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**A REVIEW ON DISASTER RISK REDUCTION AND SUSTAINABLE
DEVELOPMENT IN NIGERIA**

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ABSTRACT

The occurrences of disaster often call for the support of both government and non government organization. Consequently, disaster relief remains extremely important in disaster management. However, this approach alone does not proactively address the need to adduce the human and environment impacts of future disasters. Recent thinking in the area of disaster management is indicative of the need for a new paradigm that focuses on reducing the risk of disasters with the involvement and participation of communities. This paper reviews the need for communities to place more emphasis on a holistic approach to disaster risk reduction. This approach involves risk assessment, risk reduction, early warning and disaster preparedness in order to effectively address the reduction of social, economic, and environmental costs of disasters nationally and at the global level.

Keywords: Disaster, Vulnerability, Risk Management, Early Warning, Relief

INTRODUCTION

A disaster describes a situation where the occurrence of abnormal or infrequent hazard events has impact on vulnerable communities, causing substantial damage, disruption and possible casualties and unable to function normally without external assistance. A disaster is therefore conceived as a severe disruption to the survival and livelihood systems of a society or



community, resulting from their vulnerability to the impact of one or a combination of hazards involving loss of lives and property on a scale which overwhelms the capacity of those affected to cope unaided (NEMA, 2014).

In contemporary academic, disasters are seen as the effect of hazards on vulnerable area. This is because hazards that occur in areas with low vulnerability do not result in a disaster, as in the case of uninhabited regions. Hazards are routinely divided into Natural or man-made, although complex disasters where there is no single root cause are more common in developing countries. A special disaster may sprawl a secondary disaster that increases the impact. A classic example is an earthquake that causes a tsunami, resulting in coastal flooding. A disaster is therefore, disruption of the functioning of a community causing widespread human, mental, economic or environmental losses which exceed the ability of the affected community to cope with using its own resources (Cuny, 1983).

Disasters having an element of human intent, negligence, error or the ones involving the failure of a system are called man-made disasters which could be technological (results of failure of technology, such as engineering failure, transport accidents, or environmental disasters) or sociological hazards (such as crime, stampede, riots and war) while natural disasters could occur as hydrological, climatic or geologic events (such as volcanic eruption, earthquake, flood, drought, hurricane, tornado, landslide epidemic, and famine (Adefolalu, 2001).

The paper is aimed to review Disaster Risk Reduction strategies with the view of providing holistic approach to achieving sustainable development in Nigeria.

Disaster Management

Disaster risk management is a system i.e. process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises of all forms of activities, including



structural and non-structural measures to avoid (prevention) or to limit invitation and preparedness) adverse effects of hazards.

Disaster Risk Reduction (DRR)

According to UNDP (2004) DRR is a conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks, to avoid or limit the adverse impacts of hazards, within the broad concept of sustainable development. The DRR framework consists of the following fields of action:

- a) Risk awareness and assessment including: hazard analysis and vulnerabilities/capacity analysis.
- b) Knowledge development including education, training, research and information.
- c) Public commitment and institutional framework, including organizational, policy, legislation and community action.
- d) Application of measures including environmental management, landuse and urban planning, protection of critical facilities, application of science and technology, partnership, networking and financial instruments.
- e) Early warning systems including forecasting, dissemination of warnings, preparedness measures and reaction capacities.

The Concept of Disaster Management

The concept of disaster management is the discipline of dealing with and avoiding risks. It is a discipline that involves preparing, supporting and rebuilding society when natural or man-made disaster management is the continuous process by which individual, groups and communities manage hazards in an effort to avoid or ameliorate the impact of disasters resulting from the hazards.



Phases of Emergency Management

According to Haddow and Jane (2004), Disaster Emergency Management has overlapping phases as follows:-

Mitigation:

Mitigation efforts attempt to prevent hazards from developing into disasters or to reduce the effects of disasters when they occur. Mitigative measures can be structural or non-structural.

- a) Structural measures use technological solutions, like flood levees.
- b) Non structural measures include legislation, landuse planning

Preparedness:

Here, managers develop plans of action for when the disaster strikes common preparedness measures including the:-

- Communication plans with easily understandable terminology and chain of command.
- Development and practice of multi-agency coordination.
- Proper maintenance and training of emergency services.
- Development and exercise of warning methods combined with emergency shelters and evacuation plans.
- Stock- piling, inventory, and maintenance of supplies and equipment.

Response

The response phase includes the mobilization of the necessary emergency services and first responders in the disaster area. This is likely to include the first wave of core emergency services. Such as fire fighters, police, ambulance crews and non- governmental organizations.



Recovery

The aim of this phase is to restore the affected area to its previous state. Recovery efforts are concerned with issues and decisions that must be made after immediate needs are addressed. These efforts are primarily concerned with actions that involve rebuilding destroyed property, re-employment and the repair of other essential infrastructure.

Disaster Risk Reduction and Development Nexus

Without going into controversies in the meaning of development, it is referring to situation where economic growth is accompanied by improved living standards. Consequently, development may be seen as improving the society in terms of the provision of social services, acquisition of economic assets improved productivity and reducing vulnerability. However, sustainable development defined, may focus on conditions for economic growth while maintaining the stock of natural resources at or above their current level.



Table 1: Disaster-Development Relationship

Disasters limits or destroy relationship	<ul style="list-style-type: none">- Destruction of physical assets and loss of production capacity- Damage to infrastructure- Death, disablement or migration of productive labour force
Development causes disaster risk	<ul style="list-style-type: none">- Unsustainable development practices that create unsafe working conditions and degrade the environment
Development reduces disaster risk	<ul style="list-style-type: none">- Access to safe drinking water and food and secure dwelling which increases people resilience- Fair trade & technology can reduce poverty and social security can reduce vulnerability.- Development can build communities and broaden the provision of opportunities for participation and involvement in decision making recognizing excluded group such as women enhancing education and health capacity.
Disasters create development opportunities	<ul style="list-style-type: none">- Favorable environment for advocacy for DRR measures- Decision makers more willing to allocate resources in the wake of a disaster- Rehabilitation and reconstruction activities create opportunities for integrating disaster risk measures

Source: A challenge for development UNDP, 2004.



Developing the Capacities of Communities for Disaster Risk Reduction

In fact, it is when disaster strikes that the ingenuity and creativity in all of us come to the fore. This is a very true statement. Examples abound of local people acting as first responders when there is a major disaster, such as multi- vehicle, road accident, a plane crash, a boat mishap or fire disaster. In the case of a slow onset disaster, such as drought, we find people in rural areas putting into practice a whole array of coping mechanisms that they had built up over time.

But people and communities should not be made to wait for disasters to strike before they put their ingenuity and creativity to work. Rather, they should be empowered to use these attributes to reduce the occurrence or the impact of disasters. Every community has some form of capacity, no matter how small, to reduce the disaster risk to which they are exposed. For most communities in Nigeria, this capacity needs to be identified, developed and used for disaster reduction. But, what does this capacity consist of? It may be grouped into four categories (NEMA, 2014):-

1. Physical or material resources
 2. Social organization resources
 3. Knowledge and skills, and
 4. Attitudes and motivation
- 1) Physical / material resources:- these include:-
- Able bodies' people who can do physical work
 - Work tools (for building, earth works etc)
 - Land
 - Food storage facilities
 - Stored food
 - Domestic animals
 - Public buildings that could serve as temporary shelters, etc.



2) Social organizational resources:-these include:-

- Traditional institutions (chieftaincy)
- Religious organizations
- Community development associations
- Cooperative group
- Social clubs

3) Knowledge and skills:-

Knowledge may be in such areas of the local environment (e.g. knowledge of local terrain, disaster threats, footpaths, etc), while skills may be in farming, wood work, black smithing, commerce, healthcare, transportation, swimming etc.

4) Attitudes and motivation:-

These determine people's outlook on life in general and on disasters in particular positive attitudes and appropriate motivation are required for disaster reduction and sustainable development.

These recourses need to be identified, mobilized, developed and applied to reduce the occurrence of disasters or minimize their impact. An excellent example of the role that communities could play in disaster mitigation is provided by flood control activities within the hadejia valley in jigawa and yobe states. In this flat- lying area, the blockage of river channels by sediment deposition and the growth of typha grass over the years, coupled with unusually heavy rainfall upstream result in widespread, damaging floods. The British department for international development (DFID) has been working with relevant stake holders to develop and implement sustainable solution to this problem including:



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- a) Structural measures, such as construction of embankments and flood diversion channels and the clearance of blocked river channels.
- b) Non- structural measures, such as raising people's awareness of the problem, what needs to be done, promoting flood preparedness and flood forecasting.

In fact, developing the capacity of Communities' for Disaster Reduction involves:-

- Public education
- Training
- Social mobilization
- Technical assistance, and
- Provision of materials

Climate Change as a Major Threat in the 21st Century

Over the last 200 years ,man in his quest for better living standard have resulted in increasing emission of green house gases (primarily CO²) above natural levels from the burning of fossils fuels, forest fires and other forum of deforestation which have altered the composition of the atmosphere and caused an enhanced green house effect.

Projections made by IPCC (2007) are summarized as follows:-

- a) Deserts are likely to become extremely hotter but not significantly wetter
- b) Global hydrological cycle will be intensified with changes in precipitation. Its total amount, frequency and intensity.
- c) Agricultural production (including forestry), will increase in dome areas and decrease in others taking into account the beneficial effect of CO₂ concentration



Implications for Nigeria

According to chronicled events by (UNDP, 2004) natural disasters are estimated to claim yearly 250,000 lives and on the average cost between US\$ 50 billion and US\$100 billion (5 trillion to N10 trillion) in property damage. In 1991 alone, more than 90% of those killed were by storm related hazards.

In Nigeria, studies since the year 2000 shows that while mean surface temperature has risen by about $0.2-0.6^{\circ}\text{C}$ within the past 100 years (1901-2000), in general, the change in the Gulf of Guinea, from about 24°C in 1960 to 29°C in 2000 has been phenomenally high. Investigations so far conducted confirm that, the country is one of the most vulnerable nations with impacts already including:

- a) Floods in both north and south and erosion in the south the worst occurring in 1999 with losses of life property and agricultural produce in excess of ₦50 billion.
- b) A 2.50°C increase of sea surface temperature (SST) in the gulf of guinea from 26°C in 1979 to about 28.5°C in 1998. Thus, severe storms could generate into tornado type storms that will combine with sea level rise (SLR) to ravage the coastal areas of Nigeria.
- c) Hot dry season with record breaking temperatures that exceed 50°C in the extreme north east in 2005 resulting in deaths.
- d) Drought and desertification that have taken over states north of 12° parallel. Sand dunes advancing Yobe and Borno states in the north east geopolitical zone is wiping out vegetation and settlements. A situation that could lead to acute migration (in near future) to create congestion in southern states similar to what occurred at the wake of the wake of the 1972-73. In fact, Lake Chad has shrunked to, 'little Chad' losing about 90% of its original size in 1960s.



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It is now obvious that Nigeria will suffer from future unprecedented climate episodic events of which the following will take 'centre stages':

- i) Devastating wind storms and flooding especially along poor drainage basins in many parts of the country at the peak of the monsoon rains
- ii) Severe drought in all the 19 northern states.
- iii) Pollution and related health effects in both humans and livestock.
- iv) Loss of biodiversity, especially aquatic life, exotic plant species and medicinal plants and some soil enriching organic natural plants.

Strategies for Coping with Climate Change

While climate change is a global phenomenon, it has regionally variable characteristics and impacts, and therefore, regional strategies for overcoming or adapting to the future situation are required. Besides data collection, there are several other areas that need to be improved in Africa in order to better the continent's chances of adapting to climate change such include

- Forecasting techniques and early warning systems.
- Capacity building
- Data and information dissemination
- Natural Resources management

The above mentioned strategies as already highlighted by Benoit (1977) will help build the capacity of communities to generate, effectively communication decision without this information on the climatic risks and the adaptation measures appropriate for such risks, no sound decisions can be made to sustainable harness available resources for development.



CONCLUSION

It is clear from the paper that financial resources available for disaster management are increasingly becoming limited in the face of competing demands from the other sections of the economy. We therefore have no choice but join the international community in promoting disaster reduction and mitigation activities; moreover, disaster management is a shared responsibility.

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