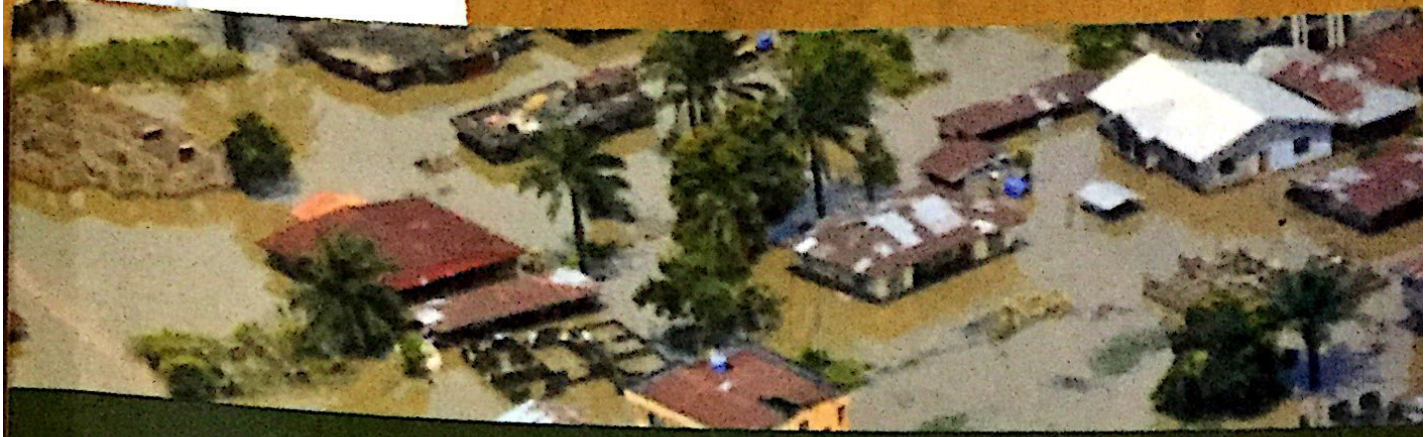

Disaster Risk Management in Nigerian Rural and Urban Settlements

Edited by:
Bolanle Wahab
Nathaniel Atebije
Ibrahim Yunusa

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2013 MCPDP Technical Committee Members:
Bolanle Wahab
Nathaniel Atebije
Ibrahim Yunusa
Nasiru Shehu

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Chapter 7

Risk Sensitive Planning for Disaster Risk Reduction and Resilient Cities in Nigeria

A.M. Jinadu

1. Introduction

The world has continued to witness rapid growth in urban population, most especially in the developing countries, with evidence of more phenomenal increases in the future. Urbanization statistics show that the global urban population grew from 737 million in 1950 to 3.5 billion in 2010 and will increase by 5 billion in 2030. The United Nations (2008) projected that from 2010, almost all the growth in the world's population will be in urban centres in low and medium income nations. The percentage of urban population in the developing countries has increased from 17.8 per cent in the 1950s to 40 per cent in 2000 and by 2030, it is estimated that about 60 per cent of the population of the Third World countries will live in cities. In Nigeria, the percentage of urban population increased from 10.2 per cent in 1950 to 35.3 per cent in 1990 and to

49.0 per cent in 2010 (United Nations, 2012). The percentage of urban population in the country rose to 50 per cent in 2012 (World Bank. 2013) and this is projected to increase to 52.1 per cent in 2015 and 57. 9 per cent by 2025.This phenomenal growth in urban population has brought about high increases in the number and size of large cities in Nigeria and many other parts of the world.

The rapid rate of urbanization with the attendant problems of urban sprawl, poor unguided physical developments in marginal areas, increasing poverty and infrastructure deficiency in the developing countries has resulted in disaster risk accumulation in our towns and cities. Thus, increases in urban risk, high frequency and magnitude of disasters of wide dimensions are major challenges faced by cities of the 21st century.

Cities of the developing countries are the worst hit by natural and man-made disasters as large and medium sized cities have been exposed to increasing danger of disasters with less resilience (Jinadu and Sanni, 2008). In these countries, cities have been the locus of both large and small scale disasters with severe impacts. In Africa, for instance, Wisner and Pelling (2009) identified 166 urban disasters affecting 28 cities between 1997 and 2008. The disasters affecting these countries include urban drought, earthquakes, windstorms, floods, fires, explosions, land subsidence, dumping of hazardous materials, air and road traffic accidents, building collapse, epidemics, etc.

Nigeria, like other parts of Africa, is affected by natural disasters of various kinds. A survey of natural disaster typology conducted by the National Emergency Management Agency (NEMA) revealed that the common disasters affecting the country include erosion, landslide, rainstorm, flood, wildfire, building collapse, oil pollution and droughts\desertification. These disaster events are of different magnitudes and have adversely affected many communities in Nigeria, causing loss of life, injuries, population displacement and loss of properties worth several millions of Naira.

The statistics on the impact of disaster are intimidating. In 2001 alone, the record of NEMA shows that disasters affected over 902,899 people and killed over 1,846 others (Jinadu and Sanni, 2008). According to the OFDA/CRED International Disaster Database, natural disaster affected 6, 306, 441and killed 21, 002 people in Nigeria between 1980 and year 2010. In year 2010 alone, flood disaster affected 1,500,200 people in Nigeria and resulted in 30, 000, 00 US Dollar loss. The 2012 flood disaster in Nigeria is described as unprecedented and the worst in the history of the country. The Post Disaster Needs Assessment (PDNA) of the 2012 flood indicated that 3, 981,314 people were affected, 5,851 injured, 363 killed and over 3.8 million people were displaced. The combined value of the damage to assets and losses was estimated at N2.6 trillion with 1.4 per cent (N570 billion) loss in real GDP growth (Federal Government of Nigeria, 2013).

Disasters lay a heavy burden on the global community, affecting 2.9 trillion people, killing 1.2 million and causing $1.7 trillion worth of damage between year 2000 and 2012 (UNISDR, 2013). The accumulation of risks in urban centres, increases in disaster events and the cascading negative effects have attracted global attention and response over the years. As contained in priority number four of the Hyogo Framework of Action (HFA), there is the need to reduce the underlying risk factors in our cities. Item number three of the priority for action advocated for the incorporation of disaster risk assessment into urban planning and management of disaster prone human settlement, most especially the highly populated areas. This priority for action underscores the fact that vulnerability to natural hazards and the risk of disasters is driven by poor human attitudes and physical development activities such as occupation of hazard-prone areas, unsafe building development and poor land use and management practices. Countries and communities of the world can therefore reduce the risk of disasters and make human settlements safe by making efficient use and management of land resources and infrastructure through risk-sensitive land use planning. This paper examines the disaster risk reduction (DRR) elements of some urban

planning and development control regulations in Nigeria with a view to identifying their potentials for reducing the risk of disasters in our cities. It recommends risk-sensitive planning measures for ensuring the resilience of towns and cities in Nigeria.

2. Urban Risk Factors and the Need for Risk Sensitive Planning

Risk is defined as the probability of harmful consequences or expected loss (of lives, people injured, property loss, livelihoods, economic activity disrupted or environment degraded), resulting from the interactions between natural and human-induced hazards and vulnerable/culpable conditions (UNISDR, 2004a). It is the probability of loss arising from the three elements of hazards, vulnerability and exposure. Risks occur as a result of the inability of communities to manage environmental hazards and their harmful consequences.

Over the years, the world has witnessed the accumulation of risks in urban centres, preparing the grounds for small and large disasters. The increases in disaster risks in cities are attributed to the key underlying factors of urbanization and rapid growth of settlements, poverty, badly planned and managed physical development, inadequate infrastructures and services, as well as poor housing and environmental quality (Figure 1). With respect to urbanization and rapid growth of urban settlement, it is on record that over half of the world's population now lives in medium sized and large cities and by 2030, over 60 per cent of the world's population will live in cities. Out of this, more than 1 billion people live in appalling condition in urban areas. Today, majority of urban dwellers in low and middle income countries are poor migrants who occupy marginal land and hazardous areas to create slums and informal settlements.

In the past decades, there has been a large increase in the number of urban dwellers living in poverty, poor – quality housing and squalid environment. According to the UN Human Settlement Programme (2010), the number of slum dwellers in the developing world increased from 776.7 million in 2000 to some 8267 million in year

2010. The United Nations estimates in 2000 stated that at least 680 million of such urban dwellers lacked adequate supply of water and at least, 850 million of them lacked provision for toilets or latrines to a quality that can reduce health risk (United Nations, 2008 as quoted in International Federation of Red Cross and Red Crescent Societies, 2010). Majority of the urban dwellers who live in slums and marginal areas of the city are at most risk from cyclone, floods, earthquakes, fire, industrial accidents, infection disease and crime amongst others.

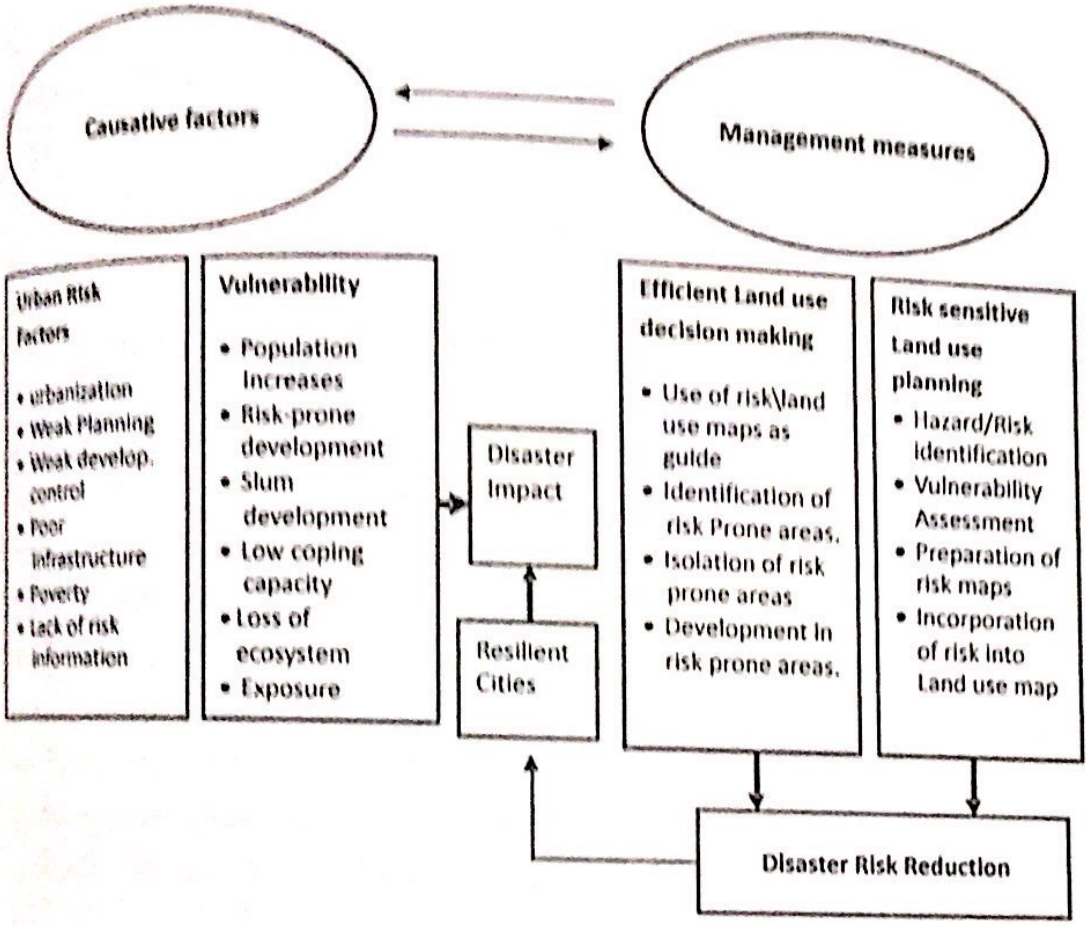

Figure 1: Urban Risk Accumulation and Risk Sensitive Land Use Management Framework

Source: Author, 2013.

As shown in the framework presented in figure 1, the underlying factors of urbanization, weak planning and development control, poverty, inadequate infrastructures and services have severe implications for risk accumulation which engender vulnerability and exposure in urban areas. The vulnerability of our cities is exemplified in high population density, marginal land

encroachment, poor physical development, loss of biodiversity and low coping capacity of urban communities. The complexity and sheer scale of humanity concentrated in large cities creates a new intensity of risk and risk-causing factors (UNISDR, 2004b). Also, poverty of the people brings about limited capacity for housing, occupation of dangerous sites (e.g. high flood risk, steep slopes or landslide area), poor livelihood and asset base all of which results in high level of vulnerability in human settlement. Living in poor quality and overcrowded housing exposes residents to high risk from physical accidents and risk of infectious diseases while inadequate infrastructure and services bring about poor sanitation , increased health burden, high risk from contaminated water, poor drainage and poor road for evacuation in times of disasters. The underlying risk drivers such as poverty, badly planned and managed urban development and ecosystem decline continue to increase urban risk (United Nations, 2011), a situation which continues to increase the level of human exposure to hazards and disasters in our cities.

Urban disaster vulnerability results largely from unsatisfactory urban development and management, inadequate land use planning, poor construction practices, ecological imbalance, infrastructure problem and inadequate provision of open spaces (Marquelza, 2007). Thus, the sustainable reduction of accumulated risks in urban areas calls for the removal of the underlying factors in order to build the resilience of our cities and make them safe for living, working and recreation. The risk sensitive land use planning methodology is considered to be a useful tool in identifying, analyzing and incorporating disaster risk reduction into the development and management process of human settlements. As shown in figure 1, the methodology of risk sensitive land use planning combines the assessment of hazards, risk and vulnerability with the standard processes of physical planning and development control in our towns and cities. It seeks to reduce urban risks by integrating the practice of hazard identification and evaluation as well as risk assessment into the city's land use plan. It is therefore an effective tool for using urban land resources as a risk reducing factor and meeting the land management objectives of the society.

According to Ibrahim (2011), the basic risk sensitive land use planning procedure is as outlined below:

i. Identify the existing land use pattern of the area and prepare existing land use map of the area.
ii. Prepare hazard\risk map of the area.
iii. Superimpose hazard map on existing land use map to see developments in hazardous areas and the elements at risk.
iv. Conduct detail vulnerability assessment and figure out the risk prevailing in the area.
v. Prepare a GIS map incorporating the land uses and hazard\risk areas.
vi. Develop guidelines for physical planning based on the hazard\risk map.
vii. Prepare hazard risk evaluation table to help adjust or reverse land uses in hazard prone areas and guide future land use decision in new areas based on the hazard/risk maps (Table 1).

Table1: Hazard Risk Evaluation Table

		Land use decisions		
Hazards	Probability and intensity of hazard	Emergency services\critical infrastructure	High occupancy areas (residential buildings, schools, large industries etc.	Agric. areas, parks and open spaces
Flood	High	ND	ND	DHS
	Medium	ND	ND	D
	Low	DHS	DHS	D
Landslide	High	ND	ND	DHS
	Medium	ND	ND	D
	Low	DHS	DHS	D

Source: Modified after UNISDR, 2011

Land use decisions

D = Development is permitted

ND= Exclusive zone (no development)

DHS = Development permissible with high construction standards

The risk sensitive land use map\plan is the output of a risk sensitive planning process. The plan is a tool for effective land use decision making in the cities. It permits the identification and isolation of risk prone areas of the city as well as the regulation or prohibition of physical development in such areas. The preparation and use of the

risk sensitive land use plan lead to the reduction of disaster risk and the creation of resilient cities that can withstand the impacts of natural disasters (Figure 1).

Mainstreaming disaster risk reduction into physical planning offers the opportunity to reduce urban risks and losses due to disasters. According to Marquelza (2007), risk sensitive planning can identify and mitigate the root causes of disaster risk, modify and reduce the existing vulnerable conditions of people and places, reduce vulnerability and potential losses, increase the resilience of people and places and help achieve sustainable urban growth free of new risk. The utility and potentials of risk sensitive planning is, no doubt, immense. Governments and planning institutions in Nigeria and Africa in general, should therefore adopt and mainstream this tool into the urban planning and development process in order to reduce urban risks and their underlying drivers and to increase the resilience of our cities.

3. Planning Regulations and Disaster Risk Reduction in Nigeria

Urban planning and management in Nigeria, like most countries of the world, is guided by legal regulations aimed at ensuring orderly development, safety and aesthetics in human settlements. An examination of some of the planning laws and regulations revealed that they contain some elements of DRR provisions. Some of the provisions of the planning regulations are considered as follows.

3.1 The Nigerian Urban and Regional Planning Decree, N0. 88 of 1992

This law was promulgated in 1992 to regulate and direct Urban and Regional Planning in Nigeria. Part I of the decree made provision for the preparation of physical development plans at the national, regional, sub-regional, state and local levels to guide development in towns and cities. Sections 5a – 5c of the law provided for the National Urban and Regional Planning Commission, State Urban and Regional Planning Boards and Local Planning Authorities with the responsibility of initiation, preparation and implementation of the

physical development plans at the Federal, State and LGA levels respectively.

Sections 27 (1) – (5) of the decree provided for the Development Control Departments at the Federal, State and Local Government levels with powers to approve all land development plans. As a requirement for physical development permit, section 33 of the law stimulated that a developer shall submit, along with the application for development permit, a detailed Environmental Impact Statement (EIS) for a residential land development in excess of 2 hectares, permission to build or expand a factory or office building in excess of four flours or 5,000 m^2 or lettable space and for a major recreational development. Section 31 (c) and (d) provided that the Development Control Department could reject application for development if the development is likely to have major impacts on the environment, facilities or the inhabitants of the community or if it is likely to cause a nuisance (risk) to the inhabitants of the community. Part V, sections 80 (1) and (2) also empowered the Local Authority to declare an improvement area within a planned area for the purpose of rehabilitating, renovating and upgrading the physical environment, social facilities and infrastructure of the area.

The physical development plans to be prepared and implemented under the planning law are to guide the overall growth of towns and cities as well as the physical development of our settlements. The provisions in the Urban and Regional Planning Decree 88 of 1992 and the requisite physical planning tools to enforce the law (e.g. land use zoning, layout preparation, road and building setbacks\airspaces, development prohibitions on hazard prone areas, provision of urban basic services etc.) are meant to regulate development activities in space in order to reduce the risk of disasters and to create a safe and healthy living environment.

3.2 The Environmental Impact Assessment (EIA) Decree No. 86 of 1992

This law was promulgated to control the negative effects of physical development of projects on the environment. Sections 2 (1) and (2)

of the decree stipulate that the public and the private sector shall not undertake or embark or authorize project or activities without prior consideration of their environmental effects. The law stipulated that "where the extent, nature and location of a proposed project or activity are such that is likely to significantly affect the environment, its environmental impact assessment shall be undertaken." It requires the assessment of the likely impacts (direct and indirect) of proposed projects/activities, the identification and description of the adverse impacts as well as the provision of mitigation measures. Section 13 of the EIA decree listed a range of development activities that require mandatory study and the preparation of environmental impact statements. These include major developments like airports, drainages and irrigation, industries, infrastructure, mining, quarries, railways etc. All the cited provisions of the EIA decree are elements that can directly or indirectly reduce the risk of disasters in urban environment if well implemented.

3.3 Other Planning Laws and Edicts in Nigeria

In addition to the above laws, several other physical planning regulations exist in the different Regions, States and LGAs in Nigeria. For instance, the Town and Country Planning Law of Nigeria, CAP 123 of 1956, parts of which are still in force in many states, provided for declaration of planning area (section 10 (ii)) and the preparation of planning schemes (sections 12 – 13 i – iv). These provisions empower the Planning Authority to prohibit or regulate development and use of land within the area covered by a planning scheme.

Also, the Development Control Standards and Regulations for the Federal Capital Territory (FCT) of Nigeria enacted in 1986 provided for detail requirements for erection of buildings and the standards of building services. The DRR-related aspects of the regulation are in sections 3.05 which covers ventilation in buildings and 4.06 – 4.08 which provides details on building setbacks. Other relevant aspects of building development and control such as material strength and standards are also contained in the National Building Code promulgated in 2006. Chapter 16 of the Nigerian National Building

Code specifies the building materials standards for concrete quality, mixing and durability as well as the material components and mixing for sand Crete blocks (Jinadu, 2007a). The different DRR elements of these planning regulations and building code are meant to achieve good quality development and the provision of resilient urban infrastructure that can reduce the risk of disasters like fire and building collapse in Nigeria.

Land use zoning and regulation is more of local planning exercise in Nigeria. Many zoning ordinances exist and are used in different LGAs for regulating the use of land. The ordinances make provisions for regulating developments in order to achieve orderly arrangement of the different land uses as well as prevent the use of marginal lands such as river banks, flood plains, hill slopes and wetlands. Thus, the provisions land use zoning laws are directly or indirectly focused on the reduction of the risks arising from unguided development activities.

4. Effectiveness of Existing Planning Laws for Disaster Risk Reduction

The discussions in section three above show that the existing urban planning laws and regulations in Nigeria contain a lot of elements that could promote DRR in our town and cities. However, they were not formulated directly on the premise and principles of risk sensitive planning. As a result, the tools and techniques of risk sensitive planning have not been adopted in the application of the existing planning laws. Besides, experience has shown that effective application of the development control laws in the urban and rural areas is lacking due to the weaknesses of the various Development Control Departments, poor attitudes of developers and low political will (Jinadu, 2007b). The level of planning law enforcement in most settlements in Nigeria is low. Thus, most physical development activities in our towns and cities have been characterized by flagrant contravention of the law, bringing about poor development that generate and promote urban risk.

The low implementation of planning laws has made the laws ineffective, not in content but in practice. There is therefore the need to improve the effectiveness of the existing planning regulations and to mainstream risk sensitive planning into the urban development and management process in Nigeria. The next section of this paper considers some of the risk sensitive measures required to reduce urban risk and increase the resilience of our cities.

5. Risk Sensitive Planning Measures for Resilient Cities in Nigeria

Reducing the level of urban risk and increasing the resilience of the Nigerian cities to natural and human-induced disasters requires that appropriate measures be taken to reduce or remove the underlying risk factors in urban centers in order to ensure that physical development programmes and activities do not create new forms of risk and vulnerability in our towns and cities. The risk sensitive planning measures proposed are categorized into the non-structural and structural ones as considered below.

5.1 The Non-Structural Measures

The non-structural measures are those required at the policy and institutional levels to create the framework for risk sensitive planning in Nigeria. These include:

5.1.1 Review of the Existing Laws to Incorporate the Risk Sensitive Planning Principles

It is demonstrated in section three of the paper that the existing planning laws and regulations contain relevant provisions that could help reduce urban risk if well implemented. It is also noted in section four that the elements of DRR in the laws were not clearly formulated on the risk sensitive principles. These laws should be reviewed to make them more potent in urban risk reduction. Relevant sections that provide for the three basic components of risk sensitive land use planning (hazard/risk identification, hazard/risk assessment and production of hazard/risk map for use as a basis for land allocation and development permit for major physical development) need be incorporated into the laws.

5.1.2 Effective Enforcement of Relevant Planning Laws

As they are, effective enforcement of the relevant provisions of existing zoning laws, EIA law, development control regulations and the National Building Code are capable of reducing the level of risk in the cities. The aspects of the laws that prohibit development in hazard prone areas such as flood plain, degraded and watershed areas as well as those that specify buffer zone, building setbacks and air spaces should be given serious attention in the cities. There is also the need for urban planners to inject elements of risk sensitivity in the enforcement of the DRR related aspects of the existing laws by considering community resources and land capability in the determination of end-uses of land and the formulation of strategic plans for city development. Ensuring the effective enforcement of the relevant planning laws for DRR will require a high level of political support and ethical re-orientation\commitment of the practitioners in the field of Urban and Regional Planning.

5.1.3 Institutional Capacity Building

The ability to manage disaster risks in urban areas depends on the availability and capacity of requisite institutional frameworks for DRR. Although Nigeria has different planning institutions at the federal, state and local levels, the existing authorities require capacity building. First, there is need for investment in institutional infrastructure (vehicles, equipment, data management and communication facilities, environmental monitoring and warning systems etc.) for effective management of the urban centres. Second, hazard/risk identification, assessment and mapping are specialized tasks that require professionalism. The current crop of physical planners in Nigeria require training and re-training in Geographic Information System (GIS) and risk sensitive planning to be able to cope with the challenges of urban risks in the 21st century. Thus, the existing low level of planning infrastructure and human resource, most especially in Local Planning Authorities, should be enhanced to ensure risk sensitive planning that will reduce urban risk and build resilient cities in Nigeria.

5.1.4 Promotion of Risk Education

The high level of poor physical planning and environmental degradation witnessed in our urban centres today is partly attributed to low risk awareness and poor attitudes. Majority of the poor urban residents who are exposed to disaster risks live passively and unconsciously with these risks. There is therefore a need for high level public education and awareness raising on the type of physical development and living patterns that increase urban risks. Community members in all settlements should be educated through the print and electronic media, street drama, religious and traditional institutions, community based organizations etc., on the identification and management of small risks in the urban environment. The risk awareness education programme should incorporate participatory training and working with communities on methods of risk identification and vulnerability assessment in the local environment, using the advocacy planning tool, the indigenous knowledge and capacities of existing community social workers.

5.1.5 City-to-city Networking and Partnership in DRR

Institutional cooperation and networking across urban settlements in Nigeria is required to reduce environmental risks and build the resilient of cities to disaster. First, there should be institutional coordination in urban areas to remove role conflicts and duplication of efforts in DRR. Second, cities like Abuja, Lagos, Port Harcourt and Kaduna, which are known to have long history and experience of urban planning, should cooperate and share experience on innovative DRR measures. The medium size and large cities in Nigeria should, as a matter of priority, join the United Nations International Strategy for Disaster Reduction (UNISDR)'s Making Cities Resilient Programme and commence the implementation of city resilient projects. Any good practice from these cities should be shared among policy makers and planners in order to replicate them in other parts of the country.

5.2 The Structural Measures

The structural measures for urban risk reduction include those specific and practical actions required to manage risks and make the

Nigerian cities resilient to disasters. The measures include the following.

5.2.1 Identification and Management of Risk Prone Areas of Cities

Risk control planning helps define the boundaries of risks zones and the geographic variations in hazards and vulnerability in urban areas. The risk zones in our urban centers include flood plains, poorly drained areas, wetlands, steep slopes, landslide prone areas and slums. In order to reduce risk in such hazard prone areas of the city, urban planners should identify and map such areas of the city with a view to instituting management actions. There should be a complete relocation of neighbourhoods at risk and the evacuation of communities to safer areas. Development of all kinds should be prohibited in marginal areas to prevent land degradation which engenders risk. Hazard prone areas of cities could be sub-divided into smaller worksites for the purpose of execution of land care\conservation projects such as re-vegetation, erosion control, rehabilitation of polluted land etc. The police power or power of eminent domain of the planning authorities should be used to acquire properties in hazard prone areas (river banks, flood plains, etc.) of the city and the use of such areas converted to passive uses – open space, gardens, recreation area, parks or woodlands etc.

5.2.2 Housing Retrofitting and Infrastructure Improvement

Substandard housing development and poor urban basic services due to population pressure, poverty and low investment in infrastructure are among the factors promoting risk accumulation in the cities. Houses of poor quality are often at risk from storm, flooding and fires while inadequacies of basic infrastructure like pipe-borne water, sanitation and drainage facilities increase the burden of disasters in our cities. Reducing urban risks and improving the resilience of the Nigerian cities requires housing retrofitting to ensure safer buildings. Retrofitting works such as structural support, foundation raising, roof strengthening etc. should be carried out in old areas of our settlements where infrastructure is weak.

Retrofitting assistance programmes involving partnerships among building owners, Local Government Authorities and insurance firms are necessary to improve the quality of buildings in poor areas and to reduce the risk of building collapse. Also, provision of disaster resilient infrastructure through the enforcement of safe construction ethics and improvement in the structural and engineering design of urban infrastructure will go a long way in reducing the risk of disasters in our urban centers.

5.2.3 Promotion of Landscaping and the Construction of Green Buildings in Cities

Ecosystem and biodiversity loss are part of the underlying risk factors that contribute to environmental degradation which increases urban vulnerability and disaster occurrence in large and medium sized cities. Massive landscaping projects should be launched in all cities to provide enough trees for reducing the effects of global warming and climate change which have been established as major causes of climate related disasters. Adequate greening of urban settlements will bring about low carbon accumulation and environmental sustainability in our cities. Also, the construction industry should promote the construction of green buildings that utilize natural materials and which are resource efficient. Such buildings will promote efficient use of energy and other resources and reduce waste and pollution in a way that is environmentally responsible. Effective landscaping and construction of green buildings will go a long way in reducing urban risk and disasters in the cities.

5.2.4 Renewal of Urban Slums

The slum areas of cities are the repositories of urban risks and disasters often have the greatest impact on the people and infrastructures of slum environment. Physical planning efforts for risk reduction should be focused on old areas, slums and informal neighbourhoods of the city. The government and urban planners should design a comprehensive infrastructure and physical improvement programmes for slum areas in all settlements. The infrastructure programme should include the provision of water,

sanitation and health facilities, de-clogging of waterways and drainage system improvement, improvement of existing roads and construction of new ones, etc. The physical improvement programme to be instituted should depart from the traditional top –bottom renewal scheme proposal to focus on participatory risk sensitive neighbourhood improvement. The physical planning proposals for the slums should emerge from detail study of the existing land use pattern in the slums, participatory hazard identification and risk assessment and the formulation of location specific physical development guidelines based on existing resources and constraints (risks). A renewal scheme of this nature will reduce urban risk in poor areas and increase the resilience of cities in Nigeria.

6. Conclusion

The world is rapidly urbanizing and cities of the 21st century, most especially those in low-income nations, are facing a high level of urban risks. The situation has subjected the urban environment to the vagaries of natural and man-induced disasters of wide dimensions and of increasing magnitude. The high level of urban vulnerability across the globe calls for pragmatic efforts devoted to urban risks reduction to increase the resilience of our cities to the negative impacts of disasters.

Cities that are well planned, maintained and well run can be the safest places in times of disasters, while those that are badly planned can be the most dangerous places to live, work and recreate (International Federation of Red Cross and Red Crescent Societies, 2010). Amongst others, risk sensitive planning is acknowledged as a practical solution to the reduction of the underlying risk factors in urban centres and the methodology is gradually gaining popularity in many nations of the world. Nigeria as a nation needs to mainstream risk sensitive planning into the physical development framework of urban centres. In doing this, the existing urban planning laws will have to be reviewed and the capacity of planning institutions and urban managers will have to be developed and adapted to the requirements and practice of risk sensitive planning

in order to implement programmes that could reduce urban risks and increase the resilience of our towns and cities to the impact of natural and man-induced disasters.

Bibliography

Adebisi A. (No date). *The Pocket Lawyer for Planning Authorities; Ife Local Planning; pp* 1-53 *Educational serious, vol. 1, Issue 4;* pp 8-9.

Federal Capital Development Authority (FCDA) 1986. *Development Control Standards and Regulations.* Abuja Federal Capital Development Authority.

Federal Government of Nigeria 1992. *Environmental Impact Assessment Decree, No. 86.* Nigerian Press Council; December, 1992.

Federal Government of Nigeria 2013. *Nigeria Post Disaster Needs Assessment (PDNA); A Report of the Federal Government of Nigeria with Technical Support from the European Union, United Nations, World Bank and other Partners,* Abuja FGN.

Federal Republic of Nigeria 1992. *Nigerian Urban and Regional Planning Decree, NO. 88 of 1992.* Federal Government Press Lagos, Nigeria.

Interactional Federation of Red Cross and Red Crescent Societies 2010. *World Disaster Report: Focus on urban Risk.* Geneva Interactional Federation of Red Cross and Red Crescent Societies

Jinadu A.M. 2007a. Understanding the Basics of Housing: A Book of Study Notes for Students in Tertiary Institutions; Jos: University Press Limited.

Jinadu A.M. 2007b. "Mainstreaming Disaster Risk reduction into Human Settlement Development in Nigeria". Mainstreaming Disaster Risk Reduction into Sustainable Development in Nigeria; Vol. 1. National Emergency Management Agency, Supported by UN/ISDR, December 2007; pages.

Jinadu, A.M and Sanni, L.M 2008. "Fire Disasters and Infrastructure Security Problems in Urban Areas: A Case Study of Niger State". *Proceedings of the 3rd Bi-annual Conference on Urban and Regional Planning, School of Environmental Technology, Federal University of Technology, Minna, Vol. 1 No. 1 Pp 30–45.*

Marqueza L.R. 2007. *Risk Sensitive Land Use Planning: Integrating Disaster Risk Reduction in the Practice and Process of Land Use Planning.* Retrieved on 22nd July, 2013 from:

http://www.alterplan.org.ph/documents/MarquezaLReyes_Risk-SensitiveLandUse.pdf

UN Human Settlement Programme 2010. *State of the World's Cities 2010/2011: Bridging the Urban Divide*; London Oxford.

UNISDR 2004a. "Land use, Disaster Risk and Rewards; A School Guide". *UN/ISDRAfrica.*

UNISDR 2004b. *Guidelines for Mainstreaming Disaster Risk Assessment in Development: Disaster Risk Reduction for Sustainable Development in Africa;* Geneva UNISDR.

UNISDR 2011. "Urban Housing Reconstruction and Land Management." *Proceeding of World Reconstruction Conference held in Geneva*, May 10–13, pp36–39.

UNISDR 2013. Disaster Statistics: Latest Infographics; United Nation Office for Disaster Risk Reduction. Retrieved on 22nd July, 2013 from http://www.flickr.com/photos/isdr/sets/7215/

United Nations 2011.*Global Assessment Report: Revealing Risk, Redefining Development.* Oxford: Information Press.

United Nations 2012. *World Urbanization Prospects: The 2011 Revision, CD–ROM Edition,* New York: Department of Economic and Social Affairs, Population Division.

Violeta, S.S. 2009. *Current Initiatives on Climate Change Adaptation of Makati City; Cities and Resilience Dialogue: Progress and Challenges in Addressing Urban Adaptation in Asia*. Thailand UNESCAP Office; pp 28-19.

World Bank (2013). *Urban Population: World Bank Databank*. Retrieved on 19th July, 2013 from http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS