biological disasters. According to him, geological events are triggered by the inherent working of our planet while meteorological events are caused by the variations in global weather patterns and biological events are caused by actions of living agents (plants and animals). Anthropogenic challenges are caused mainly by human interference with the environment.

Sustainable development is the pattern of economic development in which the resources used aims to meet the human need while preserving the environment so that these need can be meeting not only in the present but also for generation to come. There is an additional focus on the present generation responsibility to improve the future generation life by restoring the previous ecosystem damage and resistance to contribute to further ecosystem damage. Sustainable development ties together concern for carrying capacity of natural ecosystem with social challenges faced by humanity (Brundtland Commission, 1987).

According to Miller and Spolman (2009) environmental problems are caused by population growth, wasteful and unsustainable resource use, poverty, as well as insufficient knowledge of how nature works. Human activities such as agriculture, fishing, livestock rearing and hunting are exerting too much pressures on the environment. Other activities includes mining and exploration for petroleum, land reclamation, overfishing, overgrazing, deforestation, hunting, as well as the use of pesticides and herbicides are responsible for many environmental problems. Many problems concerning environment and biosphere are simply there because so many people contribute little bits and pieces to it, all of which put together assume enormous dimensions (Asthana and Asthana, 2013).

The aim of the research is to look inward into the major obstacles that hindered sustainable urban development in the metropolitan part of Kano state, Nigeria. The research is kind of review research where the data are from secondary sources such like journal articles, technical reports, projects and news papers.

### Study Area

Kano metropolitant is located on Latitudes 11°56' N-12°04' N and Longitudes 08°26' E-08° 39' E. It occupies an area of about 683km<sup>2</sup>, with a crow fly distance of 19km from east to west and about 15km from north to south. Kano Metropolis is bordered by Minjibir LGA to the North East and Gezawa LGA to the East, while Dawakin Kudu LGA to the South East, Madobi and Tofa LGAs to the South West. It is the largest urban center in the Hausa land and most influential commercial town in the Northern Nigeria and the most populous. It is the third largest in the federation of Nigeria coming after Lagos and Ibadan. The metropolitan comprises eight (8) local government area namely Dala, Gwale, Fagge, Tarauni, Kumbotso, Nassarawa, Kano Municipal and Ungogo with total population of 2,828,861 (NPC, 2006).

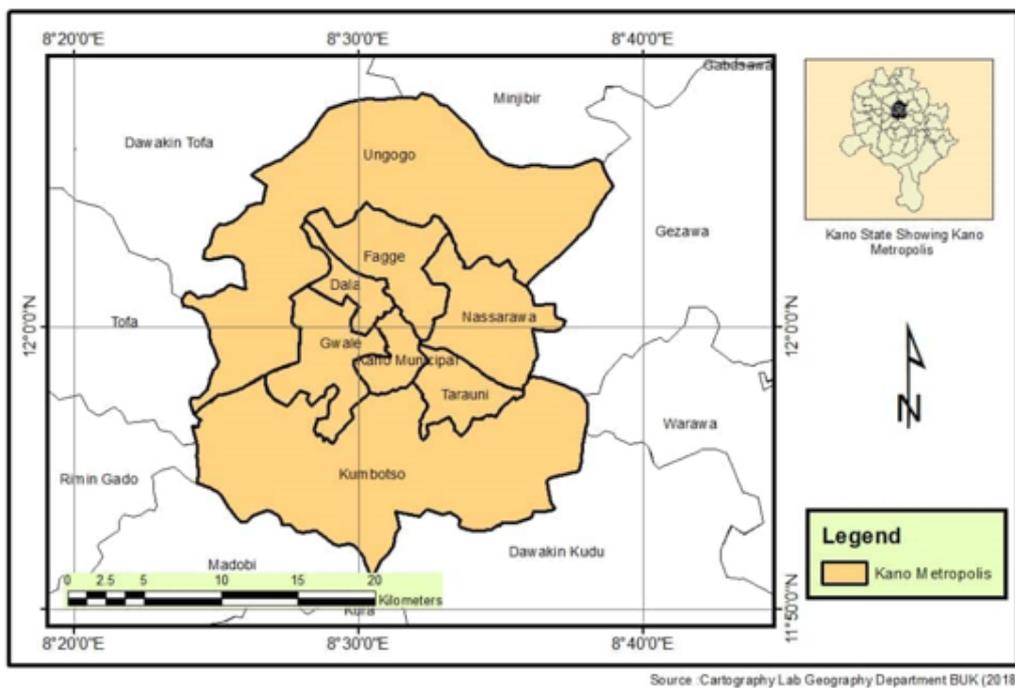


Figure 1. Map of Kano Metropolitan

### Research Findings

There are so many problems associated with sustainable urban development in Kano metropolitan as it presents in all developing countries particularly in Africa and Asia. Some of these problems are naturally induced while others are human induced. These serve as the major impediment to sustainable urban development. These includes

### Housing Planning and Development

In Kano city and its environs, government officials and rich individuals are enjoying decent and luxurious life of urban centres, they account for minimal percentage of the total population while the majority of the populace are overcrowded in an area with ineffective physical planning. The people erect structures haphazardly most of the plots are demarcated with little or no planning popularly known in Hausa as Awon Igiya. This results to series of flooding during the rainy season, because the water channel or drainage are not there or have been blocked (Ahmad, et.al, 2021). The town and country planning of the colonial masters of 1946 remain unchanged not because of its effective, comfort and satisfactory nature but rather because of negligence from the authority concern. A number of committees having set up by state government on land allocation and administration but due to corruption, favourism and political problems all effort remains in vain. Another important effort is that of site-and-service which try to open up a new areas and upgrade slums areas through provision of basic infrastructural services to already existing disorderly and crowded settlement. Kano state housing cooperative, Kano state bureau of land management and Kano Urban Planning and Development Agency (KNUPDA) as well as Kano geographic information system (KANGIS) are institution saddled with responsibilities of houses provision, lands allocation and ensure full compliance of law by structures builders and developers respectively. But unfortunately, they do not meet their expectation. Its of recent Kwankwaso led administration constructed three different housing estate namely, Kwankwasiyya, Amana and Bandirawo with view to decongest the city centre but the houses are too expensive because they are what refer as settelite settlement which meant for only those born with silver spoon. Hence, it is not affordable to average income earners and common man. Similarly, the present administration embarked on 2000 houses construction at Fari town with aim of decongesting and provide affordable house to resident of the study area (Survey, 2018).

### Water Supply and Sanitation

Adequate water supply and sanitation for environmental and personal hygiene are not adequately available in Kano metropolitant. Despite the effort of international drinking water and sanitation compaign of 1980s, water-borne diseases such like cholera are very common. Therefore, only few locations have been served with pipe borne water and flush toilet especially those situated very close to water treatment projects and well planned housing estate, while vast majority of the populace depend solely on domestic wells, borehole and water vendors as the source of their water supply (Nura, et.al, 2014). Large portion of the populace still use pit latrine, some people still defecate and urinate indiscriminately in the open spaces or nearby bushes. The public conveniences are not adequately available and located haphazardly (Auwal, et.al, 2019). As such they were located sometimes closes to the eateries, cafes and markets As a result of this food and

water can easily get contaminated as its exposed to human waste. Different administration at various time made effort to curtail water shortage problems but unfortunately no remarkable achievement recorded due to population explosion, corruption and political reasons. Kano state water board is responsible for water abstracting, treatment and distributing to Kano city and environs. Tamburawa water treatment and Challawa water work are largest water work meant to provide incessant water supply to the Kano city and environs, but few location benefitted due power failure and poor maintenance culture as well as political reasons (Nura & Ibrahim, 2014). Majority of the resident sources water from domestic wells, water harvesting in raining season and other unreliable and contaminated sources which posed serious threat to their health because the water quality and safety is not guaranteed. Hence, hinder smooth sustainable urban development.

### Waste Disposal and Drainage System

Huge amount of waste are generated on daily basis from domestic and commercial activities in Kano metropolitant. The system of collecting, transporting and disposing of these waste are not effective this lead to the proliferation of diseases, rats and other rodents are also found. Refuse Management Agency and Sanitation Board (REMASAB) is the body saddled with responsibility of refuse collection and disposal but several locations in Kano Metropolitan are not accessible because of the nature of building and narrow streets and some places are not served with refuse collection containers, and people reckless attitudes toward environmental sanitation. As a result of this people are disposing their waste indiscriminately. This make Kano metropolitant to look somehow unattractive and unpleasant. The metropolitant have open drainage system, narrow and shallow trenches which can be block easily, thereby producing unpleasant odour, pothole in the street, pools of the stagnant water, and waste gushing from bathroom and kitchen give way for breeding of malarial mosquitoes and other related diseases which affect the health and wellbeing of the residence (Geoffrey, 2005).

Proper management of solid waste is critical to the health and well-being of urban residents (World Bank, 2003). In Kano metropolis, as it is in most cities in the developing world, several tons of municipal solid waste is left uncollected on the streets on daily basis, blocking drains, creating favourable feeding ground for pests that spread disease and creating a myriad of related health and infrastructural problems. A substantial part of the urban residents in the old city and suburban informal settlements of Kano metropolis also have little or no access to solid waste collection services. This is due to lack of proper land use planning which resulted in the creation of informal settlements with narrow streets that make it difficult for collection trucks to reach many areas. The result is that a large portion of the population is left without access to solid waste management making them particularly vulnerable (Nabegu, 2008a). x larger

### Traffic Congestion

Traffic congestion is the serious problems associated with most of the cities and large urban areas of developing countries. Kano is no an exception, Kano metropolitan is characterized with traffic congestion cause by road transportation which is the commonest means of transportation there. The major roads with high traffic flow are Bello road, Zoad Road, Kofar ruwa-Kurna – Miltara- Dawanau Road among others, and all the roads linked to main markets in the area. Majority of these roads are narrow even in the city cetres and there are only few flyovers and underpass ways as a result of this roads becoming so congested due to large number of automobile especially in the rushing hours of morning and evening when peoples are going out and coming back respectively. Furthermore, the available roads are indeplorable condition especially those leading to local areas several potholes can be observed vividly and lack of drainage. Hence, road accident is very rare and automobile developed faults. Recently past and present administarion embarked on fly over and under pass road contruction in order to reduce traffic congestion in the major road within municipality and outskirt. As a results of this milestone development, it vividly observed that traffic flow and road accident having reduced greatly but still there is a need to construct more roads, flyovers and underpass so as to attained sustainable urban developemnr in the study area.

### Housing Congestion

Housing Sector plays a key role in a country's welfare than is always recognized. Adequate housing provision has since the early 1970s consequently engaged the attention of most countries because it is one of the three most important basic needs of mankind– the others are food and clothing. Housing congestion is a situation where houses are exploit beyond their carrying capacity. The shortage of houses leads to the problems of housing congestion. A single plot meant for a single house fragmented to built many houses with little or no housing facilities (Afolabi, 2008). There are serious housing congestion in the study area, most of the quaters within the area lack proper planning as such houses are constructed haphazardly. Hence, serious of housin congestion recorded in different of the study area. A good example of congested area includes almost all residential areas located within the city wall, Gaida, Sheka, Kwana Hudu, Rimin Kebe among others. These housing congestion result in rapid spread of diseases especially when there is outbreak of epidemics like cholera and so on. Therefore, people resort to buy plot of land at unplanned areas because is very cheap untill these problems curtails, the issues of sustainable urban development could never be realised.

### Environmental Pollution

Pollution is the release of toxic or harmful substances in to the environment which posed great threat/danger to living organism and physical environment. The first and

the most dangerous environmental pollution is the air pollution where toxic substances are discharge into atmospheric system, due to high number automobile, burning of fossil fuel and industrial activities green house gases ( $\text{CO}_2$ ,  $\text{CH}_4$ ,  $\text{O}_3$ ,  $\text{SO}_4$ ) are discharge into the atmosphere, it lead to contamination of atmospheric gases. Hence, acid rains and depletion of ozone layer as well as trapping green house gases from escaping outer space which leads to global warming. Industrials waste from Sharada, Challawa, Bompai Industrial area are constantly discharge into water bodies especially from tannary industries and steel industries thereby contaminating water bodies making it unsafe for human consumption and also leads to the killing of aquatic organism and agricultural activities in urban areas depend upon, this in turn affect human health, when consume agricultural product and /or fisheries. Other forms of pollution observe are soil in place characterised with oil spillage and noise pollution especially in market places and/or industrial area from machines sound which combine affect the sustainable development of the study area

### Inadequate Basic Infrastructural Facilities

Social amenities are very significant to the people social welfare without life will be boring and uncomfortable, Kano urban centre are not well attach with basic infrastructural facilities, despite the fact that state have alot of resources with high level of income, these social services like Roads, electricity, clean water supply, Hospital, stadia, cinema, among other were insufficient. Millions of people patronizing hospitals with shortage of qualified doctors with dilapidated health care services facilities, huge number children were concentrated in small class room more than 200 children in a single class room with poor ventilation. A good example in Bachirawa primary school with more than 300 pupils in a classroom, tertiary institutions and universities are very limited, and therefore, can not accomodate the increase number of student graduating from secondary school among others. Shortage of this service serve as a major impediment to sustainable urban development.

### Conclusion

Finally, Kano metropolitant is abundantly blessed with different resources one may think of, ranging from human to natural resources. Severals agencies, programme, panels, committee were established by different governments ranging from military to civilian government in order to come up with rules, laws, and regulations, but all these were remained on papers when its come to real implementation is where the problems laid. In a nut shell, one may come to conclude that mismanagement, corruption and reckless are what dragging the study area (Kano Metropolitan) backward since the creation of the state in 1963. This is the reasons for emergence of several environmental problems ranging from natural and anthropogenic ones. These are the main impediment to the

achievement of sustainable urban development in the area. Until and unless measures are taken to tackle the aforementioned challenges, the attainment of sustainable urban development in the study area could never be actualized.

### Way Forward

There are several threats to sustainable urban development in Kano metropolitan, these challenges can be curtailed or minimized when the following strategies are adopted.

1. The housing planning development policy should be strictly observed all the institutions charged with responsibilities of plots allocation and housing development and control must be empowered to ensure proper compliance with laid rules and regulations concerning structures erecting and development, and punished defaulters accordingly irrespective of their social, economic or political status. There is also a need of effective coordination between different institutions charged with urban planning, development and control.
2. The issues of water, air and land pollution need to be addressed with utmost care. The pollution control unit of Kano state ministry of environment should be empowered to ensure all the industries in different industrial estates in the study area fully comply with all rules and regulations concerning discharge of industrial waste (solid, liquid and gas) into the atmosphere and water bodies. Thereby, polluting air and water respectively. Similarly, there is a great need for sensitization campaigns to educate the households on where to dispose their domestic waste properly to avoid indiscriminate waste disposal.
3. To curtail challenges of water supply and sanitation, reliable sources of water such as steady pipe-borne water, boreholes and handpumps need to be developed and sustained which will guarantee standard water quality and safety. The populace ought to be educated on the health consequences and implications of consuming water from contaminated sources. For this to be actualized, the hand must be on deck; government alone cannot meet water demand of the entire populace. Non-governmental organizations, philanthropists and communities must come in to ensure sustainable water supply for sustainable urban development.
4. The authorities should expand the road network, construct new ones and ensure those roads in dilapidated conditions are renovated and maintained. Flyovers and underpasses should also be constructed to decongest roads that are highly congested.

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