

A. M. Jimadu

**MAINSTREAMING
DISASTER RISK REDUCTION
INTO
SUSTAINABLE DEVELOPMENT IN NIGERIA
(Vol. I)**



ISBN : 978-216-3645

Materials in this publication may be freely quoted or reprinted.

Acknowledgment is requested together with a copy of the publication

National Emergency Management Agency (NEMA)

The Presidency

Plot 439 Ademola Adetokunbo Crescent

Maitama, P.M.B. 357 Garki Post Office

Abuja, Nigeria

Tel./Fax: +234 (0) 9 413 76 40

Tel: +234 (0) 9 413 13 30

+234 (0) 9 413 19 53

+234 (0) 9 413 43 34

E-mail: info@nema.gov.ng
nema@rosecom.net;

Edited by

Prof. 'Bola Ayeni

Dr. Olusegun E. Ojo

Contents

page

Table of Contents

Authors of Papers

5

- 1 Mainstreaming Disaster Risk Reduction as a Priority sector in our National Development Strategies: Opening Address by **AVM MM Audu-Bida (Rtd.) Director - General (NEMA)** 7
-

- 2 Towards a Disaster Risk Reduction Focused Institutions in Nigeria by *Olusegun E.Ojo* 12
-

- 3 Mainstreaming Disaster Risk Reduction into Human Settlement Development in Nigeria by *Dr. A.M Jinadu* 23
-

- 4 Mainstreaming Disaster Risk Reduction into Sustainable National Water Resources by *D. Bashir and M. Garba* 44
-

- 5 Mainstreaming Disaster Risk Reduction (DRR) into the Basic Education Curriculum in Nigeria by *Dr. Flora A. Aderogba* 60
-

MAINSTREAMING DISASTER RISK REDUCTION INTO HUMAN SETTLEMENT DEVELOPMENT IN NIGERIA

Dr. A.M Jinadu

1. Introduction

Human settlements are important elements of the physical landscape, which provide the context for man's socio-cultural, economic and physical development activities. The overall global development objective is to improve the social, economic and environmental quality of human settlements in order to create a safe living and working environment for all people, most especially the rural and urban poor. In order to realize this objective, the global communities and governments across national boundaries have organized many fora to discuss and address issues of human settlement development.

The Rio summit held in 1992 provided the basic platform for significant human settlement development initiatives and efforts. In particular, Agenda 21 addressed the issue of sustainable human settlement development and focused, amongst others, on issues of adequate shelter for all, improving human settlement management, promoting sustainable land use planning and management as well as promoting human settlement planning and management in disaster-prone areas.

There is no doubt that efforts at sustainable human settlement development have yielded significant positive gains all over the world. The different gains have manifested in forms of economic (creation of national wealth) and infrastructure development as well as improved social welfare in many countries. There have also been concerted global and national efforts to consolidate and

build on the gains of sustainable human settlement development. However, the sustainability of the gains of human settlement development efforts has been threatened by many problems among which are war, hunger, insecurity, diseases, poverty and natural disasters to mention a few.

Amongst others, the occurrence of natural disaster in human settlements seems to be the most debilitating as it is characterized by suddenness and unexpected tragedies which lead to economic/environmental losses and subject communities to other problems such as homelessness, hunger, diseases and poverty. Natural disasters, as we know, have caused loss of life, disability, disruption of economic activities and urban productivity, infrastructure damage, environmental damage, settlement destruction and population displacement in all parts of the world. Thus, natural disasters constitute major threat to national development in many countries of the world.

Global statistics on the debilitating nature of natural disasters are quite intimidating. According to Agenda 21, natural disasters are estimated to have caused some three million deaths and affected 800 million people over the past two decades. Between 1994 and 2003, the world witnessed 3,561 major disaster events ranging from floods to storms, earth quakes, volcanic eruptions and health epidemics (Olokesusi, 2006). The regional disaster figures provided in the OFDA/CRED International Disaster database revealed that the Asian continent recorded the highest figure of 1,309 events (36.75 per cent) followed by Africa, 814 (22.9 per cent) and America with 637 events (17.9per cent). Also, the 2004 statistics of the International Federation of Red Cross and Red Crescent, as quoted by Olokesusi (2006), indicated that

disasters, including floods famine, earth quakes and hurricanes, affected almost 146 million people worldwide and that 250, 000 people died in disasters in 2004, including the 225,000 casualties in the Asian tsunami. In year 2005 alone, more than 360 disasters were reported with around 92,000 people killed and 160 million suffering adverse impact (Wamsler, 2007).

Data on country-specific disaster events show that India had the worst disasters in 1996 with 3,320 deaths resulting from cyclones, tornadoes, rain floods etc. (Adefolalu, 2000). This is followed by China, which recorded 2, 500 deaths in the same year, and USA with 282 deaths. In 1999, flash floods and landslides in the Caracas and on the northern coast of Venezuela killed 30,000 people and affected 483,000 others (Alex De Sherbinin et al., 2007). In Pakistan, Afghanistan and India, earthquakes measuring 7.8 on the Richer Scale left many communities devastated and infrastructures destroyed while in Guatemala, mudslides and landslides triggered by hurricane Stan buried the entire village of Panabad, killing over 30,000 people and damaged inestimable properties in year 2005. The BBC News also reported that mudslide disaster in Philippines on the 17th of February, 2006 left several villages destroyed and 8,000 people buried in the mud while in Jakarta, Indonesia one of the worst floods of the year, reaching 3 meters in height, killed 20 persons and displaced over 200, 000 people in February, 2007.

In Nigeria, a study on the impact rain related severe disasters conducted in 1999 revealed that there were at least 65 deaths, over 12 billion hectare of farmland washed away and over N 50 billion worth of infrastructure (houses, schools, roads etc.) destroyed in several flooding and erosion episodes across the

country (see Adefolalu, 2000). Also, disaster figure estimates by the Nigerian Red Cross Society indicated that almost 280,000 Nigerians were affected by disasters of various kinds in 2001, while in 2003, more than 185,000 people were displaced due to disasters with about 3,638 injuries and 1,099 deaths (see Orebiyi, 2002 and Olokesusi, 2006).

An emerging scenario on the world disaster events map is that 98 per cent of the people killed by natural disasters now come from developing countries and that by 2025, more than half of the people living in developing world will be highly vulnerable to floods and storms (Developments, 2004; quoted in Olokesusi, 2006). By implication, disaster occurrence currently has more negative impacts on human lives and the economies the developing nations. In economic terms, Gurenko (2004), as quoted in Olokesusi (2006), observed that direct losses from the 1998 flooding in Bangladesh were about 17 per cent of the country's GDP and 152 per cent of government revenues while between 1996 and 2001, India lost about US \$ 13.8 billion to diverse natural disasters. On a global scale, the UNDP (2004) noted that real annual economic losses from disasters averaged US 75.5 billion in the 1960s, 138.4 billion in the 1970s, 213.9 billion in the 1980s and 659.9 billion in the 1990s. This situation shows that natural disasters have not only taken heavy tolls on the national economies of many nations, but that they threaten their economic survival as well.

The catastrophic nature of natural disasters and the huge economic/life losses they carry, most especially in the weaker nations, made them a source of serious concern to the global community. Consequently, the United Nations General Assembly formerly lunched the International Decade for Natural Disaster

Reduction on the 22nd December 1989 through its resolution 44/236. The aim was to prevent or mitigate natural disasters and the loss of life, property damage and the social/economic disruptions they produce worldwide. Following from this, several global and national efforts at disaster mitigation culminated into the World Conference on Disaster Reduction held in Kobe, Japan in January 2005. The conference addressed the need to reduce vulnerabilities and risk hazards by building the resilience of nations and communities to disasters. The Hyogo Framework for Action adopted at the conference set the guidelines for the reduction of vulnerability to hazards and emphasized the mainstreaming of Disaster Risk reduction (DRR) into everyday decision and development activities. Its goal is to substantially reduce disaster related losses by 2015.

Although the Hyogo Framework for Action offers the guiding principles, priorities for action and practical means for achieving disaster resilience for vulnerable communities, the realization its goal rest on policy and practical efforts driven by strong political will and commitment at individual country levels. This paper considers disaster management efforts in Nigeria and identifies the basic measures required to mainstreaming DRR into development process in our towns and cities. The paper considers the concepts of disaster risk reduction and management as background issues and accounted for the Nigerian efforts at implementing the Hyogo framework for Action. It finally gave the profile of disasters occurring our settlements and identified measures to be taken to mainstream DRR into physical development activities and/or process in Nigeria.

2. Disaster Risk Reduction and Management: Some Background Issues

The increases in disaster occurrence in weak countries and the fact that natural disasters are not totally preventable call for an alternative approach that is different from the earlier post-disaster relief and crisis management one. Disaster Risk Reduction (DRR) is an emerging management approach, which takes a proactive, long-term view of disaster management. Its purpose is to assist communities to prepare for and reduce the impacts of unavoidable natural disasters and to prevent man-induced ones. According to UNDP (1992), DRR is intended to minimize the adverse effects of a hazard by eliminating the vulnerabilities, which hazards expose communities to, and to reduce the potential impact of a hazard before it strikes.

DRR is an area specific approach, which involves four main phases of activity. At individual village, town or city level, institution of DRR programme and/or projects will involve:

- (i) Risk Assessment and Analysis. This done for the communities concerned to know the risks they face and to reduce their vulnerability to the risks. Risk assessment is done through:
 - Identification of potential risks or hazards and their location in a settlement
 - Assessment of the magnitude of hazards through data collection and analysis of the scale and characteristics of key indicators
 - Monitoring of disaster risks in order to understand the signs of stress, pattern and time occurrence
- (ii) Education and Awareness. Here, the community is educated on the existence of potential risks or hazards through:
 - Raising of community environmental awareness and consciousness
 - Basic training on the identification of signs of environmental stress and risks existence

- Community involvement in the risks assessment and analysis process
- (iii) Development of an Early Warning System. Community early warning system is established and this is done through:
 - Forecast and prediction of slow-onset and rapid-onset disaster by collecting data and monitoring the environment
 - Announcement of warnings by local authority and community leaders through community radio and town criers
- (iv) Disaster management. Disaster risk management involves the building of the people's capacity to protect their lives and properties from disasters. This will involve:
 - Teaching the local community some environmental management measures to reduce the likelihood of slow-onset disasters like desertification, flooding and wild fires
 - Education on precautions and safety measures in times in times of disasters e.g. Moving to high grounds, taking shelter in corners or under tables during disaster events etc.

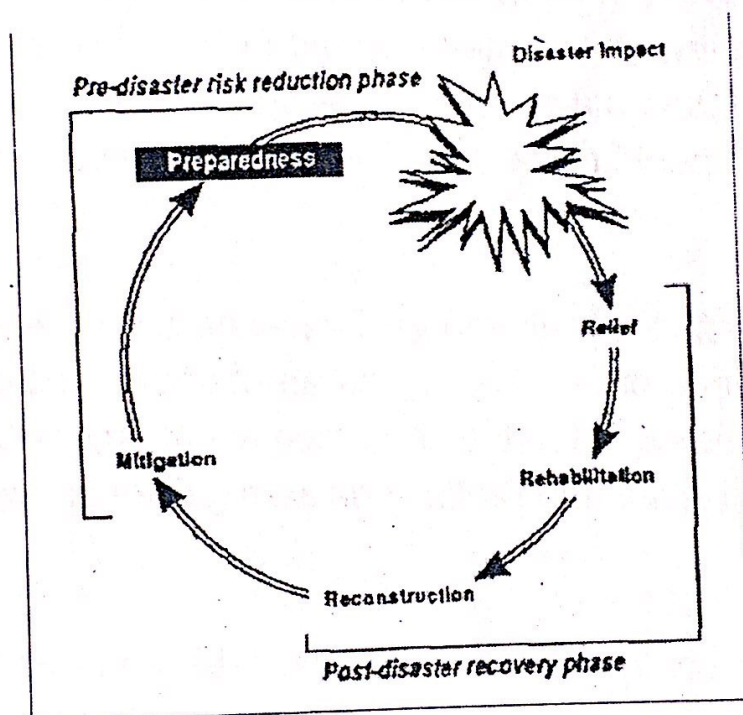


Figure 1: Disaster Management Cycle. Source: UNDP, 1992

Disaster management is the height of all DRR activities. According to UNDP (1992), disaster management is the body of policy and administrative decisions and operational activities, which pertains to the various stages of disaster at all levels. Its aim is to reduce or avoid (if possible), the potential losses from disasters, assure prompt and appropriate assistance to victims and to achieve rapid and durable recovery. Disaster management involves two distinct activity phases. These are the pre-disaster risk reduction phase and post-disaster recovery phases (figure 1).

sy:
mc
dis

pe
im
ac

There are four elements of disaster management covering all the activities in the two phases of disaster management. These include:

Disaster mitigation: This involves the institution of certain structural and non-structural measures to limit the impact of potential disaster at the pre DRR phase. The structural measures include the construction of dikes or barrages to prevent flooding and the construction of drainage channels or water pump to evacuate floodwater into the sea. The non-structural measures include public awareness raising and storm/flood forecasting amongst others.

(i
ir
c

Disaster preparedness: This entails the putting in place plans, strategies, procedures and resources to assist disaster victims to overcome the impact of disaster. Preparedness deals proactively with identified risks and builds community resilience. It involves:

Vulnerability assessment i.e. putting in place information system and response mechanisms.

Disaster planning i.e. public education and training, resource mobilization and strategic plans

Institutional framework i.e. putting in place warning systems and carrying out rehearsals such as military drills, relief movements and personnel deployment in preparation for possible disasters.

Disaster response: This is the sum total of actions taken by people and institutions in the face of disasters. It includes the implementation of preparedness plans and procedures. Related activities include:

- Warning, evacuation/migration
- Search and rescue operations
- Emergency relief supplies
- Security provision for lives and properties of victims
- Post disaster assessment
- Rehabilitation and reconstruction

(i) Disaster recovery: This is a post disaster operation involving rehabilitation and reconstruction activities. Effective disaster recovery operation is achieved through:

Identification of the location of event to understand the sectors affected and the risk reduction implications

Determination and understanding of the scale of damage

Identification and costing of tangible (infrastructure, agricultural produce etc.) and intangible (social disruptions, psychological stress etc.) losses

Balancing of recovery needs with available resources

Involvement of all actors government ministries, the military, NGOs, professionals and the community

High political commitment to disaster plans and coordination of recovery efforts.

Altogether, the four main phases of activities encapsulate the entire scope of disaster management circle. The different management activities are often translated into country or settlement specific counter-disaster plan which outlines a mitigation and possible courses of action at both pre and post disaster periods.

2.1. Typologies and Profile of Natural Disaster in Nigeria: The Basis for Action

The world of humanity is affected by disasters of various kinds. In the context of this paper, the word disaster is restricted to natural events caused by physical forces, whether naturally occurring or man induced, that affect human beings and the environment. Such events include, earthquakes, volcanic eruption, hurricanes, cyclones, storms, floods, land/mud slides, erosion and wildfires amongst others. Other events such as road accidents, plane crash, oil pipe vandalizing, ethno-religious crisis etc are not considered as natural disasters and are therefore excluded.

Nigeria, like other parts of the world is affected by natural disasters of various kinds. A survey of natural disasters in the country conducted by the National Emergency Management Agency (NEMA) reveals that the common disasters affecting the country include erosion, landslide, rainstorm, flood, wildfire, building collapse, oil pollution and droughts/desertification. The country's profile of disaster typologies (table 1) shows the peculiarity and prevalence of certain disaster type in different states of the country, with flooding and wildfires assuming a general phenomenon. At the regional level, disaster occurrence profile shows that drought, desertification and windstorm are prevalent in the north; rainstorm, flooding and erosion are common in the west while landslide and

gully erosion are important disasters in the eastern part of the country.

These disaster events are of different types and magnitude and have adversely affected many communities in Nigeria, causing loss of life, injuries, population displacement and loss of properties worth several millions of Naira (table 2). In 2001 alone, the record of NEMA shows that disasters affected over 902,899 people and killed over 1,846 others.

There is no doubt that disaster events in Nigeria have claimed many lives and destroyed infrastructure/properties amounting to several billions of Naira. Over the years, the government has responded to disaster crisis through the distribution of relief materials to victims. In year 2001 alone, the government spent about N 741,867,500.00 millions on relief materials. Arising from the huge and increasing annual expenditure on disaster relief materials, Makarfi (2004) noted that the financial resources available for disaster management are increasingly becoming limited in the face of competing demand from other sectors of the economy. This perhaps forms the basis for the current shift in focus from post disaster management to disaster risk reduction and mitigation in Nigeria.

2.2. Disaster Management and Institutional Response to Drr in Nigeria

Nigeria has a long history of post-disaster management in form emergency rescue operations and distribution of relief materials to victims. As far back as 1976, the National Emergency Relief Agency (NERA) was established to coordinate disaster relief activities of the federal government. The mandates of NERA were

broadened to include disaster management in 1993 and subsequently, the National Emergency Management Agency was established in March 1999 (by Act 12 as amended by Act 50) to manage disaster in Nigeria. In specific terms, NEMA was established to formulate disaster management policies, manage disaster fund, research into disaster management activities, carry out public enlightenment, ensure disaster preparedness and mitigation as well as to respond to disaster emergencies by conducting search and rescue operations.

Prior to the adoption of the Hyogo Framework for Action in January 2005, the activities of NEMA focused mainly on the distribution of emergency relief materials even though there are elements of DRR in its mandate. However, following the World Conference on Disaster Reduction held in January 2005 in Kobe, Japan, the country's approach to disaster management activities are now broadened to cover DRR in order to build community resilience and to reduced vulnerability to disaster impacts. Amongst others, efforts to implement the Hyogo Framework for Action at the national level include:

- (i) Conveyance of multi-stakeholders meeting in March 2005 to discuss disaster related problems and how to mainstream DRR into development process in Nigeria
- (ii) Establishment of the National Platform for DRR with NEMA as the focal secretariat. Plans and modalities for establishing State Emergency Management Agency (SEMA)/State Stakeholders Forum and Local Government Emergency Management Agency (LEMA)/Local stakeholders Forum have also been concluded.
- (iii) Decentralization of disaster management activities NEMA zonal offices serving as anchor for DRR programmes and projects.

- (iv) Publication of books, booklets and information leaflets on disaster management and the mainstreaming of DRR.
- (v) Production of National Action Plan (2006 - 2015) for Disaster Risk Reduction in July 2006.

The institutional response to DRR as a new and pragmatic approach to disaster management could be described as quick and tremendous. The National Action Plan produced by NEMA outlined several disaster management activity areas such as increasing political/institutional commitment, public education and awareness raising, capacity building and research/information gathering. The plan also outlined the implementation strategies and timetable for task accomplishment. Implementation of the action plan will, no doubt, help build community resilience and reduce disaster risks in Nigeria. What is, perhaps, left is to institute some practical measures at the town and city levels in order to properly mainstream these and other DRR activities into the Physical development process.

2.3. Practical Measures for Mainstreaming Drr into Human Settlements Development

Mainstreaming disaster risk reduction into settlement development should be a priority concern for a developing country like Nigeria. The ultimate objective of mainstreaming risk reduction is to help ensure that risks emanating from natural hazards are factored into policy, planning and physical development activities. It should be considered as a matter of importance in the design and execution of all development projects and programmes in hazard-prone areas. Mainstreaming disaster risk reduction requires that appropriate measures be taken to reduce disaster risk and ensure that development plans and programmes do not create new forms of vulnerability. Some of these measures are preventive while others are coping/adaptive

in nature and they are as considered below.

2.3.1. Baseline Survey of Risk Zones and Production of Vulnerability Map.

Purposeful planning and execution of DRR programmes in any country rely on adequate information on the existing risks/hazards and their geographical location. Collection of baseline data on risk-prone areas and the production of vulnerability map are therefore required to guide disaster management operations in Nigeria. In order to have adequate information on disaster prone areas, the government should:

- (i) Conduct a national survey on the types, nature and location of hazard risks or factors existing in different parts of the country.
- (ii) Create a GIS database of hazard spots for quick reference and easy updating of information.
- (iii) Produce vulnerability maps showing disaster-prone areas by State and Local Government areas for the purpose of planning and management operations.

2.3.2. Institutional/Human Capacity Building and Mobilization for DRR

Institutional/human capacity building is a necessary requirement for effective DRR. Capacity building helps in risk identification, risk assessment, vulnerability reduction and community resilience building. The required capacity building measures will include:

- (i) Creation of organizational structures such as State, Local Government and Community committees for DRR.
- (ii) Creation of DRR research and information services and provision of access to such services.
- (iii) Provision of technical and financial resources for effective operation of DRR institutions and service centers.

- (iv) Identification and development of local knowledge and capacities/skills for DRR.
- (v) Participatory training and working with communities on methods of identifying and determining vulnerability/risks in the local environment using social and community workers.
- (vi) Mobilization of social resources such as the traditional institutions, religious organizations, community development associations, cooperative groups and social clubs for DRR.

3. Land use Planning and Management Measures

It is an established fact that, land degradation arising from reduction in the biological resources of land (e.g plants) is a major cause of hazards such as erosion and landslide and it increases the potency of others like hurricanes, cyclones and devastating storm. Land use planning and land management practices such as conservation and rehabilitation of degraded land thus remove disaster risks and reduce vulnerability to natural hazards. Land use planning and management requires the knowledge of the geographic characteristics of land, the physical forces acting upon the land, the socio-cultural values and the economic factors that influence the use of land etc. Effective land use planning and management for DRR at the settlement level could therefore be achieved through the following measures.

- (i) Preparation of land suitability and capability map at the National, State and Local government levels. The land suitability and capability map gives the overall potentials and the capability of a land area to be used in a particular way or for a particular purpose. It forestalls harmful practices that can degrade the land and subject it to hazard risks.
- (ii) Preparation of land use plans/schemes for each settlement in the country. Land use schemes (layouts) at the neighborhood

level should be prepared to make provision for fire services/infrastructure, adequate storm drainages and landscaping for wind breaks and land surface protection.

(iii) Preparation of shoreline management plans in coastal areas.

(iv) Execution of land care/conservation projects activities such as re-vegetation, erosion control, rehabilitation of polluted land and mine pits, improved farming practices etc at community levels

(v) Formulation of new land use policy setting out the guidelines for the use of land resources.

4. Physical Development Control Measures at Settlement Level

Development activities of man compete for space in the face of scarcity of suitable land. These activities therefore need be guided and controlled, not only for order and convenience, but also to remove the hazard risks that could arise from poor physical development. Physical development control is entrenched in many planning laws in Nigeria and the control functions have often been exercised by planning authorities. However, experience has shown that effective control is lacking due to the weaknesses of the development control departments. Effective development control for DRR will therefore require the establishment development control units in DRR institutions to be created by the government. The development control units shall liaise with existing planning authorities to effect the following control measures.

(i) Protection of marginal lands such wetlands, steep slopes and river flood plains from development activities. Development of all kinds should be prohibited in these areas to prevent land degradation and physical obstructions, thereby removing

disaster risks.

(ii) Control of the location and development of informal settlements. Slums and squatter settlements are the most affected because they are often located on marginal lands such as on slopes and riverbanks. They also constitute disaster risks due to dense building development and the use of flammable materials. Effective control of informal settlements will reduce the risk of fire outbreak and the spread of epidemics.

(iii) Relocation of settlements at risk and the evacuation of communities to safer areas. Development control for DRR should involve the relocation of all communities at risk from flood plains, downstream areas of dams and other hazard prone areas. The relocation exercise should involve complete movement of small settlements from risk zones and temporary migration (most especially of dam's downstream communities) during flooding exercise.

(iv) Institution of building design criteria and safety construction measures such as building heights control, staircase width and location, etc regulation at the micro level.

(v) Introduction of stringent setback regulations in coastal areas to maintain adequate buffer zones between the coast and developments.

(vi) Control of the location of infrastructures such as petrol stations, dams and mining camps in a manner that reduce their potential risks to man.

(vii) Development of a set of disaster risk assessment criteria and incorporating them into project evaluation, selection and development approval process.

5. Institution of Household Level Physical Coping Strategies

Settlement specific household level coping strategies include measures to be used in different neighborhoods to reduce

disaster risks. Such measures are existing strategies and are already being used in some areas. What is left to make them essential part of DRR routine programmes at neighborhood level. These measures include:

- (i) Development of resilience infrastructure in low-income homes using appropriate materials and technologies.
- (ii) Maintenance of storm water drains to clear them of sand build-ups and rubbish.
- (iii) Removal of blockages from open river channels to prevent clogging and flooding.
- (iv) Construction of flood retention pond and weirs in disaster prone zones.
- (v) Building of wall embankments with concretes, old tyres and sand-filled bags in residential areas with poor drainages.
- (vi) Planting of trees across slopes in residential areas.
- (vii) Improvement of dwelling and settlement environments e.g. slum upgrading and infrastructure improvement.
- (viii) Temporary relocation in times of flood.

6. Institution of Fire Safety Measures

Fire outbreak in markets and residential areas constitute a major disaster in Nigeria. Adequate fire regulations and safety measures in residential areas, markets and public buildings are therefore required for effective DRR in our settlements. Such measures include:

- (i) Use of improved wiring devices including standard wires and circuit breaker in buildings.
- (ii) All large markets are to be provided with adequately equipped fire stations and water hydrants. Access roads within markets should also be maintained.
- (iii) Maintenance of wide fire breaks between vegetation and buildings in all residential areas.

7. Risk and Loss Financing Measures

Risk and loss financing has to do with the creation of formal and informal security system that help people to access fund in times of disaster. It involves the integration of risk and loss financing (RLF) measures such as provision of micro credits, government and non-governmental subsidies etc. into the existing housing finance mechanisms as well as execution of poverty alleviation programmes. Such measures include:

(i) Involvement of the insurance companies in disaster risk management through national policy directives and guidelines.

The insurance companies should be made to incur fiscal costs for disasters and reconstruction.

(ii) Creation of specialized disaster finance department for risk reduction and emergency loans and subsidies for social housing, infrastructure and housing improvement.

(iii) Use of donor and government's counterpart funds to create seed money for revolving loans for disaster victims in low-income settlements.

(iv) Creation of State Disaster Risk Mitigation Fund to provide revenue for risk reduction and rehabilitation and reconstruction operations.

(v) Introduction of special disaster taxes and levies on private companies to make more revenue available for disaster mitigation and management.

The different measures of DRR are by no means exclusive as they are to be used in appropriate combinations depending on local situations or the requirements of each settlement. Mainstreaming these measures requires that they are operationalized at the individual village, town and city levels and are made as part of the daily routine settlement management activities.

8. Conclusion

Natural disaster occurrence and the heavy life, economic and environmental losses it carries remains a major problem threatening to erode the gains of sustainable development in human settlement. Sustaining the gains of development effort therefore require strong political will and financial commitment to the issue of disaster management. For disaster management efforts to yield positive result, risk reduction should be given priority attention and mainstreamed into everyday decision-making and development process. In doing this, attention must be focused on the involvement of all stakeholders, development of local capacity and knowledge as well as the operationalization of the different measures identified both at the three tiers of government and at the neighborhood level in all settlements.

9. References

Adefolalu, D. O (2000), An Introduction to the Challenges of Climate Change and its Impacts in Nigeria During the Next Millennium. *A Paper Presented at the First National Training Workshop on Climate Change and Natural Disaster in Nigeria, Held at Federal University of Technology, Minna, 12th - 15th, April, 2000.*

Alex De Sherbinin, Andrew Schiller and Alex Pulsipher (2007), The Vulnerability of Global Cities to Climate Hazards. *Environment and Urbanization, Vol. 19 No. 1; April 2007. Pp 39-63.*

Ayeni, Bola (2006), Disaster Risk Reduction and Sustainable Development, in Ojo O.E. and Ogundimu A. (eds) *Proceedings of the Consultative Launch of the National Platform of Stakeholders in Disaster Risk Reduction in Nigeria.* National Emergency Management Agency, Abuja, 2006; pp 1-2.

Habitat (No Date), *Agenda 21: Promoting Sustainable Human Settlement Development* <http://www.digital-engine.net/>; retrieved on 6th June 2007.

ISDR (2004), *Land Use, Disaster Risks and Reward: A Community Leaders Guide. UN/ISDR Africa Education Series, Vol. 2 Issue 3, September 2004*

NEMA (2006), *National Action Plan for Disaster Risk Reduction (2006 - 2015;)* National Emergency Management Agency, Abuja, 2006.

Ojo, O.E (2006), *Towards a Disaster Risk Reduction Focused Institutions in Nigeria. A Paper Presented at the NEMA Consultative Meeting With Stakeholders Held at Arcade Hotel, Abuja, 12th September, 2006.*

Olokesusi, Femi (2006), *Financing Disaster Mitigation in Nigeria: The Imperative of Public-Private Partnerships*, in Ojo O.E and Ogundimu A. (eds) *Proceedings of the Consultative Launch of the National Platform of Stakeholders in Disaster Risk Reduction in Nigeria.* National Emergency Management Agency, Abuja, 2006; pp41-54.

Orebiyi, Abiodun (2002), *Nigerian Red Cross Society 2001. Central Council Report*, Nigeria Red Cross, Lagos.

UNDP (1992), *An Overview of Disaster Management. Department of Humanitarian Affairs/United Nations Disaster Relief Office- United Nations Development Programme*, 1992, p 136

UNDP (2004), *Reducing Disaster Risks: A Challenge for Development*, UNDP, New York

Wamsler Christine (2007), *Bridging the Gap: Stakeholder-based Strategies for Risk Reduction and Financing for Urban Poor. Environment and Urbanization, Vol. 19 No. 1; April 2007. Pp115-125.*