

# **AN ASSESSMENT OF NIGERIA'S PREPAREDNESS TO ENVIRONMENTAL DISASTERS FROM ITS COMMITMENT TO INTERNATIONAL ENVIRONMENTAL TREATIES**

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## **Abstract**

Environmental disasters are events that do not give notice to its occurrence but are tackled through careful planning and execution of contingency measures. The flood disaster of 2012 in Nigeria have revealed several challenges regarding the nations disaster preparedness, the need to strengthen Nigeria's Disaster Risk Reduction (DRR) mechanism is therefore particularly timely. This paper was an attempt to review the Nigeria's disaster preparedness through assessment of the country's commitment to the international instruments of environmental management as contained in several treaties and agreements. The review has indicated a general trend of accepting such instrument through the country's ratification of them, but with little efforts at its domestications and setting of the necessary structures for its implementation. The research found out that this administrative setback is hampering Nigeria from being fully prepared for eventualities of extreme environmental events; especially as occasioned by climate change. Many recommendations were made for institutional, policy and attitudinal adjustments to forestall calamities and quantum destructions resulting from environmental disasters.

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**Keywords:** Disaster, conventions, risks, hazards, vulnerability, environment

## **1.0 Introduction**

Hazards and disasters are two sides of the same coin; neither can be fully understood or explained from the standpoint of either physical science or social science alone; and are inextricably linked to the ongoing environmental changes at global, regional and local levels. Environmental hazards exist at the interface between the natural events and human systems. Human responses to hazards can modify both the natural events, and the human use of the environment Environmental degradation is a process that

reduces the capacity of the environment for meeting the social and ecological objectives, and related needs. The potential effects of degradation varies, and may contribute to increase in vulnerable conditions along and intensity in occurrence of natural hazards. Some examples include: land degradation, deforestation, desertification, wildland fires, loss of biodiversity, land, water and air pollution, climate change, sea level rise and ozone depletion etc.

Disasters are events of environmental extremes which are inevitable entities of this living world. The major environmental changes driving hazards and vulnerabilities to disasters are climate-change, land-use changes and degradation of natural resource (Gupta and Nair, 2011). Environmental concerns are crucial in all phases of disaster management and vice versa. Environmental services like shelter, water, food security, sanitation, waste management and disease control form crucial components of emergency relief. Considering disaster risk reduction as important aspect in all stages of environmental management is crucial in order to focus on disaster prevention and reduce risk from hazards, minimization of rehabilitation and overall leading to sustainability. Opportunities for integration also exist in planning and decision making tools, and in regulatory provisions pertaining to environmental governance and disaster management. However, in order to facilitate a strategic and functional understanding of the linkages between the two, a cross-examination and interpretation of commitment to Nigeria's implementation of the various international conventions in environmental management. This is achieved through a review of the different levels of Nigeria's levels implementation.

## **2.0 Environmental Disaster Paradigms**

Globally, disaster management has voiced a paradigm shift from being 'response & relief' centric' approach to becoming a 'mitigation and preparedness' approach. As lessons are drawn from UN-IDNDR a second paradigm shift is underway, driven by climate-change awareness and sustainability concerns in disaster management (Gupta et. al, 2009). This has resulted in a wider acceptance of the 'Disaster Risk Reduction' as a concept over 'Disaster Management', and giving recognition to the 'environmental approach that includes disaster risk reduction and management', which is now of a prime concern in disaster management strategies world over.

Environmental management for disaster risk reduction does not exist as a formal field of practice. Instead, its scope is largely defined by the goals set by organizations working on related issues, such as ecosystem conservation, disaster risk reduction and climate change adaptation and mitigation, etc.

Monitoring and observing environmental factors that signal the onset of a hazard are fundamental to early warning systems. Environmental monitoring and assessment play an important role in generating relevant information that assists in identifying risks, vulnerabilities and opportunities to promote community resilience (UNEP-UNISDR-PEDRR,2010). Environmental governance includes policies, legal and regulatory frameworks and institutional structures, and offers important opportunities for mainstreaming disaster risk reduction into environmental management, and for strengthening the environmental components of disaster risk reduction. Policy or regulatory frameworks often specify levels of environmental protection and establish the means for monitoring and enforcing protection.

Environmental approach to disaster risk management aims at utilizing environmental knowledge and practices in all stages of the risk-cycle so as to reduce the risk from disaster, and to ensure sustainability in reconstruction and recovery process. It starts with the understanding of the environmental basis of disasters, or in other words – recognizing disasters as ‘environmental events’. The principles set out in the Hyogo Framework are acknowledged by the UN-ISDR, which defines ten opportunities for environment in the context of disaster prevention or reduction (UNEP, 2010):

- 2.1 Engage environmental managers fully in national disaster risk management mechanisms;
- 2.2 Include risk reduction criteria in environmental regulatory frameworks;
- 2.3 Assess environmental change as a parameter of risk;
- 2.4 Utilize local knowledge in community-based disaster risk management;
- 2.5 Engage the scientific community to promote environmental research.
- 2.6. Protect and value ecosystem services.
- 2.7 Consider environmental technologies and designs for structural defences;
- 2.8 Integrate environmental and disaster risk considerations in spatial planning;
- 2.9 Prepare for environmental emergencies; and,
- 2.10 Strengthen capacities for environmental recovery.

In addressing the relationship between social and environmental vulnerability and the occurrence of disasters, Wilches-Chaux (1993) states, “There is no doubt those natural forces play an important role in the initiation of several disasters, however it is no longer the case that they can be considered the main cause of such disasters. There seem to be three fundamentals causes that dominate the disaster processes in the developing

world, which is precisely where their incidence is the largest”. Environmental and natural resource management are other key elements in vulnerability reduction; it is essential to place continuous emphasis on implementing long-term environmental measures (IADB, 1999). A summary of major environmental disasters in Nigeria is given below.

**Table 1: Estimates of Nigeria's Natural Disasters from 1980 – 2010**

No of Events	94
No of People killed	21,002
Average killed per year	677
No of People affected	6,306,441
Average affected per year	203,434
Economic Damage (US & 1,000)	188,025
Economic Damage per year (US & 1,000)	6,065

Source: Prevention web 2013

### **3.0 Nigeria’s Commitment to International Environmental Instruments.**

Nigeria has obligations under numerous international treaties and agreements related to environment. As a party, Nigeria either have ratified a treaty by adopting it as a national law before it came into force or by acceding to it after coming into force. A treaty will come into force if the requisite number of countries ratify the treaty. Some of the most important global environmental treaties are, Ramsar Convention (1971), Stockholm declaration on Human Environment (1972), World Heritage Convention (1972), Convention on International Trade of Endangered Species (1973), United Nations Convention on the Law of the Sea (1982), Vienna Convention for the Protection of the Ozone Layer (1985), and its 1987 Protocol; Basel Convention (1989), Climate Change Convention (1992); Convention to Combat Desertification (1994), Biodiversity Convention, (1992), Rio declaration on Environment and development (1992), Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998), Stockholm Convention on Persistent Organic Pollutants (2001), The Johannesburg declaration on Sustainable Environment (2002). The Kyoto protocol of 2007 and the Rio + 20 declaration of 2013. The table below summarizes our findings on Nigeria’s commitment levels on the above mentioned environmental instruments.

**Table 2: Nigeria's Levels of Commitment on int'l Environmental Instruments**

S/N	Instruments	Year	Initial Status	Current Status
1.	Ramsar Convention	1971	Ratified	Up to 3 <sup>rd</sup> National Communication Submitted
2.	Stock hole Development	1972	Ratified	Periodic follow-ups
3.	World Heritage Convention	1972	Acceded	Periodic follow-ups
4.	CITES Convention	1973	Acceded	Nigeria Suspended in 2008 and readmitted 2011
5.	Convention the Sea	1982	Ratified	Periodic follow-ups
6.	Ozone Convention	1985	Ratified	Up to 4 <sup>th</sup> National Communication
7.	Ozone Protocol	1988	Acceded	Implemented 3 out of 14 resolutions
8.	Basel convention	1989	Ratified	Up to 4 <sup>th</sup> National Communication
9.	Climate Change Convention	1992	Ratified	1 <sup>st</sup> National Communication
10.	Desertification Convention	1994	Acceded	1 <sup>st</sup> National Communication
11.	Biodiversity Convention	1994	Acceded	1 <sup>st</sup> National Communication. Actively involved in REED+
12.	Rio Declaration	1992	Acceded	Nigeria is yet to tie economic growth to environmental protection.
13.	Rotterdam Convention	1998	Ratified	Agency created (NESREA)
14.	Stock holm Convention	2001	Ratified	2 <sup>nd</sup> National Communication
15.	Kyoto Protocol	2001	Ratified	Appreciable measures reduction of CO <sub>2</sub> and Global Temperature.
16.	Johannesburg Declaration	2002	Ratified	Structure to drive Agenda 21 is still weak; 10 years after.
17	Rio + 20 Declaration	2013	Ratified	No structure to drive Green Economy & Development.

**3.1 The Convention on Wetlands (Ramsar, Iran, 1971)** is an intergovernmental treaty whose mission is “the conservation and wise use of all wetlands through local, regional and national actions and international

cooperation, as a contribution towards achieving sustainable development throughout the world”. The concept of precaution operates as part of a science-based approach to regulation, with no substitute for such an approach where perceptions on disaster risk and vulnerability have been addressed in international law. “The likelihood of environmental harm” (e.g., the Rio Declaration Principle 15 uses “where there are threats;” the 1996 Protocol to the London Dumping Convention Article 3 uses “reason to believe [dumping] is likely to cause harm”); “the extent of environmental harm” (e.g. Biosafety Protocol Articles 10 and 11 use “potential adverse effects;” U.N. Framework Convention on Climate Change Article 3 uses “threats of serious or irreversible damage”). These provisions are not however entrenched in the management of the Nigeria’s wetlands. The problems of climate change and desertification in the northern part of the country are seriously threatening such Ramsar sites like that of Komadugu-Yobe, while persistent oil spills in the Niger delta are threatening the ecosystem. These and many other factors are making the resilience of the sites to disaster control very weak.

**3.2 Stockholm Declaration on the Human Environment 1972** is a landmark in international relations as it placed the issue of protection of biosphere on the official agenda of policy and law of the member states. Environmental instruments that link the environment and human rights began to appear as early as 1972, in the Stockholm Declaration on Human Environment, which states that “Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of quality that permits a life of dignity and well being”. Environmental Protection and development were conceptualized as two sides of a coin inseparable from each other. Hence Environmental protection was an essential element of social and economic development. Principle 1 of the declaration provides that man has the fundamental right to freedom, equality and adequate conditions of life in an environment of quality that permits a life of dignity and well- being and he bears the sole responsibility to protect and improve the environment for present and future generations. Principle 6 provides for the discharge of toxic substances that can cause serious or irreversible damage to ecosystems must be halted. Principle 15 provides that planning must be applied to human settlements and urbanization with a view of avoiding adverse effects on environment. Principle 18 incorporates the “precautionary principle” which propagates the avoidance of environmental risks. Principles of the Stockholm Declaration on Human Environment have many provisions on risk avoidance, risk reduction and integration of environment as a part of the Disaster Risk Reduction and Sustainable Development; however the Nigerian state is yet to put the necessary

measures of exploiting the instrument to the benefit of Disaster Risk Reduction. This is partly due to lack of substantive environmental agency for Nigeria until almost two decades of the declaration.

**3.3 The Vienna Convention for the Protection of the Ozone Layer (adopted, 1985, entered into force, 1988)** to protect human health and the environment against adverse effects resulting from human activities: The ultimate objective of the Convention is to protect human health and the environment against adverse effects resulting from human activities which modify or likely to modify the ozone layer and urges the Parties to take appropriate measures in accordance with the provisions in the Convention and its Protocols which are in force for that Party. The Montreal Protocol on Substances that Deplete Ozone Layer adopted, 1987; entered into force, 1989, provides for the control on production of ozone depleting substances: The Montreal Protocol on Substances that Deplete Ozone Layer is a protocol under the Vienna Convention. The Protocol controls the production and consumption of the most commercially and environmentally significant ozone-depleting substances - those listed in the Annexes to the Protocol. One feature of the Montreal Protocol which makes it unique is Article 6 that requires the control measures to be revised at least every four years (starting 1990), based on the review and assessment of latest available-information on scientific, environmental, technical and economic aspects of the depletion of ozone layer. Nigeria has done several reviews but very little is added to those factors that could impact on disaster management.

**3.4 The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal** was adopted on 22 March 1989 by the Conference of Plenipotentiaries in Basel, Switzerland, in response to a public outcry following the discovery, in the 1980s, in Africa and other parts of the developing world of deposits of toxic wastes imported from abroad. The overarching objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes. Its scope of application covers a wide range of wastes defined as “hazardous wastes” based on their origin and/or composition and their characteristics as well as two types of wastes defined as “other wastes” - household waste and incinerator ash. The Koko case of waste hazardous disposal on the Nigerian soil in 1988 was part of what triggered the birth of the Convention. Nigeria was able to establish an Environmental Protection Agency out of that incidence; similarly, twenty years later, the National Emergency Management Agency was also established.

**3.5 The Biodiversity Convention** provides a number of general obligations for member states. These include in particular a commitment to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity. Conservation under the Convention is to be achieved in two ways. Firstly, the Convention emphasizes on In-situ conservation which proposes the conservation of genes, species and ecosystems in the surroundings where they have developed their distinctive properties. The In-situ and Ex-situ conservation implies among other things of the development of guide- lines for protected areas; the regulation of biological resources; the promotion of the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings; the promotion of environmentally sound and sustainable development in adjacent areas; the rehabilitation and restoration of degraded ecosystems and the promotion of the recovery of threatened species; controlling the risks associated with the use of living modified organisms; controlling alien species; seeking compatibility between present and future use; developing necessary legislation to protect threatened species or populations; regulating any processes or activities found to have an adverse impact; and providing financial support for in situ conservation, especially in developing countries. Secondly, supplementary ex-situ conservation outside the natural habitats of the protected biodiversity components has also been proposed. Ex situ conservation requires the use of gene banks and zoological and botanical gardens to conserve species, which can contribute to saving endangered species. CBD defines biotechnology and provides on the widespread and potential risks associated with the handling and introduction into the environment of living modified organisms (LMOs). The need to promote bio-safety has centered on two related issues: (1) protect workers and prevent accidental liberation into the surrounding ecosystem, and (2) regulatory systems to govern the deliberate release of LMOs into the environment. A risk assessment report as part of a regulatory process has been envisaged. Nigeria was able to make significant stride which was acknowledged by the world in its REDD+ achievements, as well as the establishment of a Biotechnology Agency to promote biodiversity and its wise use under the precautionary principles of the convention, especially as it affects the LMOs. What is however lacking in the Nigeria's effort is the use of forestry in taming flood disasters and soil erosion. Over 500 million dollars were expended between 2010 and 2013 on presidential Initiative on Afforestation but with little result.

**3.6 The United Nations Framework Convention on Climate Change** is concerned with greenhouse warming. The Protocol to the UN Frame- work Convention adopted in Kyoto on December 11, 1997 specified



different goals and commitments concerning emission of greenhouse gases. The potential adverse effects of climate-change have been characterized as changes in the physical environment or biota which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare (U.N. Framework Convention the Convention refers to minimizing the cause and mitigating adverse effects, with obligations (articles 4 and 12) for inventory of emissions, sinks and reservoirs, technology transfer, coastal zone management and research cooperation.

**3.7 The Rio Declaration** states that the only way to achieve long-term economic progress is to link it to environmental protection. Therefore, nations must establish a new and equitable global partnership involving governments, populations and key sectors of societies and build international agreements that protect the integrity of the global environment and the development system. The Rio declaration thus reaffirms and builds upon the declaration of the United Nations Conference on the Human Environment, adopted in Stockholm 1972 where there was a presence of many world leaders from 179 countries. The UNECD in Rio underlined that thinking of environmental, economic and social development as isolated fields is no longer possible. At the Earth Summit major international treaties and agreements were made on issues of global climate change, biological diversity, deforestation, and desertification. In addition the Rio Declaration contains fundamental principles on which nations can base their future decisions and policies, considering the environmental implications of socio-economic development. Principle 6 states that the special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries. Principle 7 states that “States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem”. According to Principle 13, “States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction”. Principle 18 states that “States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the

environment of those States. Every effort shall be made by the international community to help States so afflicted.

**3.8 Agenda 21** was adopted at the Earth Summit 1992 in Brazil by nations representing over 98% of the Earth's population, it is the principal global plan to confront and overcome the economic and ecological problems of the late 20th Century. It provides a comprehensive blueprint for humanity to use to forge its way into the next century by proceeding more gently upon the Earth. As its sweeping programs are implemented world-wide, it will eventually have an impact on every human activity on our planet. Deep and dramatic changes in human society are proposed by this monumental historic agreement. Understanding those changes is essential to guide us all into the future on our fragile planet. Seven Central Themes of Agenda 21 include 1.The Quality of Life on Earth, 2. Efficient use of the Earth's Natural Resources, 3 The Protecting of our Global Commons, 4.Management of Human Settlements, 5. Chemicals and the Management of Waste, 6.Sustainable Economic Growth and 7. Implementing Agenda 21. Chapter 3 on the efficient use of the Earth's natural resources deals with different types of resources, detail reasons for protecting them, and benefits associated with resource protection. Areas of concern include: sustainable agriculture, water, energy, bio-diversity, and bio-technology. Forests, Deserts and drought and mountain ecosystems are given special importance.

Salient principles of “sustainable development “ as culled out from Brundtland Report, Rio- declaration and Agenda 21 are (i) Intergenerational Equity (ii) Use and conservation of Natural resources (iii) Environmental Protection (iv) The Precautionary Principle (v) Polluter Pays Principle (vi) Obligation to Assist and Cooperate (vii) Eradication of Poverty and (viii) financial assistance to developing countries .These principles are important in achieving disaster risk reduction in Nigeria; especially in view of the fact that the Ecological Fund intervention of the federal government is insufficient to tackle every aspect of the challenge.]

#### **4.0 Recommendations of integrating DRR initiatives in Nigeria's environmental Governance.**

Analysis of the environment based DRR initiatives and integration in different countries can enable us give a sketch framework for implementation in Nigeria with following five strategic recommendations:

4.1 Establishment and functional maintenance of interdisciplinary cell/centres or specialized office on Disaster Risk Reduction affairs within the apex organization of policy, research, monitoring and funding promotion on environment and natural resource matters.

4.2 Introduction of regional EIA (state level, and preferably at local government level as well) as a pre-requisite to term-planning. For example, five-yearly planning can facilitate for preparation of an ‘Environment Management and Action Plan’ at local/State level as an strategic Umbrella Approach on sustainable development.

4.3 Disaster Risk Reduction and post-disaster relief and recovery to be introduced as a compulsory module within the higher education, research and awareness courses in the Universities, colleges and school curriculum. On the other hand, the module on ecosystem- approach to DRR within disaster management training and sensitization framework needs to emphasize the role of legislation, and in particular, of environmental/natural resource international convention.

4.4 Environmentally sustainability mitigation option and the concept of ‘greening disaster-response’ and ‘sustainable-recovery’ need to be promoted within the framework of sustainable development by integrating SEA to the developmental planning process. SEA and EIA scope need to necessarily include hazard-risk and vulnerability assessment within the assessment framework.

4.5 The National Emergency Management Agency ( NEMA) needs to establish an inter-sectoral committee at strategic level involving Environment and Natural Resource related Ministries, Research Institutes and Academia, relevant NGOs and international agencies, to generate and maintain environmental database for disaster risk management functions, developing relevant guidelines and manuals, training and educational modules, and standards on environmental approach to DRR.

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