

Assessment report on mainstreaming and implementing disaster risk reduction measures in Nigeria



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Acronyms and abbreviations

ECA	Economic Commission for Africa
ECLAC	Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
GDP	Gross domestic product
IFRC	International Federation of Red Cross and Red Crescent Societies
ISDR	International Strategy for Disaster Reduction
NEMA	National Emergency Management Agency
NGO	Non-governmental organization
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNISDR	United Nations Office for Disaster Risk Reduction
UN/ISDR	Secretariat of the International Strategy for Disaster Reduction
WFP	World Food Programme
WHO	World Health Organization

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¹ International Federation of Red Cross and Red Crescent Societies (IFRC)

Executive summary

Nigeria, like many countries, is periodically affected by various forms of natural and man-made hazards. The dominant natural hazards in Nigeria include floods, landslides, windstorms, heatwaves, desertification and disease epidemics. Climate change is intensifying the frequency and magnitude of these hazards; particularly, those of hydrometeorological origin. Man-made hazards are also very common and are often caused by ethnic, political and religious conflicts. The social and economic impacts vary from community to community depending on the nature of the hazard, the community's vulnerability and its hazard management capacity. Most hazards are limited in terms of the area they cover and are effectively managed by the appropriate emergency management agencies of government; occasionally, however, some hazards cover extensive areas of the country and become major disasters. A typical example is the flood disaster of 2012, which affected 23 out of the 36 states in Nigeria and cost the country about US\$16.9 billion, or 1.4 % of national gross domestic product (GDP).

Disasters are increasing in frequency and magnitude in Nigeria, not least due to increasing vulnerability, unwholesome land-use practices, climate change and increasing conflicts. Disasters impact negatively on the national economy and further impoverish the people, a situation that is further compounded by insufficient capacity at community and national levels to cope with these hazards. This trend provides the impetus for mainstreaming disaster risk reduction into development plans in Nigeria, which ideally should reduce disasters to acceptable and tolerable levels. Mainstreaming disaster risk reduction into

such plans implies that conscious efforts must be made to plan and implement disaster risk reduction programmes along with economic development projects so that, when disasters strike, their impact on the country and the national economy will be minimal.

This report presents an assessment of implementation of disaster risk reduction and its mainstreaming into development plans in Nigeria. The assessment entailed an examination of the dominant types of hazards in Nigeria and a review of disaster risk reduction plans and policies and the extent to which disaster risk reduction has been mainstreamed in the country. Questionnaires were distributed to relevant government ministries, departments and agencies and development partners in order to solicit information on disaster risk reduction plans, programmes and policies (the questionnaires are set out in annex I to the present report). Information was also sought on the extent of, and approaches and challenges to, disaster risk reduction mainstreaming in the country. Additional information was acquired from secondary sources and through interviews.

The report shows that disaster risk reduction mainstreaming in Nigeria is at a very low level, a fact amply demonstrated by the absence of disaster risk reduction projects and budgeting in the medium-term national economic development plan of Nigeria (2010-2020), popularly referred to as Vision 20:2020. The main reason for this omission was the lack of adequate knowledge about and education on disaster risk reduction at the time when the plan was being developed in mid-2009. At that time, the National Emergency

Management Agency (NEMA), Nigeria's lead agency in disaster management, was essentially a humanitarian relief organization with limited human capacity in disaster risk reduction. Other segments of Government also knew very little about disaster risk reduction. NEMA began the gradual introduction of disaster risk reduction into its operations in late 2009.

Due to the relatively late introduction of measures for disaster risk reduction in Nigeria, very little has been achieved in its mainstreaming into national development plans. Some progress has been made, however, in the development of early warning systems for various hazards; a nearly warning system for floods, developed by NEMA in collaboration with the Nigerian Meteorological Agency and Hydrological Services Agency, is helping the country to reduce damage and losses caused by floods in the agricultural, water resources, and urban sectors. Meanwhile, the National Space Research and Development Agency is actively involved in the acquisition of satellite imagery to support hazard assessments and the mapping of hazard-prone areas.

Some form of emergency preparedness and response activities exist in several sectors, but a lack of adequate capacity in hospitals and the fire service, for example, has hampered the effective response to disasters. Emergency coordination mechanisms are currently inadequate, but the country is in the process of establishing toll-free emergency phone numbers. The search and rescue unit of NEMA also faces capacity constraints and is thus not able to respond effectively during emergencies and major disasters. In most cases, private construction companies are called upon to assist with heavy-duty rescue equipment. This situation is attributed to several factors, including the fact that state and local government entities have not shared the burden of disaster prepar-

edness and response with NEMA; this has overwhelmed NEMA, as it has had to spread its limited resources thinly in order to cover the entire country.

A number of initiatives have been undertaken by various Government agencies for the purpose of facilitating disaster risk reduction mainstreaming in Nigeria. Prominent among these was the establishment of NEMA and tasking it with the coordination of disaster risk management activities in the country. NEMA has taken the lead in advocating the establishment of state emergency management agencies and local emergency management committees, at the state and local government levels, respectively. These bodies are expected to complement NEMA's effort at the lower levels of government but, to date, the process of establishing them has been very slow because state and local governments do not consider the project as expedient and of any immediate priority. At present, only 22 of 36 states have set up emergency management agencies and, of those, around 70 per cent are operating with very little human capacity and inadequate equipment. None of the 774 local government councils in Nigeria have established emergency management committees, a fact attributed to a lack of funding for the project.

NEMA, in collaboration with several stakeholders, has developed a number of policies and plans on disaster risk reduction and the effective management of disasters in Nigeria. Examples include the National Disaster Response Plan, National Disaster Management Framework, National Action Plan for Disaster Risk Reduction, and National Contingency Plan for Nigeria. The Ministry of Environment has also developed various policies and plans on environmental management for the purpose of reducing disasters, among which are the National Policy on Drought and Desertification: Drought Preparedness Plan, National Biodiversity Strategy

and Action Plan, and National Policy on Erosion and Flood Control. The National Environmental Standards and Regulations Enforcement Agency was created in 2007 to enforce these regulations and policies.

By and large, it was observed that the main challenges hampering the effective mainstreaming of disaster risk reduction in Nigeria are inadequate funding of institutions, a lack of trained personnel, low level of education on disaster risk reduction among the public and a lack of collaboration or synergy among the various emergency responders. Another major factor hindering its optimal mainstreaming into national development plans is the fact that state emergency management agencies and local emergency management committees have not been fully established at the state and local government levels, respectively, in order to complement NEMA at the federal level. This gap makes mainstreaming difficult at the state and local government levels and thus vertical mainstreaming from the federal level to the other levels of government is compromised. In addition, horizontal integration of disaster risk reduction mainstreaming across sectors of the economy is also not effective, because these sectors are not involved at the state level.

Some good practices and success factors are highlighted in this report. First, it is observed that Nigeria has strong institutional arrangements for disaster risk reduction mainstreaming at the national level, including relevant legislation and structures. NEMA was established by law in 1999 with the specific responsibility of coordinating disasters in Nigeria. The Vice-President of Nigeria is the Chairman of the Governing Board of NEMA, an arrangement that is meant to draw disaster management closer to the President of Nigeria. There are two separate committees in the National

Assembly that support disaster management: the Committee on Special Duties, in the Senate, and the Committee on Disaster Management, in the House of Representatives.

A second good practice observed is the measures that have been taken to mainstream disaster risk reduction into the education sector. A syllabus on disaster risk reduction was jointly developed by NEMA and the Ministry of Education in 2012 for incorporation into primary and secondary school curricula. The syllabus has yet to be introduced, however, as it is awaiting approval by the National Council on Education. This attempt to mainstream disaster risk reduction into the education sector for human capacity-building is not limited to only primary and secondary schools. NEMA, in collaboration with six universities in Nigeria, has also established centres for disaster risk management at those universities, which offer training at the master's degree and postgraduate diploma levels. Efforts are now being made to introduce short courses in these centres.

In addition, and in collaboration with the Nigerian Meteorological Agency and the Hydrological Services Agency, NEMA developed an early warning system for floods. This allows NEMA to provide early warnings to vulnerable communities, well ahead of flood occurrence and has been effective in managing flood disasters in Nigeria. NEMA has also enhanced its collaboration with the National Space Research and Development Agency for the purpose of obtaining satellite imagery; this collaboration helped to effectively manage the flood disaster of 2012. Further, the need for public sensitization and dissemination of relevant information on natural and man-made hazards led NEMA to work with the National Orientation Agency. Under this arrangement, the latter organizes public sensitization workshops for the dissemination of NEMA's information, which has helped in providing early warning of floods and conflicts. NEMA

has also collaborated with the military for logistics support, through the Military Assistance to Civil Authorities Disaster Contingency Plan, so as to be adequately prepared to respond to complex emergencies. The arrangement sees the military provide the manpower for security, transport for movement of goods and people, and technical support in communication and construction.

NEMA has also collaborated with other stakeholders to develop a number of plans and policies for managing disasters in Nigeria. This is a welcome step, as useful guidelines have been provided to all stakeholders for effective disaster management. Such policies and plans are the necessary foundation of any thrust for development.

Useful lessons have been learned from the process of disaster risk reduction mainstreaming in Nigeria. One such lesson is that disasters are capable of wiping out a substantial proportion of a nation's GDP if adequate disaster risk reduction measures are not established to mitigate the impacts of hazards. For example, it was observed during the 2012 flood disaster in Nigeria that about 1.4 per cent of national GDP was lost, and this was in spite of some progress made by the Government to mainstream disaster risk reduction and climate change adaptation into national development plans. It would likely have been worse if integration of disaster risk reduction and climate change adaptation had been non-existent. Disasters can reverse the course of economic development and further entrench poverty if appropriate risk reduction initiatives are not implemented to stem the tide of negative impacts of disasters on the national economy.

In addition, it was observed that irregular stakeholders meeting and inadequate implementation of disaster risk reduction plans and policies are slowing down the pace of disaster risk reduction mainstreaming and implementation in Nigeria. Little is achieved because community participa-

tion in disaster management is low. Further, national development plans have very little or no disaster risk reduction content and only a few sectors of the economy are involved in risk reduction activities peripherally.

In conclusion, the process of mainstreaming disaster risk reduction into national development plans in Nigeria is slow, but progressing steadily. Some achievements have been made, but much remains to be done. Institutions for disaster risk reduction mainstreaming exist at the national level, but are only partially established at the state level and are non-existent at the local government level; community participation is therefore lacking. The level of involvement of government ministries, departments and agencies in mainstreaming disaster risk reduction is also very low, which is reflected in the near absence of risk reduction in any sector in the medium-term national development plan, Vision 20:2020.

The major factor hindering optimal mainstreaming into development plans is the lack of adequate knowledge of and education in disaster risk reduction, as the importance of disaster risk reduction in national development is therefore not adequately appreciated by the people. This knowledge gap pervades all segments of the society, not least politicians, bureaucrats and the general public. There is also the challenge of fully establishing state emergency management agencies and local emergency management committees at the state and local government levels, respectively, to complement NEMA at the federal level. The ineffective disaster risk reduction structures at state and local government levels has made mainstreaming at those levels difficult. Other notable factors include insufficient funding for implementing programmes and a lack of trained personnel. If those problems are reduced, the process of disaster risk reduction mainstreaming into development plans in Nigeria will hopefully be boosted.

It is recommended that disaster risk reduction education should be given additional impetus in order to facilitate its mainstreaming in the country. The process of mainstreaming risk reduction in primary and secondary school curricula should be expedited and efforts should also be made to introduce disaster risk reduction into university undergraduate degree programmes. In addition, the process of establishing state emergency management agencies and local emergency management committees should be pursued vigorously to complement the efforts of NEMA at the federal level, as this would lessen the burden on NEMA and help bring it to optimal performance. Further, existing disaster risk reduction and climate change adaptation plans and policies should be revised and new ones formulated for effective disaster risk management. Some existing policies and plans

are due for revision and should reflect new and emerging emergencies that were not in existence when those policies and plans were first formulated. Furthermore, funding for disaster risk reduction programmes should be improved; there is a consensus of opinion among ministries, departments and agencies that there are insufficient funds to implement programmes. Funding for NEMA's activities in particular should be improved to make provision for complex emergencies. Hazard risk assessment for the entire country should be vigorously pursued so that people know the risks, develop adaptation strategies and effectively reduce their vulnerability. Emergency preparedness and response should also be improved as a matter of importance in order to address observed deficiencies in coordination mechanisms, emergency health, search and rescue, and fire services.

1. Introduction

Nigeria has three major climatic regions: tropical monsoon in the south, tropical wet and dry in the central area and semi-arid in the far north. These climatic conditions have given rise to unique ecological zones in the country: tropical rain forest in the deep south, savannah woodlands of different composition in the central area and Sahel dry land in the far north. These ecological zones predispose the country to various types of natural hazards; flood, coastal erosion and landslides are common in the southern part of the country while, in the north, desertification, drought and occasional flooding are common.

Nigeria has experienced a wide range of disasters since attaining independence in 1960. In the early 1970s and 1980s it experienced devastating droughts (the Sahelian drought), with the drought of 1971-1972, for example, reducing agricultural contribution to national GDP from 18.4 per cent in 1971-1972 to 7.3 per cent in 1972-1973 (Abubakar and Yamusa, 2013). Data of long-term average values of disaster occurrence in Nigeria show that 94 disaster events occurred between 1980 and 2010, resulting in the death of 21,002 people, affecting 6,306,441 more people and causing economic damage amounting to US\$ 188 million (EM-DAT, 2011).

Disasters are increasing in both frequency and intensity in Nigeria due to climate change and conflicts. Climate change is causing extreme weather events in the form of increasingly intense rainstorms, forest fires, droughts, floods, heat waves and sea level rise, which is threatening coastal cities. From 2002 to date, there have been a series of floods in different parts of Nigeria, which

has forced millions of people from their homes, destroyed businesses, polluted water resources and increased the risk of diseases (Baiye, 1988; Akinyemi, 1990; Nwaubani, 1991; Edward-Adebisi, 1997). The floods of 2012 are perhaps the most historic in terms of spread and enormity.

Disease epidemics have also been a major disaster issue in Nigeria, with recurring incidences of measles, meningitis, cholera, and Lassa fever. Adagbada and others (2012), for example, report that cholera infection is endemic in Nigeria and outbreaks are not unusual; in the last quarter of 2009, it was speculated that more than 260 people died of cholera in four northern states of the country. The disaster risks are further exacerbated by high poverty and vulnerability levels. About 60 per cent of Nigeria's population lives below the poverty line (below US\$ 1.25/day) (United Nations Office for the Coordination of Humanitarian Affairs (OCHA), 2013).

This assessment report on mainstreaming and implementing disaster risk reduction measures in Nigeria was prepared within the framework of the United Nations Development Account project on mainstreaming disaster risk reduction in national and regional development strategies in support of efforts to meet the Millennium Development Goals and the attainment of sustainable development in Africa. The project was jointly conceived by the Economic Commission for Africa of the United Nations (ECA) and the United Nations Office for Disaster Risk Reduction (UNISDR). Key partners in project implementation included

the Southern African Development Community, Economic Community of West African States (ECOWAS), African Union Commission and United Nations Development Programme (UNDP).

The report provided input to the preparation of the West Africa subregional assessment report. It also served as a key resource for a subregional disaster risk reduction capacity development workshop, which, among other things, showcased and promoted good practices for scaling up the mainstreaming and implementation of disaster risk reduction measures as part of development frameworks. In addition, the findings in the report were disseminated at an event on disaster risk reduction mainstreaming and investment for resilient structural transformation of Africa, which was held in May 2014. ECA and UNDP jointly organized that event, which was held in the run-up to Fifth Africa Regional Platform for Disaster Risk Reduction. The report further served as input to the African regional report on the mainstreaming of disaster risk reduction.

1.1 The report

The report documents and analyses the mainstreaming and implementation of disaster risk reduction programmes and actions in Nigeria. In this respect, the report,

- a) Identifies, documents and analyses the main national hazard risks and, where applicable, identifies and documents any disaster events and provides quantitative and qualitative analysis of the social, economic and environmental damage and loss associated with those disasters.
- b) Identifies and analyses past, ongoing and planned disaster risk reduction interventions of selected national and local government and partner institutions.

- c) Reviews and assesses the extent to which disaster risk reduction and climate change adaptation interventions are integrated or mainstreamed into national, sectoral, and local level strategies and policies and partner cooperation frameworks, including at the stage of implementation.
- d) Identifies, documents and analyses:
 - Main tools and approaches used to mainstream and implement disaster risk reduction activities;
 - Synergy or complementarity and integration of disaster risk reduction and climate change adaptation interventions and frameworks;
 - Good practices, success factors and lessons learned in mainstreaming and implementing disaster risk reduction interventions.

1.2 Methodology

1.2.1 Conceptual framework

Conceptually, a disaster risk reduction mainstreaming framework involves two processes. The first is a disaster risk assessment, which analyses the hazards of a community together with the risks to exposed elements, which will be addressed in the first specific task of the study. The second process concerns how the results of the risk assessment facilitate development planning analysis and lead to the better design and prioritization of interventions that are intended to reduce the hazard risks and vulnerability of the community. On the basis of those two components, practical recommendations will be made for scaling up effective mainstreaming and implementation of disaster risk reduction and climate change adaptation policies and plans into plans for sustainable development.

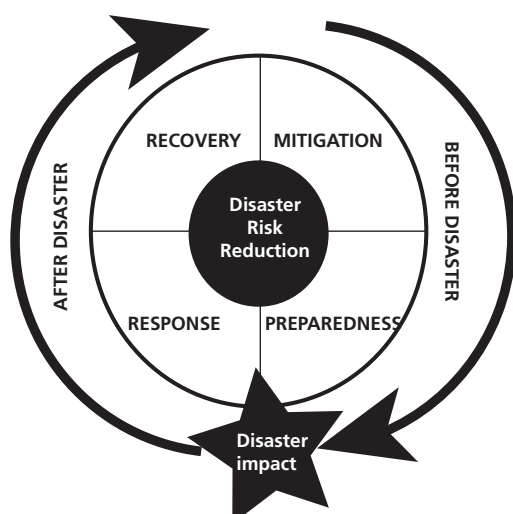
La Trobe and Davis (2005), summarized the disaster risk management cycle, as consisting of four phases: prevention or mitigation, preparedness,

response and rehabilitation or reconstruction. The first two phases fall in the pre-disaster stage, while the third and fourth fall in the post-disaster stage. In the “prevention or mitigation” phase, efforts are made to prevent or mitigate damage, for example through the construction of dykes and dams against floods. Activities and measures for ensuring an effective response to the impact of hazards, such as emergency drills and raising public awareness, are classified as “preparedness” and are not aimed at averting the occurrence of a disaster. “Response” includes activities such as rescue efforts, first aid, fire fighting and evacuation. In the “rehabilitation or reconstruction” phase, considerations of disaster risk reduction should form the foundation for all activities. Taking appropriate measures based on the concept of disaster risk management in each phase of the disaster risk management cycle can reduce the overall disaster risk.

The various phases of the disaster risk management cycle are aptly illustrated by Twigg (2004), as shown in figure 1.

Disaster preparedness, prevention and mitigation lessen the impact of hazards and related disasters. Mitigation measures include public awareness and training, environmental and land-use controls. Prevention measures include reinforced structures, physical barriers, restrictions and regulations. Relief focuses on saving lives through, for example, search and rescue and provision of critical medical care, food and drinking water. Response focuses on reducing vulnerability and meeting basic needs through, for example, family tracing, food, nutrition, health care, sanitation, water and shelter. Recovery is about longer-term support in restoring ‘normal life’. Local ownership and participation of affected populations is critical to recovery. Recovery is also important in linking humanitarian activity with longer-term development plans. Rehabilitation focuses on public and social services, livelihoods, education and making changes needed as a result of the disaster impact (e.g. protection measures). Reconstruction seeks to re-establish and improve infrastructure, housing and pre-disaster services and social conditions.

Figure 1: Disaster risk management cycle



Source: Twigg (2004).

1.2.2 Desk study

A number of disaster management plans, policies and strategies were reviewed in order to highlight the extent of, and commitment of the Government to, disaster risk management in Nigeria. These include:

- National Disaster Response Plan
- National Disaster Management Framework
- National Contingency Plan
- Armed Forces of Nigeria Pandemic Contingency Plan

- Military Assistance to Civil Authorities Disaster Contingency Plan

1.2.3 Key informant interviews

Key informant interviews were conducted for a representative sample of the establishments where questionnaire surveys were conducted. The purpose of the interview was to gain in-depth information about disaster risk reduction mainstreaming in development plans in Nigeria.

Questionnaires were distributed to relevant government ministries, departments and agencies, non-governmental organizations and development partners for the purpose of soliciting information on the extent of disaster risk reduction mainstreaming into national development in Nigeria. The questionnaire and list of target institutions are set out in annexes I and II to the present report.

1.2.4 Data analysis and synthesis of information

The questionnaires were designed to elicit information from relevant governmental agencies and development partners within the country. A total of 22 governmental ministries, departments and agencies participated in the survey, as did 15 de-

velopment partners (international and national non-governmental organizations). In this report, development partners are understood to be international donor agencies (agencies of the United Nations System), national and international non-governmental organizations (NGOs).

Completed questionnaires from the various entities were coded and subsequently analysed, using the SPSS Statistics package. Tables and charts were generated to illustrate some of the observations. Simple illustrative statistics were calculated in order to describe the data sets.

1.3 Structure of the report

The report is divided into six chapters. Chapter 2 provides an overview of global and regional disaster risk reduction mainstreaming frameworks. Chapter 3 presents a hazards and disasters profile of Nigeria and discusses occurrences and trends of main hazards and their socioeconomic and environmental impacts. Chapter 4 discusses the frameworks for and extent of mainstreaming disaster risk reduction into national plans and strategies. Chapter 5 presents good practices, success factors and lessons learned. Finally, chapter 6 presents key conclusions and recommendations emerging from the assessment.

2. Global and regional disaster risk reduction mainstreaming frameworks

2.1 The Hyogo Framework for Action and disaster risk reduction mainstreaming

Given increasing concerns about disaster impacts and the need to promote capacity and knowledge to deal with disaster events, the United Nations General Assembly declared 1990-1999 as the International Decade for Natural Disaster Reduction. In the Yokohama Strategy and Plan of Action for a Safer World, conceived at the first World Conference on Natural Disaster Reduction, held in Yokohama in 1994, it was stressed that every country had the sovereign and primary responsibility to protect its people, infrastructure and national, social and economic assets from the impact of disasters.

The successor to the International Decade for Natural Disaster Reduction is the International Strategy for Disaster Reduction (ISDR), established in 2000 by the United Nations General Assembly. The ISDR – a coalition of governments, agencies of the United Nations System, regional organizations and civil society organizations – was created to sustain a strong and focused international agenda for the implementation of disaster risk reduction.

The Hyogo Framework for Action is the key instrument for implementing disaster risk reduction, adopted by the Member States of the United Nations. Its overarching goal is to build resilience of nations and communities to disasters, by achieving substantive reduction by 2015 of losses from disasters of lives and of the social, economic and environmental assets of communities and

countries. The Hyogo Framework for Action has three strategic goals and offers five areas of priorities for action, guiding principles and practical means for achieving disaster resilience for vulnerable communities in the context of sustainable development. The three strategic goals are:

- a) The integration of disaster risk reduction into sustainable development policies and planning.
- b) Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards.
- c) The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes.

The five priorities for action are designed to guide states, organizations, and other actors at all levels in formulating their approach to disaster risk reduction.

Priority 1: make disaster risk a priority

This priority is meant to ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation. Strong national and local commitment is required to save lives and livelihoods threatened by natural hazards. Natural hazards must be taken into account in public and private sector decision-making in the same way that environmental and social impact assessments are currently required. Countries must therefore develop or modify policies, laws, and organizational arrangements, as well as plans, programmes, and projects, to integrate disaster risk reduction. They must also allo-

cate sufficient resources to support and maintain them. This includes: creating effective, multisectoral, national platforms to provide policy guidance and to coordinate activities; integrating disaster risk reduction into development policies and planning, such as poverty reduction strategies; and ensuring community participation, so that local needs are met.

Priority 2: know the risk and take action

The focus of this priority is to identify, assess, and monitor disaster risks, and enhance early warning. It also underlies the need to reduce community vulnerability to natural hazards, know the risks that they face, and take actions based on that knowledge. Understanding risk requires investment in scientific, technical, and institutional capabilities to observe, record, research, analyse, forecast, model and map natural hazards. Tools need to be developed and disseminated: statistical information about disaster events, risk maps, disaster vulnerability and risk indicators are essential.

Most importantly, countries need to use this knowledge to develop effective early warning systems, appropriately adapted to the unique circumstances of the people at risk. Early warning is widely accepted as a crucial component of disaster risk reduction. When effective early warning systems provide information about a hazard to a vulnerable population, and plans are in place to take action, thousands of lives can be saved.

Priority 3: build understanding and awareness

This priority emphasizes the use of knowledge, innovation, and education to build a culture of safety and resilience at all levels. Disasters can be reduced substantially if people are well informed about measures they can take to reduce vulnerability and if they are motivated to act. Key activities to increase awareness of disaster prevention include:

- a) Providing relevant information on disaster risks and means of protection, especially for citizens in high-risk areas.
- b) Strengthening networks and promoting dialogue and cooperation among disaster experts, technical and scientific specialists, planners and other stakeholders.
- c) Including disaster risk reduction subject matter in formal, non-formal, and informal education and training activities.
- d) Developing or strengthening community-based disaster risk management programmes.
- e) Working with the media in disaster risk reduction awareness activities.

Priority 4: reduce risk

The primary focus of this priority is to enable communities to reduce the underlying risk factors of disasters. Vulnerability to natural hazards is increased in many ways, for example:

- a) Locating communities in hazard-prone areas, such as flood plains.
- b) Destroying forests and wetlands, thereby harming the capacity of the environment to withstand hazards.
- c) Building public facilities and housing unable to withstand the impacts of hazards.
- d) Not having social and financial safety mechanisms in place.

Countries can build resilience to disasters by investing in simple, well known measures to reduce risk and vulnerability. Disasters can be reduced by applying relevant building standards to protect critical infrastructure, such as schools, hospitals and homes. Vulnerable buildings can be retrofitted to a higher degree of safety. Protecting precious ecosystems, such as coral reefs and mangrove forests, allow them to act as natural storm barriers. Effective insurance and micro-finance initiatives can help to transfer risks and provide additional resources.

Priority 5: be prepared and ready to act

The final priority is aimed at strengthening disaster preparedness for effective response at all levels. Being prepared, including by conducting risk assessments, before investing in development at all levels of society will enable people to become more resilient to natural hazards. Preparedness involves many types of activities, including:

- a) The development and regular testing of contingency plans.
- b) The establishment of emergency funds to support preparedness, response and recovery activities.
- c) The development of coordinated regional approaches for effective disaster response.
- d) Continuous dialogue between response agencies, planners and policymakers, and development organizations.
- e) Regular disaster preparedness exercises, including evacuation drills, are keys to ensuring rapid and effective disaster response. Effective preparedness plans and organization also help to cope with the many small and medium-sized disasters that repeatedly occur in so many communities. Natural hazards cannot be prevented, but it is possible to reduce their impacts by reducing the vulnerability of people and their livelihoods.

2.2 Africa Regional Strategy for Disaster Risk Reduction

In line with the arrangements of UNISDR, every region of the world has developed a strategy for disaster risk reduction. The primary purpose of this arrangement is for every region to drive its disaster reduction strategy within its own social, economic and cultural context. Each region meets annually to review its progress and, every other year, all the regions meet in Geneva to review

global progress. At sessions of the Global Platform on Disaster Risk Reduction, global progress in disaster risk reduction is weighed against the targets set in the Hyogo Framework for Action.

According to UNISDR (2004), the Africa Regional Strategy for Disaster Risk Reduction evolved out of the African Consultative Meeting on Disaster Risk Reduction, held in Addis Ababa, Ethiopia, in June 2003. At that meeting, a decision was made to develop the Regional Strategy on Disaster Risk Reduction in two phases: first, undertaking a baseline study to establish the status of disaster risk reduction in Africa and, second, drafting the Regional Strategy on Disaster Risk Reduction.

The baseline study identified gaps and issues that formed the basis for developing the regional strategy. An outline of the strategy and key areas of focus were reviewed at a preliminary meeting of the Africa Working Group on Disaster Risk Reduction in April 2004. A draft strategy was reviewed at several forums in May and June 2004: a meeting of experts to discuss the strategy; an African regional consultation on the United Nations World Conference on Disaster Reduction; and the second meeting of the Africa Working Group on Disaster Risk Reduction. The Strategy was adopted by African ministers at the tenth session of the African Ministerial Conference on the Environment on 26-30 June 2004 and submitted to the African Union Summit. The Strategy was positively received by Heads of State at the third ordinary session of the Assembly of the African Union, in Addis Ababa, Ethiopia, on 6-8 July 2004, with a call to develop a programme of action for its implementation.

In terms of its scope of operation, the African Regional Strategy for Disaster Risk Reduction focuses on disasters arising from natural and related human induced hazards. It builds upon existing disaster risk reduction institutions and

programmes available in African countries and in the regional economic communities and aims to mainstream them into development so that they can better contribute to disaster risk reduction.

In recognition of the different status of disaster risk reduction in regional economic communities and countries, the Strategy provides a broad range of strategic directions that regional both can choose from to suit their respective contexts and needs.

The aim of the Africa Regional Strategy for Disaster Risk Reduction is to contribute to the attainment of sustainable development and poverty eradication by facilitating the integration of disaster risk reduction into development. Its primary objectives are to:

- a) Increase political commitment to disaster risk reduction
- b) Improve identification and assessment of disaster risks
- c) Enhance knowledge management for disaster risk reduction
- d) Increase public awareness of disaster risk reduction
- f) Improve governance of disaster risk reduction institutions
- g) Integrate disaster risk reduction into emergency response management.

Since the establishment of the Regional Strategy, a lot has been achieved in promoting disaster risk reduction in Africa. The most notable achievements include:

- a) The creation of the annual Africa Regional Platform on Disaster Risk Reduction, which provides a forum for all member States to report on achievements in disaster

risk reduction in their countries. So far, five Regional Platforms have taken place, with the most recent being held in Abuja, Nigeria, in May 2014.

- b) The articulation of a common position for Africa at the Global Platform on Disaster Risks Reduction. Africa's position is usually presented at the Global Platform through the Africa Regional Strategy for Disaster Risk Reduction. This enables the continent to compare notes with other regions on achievements in disaster risk reduction mainstreaming in member countries. It also enables Africa to negotiate funding and opportunities for the continent at the global level.
- c) The development of elaborate policies and strategic plans by the Africa Regional Strategy for Disaster Risk Reduction for member States, to act as guidance for developing and mainstreaming disaster risk reduction in countries. The overall framework for the Strategy also encompasses a system for monitoring and evaluating compliance and achievements.
- d) The Africa Regional Strategy for Disaster Risk Reduction has successfully embedded disaster risk reduction in the mandates of the Africa regional economic communities, thus facilitating its mainstreaming in the national economies of member States.

2.3 Disaster risk reduction mainstreaming frameworks

The imperative for disaster mainstreaming

The rising interest in mainstreaming disaster risk reduction is fuelled by a gradual upward rise in reported losses from disasters, primarily as a result of the increasing vulnerability of economic and social assets and people's well-being and livelihoods to natural hazard events. Between the

1950s and 1990s, the reported global cost of disasters increased 15-fold in real terms, while the number of people affected rose from 1.6 billion in the period 1984-1993 to almost 2.6 billion in the subsequent decade.

In more recent years, there has been a rapid succession of catastrophic events causing substantial human and economic losses, including the Indian Ocean tsunami in 2004, hurricanes Katrina and Rita in the United States of America and the South Asian earthquake that struck Kashmir in 2005. Although the largest absolute economic losses occur in developed countries, developing countries suffer far worse in relative terms (Benson and Twigg, 2007). According to the World Bank (2006), losses can be up to 20 times greater as a percentage of GDP in developing countries than in industrialized nations, while over 95 per cent of all disaster-related deaths occur in developing countries. Indeed, disasters are increasingly recognized as a potential threat to sustainable development, poverty reduction initiatives and the achievement of the Millennium Development Goals.

Win-win solutions for securing sustainable development, reducing poverty and strengthening hazard resilience need, therefore, to be explicitly and actively sought, particularly as climate change looks set to increase the incidence of droughts and floods and the intensity of wind storms (H.M Treasury and Cabinet Office, 2006). Such solutions are best derived by integrating disaster risk reduction strategies and measures within the overall development framework and viewing disaster risk reduction as an integral component of the development process rather than as an end in its own right.

A recent report stated that, "it would be well to remember that there is no period when disaster risks can be safely ignored or set aside, especially for the subgroup of countries that is highly vulner-

able to disasters" (Parker, 2006). Instead, hazard-related issues need to be considered in national and sectoral development planning, country programming and in the design of all development projects in hazard-prone countries, seeking both to protect development investments against natural hazards and to strengthen the hazard resilience of the communities they serve. Hazard-proofing individual structures may not even cost much (Benson and Twigg, 2007).

Increasing appreciation of the need to mainstream disaster risk reduction in development was formalized in January 2005 when the Hyogo Framework for Action 2005-2015 was adopted by the World Conference on Disaster Reduction, with 168 nation and multilateral institution signatories. The Hyogo Framework for Action is centred around three principal strategic goals, the first of which is: "the more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction" (UN/ISDR, 2005).

Some of the critical issues propelling the need for mainstreaming include the realization that several development schemes or projects are at risk from disasters. According to Planitz (2013), the rising impact of disasters over the past 30 years has led to the death of 3.3 million people, 50 per cent of which have been in poor countries, despite those countries accounting for only 9 per cent of disasters. The economic cost of disasters has tripled, with over US\$ 1.2 trillion of economic loss occurring in developing countries, equivalent to a third of official development assistance. In addition, it is also widely known that disasters push people into poverty; for example, following the Haiti 2010 earthquake and Djibouti 2011 drought, poverty levels in those countries returned to those seen in early 2001 and 2003.

Since the late 1990s, there has been increasing recognition of this need to 'mainstream' disaster risk reduction into development, that is, to consider and address the risks emanating from natural hazards in medium-term strategic frameworks and institutional structures, in country and sectoral strategies and policies and in the design of individual projects in hazard-prone countries (Benson and Twigg, 2007). A number of development organizations have begun efforts to mainstream disaster risk reduction into their work, undertaking various relevant institutional, policy and procedural changes and adjusting operational practices.

Mainstreaming requires analysis both of how potential hazard events could affect the performance of policies, programmes and projects and, in turn, of the impact of those policies, programmes and projects on vulnerability to natural hazards. This analysis should lead to the adoption of related measures to reduce vulnerability, where necessary, and to treating risk reduction as an integral part of the development process rather than as an end in itself (Benson, 2009).

Solutions for disaster- and climate-resilient development should fundamentally include:

- Pursuing disaster reduction, adaptation and sustainable development as mutually supportive goals
- Considering risk reduction as an essential investment in sustainable development, not as an additional cost
- Corrective development planning that ensures development does not generate risks

Essentially, disaster risk reduction mainstreaming requires assessing the implications of disasters and climate change on any planned development actions in all thematic areas and sectors, at all levels and as an integral dimension of the

design, implementation, monitoring and evaluation of policies and programmes. It also involves the mainstreaming of disaster risk reduction and climate change adaptation into national development plans, strategies, policies, regulations, budgets, sectoral plans, programmes and projects.

Some standard elements for successfully mainstreaming disaster risk reduction into national plans and strategies include: awareness-raising, an enabling environment, development of tools, training and technical support, changes in operational practice, measuring progress, learning and experience sharing (Benson and Twigg, 2007).

According to Planitz, (2013), some typical approaches used by development partners, including UNDP, for disaster risk reduction mainstreaming include comprehensive national disaster risk reduction programmes, tailor-made technical assistance and policy advice, knowledge products and training courses, partnerships with specialized institutions and global advocacy efforts. Since 2005, UNDP has undertaken some comprehensive disaster risk reduction programmes in different parts of the world, which, according to Planitz (2013), include supporting over 45 national disaster risk management authorities; the integration of disaster risk reduction into national development policies and frameworks in over 30 countries; strengthened legislative frameworks that foster disaster risk management in 58 countries; supporting climate risk management programmes in 22 countries; and helping to establish 30 disaster loss databases.

Some typical tools, again according to Planitz (2013), that UNDP and other development partners have used for mainstreaming disaster risk reduction into national development programmes include:

- **Partnerships for mainstreaming:**

- Mainstreaming Adaptation and Disaster Reduction into Development, with UNISDR and the Government of the Republic of Korea, since 2012.
- Capacity for Disaster Reduction Initiative, with OCHA, the United Nations Children's Fund (UNICEF), World Food Programme (WFP), World Health Organization (WHO), and with the Global Facility for Disaster Reduction and Recovery and International Federation of Red Cross and Red Crescent Societies (IFRC) as observers.
- Disaster risk reduction law project with IFRC to review disaster risk reduction integration into national and sub-national legislative and regulatory frameworks.
- Disaster risk reduction integration into United Nations Development Assistance Framework (UNDAF) with the United Nations Development Operations Coordination Office and UNISDR.
- Integrating Disaster Risk Reduction into the CCA (common country assessments) and UNDAF: a Guide for United Nations Country Teams (2009).

- Technical assistance to United Nations Resident Coordinators and Country Teams to mainstream disaster risk reduction into UNDAF.
- Training materials and workshops for Country Teams.
- Since 2009, 54 Country Teams have officially published their UNDAF, of which 50 incorporate disaster risk reduction.

- **Global advocacy for disaster risk reduction mainstreaming:**

- Integration of disaster risk reduction and conflict prevention into the post-2015 development agenda: UNDP is leading consultations with UNISDR, UNICEF and United Nations Peace Building Support Office.
- Political champions group: UNDP and OCHA are leading a United Nations system-wide process to improve how development and humanitarian agencies work together and cooperate with governments and donors towards resilience in countries at risk from natural hazards.
- UNDP is supporting a consultation process on and the development of the successor to the Hyogo Framework for Action, based on its practical experience.

3. Hazard and disaster profile of Nigeria

3.1 Main hazards and spatial distribution in Nigeria

Nigeria periodically experiences a wide range of natural and man-made hazards: floods, windstorms, drought, desertification or desert encroachment, landslides, soil erosion, gully erosion, coastal erosion, wildfires, sandstorms, pest invasion, and volcanic eruptions and associated activities.

The spatial distribution of these hazards across the country is illustrated in table 1. It is important to note that, in particular, those of hydrometeorological origin are widespread, as rainfall is experienced in virtually all parts of the country, although with remarkable spatial variation. Rainfall is usually accompanied by thunder and lightning, particularly during the onset of the rainy season; such thunderstorms are usually characterized by high rainfall intensity and strong winds and often lead to flooding, landslides and soil erosion.

Drought and desertification are phenomena of the drier northern part of the country, which is an extension of the Sahel savannah. In recent times, the Sahel savannah suffered devastating drought, particularly in 1972-1973 and 1982-1983.

At the onset of the rainy season, rainfall is usually accompanied with strong winds. Wind speeds of up to 200 km/h have been recorded. The winds are usually associated with the tropical easterlies and coincide with thunderstorms. They occur virtually countrywide.

Table 1: Natural hazards in Nigeria

Hazard	Geographical Area
Floods	Urban areas with poor drainage; settlements located in low-lying river flood plains; settlements fringing the Niger, Benue, Cross, Katsina, Ala, and Imo rivers.
Landslides	Hilly terrains, particularly in the south-eastern part of Nigeria with Cretaceous sedimentary geological formations.
Soil erosion	Widespread across the country but occurs particularly in areas undergoing rapid deforestation, intensive agriculture and rapid urbanization without adequate provisions for protecting topsoil.
Gully erosion	Predominantly in Anambra, Cross River, Akwalbom, Imo, Benue, Abia, Enugu, Ekiti, Kogi, Edo and Plateau states. It is caused by devegetation of sloppy terrains and the impact of high intensity rains, which cause overland flow, riling and gulling.
Coastal erosion	The most severely affected areas are the coastal areas of Lagos, Ondo, Delta, Bayelsa, Rivers, Akwalbom and Cross River states. An estimated 25 million people (28% of the population) live in coastal zones and are at risk of coastal flooding.
Windstorms	At the onset of the rainy season, rainfall is usually accompanied with strong winds. Wind speeds of up to 200 km/h have been recorded. The winds are usually associated with the tropical easterlies and coincide with thunderstorms. They occur virtually countrywide.
Drought and desertification	Mainly areas within the Sudan-Sahel ecological region, including areas north of the 11th parallel north (Borno, Yobe, Adamawa, Taraba, Sokoto, Bauchi, Katsina, Kano, Gombe, Kebbi and Zamfara states).
Sandstorms	All states within the Sudan-Sahel ecological region are vulnerable (Borno, Yobe, Adamawa, Taraba, Sokoto, Bauchi, Katsina, Kano, Gombe, Kebbi and Zamfara states). They are caused by the propagation of north-easterly trade winds across the Sahara desert into these northern states.
Pest invasion	Pests of various types occasionally attack agricultural lands (locusts and quails are common). When it occurs, the farmlands of whole communities are ravaged, leaving people impoverished. All areas of the country are vulnerable.
Wildfire	All areas are at risk of wildfire but the Sudan, Guinea and derived savannah ecological regions and the drier parts of the rainforest are particularly susceptible. Fires are usually seasonal and are often caused naturally by lightning flashes or through uncontrolled bush burning.
Volcanic activity	Volcanic activity is common on the Biu and Jos plateaus and in the Benue valley. Plateau, Adamawa and Taraba States are most susceptible.

Man-made hazards are increasing in frequency and magnitude owing to religious, political and ethnic crises. A report by the Coalition for Peace and Security showed that between 2003 and 2013 about 210 crises were recorded in northern Nigeria alone. Plateau state recorded the highest, with 74 conflicts (Isuwa, 2013). Attention to the emergency management of civil disturbances, such as riots and violent demonstrations, is growing. Civil disturbances are a serious issue in Nigeria, afflicting virtually all states. The country is particularly vulnerable to such disturbances, owing to its multicultural nature and religious pluralism. Civil disturbances result in spontaneous mass immigration and increase the need for law enforcement, detention and mass care that can be monitored.

3.2 Disaster risk profile

Disaster risk in Nigeria is determined by the combined effects of its geographic location, ethnic

and political characteristics and prevailing economic conditions. These factors both separately and collectively predispose the country to a wide range of natural and man-made hazards. These hazards and their impacts have created unique hazard risk characteristics for Nigeria; according to the 2011 edition of the World Risk Report (Jeschonnek, 2011), Nigeria ranks fiftieth globally in terms of hazard risk and has a World Risk Index of 9.03, which is classified as high. All countries are classified according to whether their risk index is very low (0.00-3.50%), low (3.51-5.80%), medium (5.81-7.71%), high (7.72-11.13%) or very high (11.14-32.00%). Each country's index is determined as an aggregate of the four factors that characterize hazard risk: exposure to natural hazards, susceptibility, lack of coping capacities and lack of adaptive capacities (the final three are combined to calculate a country's overall vulnerability). Nigeria's rating for each of these factors is shown in table 2.

Table 2: World risk index values for Nigeria

Factor	Value (%)	Classification	Remarks on index values
Exposure	13.41	Medium	Values for this factor range from 0.05-9.71 % (very low) to 17.86-56.3 % (very high).
Vulnerability	67.37	Very high	Values for overall vulnerability range from 24.57-35.63 % (very low) to 63.33-76.19 % (very high).
Susceptibility	54.94	Very high	Values range from 9.40-16.30 % (very low) to 49.03-69.38 % (very high).
Lack of coping capacities	86.93	Very high	Values range from 35.46-58.81% (very low) to 85.46-94.36 % (very high).
Lack of adaptive capacities	60.24	Low	Values range from 23.91-33.14% (very low) to 56.43-73.55 % (very high).

Source: Jeschonnek (2011)

It is clear that the index values for the factors characterizing hazard risk indicate that such risk is indeed high in Nigeria; the lack of coping and adaptive capacities against possible hazards is particularly worrisome and shows that the need for mainstreaming and implementing disaster risk reduction into national development plans is imperative.

Nigeria has had its fair share of disasters, as illustrated by the following facts and figures listed by OCHA (2013) regarding disasters and humanitarian assistance in the country:

- Number of people affected by natural disaster (millions): 7.02
- Proportion of the population affected annually by natural disasters(%): 0.54
- Number of most recent decades experiencing active conflict: 2
- Density of physicians (per 1000 population): 0.4
- Mobile cellular subscriptions per 100 inhabitants: 67.68
- Humanitarian funding received (US\$ million): 20.1

Details of the frequency of each type of hazard and its corresponding impact on lives and the national economy between 1980 and 2010, obtained from the OFDA/CRED International Disaster Database, are shown in tables 3 to 8. Table 3 shows an overview of natural disasters in Nigeria from 1980 to 2010.

Table 3: Overview of natural disasters, 1980-2010

Number of events:	94
Number of people killed:	21 002
Average number of people killed per year:	677
Number of people affected:	6 306 441
Average number of people affected per year:	203 434
Economic damage (US\$ thousands):	188 025
Economic damage per year (US\$ thousands):	6 065

Source: OFDA/CRED International Disaster Database, Université catholique de Louvain, Brussels, Belgium.

Between 1980 and 2010, 94 natural disaster events were recorded in Nigeria, which affected approximately 6.3 million people and killed 21,000 people. Economic damage was around US\$ 188 million, amounting to US\$ 6 million per year. This level of social and economic loss is significant in a developing country that requires all its resources for growth and development.

For the period 1980-2010, floods were the most common natural hazard recorded in Nigeria, based on a selection of the ten most devastating hazards in the country, as illustrated in table 4. The data show that floods accounted for 90 per cent of all the hazards, affecting varying numbers of people. However, in terms of the numbers of people affected by natural hazards alone, the 1983 drought was the most devastating of all the hazards within the period studied. Data on the percentage of people reported to be affected, according to disaster type, show that drought accounted for 47.6 per cent and flooding 50.2 per cent.

Table 4: Natural disasters reported in Nigeria

Rank	Disaster	No. of people affected	Date
1	Drought	3 000 000	1983
2	Flood	1 500 200	2010
3	Flood	580 000	1994
4	Flood	300 000	1988
5	Flood	210 000	2003
6	Flood	150 000	2009
7	Flood	100 000	1998
8	Flood	90 000	1999
9	Flood	84 065	2001
10	Flood	50 000	2007

Source: OFDA/CRED International Disaster Database, Université catholique de Louvain, Brussels, Belgium.

In terms of fatalities from natural disasters, disease epidemics accounted for more than other natural disasters that occurred between 1980 and 2010. This appears anomalous but, although drought and floods affected greater numbers of people, the number of people who died from those hazards was lower. The data on fatalities from epidemics are illustrated in table 5. Regarding the number of fatalities, according to disaster type, epidemics accounted for 95 per cent while floods accounted for 4 per cent.

Among the list of natural hazards that occurred within that period and the resultant casualties, epidemics were more prevalent than any others and accounted for the top ten hazards with the most fatalities (see table 5).

Table 5: No of People Killed

Rank	Disaster	No. of fatalities	Date
1	Epidemic	7 289	1991
2	Epidemic	4 346	1996
3	Epidemic	1 701	2009
4	Epidemic	1 193	1996
5	Epidemic	1 000	1986
6	Epidemic	561	2005
7	Epidemic	400	1991
8	Epidemic	353	2010
9	Epidemic	350	1999
10	Epidemic	340	2001

Source: OFDA/CRED International Disaster Database, Université catholique de Louvain, Brussels, Belgium.

In terms of economic damage caused, droughts topped the list of the ten most destructive disasters between 1980 and 2010 (table 6). However, although droughts caused the most damage, floods were the most frequent economically destructive disasters within the specified period.

Table 6: Economic damage

Rank	Disaster	Cost (US\$ thousands)	Date
1	Drought	71 103	1983
2	Flood	66 500	1994
3	Flood	30 000	2010
4	Flood	8 000	1985
5	Flood	4 805	2000
6	Flood	3 000	2001
7	Flood	2 570	2003
8	Flood	1 900	2000
9	Flood	147	2005
10	Epidemic	0	1986

Source: OFDA/CRED International Disaster Database, Université catholique de Louvain, Brussels, Belgium.

A risk profile analysis of Nigeria shows that the four major natural hazards that pose significant threats to the population are, in order, drought, floods, landslides and earthquakes. Of these, drought poses the highest level of risk (table 7); about 3.5 million people are exposed to this hazard in Nigeria, which means that the country ranks twenty-first out of 184 countries affected by drought.

Table 7: Human exposure

Hazard type	Populationexposed	Country ranking
Cyclone	-	- out of 89
Drought	3 254 060	21st out of 184
Flood	226 622	15th out of 162
Landslide	14 038	18th out of 162
Earthquake	1 155	129th out of 153
Tsunami	-	- out of 76

Source: OFDA/CRED International Disaster Database, Université catholique de Louvain, Brussels, Belgium.

In terms of economic risk to hazards(that is, the amount of GDP in hazard zones exposed to potential losses), the three natural hazards posing the highest risk are floods, landslides and earthquakes. Table 8 illustrates this, showing that flooding, for example, has the potential to wipe away US\$ 0.2 billion of the country’s GDP when it occurs.

Table 8: Economic exposure

Hazard type	GDP exposed (US\$ billion)	Country ranking
Cyclone	-	- out of 89
Flood	0.17	41st out of 162
Landslide	0.04	55th out of 162
Earthquake	0.00	139th out of 153
Tsunami	-	- out of 76

Source: OFDA/CRED International Disaster Database, Universitécatholique de Louvain, Brussels, Belgium.

3.3 Vulnerability

UN/ISDR (2004) describes vulnerability as “a set of conditions and processes resulting from physical, social, environmental and economic factors, which increase the susceptibility of a community to the impact of hazards”. A basic consensus has emerged, that the concept of vulnerability consisting of an external aspect (exposure) (Bohle, 2001) and that it is also:

Multidimensional and differential (i.e. it varies across physical space and among and within social groups);

- Scale-dependent (with respect to time, space and units of analysis, such as individual, household, region, and system);
- Dynamic (i.e. the characteristics and driving forces of vulnerability change over-time, certainly exceeding the time of the extreme event itself) (Pelling and Uitto, 2001).

The vulnerability of a community to hazard is determined by the community’s economic, social and cultural characteristics. Disasters happen when a given set of conditions or processes results in an increase in the vulnerability of people and ecosystems to natural hazards. This increase is due to the negative outcomes of underlying economic, social, political and physical factors that shape or determine people’s lives, their living environment and how they respond to hazards. These negative situations weaken the ability of people and ecosystems to with stand destruction and loss of lives, livelihoods and the supporting physical infrastructure and natural resource base when hazards occur (African Union and others, 2004).

In Nigeria, issues of poverty, unemployment, natural resource control, politics, religious and ethnic crises create various levels of vulnerability among the people. Poverty causes malnutrition among people, thus making them more vulnerable to diseases and also impels them tolive in informal settlements where the hazard risks are very high. The poverty level of Nigeria is one of the critical factors raising people’s vulnerability to natural and man-made hazards. The poverty profile of Nigeria between 1980 and 2010 (table 9) shows that the number of people below the poverty line

has steadily increased; this trend predisposes this population group to malnutrition and poor health and drives them to live in informal settlements that expose them to various types of hazards.

Table 9: Nigeria poverty profile (1980-2010)

Year	Population in poverty (millions)	Estimated population (millions)
1980	17.1	65
1985	34.7	75
1992	39.2	91.5
1996	67.1	102.3
2004	68.7	126.3
2010	112.5	163

Source: National Bureau of Statistics (2010).

The level of unemployment in the country is another factor that raises vulnerability to disaster risks. According to the National Bureau of Statistics, the unemployment rate in Nigeria is on the increase: in 2009, it was 19.7 per cent and increased to 21.1 per cent in 2010 and 23.9 per cent in 2011. This trend further reinforces the poverty level in the country and the situation is worse in rural areas (25.6 per cent) than in urban areas (17.1 per cent). The majority of those who are unemployed (56.3 per cent) are between 15 and 64 years old, with 39.6 per cent of the unemployed being under 14 years old and the remaining 4.2 per cent above 65 years old.

Theoretically, as vulnerability increases, disaster risk also increases proportionally. Unless conscious efforts are made to reduce vulnerability and build capacity, disaster risks are expected to continue increasing in Nigeria. To reduce that vulnerability and increase adaptive capacity, greater efforts need to be made to mainstream disaster risk reduction into national development plans and policies.

Climate change is also unfortunately increasing the hazard risk in Nigeria. Rainfall intensity, for example, is on the increase in the southern

part of the country, causing greater incidence of flooding in urban areas. The incidence of strong and ferocious winds is also on the increase and thunderstorms are becoming very frequent, with devastating consequences to people’s lives and the economy. Coastal erosion is ravaging the coastlines and adjacent settlements as a result of the rising sea level while, in the northern part of the country, dryer weather conditions are accelerating drought and desertification. These conditions are forcing cattle herders to migrate into the wetter savannah in the central belt of the country, thus causing conflict between farmers and cattle herders. These conflicts have caused the loss of several lives and huge economic losses. Without adequate coping and adaptive capacities, most of the communities affected by these new and emerging hazards will inherently be vulnerable. Consequently, disaster risk is high.

3.4 Impact of main hazards

Disaster loss is on the rise, with grave consequences for the survival, dignity and livelihood of individuals, particularly the poor, and hard-won development gains. Disaster risk is of increasing global concern, as any impact or action in one region can have an impact on risks in another, and vice versa. This trend – compounded by increasing vulnerabilities related to changing demographics, technological and socioeconomic conditions, unplanned urbanization, development within high-risk zones, under-development, environmental degradation, climate variability, climate change, geological hazards, competition for scarce resources, and the impact of epidemics such as HIV/AIDS – points to a future where disasters could increasingly threaten the global economy and population and the sustainable development of developing countries. In the past two decades, more than 200 million people, on average, have been affected by disasters each year. (UNISDR,

2005) During the devastating 1972-1973 Sahelian droughts, over 300,000 herds of cattle died, farmlands were desiccated, and farmers were impoverished. Nigeria has also suffered various disease epidemics in the past, the more common being cholera, meningitis and influenza viruses. The most devastating of all disasters in Nigeria, from historical records, however, looks to be the 2012 flood disaster.

3.4.1 The 2012 flood disaster in Nigeria

Natural and man-made hazards in Nigeria have caused disasters of varying magnitude with enormous costs to lives, property, livelihoods, the environment and national economy. No disaster has been evaluated with acceptable scientific procedure; estimates of damage and losses have been merely speculative and the monetary values have been attached to damage and losses without reference to any standard procedure. After the flood disaster in 2012, Economic Commission for Latin America and the Caribbean (ECLAC) methodology was used for the first time to estimate the damage and losses in Nigeria. This methodology was combined with the human recovery needs assessment methodology to obtain the post-disaster needs assessment. The impact of the 2012 flood in Nigeria is presented here as a case study to illustrate the possible extent of the damage that natural hazards can cause.

A report on the 2012 flood, published in 2013 by the Government of Nigeria, with technical support from the European Union, United Nations, World Bank, and other partners, stated that the disaster was caused essentially by a combination of three major factors. First, there was an unprecedented high intensity rain between June and September 2012, then a set of unwholesome land-use practices increased the runoff coefficient, obstructed the free flow of over land flow and impaired proper drainage and, finally, there was the release of excess water from river dams within and outside Nigeria's land border into the two major rivers in

Nigeria: the Niger and the Benue. Cameroon released enormous amounts of water from its Lagdo dam into the Benue river, thereby adding to the releases from Nigeria's Kainji, Shiroro and Jebba dams.

By the second week of October 2012, several communities were inundated, bridges were broken, roads were cut off and Nigeria was witnessing a major humanitarian crisis. The Government quickly set up a presidential committee to conduct a preliminary assessment of the extent of the flooding. The report indicated that 28 out of the country's 36 states were affected, comprising of 254 local government areas and 3,870 communities. Over 2 million people were displaced, 7 million people were affected either directly or indirectly, and there were 18,422 injured and 381 dead. In addition, 685,501 houses were totally destroyed and 321,866 more were partially damaged in the most affected states. Eighty-two schools, 20 markets, and over 3 million hectares of farmlands were also destroyed.

To determine the impact of the floods and the resulting post-disaster recovery, reconstruction, and resilience needs, a post-disaster needs assessment was carried out in November and December 2012, with the objectives of: assessing the damage and losses caused by the disaster; estimating the overall impact of the floods on socioeconomic development at the national, state and community levels; developing a recovery and reconstruction framework that presented the short-, medium- and long-term recovery and reconstruction needs, including the costs and time frame; ensuring that strategies for recovery integrated the concepts of disaster risk reduction and "build back better" and addressed gender and environmental concerns; and recommending and defining a strategy for disaster risk management in the country.

The post-disaster needs assessment methodology combined two distinct but complementary methods of assessing the disaster effects, impact and needs. The first was the time-proven damage, loss and needs assessment methodology, originally developed by ECLAC in the early 1970s and subsequently updated by the World Bank's Global Facility for Disaster Reduction and Recovery and the second was the human recovery needs assessment methodology, developed by UNDP. The post-disaster needs assessment estimated damage (the monetary replacement value of the completely or partially destroyed durable assets), losses (changes in the flows of goods and services in the economy, including reductions in production and increases in expenditure arising as a result of the disaster) and recovery and reconstruction needs (the financial amounts required to achieve recovery of the economy at the macroeconomic, sectoral, and personal or household levels, and the financing required to rebuild with disaster-resilient features to reduce future risk). The human recovery needs assessment measured, through qualitative and quantitative data, the micro- and meso-level impacts of the disaster on affected sectors, cross-cutting the areas of gender, age, environment, disaster risk reduction and governance.

Economic losses

The total value of physical and durable assets destroyed by the 2012 floods in the states most affected in Nigeria has been estimated at 1.48 trillion Nigerian naira (N1.48 trillion), or the equivalent of US\$ 9.5 billion. The total value of losses across all sectors of economic activity was estimated at N1.1 trillion, equivalent to US\$ 7.3 billion. The combined value of these damages and losses is N2.6 trillion, (US\$ 16.9 billion). The overall impact of the flood on real GDP growth in 2012 is estimat-

ed at 1.4 per cent (N570 billion, in nominal terms). This estimation is based on the impact of production losses across most sectors of the economy on real GDP growth in 2012, as a result of the floods.

From that data, it is clear that the greatest effects of the floods were concentrated most heavily on the destruction of physical and durable assets, the value of which represents 57 per cent of the flood's total impact. Production losses make up the remaining 43 per cent.

The magnitude of the flood's effects can be gauged by observing that the value of destroyed assets represents 35 per cent of the annual value of Nigeria's gross fixed capital formation for 2011, which indicates that, if all other construction activities were stopped and the country's capacity were to concentrate solely on reconstruction, it would take nearly three years to achieve the complete reconstruction of flood-destroyed assets. Furthermore, the value of production losses caused by the floods represents three per cent of the value of all goods and services produced in the country in the year preceding the floods. It can be concluded that the 2012 floods had a significant negative effect on the country's capital assets and that the disaster negatively affected overall economic performance.

Macro- and microeconomic impacts

The flood affected several sectors of the economy; its overall impact on real GDP growth in 2012 is estimated at 1.4 per cent (N570 billion, in nominal terms). This estimation is based on the impact on real GDP growth of production losses and extraordinary spending after the disaster across most sectors of the economy. The balance of payment projections for 2012 by the Central Bank of Nigeria indicate that, prior to the floods, the current account balance was in surplus and projected to improve by about 1.2 per cent of GDP in 2012, mainly due to a projected increase in oil exports.

However, in view of the losses associated with the flood, the current account surplus was estimated to improve by only about 0.6 per cent of GDP in 2012.

The repercussions of the floods on inflation were mitigated by the Government's efforts to address the short-term impact through the release of grain from the strategic food reserves and the distribution of high yielding and flood-resistant grain varieties to affected farmers for mid-season planting, once the flood waters receded. Nevertheless, the average inflation rate is likely to remain in the double digits into 2013 but should trend downwards slightly compared to 2012 levels given the continued focus on fiscal consolidation by the federal government and the activist monetary policy stance of the Central Bank of Nigeria.

The current forecast of the floods' impact on the fiscal sector takes into consideration losses in tax revenues that could result from a decline in economic activities, as well as the corresponding increase in expenditure as a result of reconstruction activities. A decline of N280.6 billion is expected from the productive sectors, broken down as follows: N225 billion from the oil industry, N50.8 billion from the commerce subsector, and N4.8 billion from the manufacturing subsector. This may result in a N27.75 billion decline in tax revenue, or 0.07 per cent of GDP, in 2012. Concerning the equivalent employment losses and imputed personal income decline of workers in the productive sectors of agriculture, commerce, and manufacturing, the findings show that workers lost a total of 27,602,524 working days in the agriculture sector, amounting to N9,917 million. A total of 211,500 working days were lost in the trade SMEs, amounting to N93.9 million, while a total of 42,670,440 working days, amounting to N28,418.5 million, were lost in micro-trade. The total number

of working days lost in the manufacturing sector, including days lost by SME employees, micro-enterprise owners, and micro enterprise workers, was 20,259,720, amounting to N16,904.0 million.

Environmental impact

During and immediately after the flood, virtually all sources of domestic water supply were highly polluted and toxic water became the only water available to most people. Many water treatment plants, boreholes, dams, reservoirs, irrigation facilities and other water resource infrastructure were adversely affected by the floods. Hydrometric stations that provide basic information for water resource management were also submerged, damaged or washed away.

In most rural areas, fertile topsoil was washed away by the flood thus reducing the value of the remaining soil. Several economically valuable trees and wild plants were inundated and died after prolonged submergence and suffocation. A wide range of fauna communities were also destroyed, with burrowing animals being heavily affected. Snakes invaded houses built close to riverbanks in search of refuge and crocodiles and hippopotamuses left their natural habitats in the Niger and Benue rivers and also entered people's homes.

Social impact

According to a report by the Government of Nigeria (2013) on the 2012 flood disaster, the impact on the social sector was enormous. The effects on housing were considerable; in some instances, floodwaters rose to two metres (6 feet 6 inches) and higher, pulling down a great number of traditional (mud) houses, affecting sandcrete houses and fenced walls, destroying household goods, and leaving many residents homeless and in distress. An assessment of the flood impact in the 12 states most affected showed that a total of 1,337,450 houses were either fully or partially destroyed. Of these, 73 per cent (or 1,007,367) were

traditional dwellings, while modern sandcrete homes made up only 27 per cent of the houses affected. The total estimated cost of damage to houses in those 12 states was N1,156 billion, while total losses amounting to N48.9 billion.

The floods hampered the education sector's ability to deliver on its objectives. In many states, schools were closed for at least two months. State ministries of education officially closed schools because either the actual buildings were flooded or access roads to the schools were blocked by floodwaters, and because of the high risk of students drowning in the school area. Some schools attempted to operate in rented buildings or tents, but this was not necessarily conducive to learning and the quality of education was still affected. Further, those children who attended classes outdoors or in tent were more vulnerable to health risks, from the common cold to more severe diseases, such as pneumonia. Many of the schools that reopened lost all their furniture, along with teaching and learning materials, making it difficult for both teachers and students to resume their normal routines, thus further compromising edu-

cation quality. Demand for education was also impeded as some children whose schools remained open dropped out temporarily because either they or their parents did not want to risk crossing the floodwaters to reach the school. Some schools were used as temporary shelters for families whose houses were submerged or destroyed. In the six states that reported on this issue, more than 200 schools were being used as temporary shelters at the time of the assessment. Some of them consequently sustained damage due to the overuse. It was even reported that, in some schools, displaced people used school benches as firewood.

In the affected areas, 11.4 per cent of primary, 24.8 per cent of secondary and 8.3 per cent of tertiary health facilities were damaged or destroyed by the floods, interrupting basic preventive and curative health services and reducing access to appropriate health care. The populations displaced by flooding were at immediate and high risk of outbreaks of waterborne and foodborne diseases. They were also at high risk of transmission of measles and meningitis and increased incidence of acute respiratory infections, especially pneumonia, in children under five years of age. There was also a proliferation of vector breeding sites, increasing the medium-term risk of malaria and yellow fever. Further, the likelihood of malnutrition also increased, owing to difficulty in accessing food and medication.

4. Mainstreaming of disaster risk reduction into development frameworks in Nigeria

4.1 Institutional arrangements for disaster risk management in Nigeria

Nigeria operates a three-tier style of government. There are federal, state and local governments, which are independent of one another.

4.1.1 National level

At the national level, NEMA was established in 1999 by an Act of Parliament (Act 12, as amended by Act 50 of 1999) as the coordinating agency for disaster management in Nigeria. Due to the importance that the Government attaches to NEMA, its Governing Board is chaired by the Vice-President of Nigeria. The Governing Board consists of ministers and directors general of relevant government ministries, departments and agencies. A department for disaster risk reduction has also recently been established under NEMA.

In view of the importance that the Government attaches to disaster risk reduction as a strategy for ameliorating the impacts of disasters on the economy, NEMA is mandated, among other things, to:

- Formulate policies on all activities relating to disaster management in Nigeria and coordinate plans and programmes, for efficient and effective response to disasters at national level;
- Monitor the state of preparedness of all organizations or agencies that may contribute to disaster management in Nigeria;
- Collate data from relevant agencies so as to enhance forecasting, planning and field operations;

- Educate and inform the public on disaster prevention and control measures (Nigeria has 36 states, all of which are to establish a state emergency management agency).

At its inception, NEMA was predominantly a relief outfit mandated to procure humanitarian relief materials and distribute them to disaster victims. However, as time went by, the emphasis gradually shifted to disaster risk reduction; although it still retains its capacity to deliver relief to the needy.

NEMA, through advocacy and diplomacy, has helped states to establish state emergency management agencies, which now exist in 25 of the 36 states in Nigeria. Efforts are ongoing to ensure that the remaining states have functional emergency management agencies. NEMA has also vigorously pursued the establishment of local emergency management committees at the local government level. The establishment of the emergency management agencies and emergency management committees and the state and local government levels, respectively, is designed to complement NEMA's efforts to coordinate disaster management at the national (or federal) level, in accordance with the three tiers of government in Nigeria. NEMA has also created a community disaster risk reduction work force, popularly called the emergency volunteer vanguard, which is expected to coordinate disaster management at community level.

Through advocacy and high-level diplomacy, NEMA was able to influence the creation of the Senate Committee on Special Duties, which presents issues on disaster management to

the Senate. In addition to this, NEMA also influenced the creation of the House Committee on Disaster Management, which presents matters relating to disaster management to the House of Representatives. This arrangement ensures legislative support and goodwill towards disaster risk management in Nigeria.

A national platform on disaster risk reduction was also created by NEMA, in 2006, to ensure the participation of all interest groups in formulating and implementing disaster risk reduction policies. NEMA has also established effective working relationships with various development partners, such as UNDP, OCHA, World Bank, UNICEF, the International Federation of Red Cross and Red Crescent Societies, and a number of NGOs, for the purpose of fulfilling its core mandates of disaster risk reduction and emergency management. NEMA further established centres for disaster management training in six Nigerian universities for the purpose of human capacity-building in disaster management. The centres offer postgraduate diplomas and master's degrees in disaster management.

A national plan exists, entitled the Military Assistance to Civil Authorities Disaster Contingency Plan, that allows NEMA to involve the military in complex emergencies. NEMA also organizes community-based emergency managers, called the Grassroots Emergency Management Volunteers Corps. They are intended to serve as first responders to emergency situations in communities before the arrival of state emergency management agencies, local emergency management committees, NEMA and other emergency agencies.

4.1.2 State level

State emergency management agencies have been established at the state level and now exist in about two-thirds of all states. There are plans

to ensure that all states have such agencies. They have been created in order to coordinate emergencies at state level and, if necessary, to seek assistance from NEMA. They are also supposed to undertake disaster risk reduction activities so as to reduce the impacts of hazards that occur within a given state.

4.1.3 Local level

The Government wanted to see the establishment of local emergency management committees, but they have not yet come into being, owing to issues on sources of funding. NEMA is vigorously pursuing the establishment of those emergency management committees in order to strengthen that weak link in the chain of disaster management in Nigeria.

4.2 Main policies and strategies for disaster risk reduction

Since its creation, NEMA, working with other disaster management stakeholders in Nigeria, has developed a number of policies, plans and strategies for managing disaster risks in the country. Some of the most notable are described below.

National Disaster Response Plan

The National Disaster Response Plan was formulated in 2001 and was put in place to assist NEMA in its role as the coordinator of disaster response in Nigeria. The plan was given legislative backing through its formal endorsement by the Federal Executive Council.

The essential features of the plan are that it:

- a) Specifies the disaster response and recovery actions and responsibilities of the Government and its agencies.
- b) Outlines the Government response and the recovery resources available to sup-

port state and local governments and communities at the ward level to save lives, protect public health and safety, protect property, and assist victims in reconstruction efforts after a disaster.

- c) Describes disaster management facilities available within some NGOs that may be called upon for assistance in times of emergency.
- d) Describes the standard operating procedures or disaster response functions of relevant Government agencies and some NGOs;
- e) Assigns disaster response functions to various Government agencies and NGOs;
- f) Provides a coordinating framework for disaster response, with NEMA as its hub.

In addition, the plan identifies 13 support service areas required for disaster management: transport, communication, public works and engineering, fire fighting, information and planning, mass care, resource support, health and medical services, search and rescue, hazardous materials, food and water, energy, and military and police support.

The plan was activated at the time of the 2012 flood disaster and the subsequent coordination of the disaster was satisfactory. The aspect that required further strengthening was community participation, which was largely missing in the plan and expected responses; there was hardly any role specifically earmarked for communities. This aspect should be given greater consideration in any revision of the plan.

National Disaster Management Framework

The National Disaster Management Framework was developed to serve as a regulatory guideline for the effective and efficient disaster management in Nigeria. The framework defines measur-

able, flexible and adaptable coordinating structures, and aligns key roles and responsibilities of disaster management stakeholders across the nation. The framework has the following attributes:

- a) It describes specific authorities and best practices for managing disasters;
- b) It explains a paradigm shift from response and recovery in disaster management to disaster risk reduction;
- c) It offers a holistic approach to disaster management and serves as a legal instrument to address the need for consistency among multiple stakeholders;
- d) It is a coherent, transparent and inclusive policy for disaster management in Nigeria.

All relevant disaster management stakeholders can use the document as justification for organizational preparedness, using the roles that have been assigned to them in it. The framework ensures a humanitarian response in all sectors and that the areas of camp management, water sanitation and hygiene, basic education, food and nutrition, logistics, telecommunications and security are addressed. It also serves as a link between national, regional and international humanitarian actors. The framework is, therefore, a foundation upon which all plans, policies, programmes and procedures for disaster management can be created, developed or sustained. The framework was developed to consider the following: institutional capacity; coordination mechanisms; disaster risk assessment; disaster risk reduction; disaster prevention, preparedness and mitigation; disaster rehabilitation; and facilitators.

The framework has already been implemented to address various disasters in Nigeria and has worked effectively in virtually all cases. However, there are some constraints, which stifle the full implementation of the framework; the most prominent is the contention between federal and state

level emergency agencies over who has authority at incident scenes. A popular example is the insistence of the Lagos state emergency authority that it take charge of an incident scene in the Lagos area, instead of the federal authority (i.e. NEMA) in Abuja. This issue needs to be properly addressed to avoid friction and possible litigation in the future.

National Contingency Plan

The National Contingency Plan focuses on the hazards that have highest probability of occurrence and greatest severity, such as flooding, conflicts, drought and disease epidemics. The plan addresses the readiness of disaster management stakeholders in the country and defines the modus operandi for engaging international assistance if and/or when required.

The plan emphasizes sectoral responses in the areas of camp management; basic education; food and nutrition; logistics and telecommunication; security and protection; water, sanitation and hygiene; health; and emergency shelter and non-food items. This plan has been implemented in a couple of hazard cases and has performed satisfactorily; a memorable test case was the 2012 flood disaster.

Armed Forces of Nigeria Pandemic Contingency Plan

This plan was developed by the Nigerian Armed Forces to serve as a guideline for responding to global pandemic situations. The purpose of the plan is to provide a framework for response by the Armed Forces to accomplish the following objectives:

- a) Contribute to an effective national response to a severe global influenza pandemic;
- b) Reduce influenza-related morbidity and mortality;
- c) Minimize disruption of critical social and medical services during a pandemic;

- d) Mitigate pandemic-related impacts on critical infrastructure;
- e) Support post-pandemic recovery operations;
- f) Coordinate with the armed forces of neighbouring countries through ECOWAS to plan synchronization and mutual support in response operations during a pandemic.

The plan is based on the following planning assumptions:

- a) Pandemic influenza will affect multiple communities across Nigeria simultaneously;
- b) Susceptibility to pandemic influenza virus will be universal among all population groups, including military personnel;
- c) Efficient and sustained person-to-person transmission of a novel virus signals an imminent pandemic (a novel virus being one that has not been previously found in the human population and therefore one for which humans have little, if any inherent immunity);
- d) The clinical disease attack rate will be 25 per cent or higher in the overall population, including military personnel, during the pandemic. Illness rates will be highest among school-aged children (about 40 per cent) and decline with age. Among working adults, an average of 25 per cent will become ill during a community outbreak;
- e) Some persons will become infected but not develop clinically significant symptoms. Asymptomatic or minimally symptomatic individuals can transmit infection and develop immunity to subsequent infection;
- f) Of those who become ill with pandemic influenza virus, 50-60 per cent will seek outpatient medical care but, due to enor-

- mous demand for healthcare resources, most infected persons will be treated at home. This will require families to provide in-home care for ill family members;
- g) Pandemic-related anxiety will cause increased psychogenic and stress-related illness, compounding the strain on health-care facilities;
 - h) Risk groups for severe and fatal infection will include infants, the elderly, pregnant women, and persons with compromised immune systems and/or chronic medical conditions;
 - i) Once a pandemic influenza virus is identified, it will take from four to six months to produce an initial vaccine and longer to produce and distribute sufficient quantities to effectively impact the pandemic;
 - j) Once produced, the vaccine will be distributed in accordance with plans and guidance developed by WHO;
 - k) Lack of access to anti-viral medications and vaccines and perceptions about inequitable distribution is a potential cause of public concern or even social unrest;
 - i) Workplace absenteeism will depend on the severity of the pandemic. In a severe pandemic, absenteeism attributable to illness, the need to care for ill family members and fear of infection may reach 40 per cent during the peak weeks of a community outbreak. Certain public health measures (e.g. closing schools and child-care facilities, quarantining household contacts of infected individuals) are likely to increase rates of absenteeism;
 - m) In an affected community, a pandemic outbreak “wave” will last about six to eight weeks. These outbreaks will reoccur multiple times within a community;
 - n) Most governments will not close their borders or severely limit travel, although significant entrance and exit screening will be mandated at border entry and exit locations and will cause significant travel delays;
 - o) Commercial air transportation will be limited as a result of flight cancellations due to airline crew availability, pandemic-related infrastructure limitations and fiscal challenges. Flights to some countries may be completely unavailable;
 - p) During a severe pandemic wave, local availability of food, healthcare, fuel, and other everyday items will be limited owing to hoarding and pandemic-related impacts on distribution and transportation systems;
 - q) Movement of populations both within nations and across international borders will significantly impact societies, altering the requirements for health care, shelter, food, and security.

The Plan was developed in 2013 but has not yet been put to the test. It is expected, however, that as the Nigerian Armed Forces run exercises with this plan, they would be able to perfect all the necessary arrangements for handling any pandemic that may enter the country.

Military Assistance to Civil Authorities Disaster Contingency Plan

This disaster management plan is different from the Armed Forces of Nigeria Pandemic Contingency Plan and focuses on the nature of military assistance to civilian authorities in times of major disasters (natural or man-made) and national emergencies. This type of response falls under the command and control of the President and NEMA, as the agency delegated by the President to supervise the response of all government ministries and agencies.

The plan is intended to guide the response of the Armed Forces as they assist the civil authorities following any disaster event, including those most commonly experienced in Nigeria: epidemics, floods, wildfires, storms and droughts. The purpose of the plan is to provide a framework for that response in order to accomplish the following objectives:

- a) Contribute to an effective national response to a major disaster event affecting Nigeria.
- b) Mitigate disaster-related suffering and mortality.
- c) Minimize disruption of critical social services during a disaster event.
- d) Mitigate the disaster-related impact on critical infrastructure.
- e) Support post-disaster recovery operations.
- f) Coordinate with the armed forces of neighbouring countries through ECOWAS to plan synchronization and mutual support in response operations during a disaster event.

The plan makes the following assumptions:

- a) The management of any disaster will be based on the principles and methodologies contained in current national disaster management plans and policies.
- b) The combined expertise and capabilities of all levels of government, the private sector, agencies of the United Nations System and NGOs will be required to respond to major disaster events.
- c) While national level planning and support is critical, disaster response is best man-

aged at the lowest possible jurisdictional level and therefore the Nigerian Armed Forces must be prepared to provide support to state and local government.

- d) Multiple disaster events may occur concurrently, with little or no advanced warning.
- e) A major disaster may impact a large geographic area of Nigeria, encompassing multiple communities.
- f) A major disaster may impact multiple countries simultaneously, thus creating a regional or even global event.
- g) During a major disaster event impacting a large geographic area, movement of populations, both within nations (internally displaced persons) and across international borders (refugees) may significantly impact societies, altering the requirements for healthcare, shelter, food, and security.
- h) Depending on the severity and geographic extent of a disaster, international aid organizations and agencies of the United Nations System (e.g. WHO, WFP) may be overwhelmed by disaster response requirements, limiting the amount of aid provided to Nigeria.

This Plan was developed in 2013 and has not been put to the test. It is hoped that it will serve its purpose when it is put into action. This study shows that only a few government and non-governmental organizations own these plans and policies. The bulk of them emanate from NEMA and some development partners such as UNDP and UNICEF, although NEMA works in concert with other government ministries and agencies (e.g. health, environment, and the military) to evolve those plans. Table 10 shows some of the policies that government institutions and development partners are implementing.

Table 10: Disaster risk reduction policies owned by government ministries, departments and agencies and by development partners

Ministries, departments and agencies	Development partners
National Action Plan on Disaster Risk Reduction National Contingency Plan National Disaster Management Framework National Disaster Response Plan	Disaster Reduction Plan Health and Safety Action Plan

This study shows clearly that government ministries, departments and agencies have several disaster management plans and policies, which demonstrates their willingness to mainstream disaster risk reduction. However, implementation of those plans and policies remains a challenge. The main constraint is a lack of awareness of the crucial role that disaster risk reduction plays in national development. It is not usually considered as a relevant variable in economic development planning and implementation, to the extent that the medium-term national economic development plan, Vision 20:2020, which was developed in 2009, does not make any reference to disaster risk reduction. The level of education on and public awareness of disaster risk reduction in Nigeria is low, including among politicians and bureaucrats. The outlook is improving, however, as a result of NEMA’s vigorous advocacy in recent years.

Development partners also have policies and plans that they hope to use in mainstreaming disaster risk reduction in Nigeria. Their formulation by the development partners have been influenced by global trends and global coordinating bodies on disaster risk management. It is gradually becoming universal practice for every country to have such plans and policies in order to significantly reduce the incidence of disasters. This process seems to have been driven by UNISDR and is supported by the World Bank and others.

4.3 Approaches and tools for mainstreaming disaster risk reduction in Nigeria

Results obtained from both primary and secondary sources indicate that disaster risk reduction mainstreaming in Nigeria uses various approaches and tools.

4.3.1 Approaches used

National Platform for Disaster Risk Reduction:

At this multisectoral, multi-stakeholder meeting, issues on disaster risk reduction and its integration into the various sectors of the national economy are discussed by stakeholders. This is the foremost approach used in mainstreaming disaster risk reduction into development plans in Nigeria, owing to the broad based nature of the disaster risk reduction issues brought to the table for discussion and the level of representation of the different sectors. At these meetings far-reaching decisions are taken, to then be implemented across board. For example, the early warning system for floods in Nigeria was developed at this forum: the Nigerian Meteorological Agency provides annual rainfall prediction for the year at the beginning of the rainy season and the information is then disseminated to other stakeholders by NEMA through workshops, public awareness campaigns and publications. This approach has helped to reduce flood incidence in some communities in the country.

Capacity-building

Relevant skills and knowledge on disaster risk reduction are continually passed on to particular groups in different sectors for effective risk management. NEMA periodically organizes workshops for stakeholders on different thematic areas relating to disaster risk reduction in order to build their human capacity for disaster risk management. For example, NEMA, in collaboration with the World

Bank organized a training workshop on post-disaster damage and loss assessment and, in collaboration with the United Nations Platform for Space-based Information for Disaster Management and Emergency Response, organized a workshop on the use of satellite technology for disaster management. NEMA also established centres for disaster risk management in six Nigerian universities for disaster risk management capacity-building at certificate, postgraduate diploma and master's degree levels. The centres also organize conferences, seminars and training workshops for that capacity-building.

Thematic disaster risk reduction platforms

A secondary approach is sometimes used to achieve the same purpose, which involves mainstreaming disaster risk reduction into national plans through various sub-themes such as gender, the environment, and education, etc. For example, mainstreaming disaster risk reduction into primary and secondary school curricula was achieved through several meetings and workshops organized on education. However, the teaching of disaster risk reduction at those levels is yet to commence owing to bureaucratic bottlenecks; the National Council on Education has not approved the implementation of the new curricula. NEMA also plays an active support role in climate change adaptation programmes across Nigeria.

Institutional strengthening

Through advocacy, NEMA has facilitated the establishment of state emergency management agencies and continues to vigorously pursue the establishment of local emergency management committees. A lack of political will and paucity of funds have made some state governments reluctant to establish state emergency management agencies, however, which are supposed to complement the efforts of NEMA at the federal level. Similarly, local government councils are not willing to establish emergency management com-

mittees, apparently because of the financial implications. However, NEMA is working hard to ensure that both entities are established and operational at the state and local levels. NEMA also provides financial support to six federal universities in Nigeria in order for them to achieve their mandate of training the numbers required for disaster risk management.

Coordination and collaboration

NEMA, other government agencies, development partners and NGOs are actively involved in the coordination and/ or collaboration of disaster risk reduction activities in order to achieve disaster risk reduction mainstreaming in Nigeria. This facilitates human and material resource mobilization across a wide spectrum of potential funding sources. NEMA is collaborating with the National Space Research and Development Agency in order to acquire the necessary satellite imagery for hazard risk assessments and post-disaster damage assessments. NEMA also collaborates with the Nigerian Meteorological Agency for the dissemination of weather forecasts and flood mitigation. The Agency partners with six Nigerian universities for the training of disaster risk management personnel. During the 2012 flood disaster, the World Bank and UNDP helped to coordinate the post-disaster needs assessments. The International Federation of Red Cross and Red Crescent Societies is also an active partner of NEMA in disaster management in Nigeria.

4.3.2 Common tools

Government ministries, departments and agencies use appropriate tools for data generation and input into plans at the sectoral level. The Nigerian Meteorological Agency, for example, uses World Meteorological Organization standards for data collection and analyses; it primarily does so in order to standardize its methodologies so that its data is comparable with those of other countries. The Meteorological Agency maintains a network

of weather stations in Nigeria that provide data for weather forecasts and early warnings against disasters. Before the onset of the rainy season, it publishes weather forecasts for the year, which assist national planning in the areas of agriculture, water resources and disaster management. Integrating climatic data into national plans has considerably reduced agricultural failure, flood incidence, dam collapse and weather-related diseases.

ECLAC methodology was used by NEMA in assessing the damage and losses resulting from the 2012 flood and the World Bank provided assistance in that regard. The adoption of ECLAC methodology ensured that the assessment process conformed to international standards. The results obtained from the assessment were used in developing a recovery framework for the sectors that were affected; the recovery plan was integrated into the 2014 national budget and the medium-term national development plan (Vision 20:2020). UNDP also developed a methodology for a human recovery needs assessment, which was used together with the data on damage and losses to produce the post-disaster needs assessment.

The Federal Ministry of Water Resources and the National Hydrological Service Agency use standard hydrological tools in their data collection and presentation. A network of river gauges has provided useful information for developing early warning systems on river stage and probability of river flooding, which has worked successfully to reduce flooding in some areas.

Remote sensing and geographic information system are also commonly used in hazard risk assessment in Nigeria. NEMA and the university centres for disaster risk management have laboratories with sufficient capabilities for geographic information system analyses and most of the laboratories have appropriate data extraction and analysis software.

NEMA collaborates with the National Orientation Agency in using the technique of crisis resolution to manage man-made hazards. The two agencies have organized several workshops across the country on the issue of crisis resolution, which has measurably helped to reduce some aspects of man-made disasters.

4.4 The extent and challenges of disaster risk reduction mainstreaming in Nigeria

4.4.1 The extent of disaster risk reduction mainstreaming

The extent to which disaster risk reduction has been mainstreamed into development plans in Nigeria is low. Not much has been achieved, in part, owing to insufficient knowledge of or education on the key role of disaster risk reduction in sustainable development. This perhaps explains why the current medium-term national development plan, Vision 20: 2020, does not address disaster risk reduction issues. At the time that the development plan was being formulated in 2009, there was very little awareness of disaster risk reduction in Nigeria and, although NEMA had been established in 1999, it was essentially still a humanitarian relief agency of the Government. Its operations primarily focused on reacting to emergencies and disasters and it was not until around 2009 that NEMA underwent a paradigm shift from a reactive to a proactive agency. It was then that NEMA gradually began to introduce elements of disaster risk reduction into its operations, initiated the establishment of the six university centres for disaster risk management and started organizing workshops on disaster risk reduction and climate change adaptation. It was only in 2014, however, that a department for disaster risk reduction was created within the Agency. The attention of the National Planning Commission was drawn to the

absence of disaster risk reduction in the VISION 20:2020. There is a promise to incorporate disaster risk reduction into the plan during its mid-term review in August 2014.

In spite of the late introduction of disaster risk reduction into national and sectoral development plans and its subsequent implementation, some achievements have been made in its mainstreaming in Nigeria. Some of the more notable achievements are listed here:

Mainstreaming early warning systems for hazards into the national economy

Early warning systems are effective tools for disaster risk reduction and a number have been developed for integration into various sectors of the economy, including:

- Development of annual weather forecasting by the Nigerian Meteorological Agency at the beginning of each rainy season. This serves as an early warning system for planning against flood disaster and other related hydrometeorological hazards and has helped to reduce damage and losses in the agricultural, transport and housing sectors.
- The Hydrological Services Agency has also developed an early warning system through its network of river gauges. The system is linked to the agriculture, water resources, environment and transport sectors and has helped to reduce damage and losses in these sectors as a result of flood events.

Mainstreaming disaster risk reduction into the education sector

In the education sector, disaster risk reduction is being mainstreamed into primary and secondary school curricula. The mainstreaming process is handled nationally by the Nigerian Education

Research and Development Council and is an initiative of NEMA. The syllabus has been completed but government approval is still needed in order to commence its incorporation into courses in these educational institutions. Disaster risk reduction awareness and risk reduction activities are being included in lesson plans, though much remains to be done to integrate the curricula at the local level and to train teachers. The initiative is intended to build human capacity in disaster risk reduction through educating children to know what to do before, during and after disasters and thus to reduce loss of life as a result of disasters..

Since 2009, NEMA has established six centres for disaster risk management in Nigerian universities, for the purpose of building capacity in disaster risk reduction and has developed and delivered master's Degree and postgraduate diploma programmes in disaster risk management and development studies. Those universities are: University of Maiduguri; Ahmadu Bello University; University of Nigeria, Nsukka; Federal University of Technology, Minna; University of Port-Harcourt; and University of Ibadan. The initiative is intended to produce personnel to work in disaster risk management who will facilitate the mainstreaming of disaster risk reduction in Nigeria.

The Government of Nigeria is also implementing a safe schools project, which it is hoped will reduce damage to building and loss of life following disasters. Aspects of the project include the provision of potable water to stem the tide of cholera outbreaks, erection of fences and provision of security measures to reduce terrorist attacks.

Formulation of disaster risk reduction policies and plans

Mainstreaming disaster risk reduction into national development plans logically begins with the formulation of disaster risk management plans, policies and strategies that will drive the process. NEMA has successfully coordinated the formulation of a number of such plans and policies in

Nigeria, which have been mainstreamed into different sectors of the economy for the purpose of reducing the impact of a hazard and the related damage and losses. A prominent example in the environment sector is the environmental impact assessment policy, which requires that every major development project must be accompanied by an impact assessment report. The policy applies to all major projects in all sectors of the economy and is designed to forestall the adverse effects of a project on the environment. The Ministry of Environment is also responsible for the national policy on drought and desertification and the drought preparedness plan, which are currently being used to reduce the incidence of drought and desertification in Nigeria. The national policy on drought and desertification was preceded by a national action programme to combat desertification and mitigate the effects of drought, developed in 2000, which was developed in accordance with the United Nations Convention to Combat Desertification as a key operational tool for the implementation of the Convention.

The Ministry of Environment also has a number of regulations, including building codes, urban plan and pollution control, that are supervised by the National Environmental Standards and Regulations Enforcement Agency, which has responsibility of enforcing environmental laws, regulations and standards to deter people, industries and organizations from polluting and degrading the environment. These regulations are meant to guide the use of the environment such that land-use practices have minimal negative impacts on the environment. In spite of these regulations and policies, however, unwholesome land-use practices still abound in the country. Houses are built without due regard to building codes, industries discharge factory effluent into public drains, informal settlements litter the landscape and projects

are executed without approved environmental impact assessments, all of which indicates a problem of lack of adequate enforcement of the regulations.

The Ministry of Health has also introduced policies that aim to reduce the number of deaths from major epidemics that occur periodically in the country. There is, for example, a hand washing and safe drinking water campaign, developed by the Ministry and UNICEF, that seeks to reduce outbreaks of cholera. There is also the compulsory immunization programme aimed at reducing the number of deaths from measles, polio virus and meningitis. These policies are successfully reducing the incidence of these key epidemics in Nigeria.

NEMA and the Ministry of Environment are jointly championing climate change adaptation strategies in the country, including retrofitting houses, adjusting land-use practices and adapting livelihoods (box 1). These strategies are aimed at reducing damage and losses which are likely to result from hydro meteorological hazards.

Box 1: Climate change adaptation strategies

Communities as active agents in climate change adaptation: building Nigeria's response to climate change (BNRCC project)

All over Nigeria, communities are actively engaged in climate change adaptation activities in their attempt to relate to their changing environment. For example, between 2008 and 2011, under the BNRCC project, a number of pilot projects were carried out to support climate change adaptation initiatives in communities across the major ecological zones of the country. The communities include Kwaikong and Dashe (Plateau state), Falgore (Kano state), Daudu (Benue state), Bebi, Wula, Esukldebe, AkwaEsukAgoilbam and IkoEsai (Cross River state), Gorori (Jigawa state), Bursali and Billeri (Bauchi state), Tosha (Yobe state), and Sansan (Borno state).

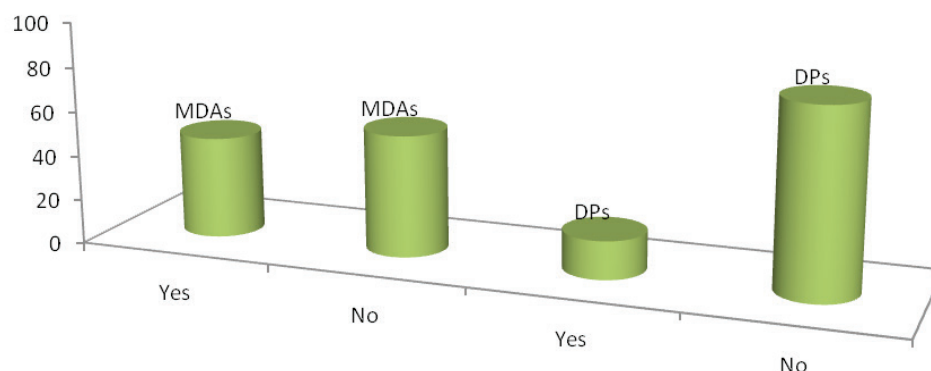
In these communities, people were engaged in a wide range of climate change adaptation activities, including water harvesting, construction of earth dams, dry season irrigation, adoption of improved seeds and early maturing crops, use of fuel efficient wood stoves, bee keeping, snail farming, tree planting, use of simple weather forecasting tools, erosion control, sand dune stabilization, establishment of fodder production farms, and fish farming. Such initiatives should be encouraged and deserve external support, as they serve as models for other regions and countries.

See details in www.nigeriaclimatechange.org and www.nestinteractive.org.

As a result of active participatory discussion and contributions by disaster management stakeholders across the country the National Plan of Action on Disaster Risk Reduction was developed in 2006; it is a very detailed document, which largely matches the disaster risk reduction activities mentioned in the Hyogo Framework for Action. NEMA is responsible for the Plan's implementation, which rests on a set of guiding principles for disaster risk reduction. Financial and technical support from the Government and development partners is required not only to fully implement the Plan of Action, but also to conduct a review of the Plan in the light of emerging challenges. Several other plans and policy documents exist, including the National Disaster Management Framework, which serves to review the National Disaster Response Plan. The Framework was drafted through a broad-based national consultative process with public hearings and complements the work of NEMA. In view of emerging challenges, the Framework also needs to be reviewed.

Also worthy of note is the establishment of National Platform for Disaster Risk Reduction, which acts as a stakeholders' forum for all disaster risk managers in all sectors and was created as a disaster risk reduction coordination mechanism in 2009, under the coordination of NEMA. Several Government ministries, departments and agencies, such as the police, national and international NGOs, the media, and universities, also participate in the National Platform, although in practice it meets rarely. There is a need for more regular meetings in order to review existing policies, formulate new ones and implement plans and programmes. NEMA has a working relationship with a number of disaster risk reduction stakeholders—both within and outside of the country and, as the coordinating agency for disaster management and focal point for implementation of the Hyogo Framework for Action in Nigeria, it drives forward the process of disaster risk reduction based on consultation and perceived gaps in the sector. This forum has produced 12 resource materials for awareness-raising and capacity-building among different population groups in Nigeria. The ma-

Figure 2: Entities with disaster risk reduction policies and plans



Note: MDAs = ministries, departments and agencies; DPs = development partners

terials include those that have been published by agencies of the United Nations System and subsequently adapted by NEMA for use in a local context.

This study shows that only a few Government ministries, departments and agencies and some development partners (including NGOs) have disaster risk reduction policies and plans in place (figure 1).

The ministries, departments and agencies list among their policies the National Action Plan on Disaster Risk Reduction, National Contingency Plan, National Disaster Management Framework and National Resource Plan. Notable policies developed by development partners include a disaster reduction plan and a health and safety action plan. Similarly, the ministries, departments, agencies and development partners have participated in the development of various plans and policies on climate change adaptation in Nigeria (table 11). It is difficult to separate the policies and plans developed by the ministries, departments and agencies from those developed by development partners as, in most cases, both groups work together to produce these plans. The development of such plans is a logical first step in mainstreaming disaster risk reduction into national development plans and is tacit acknowledgement of the value of disaster risk reduction strategies in reducing damage and losses and, ultimately, in facilitating economic growth. Although progress has been slow, there are strong indications that further plans and policies are due to be adopted in the foreseeable future.

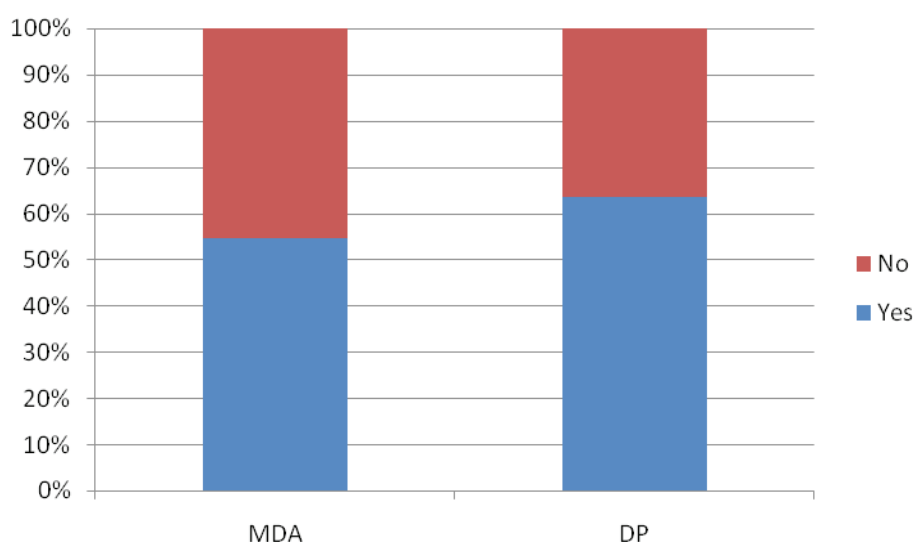
Table 11: Involvement of establishments in developing climate change adaptation plans and policies in Nigeria

Ministries, departments and agencies	Development partners
Participated in developing the climate change adaptation policy	National Climate Change Policy
National Adaptive Plan Of Action	National Adaptation Strategy and Plan of Action on Climate Change
Green Wall for the Sahara	
National Climate Change Policy	

Data collected for this study show that government institutions are less involved in disaster risk reduction issues in Nigeria than development partners (including international and national NGOs); 54.5 per cent of Government ministries, departments and agencies are involved in disaster risk reduction activities while the figure is about 63.3 per cent for development partners (figure 2).

The higher level of involvement by development partners in disaster risk reduction than ministries, departments and agencies is informed by the former's greater awareness of disaster risk reduction issues. The implication that development partners are more conscious of mainstreaming disaster risk reduction than the ministries, departments and agencies is not healthy for the mainstreaming process, as it is the latter who are supposed to take the lead in that regard and to ensure meaningful progress in disaster risk reduction mainstreaming in Nigeria.

Figure 3: Level of involvement in disaster risk reduction activities



Note: MDA = ministries, departments and agencies; DP = development partners

It was observed, by and large, that not much has been achieved in mainstreaming disaster risk reduction into national development plans; some plans for mainstreaming exist at the sectoral level but there are hardly any at the national economic level. The four plans listed under ministries, departments and agencies in table 11 all fall at the national, or federal, level; there are hardly any at the state or local government levels. For the country to effectively mainstream disaster risk reduction, there needs to be both vertical and horizontal integration of disaster risk reduction policies and plans across all levels of government and all sectors.

4.4.2 Challenges of disaster risk reduction mainstreaming in Nigeria

Mainstreaming disaster risk reduction into development plans in Nigeria faces many challenges. The responses received to questionnaires and in interviews with key stakeholders shed some light on these challenges. Among ministries, departments and agencies and development partners,

the greatest challenge to mainstreaming is the low level of awareness among the people and lack of adequate sensitization by government and non-governmental agencies (table 12). This problem appears to be most profound among rural populations and those with poor or no education, who make up a large proportion of society. Such a tendency has the capacity to significantly hinder the process of disaster risk reduction mainstreaming in the country.

The second most common challenge, which cuts across all sectors and stakeholders, is inadequate funding. NEMA also asserted that inadequate funding is a major challenge; the state emergency management agencies are grossly underfunded while the local emergency management committees are yet to take off as institutions. It was also observed that a lack of adequate staff, insufficient knowledge about disaster risk reduction and low institutional capacity also militate against the effective and adequate mainstreaming of disaster risk reduction into national development plans in Nigeria.

Table 12: Challenges hindering disaster risk reduction implementation

Challenges	Percentage
Lack of adequate staff on disaster risk reduction	16%
Inadequate funding	19%
Lack of synergy and proper coordination	11%
Poor institutional capacity	16%
Low awareness and sensitization	22%
Limited knowledge on disaster risk reduction	16%

In addition to the data presented from both primary and secondary sources, observations also revealed that effective disaster risk reduction mainstreaming in Nigeria is affected by the following issues:

- Weak capacities at the lower levels and communities.
- Unavailability of contingency plans for various hazards.
- Emergency management is still handled on an ad-hoc basis in some states.
- Inadequate funding and support in some states; the funds presently allocated are grossly inadequate for the challenges of modern disaster risk management. There is the need to urgently review and increase funding to improve disaster risk management mechanisms.

While considerable progress has been made in disaster risk reduction at the national level, there have been limitations at the lower levels of governance. At the national level, there are policies, plans and institutions that are driving the disaster risk reduction process, not least its mainstreaming into the education sector. However, at the state

level, only 22 states have emergency management agencies backed by legislation. Some states still have emergency relief agencies and others adopt disaster management procedures on an ad hoc basis.

4.5 Implementation of disaster risk reduction initiatives as part of development frameworks

A number of disaster risk reduction programmes, activities and projects have been implemented to date by the Government, non-governmental organizations and development partners as part of Nigeria’s development frameworks. Some notable examples are outlined below.

4.5.1 Creation of National Emergency Management Agency

NEMA was established by Act 12, as amended by Act 50 of 1999, under the Office of the Vice-President. This arrangement enables NEMA to have greater attention from the Government for a more effective emergency response and disaster risk reduction. However, funding of disaster risk reduction projects and plans is still a problem at the federal, state and local government levels. At the federal level, NEMA is requesting for more funds to bring its operations to acceptable international standards, with timely and adequate emergency responses. This of course requires more state-of-the-art equipment, information technology and trained personnel. Trained personnel with the necessary skills regarding disaster risk reduction are, in particular, in short supply at all three levels. These are all obvious hindrances to effective disaster risk reduction mainstreaming in the country.

4.5.2 Establishment of state emergency management agencies and local emergency management committees

NEMA is at the forefront of advocating the establishment of state emergency management agencies and local emergency management committees at the state and local government levels, respectively. However, despite the aim to ensure disaster management at those levels, only about 22 of the 36 states in Nigeria have emergency management agencies and there are no emergency management committees at the local level. The inability of state and local government authorities to establish those entities in their areas of jurisdiction creates gaps in disaster risk management and consequently leads to a low level of disaster risk reduction mainstreaming at community level. In addition, such gaps place great burden on NEMA, which has to ensure adequate emergency response across the nation's land area of over 950,000 square kilometres while operating from Abuja.

NEMA is also actively engaged in the establishment of community-based emergency responders, known as the Grassroots Emergency Management Volunteers Corps. The programme has been recognized as a veritable tool for disaster risk reduction and is being pursued vigorously. The Corps was initiated in 2008 with a view to achieving the goal of extending disaster management services to the grassroots level and has so far spread to about 23 states with around 6,400 registered volunteers.

4.5.3 Hazard risk assessment and development of early warning systems

Hazard risk assessment is not very prevalent at present; within government institutions, only 36.4 per cent of questionnaire respondents from ministries, departments and agencies are engaged in hazard risk assessments while for development

partners the figure is 26.7 per cent. The specific areas where ministries, departments and agencies and development partners are engaged in hazard risk assessments are shown in table 13. This observation implies that much of the hazard risks faced by communities have not been adequately assessed and it is highly probable, therefore, that many people may be living at risk of hazards without knowing it. This increases their vulnerability profiles and increases disaster risks. Knowing the hazard risks in a community helps to mitigate disaster risks, but this can only be achieved if concerted efforts are made across all sectors to assess and reduce the hazard risks and mainstream disaster risk reduction.

Table 13: Specific areas of hazard risk assessment by ministries, departments and agencies and development partners.

Ministries, departments and agencies	Development partners
Vulnerability assessment	Baseline studies
Emergency preparedness and response and disaster risk reduction assessments	Partnership and collaboration Research
Availability of spatial data	
Provision of weather forecasts and prediction	
Identification and mapping of disaster-prone areas	
Field assessments	

In the area of early warning activities, ministries, departments and agencies are again more involved than the development partners, as shown in table 14. The Nigerian Meteorological Agency, for instance, forecasts weather patterns for the country before the onset of each rainy season. This prediction is usually publicized to serve as an early warning for farmers and people living in flood prone areas, among others, and has helped to reduce damage and losses from floods. The

Ministry of Water Resources and Hydrological Services Agency maintain a network of river gauges across the country for monitoring river stage. This also provides a form of early warning on possible flood hazards along the flood plains and for communities downstream of dams. This early warning system has measurably reduced flood-related damage and losses incases where people heed these warnings.

The National Space Research and Development Agency provides satellite imagery for hazard risk monitoring, assessment and management, in collaboration with the National Centre for Remote Sensing. These facilities were highly valuable in assessing the extent of the damage resulting from the 2012 flood disaster in Nigeria. NEMA’s geographic information system laboratory in Abuja and the six university centres for disaster management are also actively engaged in hazard mapping, hazard risk assessment, and vulnerability and capacity studies. These activities are expected to reduce disaster incidences in the country.

partment of Planning a geographic information system unit, which is already working on hazard maps for flooding and landslide in isolated areas with techniques that could be used for wider hazard assessments across the country.

Courses on the geographic information system are conducted at some universities, including the University of Ibadan, Ahmadu Bello University, and the Federal University of Technology, Minna, which provide training in the skills needed to expand risk mapping initiatives. Nevertheless, availability of sufficient equipment in the geographic information system laboratories still remains a problem.

The Government established the National Space Research and Development Agency in 1999 to champion the development and application of space science and technology and, to that end, six centres exist around the country whose activities are coordinated and controlled by the Agency. These centres are the National Centre for Remote Sensing, Centre for Space Science and Technology Education, Centre for Satellite Technology Development, Centre for Space Transport and Propulsion, Centre for Geodesy and Geodynamics, and the Centre for Basic Space Science.

Table 14: Specific early warning activities by ministries, departments and agencies and development partners

Ministries, departments and agencies	Development partners
Flood early warning systems	Grassroots sensitization and mobilization
Drought early warning systems	Data collection and information gathering
Disease epidemic early warning systems	Networking
Civil unrest early warning systems	
Provision of weather forecasts and prediction	
Sensitization and information dissemination	

Many institutions and agencies have the required technical skills to undertake risk assessment and identification. NEMA has established within its De-

4.5.4 Making Cities Resilient campaign

The Government of Nigeria, through NEMA and in collaboration with various national stakeholders, is fully engaged in the UNISDR Making Cities Resilient campaign. A national committee was established in 2011 to oversee the programme and advocate on its behalf and the city of Abuja, as the capital of Nigeria, has joined this safer cities campaign. The committee seeks to convince community leaders and local governments to commit to a checklist of ten “essentials” for making their cities resilient and to work alongside local activists, grassroots networks and national authorities. The committee is charged with providing a strong

network among federal and state ministries, departments and agencies, international agencies, and professional bodies, and developing frameworks and strategies for increasing state and local government commitment to signing up to the campaign and achieving its objectives.

4.5.5 Mainstreaming disaster risk reduction into education

The specific areas of engagement by ministries, departments and agencies and development partners in mainstreaming disaster risk reduction in the education sector is highlighted in table 15.

With regard to knowledge and information sharing, the ministries, departments and agencies and development partners have evolved various strategies for disseminating knowledge and information on disaster risk reduction in Nigeria (table 16).

NEMA, in collaboration with development partners, has organized a number of workshops on disaster risk reduction for the purpose of educating

the people on issues concerning hazard risks, emergency preparedness, community participation in disaster risk management, and conflict resolution. Each year NEMA marks the International Day for Disaster Reduction by holding workshops and seminars in Abuja and other areas of the country.

Table 16: Specific ways which establishments are involved in knowledge and information sharing on climate change adaptation

Ministries, departments and agencies	Development Partners
Partnership with universities	Network platforms
Website information provision	Awareness raising and sensitization activities
Development of primary and secondary school curricula	Workshops and conferences
Collaboration with National Orientation Agency and media houses	Publications Media campaigns

Table 15 : Specific Areas of engagement by MDAs and Development Partners

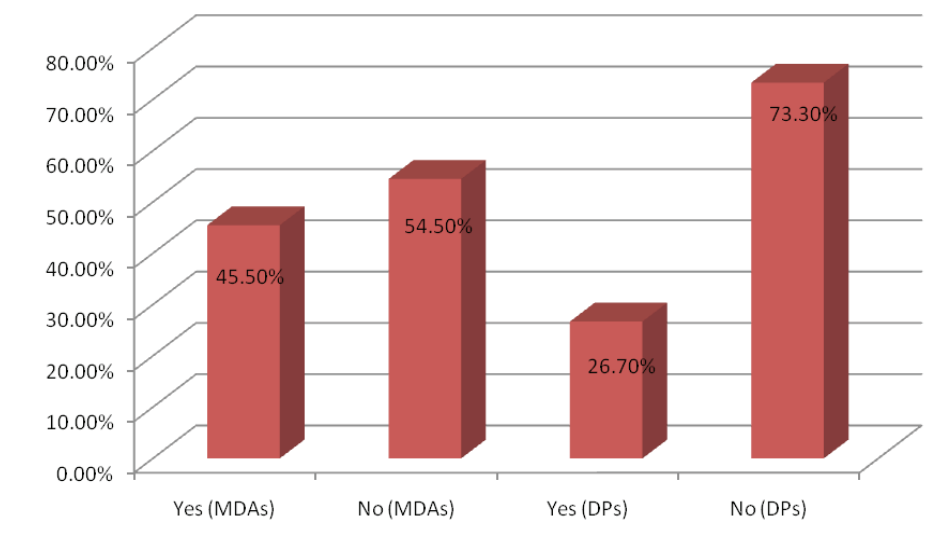
Ministries, departments and agencies	Development partners
Collaboration with universities	Support and collaboration
Mainstreaming disaster risk reduction and climate change adaptation into primary and secondary curricula	Capacity-building activities Printing of informative, educational and communicative materials
Facilitating disaster risk reduction clubs in secondary schools	Partnership and collaboration with government agencies
Website for sharing information	Conferences and workshops
Sensitization and enlightenment campaigns	
Training and workshops	
Using print and electronic media to educate the public	

4.5.6 Strengthening disaster preparedness

One of the fundamental requirements of disaster risk reduction is to have a robust emergency preparedness and response plan. NEMA has developed and continues to strengthen disaster preparedness for the purpose of responding effectively to emergencies at all levels. However, in many cases, hospital equipment is inadequate and obsolete and ambulances are not well equipped to handle critical emergencies. Rural areas are poorly served in terms of experienced personnel and the necessary equipment. Further, the fire service is inadequate, owing to obsolete equipment and poor motivation among fire fighters, while search and rescue operations are also limited by a lack of appropriate equipment and skilled personnel.

Data from this study shows that the number of Government ministries, departments and agencies and development partners involved in emergency preparedness and response is relatively

Figure 4: Establishments undertaking emergency preparedness and response activities



Note: MDAs: ministries, departments and agencies; DPs: development partners.

small (figure 3), with only around 45% and 26%, respectively, undertaking such activities. Those that are involved in emergency preparedness and response activities often have very low capacity; that capacity needs to be enhanced as a priority if disaster risk reduction is to be effective. The low uptake of emergency preparedness and response activities by ministries, departments and agencies inevitably reduces the capacity of responding agencies in times of disaster and, by implication, people are more vulnerable and disaster risk is higher. The Government needs to take the lead and set the pace for other stakeholder by ensuring greater involvement in emergency preparedness and response to reduce vulnerability and disaster risk.

The specific areas of involvement emergency preparedness and response vary among ministries, departments and agencies and development

partners (as shown in table 17). Both groups need to ensure the proper implementation of these activities in order to enhance emergency preparedness and response and reduce disaster risks.

Table 17: Specific emergency preparedness and response activities undertaken by ministries, departments and agencies and development partners

Ministries, departments and agencies	Development partners
Development of plans and policies on emergency preparedness and response	Advocacy and sensitization visits Capacity-building activities
Assessment of emergency preparedness and response	Grassroots sensitization Provision of support and collaboration
Provision of early warning systems	
Operational and functional offices	
Stockpiling of relief materials	
Human and material resources for search and rescue	

5. Good practices, success factors and lessons learned

Various good practices and success factors have been observed in the mainstreaming of disaster risk reduction in Nigeria. Two examples are outlined in this chapter.

5.1 Collaboration of NEMA with six Nigerian universities on mainstreaming disaster risk reduction in university curricula.

Context: Nigeria is periodically affected by various forms of natural and man-made hazards, dominant among which are flooding, landslides, strong winds, heatwaves, desertification and disease epidemics. Climate change is intensifying the frequency and magnitude of these hazards, particularly those of hydrometeorological origin. Man-made hazards are also very common and are often caused by ethnic, political and religious conflicts. Nigeria has a low human development index; 68 per cent of the population living on below US\$ 1 a day and the rate of under-five mortality is 141.9 per 1000 live births. Further, Nigeria has a poor corruption perception index and there have been various acts of terrorism in recent times. The population is therefore highly vulnerable to disasters.

In response to the very weak institutions inherent in the country and in the quest to improve people's understanding of disaster risk reduction issues, the National Action Plan on Disaster Risk Reduction seeks to build human and institutional capacity in that regard. NEMA has therefore developed a programme of collaboration with six universities – with one in each geo-political zone

of the country – in order to address hazard risk and build resilience. The university centres deliver postgraduate degrees in disaster risk reduction, risk management and development studies. In collaboration with the Nigerian Educational Research and Development Council, NEMA has also developed curricula that incorporate disaster risk reduction at the primary and secondary education levels.

The university collaboration programme is regarded as a good practice, as it continuously ensures the building of capacity while promoting and coordinating research activities related to disaster risk reduction and management in line with international practices and the priorities of the Hyogo Framework for Action. It enhances awareness on the importance of disaster risk reduction and helps to fulfil NEMA's mandate as the focal agency for disaster management).

Outcome: The initiative has improved capacity building in disaster risk reduction and risk management through the promotion and coordination of research activities in Nigeria. Since its inception, about 500 practitioners have been trained or re-trained. This has also led to the organization of an international conference on disaster management, aimed at improving decision-making and international cooperation. The development of a curriculum on disaster risk reduction and climate change adaptation and its integration into four carrier subjects (geography, English, civil education and health education) in post-basic (secondary) curricula has enhanced awareness on the relevance of disaster risk reduction for education sector stakeholders and the development of capacity.

Success factors and lessons learned: There must be continuous monitoring and review of the curriculum so as to retain the disaster risk reduction and development elements in the programme. Effective disaster risk reduction mainstreaming into different sectors of the economy cannot be achieved without adequate understanding of those issues and partnership with relevant stakeholders in all sectors.

Challenges: Disaster risk reduction is still a relatively new approach in the country; as such, legislative measures and levels of awareness on the subject are still low. Capacity for teaching, mentorship and research on disaster risk reduction-related issues are grossly inadequate.

Potential for replication: The programme can and should be replicated in other contexts, especially in fulfilling the mandate of most federal-and state-level focal agencies on disaster management to build capacity and create awareness for disaster risk reduction and its associated activities.

5.2 NEMA/World Bank post-disaster needs assessments and vulnerability and capacity analyses in Nigeria

Context: This initiative was embarked upon on the heels of the devastating effects of the 2012 flood that affected more than 7.7 million people, destroyed over 618,000 houses and killed at least 363 people, disrupting livelihoods and wider socio-economic activity. The Government of Nigeria, with technical and financial support from the United Nations, European Union and the World Bank carried out an assessment to estimate the impact of the flood, determine recovery and reconstruction needs and formulate a long-term strategy for reducing disaster risk in the future. The assessment covered 15 sectors, including housing, agriculture,

transport, education, energy, economy, gender, health, hydrometeorology, employment, environment, disaster risk management and telecommunications. NEMA collaborated with other stakeholders to conduct a vulnerability and capacity analysis in six states. The assessment involved a comprehensive review of hazard, population and infrastructural vulnerabilities and capacities as well as a risk analysis to support mitigation, preparedness and response, taking into account different institutional mandates and capacities.

The project is regarded as a good practice, as it sought to identify needs, discover vulnerabilities, ameliorate the suffering of disaster victims, develop strategies to mitigate the effects of the flood and facilitate the sustainable rehabilitation and recovery of the people affected. The project was participatory and provided a veritable reference document with guidelines for decision-making, policy making and planning. It has also helped to build capacity and create a base for data and information collection, compilation and sharing.

Outcome: The project improved the capacity of ministry, department and agency officials regarding the assessment methodology. It also enabled the collection of baseline socioeconomic information at the federal and state levels, the development of a needs assessment report and strategies to mitigate the effects of the disaster and recovery of the affected people. NEMA now has a mechanism for implementing and funding the vulnerability and capacity analysis nationwide. Some 600 officials, representing 36 state-level and federal-level ministries, to acquire skills in basic emergency preparedness and response planning and in implementation of the vulnerability and capacity analysis.

Success factors and lessons learned: The post-disaster needs assessment and vulnerability and capacity analysis both require multisectoral and multi-stakeholder consultations for implementation and

strong commitment from the Government, local political and community leaders, community-based organizations, faith-based organization and other relevant local-level institutions. There has to be proper administrative and logistical coordination for data collection and processing as well as multilateral collaboration for funding and technical support.

Challenges: There were bottlenecks in apportioning roles and responsibilities and in the coordination of the various stakeholders in order to achieve the goals and targets set. There were difficulties in se-

curing commitment from stakeholders to fund various aspects of the post-disaster needs assessment. Moreover there were concerns related to the credibility of the information collected.

Potential for replication: The initiative was participatory and could serve as a guideline for decision-making regarding prevention, mitigation, and preparedness. It enabled a targeted response and set the pace for appropriate recovery activities. It should be replicated to help prevent disasters and to ensure coordinated response and reconstruction activities.

6. Conclusions and recommendations

6.1 Conclusions

Nigeria is not shielded from hazards; in fact natural and man-made hazards are increasing in frequency and magnitude, in part due to climate change and other crises. Therefore, appropriate disaster risk reduction and climate change adaptation plans and policies are required in order to stem the tide of disasters occurring in the country. The 2012 flood disaster cost the country about US\$ 16.9 billion, or 1.4 per cent of GDP, and is a typical example of the extent to which disasters can cause significant damage to national economy. Consequently, this is the driving force behind disaster risk reduction mainstreaming in Nigeria.

The process of mainstreaming disaster risk reduction into national development plans is progressing steadily, although much still needs to be achieved. Some notable positive steps have been the inclusion of disaster risk reduction in primary and secondary school curricula, the establishment of six centres in Nigerian universities for disaster risk management training, the establishment of early warning systems for hazards and the development of appropriate policies and plans to guide disaster risk reduction activities in the country. The Government has also developed other initiatives to facilitate disaster risk reduction mainstreaming; not least the establishment of NEMA and the creation of state emergency management agencies and local emergency management committees, which should ultimately take centre stage in driving forward the process of disaster risk reduction mainstreaming in Nigeria. The establishment of NEMA saw disaster risk reduction designated as a national priority. Since then, and in collaboration

with relevant stakeholders and development partners, NEMA has developed a number of policies and plans on mainstreaming disaster risk reduction into national development plans. Conversely, however, disaster risk reduction is not considered a priority at the local level. Several states have not yet established emergency management agencies, while those that do exist are poorly funded by state governments and suffer from a dearth of skilled personnel. At the local government level, there is no institution for disaster management. Furthermore, while legal and institutional frameworks exist at the federal level, they are lacking at the state and local government levels. These gaps represent a weak link in the chain of disaster management in the country.

In the area of emergency preparedness, not much has been achieved. Capacity for emergency preparedness and response is still low in the country and the necessary coordinating mechanisms and operating procedures are weak. There is no toll-free emergency number in the country. Emergency health care is poor: ambulances are poorly equipped and rural areas are neglected. Search and rescue is also weak because there is a lack of appropriate equipment and skilled manpower. Meanwhile, fire fighting equipment is obsolete and firefighters are poorly motivated.

The major factor hindering optimal disaster risk reduction mainstreaming into development plans is the slow progress by state and local governments to fully establish emergency management agencies and emergency management committees, respectively, to complement NEMA's work at the federal level. This gap has therefore placed the additional burden on NEMA of coordinat-

ing emergency responses at the state and local government levels, which has overstretched the Agency's capacity and lessen the effectiveness of its responses. Other notable factors hindering mainstreaming include insufficient funding for the implementation of programmes and an inadequate level of trained personnel. Addressing these problems would considerably boost the process of disaster risk reduction mainstreaming into development plans in Nigeria

6.2 Recommendations

In order to effectively mainstream disaster risk reduction into development plans in Nigeria, the following recommendations are given:

- a) As part of the mid-term review of the medium-term national economic development plan (Vision 20: 2020), disaster risk reduction should be integrated into all sectors of the economy. This will ensure adequate budgetary provisions for disaster risk reduction programmes and plans.
- b) The environmental impact assessment policy of the Ministry of Environment should be strictly enforced. This will help to reduce the negative impacts of development projects on the environment; indeed, disasters can be averted if this policy is properly implemented. The same applies to other environmental policies and regulations.
- c) All disaster risk reduction plans and policies should be implemented and revised, as necessary, to reflect contemporary issues. New ones should also be developed to take care of new and emerging disasters.
- d) The introduction of disaster risk reduction syllabuses into primary and secondary school curricula should be fast-tracked. The curricula were developed in 2012 and are still awaiting government approval.
- e) The introduction of disaster risk management courses at six Nigerian University is a novel idea. However, this programme should be expanded to include bachelor's degrees in disaster risk management in all universities in Nigeria. This will facilitate human capacity-building in disaster risk reduction and enhance disaster risk reduction mainstreaming.
- f) The development of early warning systems for disaster risk reduction in Nigeria should be expanded to cover man-made hazards, such as political and religious crises, which cause more damage and losses than many natural hazards. A good early warning system can help to avert politically and religiously motivated violence, thus reducing damage to property and loss of life.
- g) There is an urgent need to educate and raise awareness of the general public on disaster risk reduction issues. This will help promote its importance in national development. It should be done within all sectors of society, not least politicians, bureaucrats and rural dwellers.
- h) Institutions for disaster risk reduction mainstreaming at the state and local government levels should be strengthened to achieve both the vertical and horizontal integration of disaster risk reduction into the national economy. Horizontal integration can be achieved through the Vision 20: 2020 plan, which covers all sectors, but vertical integration can only be achieved through participation at all three of the

federal, state and local government levels (that is, through NEMA, emergency management agencies and emergency management committees, respectively).

- i) Funding for emergency preparedness and response should be improved so that emergency responders can acquire appropriate equipment for effective disaster management.

References

- Abubakar, I.U. and A.M. Yamusa, (2013). Recurrence of drought in Nigeria: Causes and Mitigation. *International Journal of Agriculture and Food Science Technology*, vol.4, No.3, pp168-180.
- African Union, the New Partnership for African's Development, African Development Bank and UN/ISDR (2004) *Guidelines for Mainstreaming Disaster Risk Assessment in Development*. A publication of UN/ISDR. Geneva.
- Akinoyemi, T.(1990).Stemming the Tide of Lagos Floods. *Guardian*, 20 July.
- Adagbada, A.O. and others (2012).Cholera Epidemiology in Nigeria:an overview. *The Pan African Medical Journal*, vol.12, No59 (July).
- Benson, C. (2009). *Mainstreaming Disaster Risk Reduction into Development: Challenges and Experience in the Philippines*. International Federation of Red Cross and Red Crescent Societies and ProVention Consortium. Geneva.
- Benson, C and J. Twigg with Tiziana Rossetto (2007). *Guidance Notes for Development Organisations*. ProVention Consortium. Geneva.
- Baiye, E. (1988). Numan in the Throes of Floods. *Guardian*, 8 October.
- Bohle H.-G. (2001). Vulnerability and criticality: Perspectives from social geography. *Newsletter of the International Human Dimensions Programme on Global Environmental Change Update*, vol. 2/2001, pp. 1-7.
- Edward-Adebiyi, R. (1997). The Story of Ogunpa. *Guardian*, 17 May.
- EM-DAT (2011).The OFDA/CRED International Disaster Database, Université catholique de Louvain, Brussels, Bel. Data version: v11.08.
- The Federal Government of Nigeria, with the World Bank, European Union, United Nations and Other Partners (2013). *Nigeria Post-Disaster Needs Assessment: 2012 Floods*. Government Press, Abuja, Nigeria.
- Isuwa, S. (2013). *Plateau records highest number of conflicts in North —Report*. Daily Trust, 23 August.
- Jeschonnek, L. (2011). World Risk Report 2011. Bündnis Entwicklung Hilft (Alliance Development Works) in Association with United Nations University Institute for Environment and Human Society. Berlin.
- La Trobe, S. and I. Davis (2005). Mainstreaming disaster risk reduction: a tool for development organizations. A Tearfund publication.
- Nwaubani, C.(1991). Ogunpa River Leaves Bitter Aftertaste in Tragic Course Through Abeokuta. *Guardian*, 21 October.

- National Bureau of Statistics, Nigeria (2010). Nigeria Poverty Profile, 2010.
- Parker, R.S.(2006). Hazards of nature, risks to development: an IEG evaluation of World Bank assistance for natural disasters. Washington, DC: World Bank. Available from <http://documents.worldbank.org/curated/en/2006/06/6891782/hazards-nature-risks-development-ieg-evaluation-world-bank-assistance-natural-disasters>.
- Pelling, M.and J.I.Uitto(2001). Small Island Developing States: Natural Disaster Vulnerability and Global Change. Environmental Hazards,vol. 3,No. 2, pp. 49-62.
- Plantz, A. (2013), Mainstreaming Disaster Risk Reduction into Development in UNDP. [PowerPoint slides]. Presented at Mitigating Natural Disasters, Promoting Development: The Sendai Dialogue and Disaster Risk Management in Asia,Brookings Institution. 10 May.
- Twigg, J. (2004).Disaster Risk Reduction. Humanitarian Practice Network, Good Practice Review 9. London.
- United Kingdom, Her Majesty's Treasury and Cabinet Office (2006). Stern Review on the Economics of Climate. London.
- United NationsOffice for the Coordination of Humanitarian Affairs (2013).World Humanitarian Data and Trends 2013. New York.
- Inter-Agency Secretariat of the International Strategy for Disaster Reduction (2004).Africa Regional Strategy for Disaster Risk Reduction. Geneva.
- Inter-Agency Secretariat of the International Strategy for Disaster Reduction (2005), Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters. World Conference on Disaster Reduction, 18-22 January 2005, Kobe, Hyogo, Japan. Geneva.Available from <http://www.unisdr.org/eng/hfa/hfa.htm>.
- UNISDR (2009), 2009 UNISDR Terminology on Disaster Risk Reduction. United Nations International Strategy on Disaster Reduction (UNISDR), Geneva, Switzerland.
- Verini, James (2013) Northern Nigeria Conflicts. National Geographic.
- World Bank(2006). Mainstreaming Hazard Risk Management in Poverty Reduction Strategies: A strategic framework for action. Discussion paper, January.

Annex I: Questionnaires sent to government ministries, departments and agencies and to development partners on disaster risk reduction measures

A. Questionnaire sent to ministries, departments and agencies

National Assessment on Mainstreaming and Implementing of Disaster Risk Reduction Measures in Nigeria

Is your Organization involved in disaster risk reduction activities in Nigeria?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Does your Organization have disaster risk reduction Policies/Plans?

Yes _____ No _____

If Yes, Please outline

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(use additional sheet, if necessary)

Is your establishment involved in hazard risks assessment in Nigeria?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is your establishment involved in Early Warning Systems in Nigeria?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is your establishment involved in education and information sharing on disaster risk reduction?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is your establishment involved in emergency preparedness and response in Nigeria?

Yes _____ No _____

If yes, please specify

(use additional sheet, if necessary)

Is a disaster risk reduction policy or plan implemented in your establishment?

Yes _____ No _____

If yes, please elaborate.

(use additional sheet, if necessary)

Is disaster risk reduction policy or plan mainstreamed into sectoral development plans?

Yes _____ No _____

If yes, Please give some details

(use additional sheet, if necessary)

Outline the tools and approaches used for mainstreaming and implementing disaster risk reduction into your sectoral plans

(use additional sheet, if necessary)

Are there challenges hampering disaster risk reduction implementation and mainstreaming in your establishment?

Yes _____ No _____

If yes, please give details

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(use additional sheet, if necessary)

Is your organization involved in climate change adaptation programmes in Nigeria?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Have you developed any plan or policy on climate change adaptation in Nigeria?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is your establishment involved in education and information sharing on climate change adaptation?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is a climate change adaptation policy or plan implemented in your establishment?

If yes, please elaborate.

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(use additional sheet, if necessary)

Is a climate change adaptation policy or plan mainstreamed into sectoral development plans?

Yes _____ No _____

If yes, Please give some details

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(use additional sheet, if necessary)

Outline the tools and approaches used for mainstreaming and implementing climate change adaptation into your sectoral plans

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(use additional sheet, if necessary)

Are there challenges hampering climate change adaptation implementation and mainstreaming in your establishment?

Yes _____ No _____

If yes, please give details

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(use additional sheet, if necessary)

Is your establishment engaged in advocacy for implementing and mainstreaming disaster risk reduction and climate change adaptation plans or policies into development plans in Nigeria?

Yes _____ No _____

If yes, please give some details:

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(use additional sheet, if necessary)

Are there any suggestions for enhancing disaster risk reduction and climate change adaptation implementation and mainstreaming into development plans in Nigeria?

Yes _____ No _____

If yes, please give some details:

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(use additional sheet, if necessary)

Questionnaire sent to development partners

National assessment on mainstreaming and implementing disaster risk reduction measures in Nigeria

Is your organization involved in disaster risk reduction activities in Nigeria?

Yes _____ No _____

If yes, please specify

(use additional sheet, if necessary)

Have you developed plans and policies on disaster risk reduction in Nigeria?

Yes _____ No _____

If yes, please specify

(use additional sheet, if necessary)

Is your establishment involved in hazard risk assessments in Nigeria?

Yes _____ No _____

If yes, please specify

(use additional sheet, if necessary)

Is your establishment involved in early warning systems in Nigeria?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is your establishment involved in education and information sharing on disaster risk reduction?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is your establishment involved in emergency preparedness and response in Nigeria?

Yes _____ No _____

If yes, please specify

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(use additional sheet, if necessary)

Is your organization involved in climate change adaptation programmes in Nigeria?

Yes _____ No _____

If yes, please specify

(use additional sheet, if necessary)

Have you developed plans and policies on climate change adaptation in Nigeria?

Yes _____ No _____

If yes, please specify

(use additional sheet, if necessary)

Is your establishment involved in education and information sharing on climate change adaptation in Nigeria?

Yes _____ No _____

If yes, please specify

(use additional sheet, if necessary)

Is your establishment engaged in advocacy for implementing and mainstreaming disaster risk reduction and climate change adaptation plans and policies into development plans in Nigeria?

Yes _____ No _____

If yes, please give some details:

(use additional sheet, if necessary)

Are you aware of any challenges hindering disaster risk reduction and climate change adaptation implementation and mainstreaming into national development plans in Nigeria?

Yes _____ No _____

If yes, please give some details:

(use additional sheet, if necessary)

Are there any suggestions for enhancing disaster risk reduction and climate change adaptation implementation and mainstreaming into development plans in Nigeria?

Yes _____ No _____

If yes, please give some details:

(use additional sheet, if necessary)

Annex II: List of organizations and people consulted, and questionnaire respondents

List of organizations and people consulted

Questionnaires were sent to the following establishments:

- i) National Emergency Management Agency (NEMA)
- ii) National Planning Commission
- iii) Nigerian Meteorological Agency
- iv) Nigerian Hydrological Services Agency
- v) National Space Research and Development Agency
- vi) Federal Ministry of Women Affairs
- vii) Federal Ministry of Environment
- viii) Federal Ministry of Water Resources
- ix) Federal Ministry of Education
- x) Federal Ministry of Lands and Urban Development
- xi) Some state emergency management agencies
- xii) Nigerian Red Cross Society
- xiii) UNICEF
- xiv) UNDP
- xv) World Bank
- xvi) Federal Ministry of Health
- xvii) Federal Ministry of Agriculture and Rural Development
- xviii) Selected NGOs, civil society organizations and faith based organizations
- xix) Representatives of state emergency management agencies in Jigawa, Kaduna, Kano, Zamfara, Kebbi and Katsina States.

Questionnaire respondents:

- i) Mal. Aliyu Sambo, Deputy Director, NEMA
- ii) Rev. Nwabufor, Director, National Hydrological Services Agency
- iii) Mal Liman Nura Jega, state emergency management agency, Kebbi State
- iv) Mohammed Bello Musa, state emergency management agency, Zamfara State
- v) Mrs M. J. Ahmed, Ex. Director, Mother Care (NGO)
- vi) Hussaini Abdullahi, state emergency management agency, Kaduna State
- vii) C. A. Ibrahim, Director, state emergency management agency, Katsina State
- viii) Musa Mada, state emergency management agency, Jigawa State
- ix) Garba Abdu, state emergency management agency, Kano State

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