

## Needs for Disaster Risks Reduction Education in Nigeria

<sup>1</sup>Moses Zira Wand, <sup>2</sup>Ijeoma G.U. Ayuba <sup>3</sup>Bitrus G. Asika

<sup>1</sup>Department of Urban and Regional Planning Federal Polytechnic Mubi, Adamawa State-Nigeria

<sup>2</sup>Department of Urban and Regional Planning, University of Jos

<sup>3</sup>Department of Estate Management and Evaluation, Federal Polytechnic Mubi, Adamawa State-Nigeria

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**Abstract:** This paper reviews disaster risk reduction and the need to involve disaster education in educational institutions curriculum for sustainable quality education. Disaster encompasses serious disruption of the functioning of society causing wide spread human, material, economic, or environmental losses which exceeds the ability of the affected community to cope, using its own resources. Rising concern on disaster risks in all countries is evidenced in the number of major disasters and the amount of losses sustained there-from have been on the increase. Framework of Action (HFA) stresses the "use of knowledge, innovation and education to build a culture of safety and resilience." This paper advocates turning human knowledge into local action to reduce disaster risks. The basic principles should outline the general objectives and scope of disaster risks reduction at schools and educational materials to teach all stages of disaster risks reduction through quality education.

**Key Words:** disaster, risk reduction, disaster risk education, vulnerability

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### I. Introduction

Disasters are global phenomena that are of major concern in all the countries on the globe. Reports revealed that the frequency of major disasters and the quantities of losses/destruction resulted from it is increasing beyond expectation. Fresh in our memory are the disasters with severe impacts on environments and human among which are; the Indian Ocean Tsunamis, of December 2004, hurricane Katrina and sandy that devastated New Orleans 2006, and the North East of USA 2012 and 2013 flood calamity that ravaged over 14 states in Nigeria (NEMA 2011).

Disaster happens when natural events situations and normal activities are impacted by significant and sudden negative and unpleasant events that impact damage on people and their belongings (Ojo. 2013). Disaster may be of different forms such as drought, rainstorms, windstorms, floods, ethno-religious crises or terrorist's attacks. Disaster constitutes potential threats to national development, quality education, poverty alleviation programmes and the attainment of the overall needed societal goals. This opinion encourages proactive countries to utilize the threats as a foundation for developing relevant strategies focused on risk assessment, risk reduction, early warning and disaster readiness for effective reduction of social, economic and environmental resultant costs. Therefore, for sustainable development, livelihood and quality education to be achieved, disaster risk in the context of reducing vulnerability and enhancing resilience should constitute a new approach to disaster management.

Recent happenings depicts that Nigeria has been noticed as one of the disaster prone nations in the world. Apart from the challenges of basic needs of life such as water, health services and shelter, floods and insecurity have taken a centre stage in the nations concern. Evidently, the 2012 flood that displaced 7.7 million people, wind storms, rainstorms as well as incessant bomb blast that have led to the death of hundreds of persons are happenings that placed Nigeria as a highly challenged nation by disaster risk as well as limited capacity to curtail the challenges. Even though there are agencies directly responsible for disaster risk management, allied professionals and the public are handicapped as a result of limited knowledge of disaster risks, management and reduction. This paper reviews place and the basics for disaster risks reduction knowledge/education in Nigeria in furtherance of all round quality education for sustainable quality of life.

### Conceptual Clarification

**Disaster:** a disaster is a serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community to cope, using its own resources. A disaster is a function of the risk process. It results from the combination of hazards conditions of vulnerability and insufficient capacity or resources to reduce the potentials negative consequences of risks (ISDR, 2004). The disaster causal factors and the location are not the major determinants of their impacts but the environmental, economic, social and political disposition of the victims.

**Disaster Risk:** disaster risks refer to the probability of harmful expected loss (for instance, lives property and environment) due to interaction between hazards and vulnerable conditions. The vulnerability of groups or communities arising from physical, social, economic and environmental factors that expose them to risks may determine the likelihood and scale of the impact of a disaster. Moreover the capacities of a society that provide resources to cope with losses arising from a disaster create situations that minimize the conditions that generate risks.

**Vulnerability:** vulnerability is the existence of condition of defenselessness and insecurity resulting from physical, social, economic and environmental factors which expose a community to the impact of hazards (ISDR, 2004). Precisely; vulnerability means exposure and susceptibility to harms while exposure is determined by where and how people live and work relative to hazards. Susceptibility takes account of social, political, psychological and environmental variables that intervene in producing different impacts among persons with similar levels of exposure.

**Disaster Risk Reduction:** this the concept and practice of reducing disaster risks by systematic activities to analyses and manage the causal factors of disaster which encompass reduced exposure to hazards, minimize vulnerability of

people and property, good land and environmental management and improved readiness for negative events. Prevention is involved and it is targeted towards avoiding damages by minimizing vulnerability. Physical planning of the settlements is considered to be one of the effective methods to promote proactive preventive approaches to disaster (Ogboi, 2013).

**Categorization of Disaster**

Disaster represents the impacts of a natural, man-made event that adversely affects life, property, livelihood which often result in permanent changes to human societies, ecosystems and environment. The event in itself according to

Quarantelli (1998) is not a disaster but it is the impact which is called the disaster. Relative to their causal factors, disaster can be classified as being natural, man-made or human-natural in nature.

*Natural Disaster:* As they arise without direct human participation natural disaster are most times refers to as act of God. Natural disaster could be made severe due to man’s action before during or after the disaster event. Figure a. presents illustrations of disaster classification:

*Man-made:* Disasters that have an element of human intention, negligence error or action to do with a failure of a system are referred to as man-made disaster.

*Human- Natural Disaster:* those occurrences that arise due to combined roles of human actions and natural forces are in this category.

Figure: a: Classification of Disasters

Natural	Man-made	Human-natural
<ul style="list-style-type: none"> <li>•Avalance</li> <li>•Cold Snap</li> <li>•Disease</li> <li>•Drought</li> <li>•Earthquake</li> <li>•Famine</li> <li>•Fire</li> <li>•Flood</li> <li>•Hailstorm</li> <li>•Windstrom</li> <li>•Hurricane</li> <li>•Impact Event</li> <li>•Volcanic Eruption etc</li> </ul>	<ul style="list-style-type: none"> <li>•Aviation</li> <li>•Arson</li> <li>•Chemical, Biological, Radioactive and Nuclear Disasters (CBRNDS)</li> <li>•Civil Disorder</li> <li>•Power Outages</li> <li>•Communal Conflicts</li> <li>•Radiation</li> <li>•Siltation</li> <li>•Space Disaster</li> <li>•GSM Outages</li> <li>•War/terrorism</li> </ul>	<ul style="list-style-type: none"> <li>•Land Degradation</li> <li>•Desertation</li> <li>•Technological- Impacted</li> <li>•Siltation</li> </ul>

Source: NEMA Baseline Study for Katsina 2009

**Disaster Risk Management Planning**

Preparation of Disaster Risk Management plans (DRMP) in Nigeria is facilitated by NEMA, SEMA and LEMA by using VCA (Vulnerability and Capacity Analysis) tools and contingency plans. The VCA identifies National, State and local (Community) risks to:

- i. Build capacity for identification, development and management and sustenance of disaster risk management.
- ii. Assesses capacity (existing and required) in respect of prevailing and foreseeable hazards.
- iii. Provide forum for exchange of knowledge and experience in the areas of vulnerability and risk profile development.
- iv. Strengthens local capacity in utilizing available resources.
- v. Identifies and provides support to states and local Government for the development of vulnerability and risk profile.

**Components of Contingency plans:**

- i. General situation and scenario.
- ii. Strategic objectives and interventions
- iii. Relevant stakeholders required for intervention (indicating their roles and responsibilities);
- iv. Priorities and activities of intervention;
- v. Resources, needs and capacities relevant to intervention such as facilities, personnel, funding and logistic services;
- vi. Feedback and future action on intervention; mainstreaming DRR shall be integrated into development efforts at all levels of governance.

**Other Tools for DRR include Legal Enforcement Instruments such as:**

- i. Landuse Regulations;
- ii. Urban Planning and Development Standards

- iii. Standards for Environmental Impact Assessment
- iv. Building codes
- v. Fires codes
- vii. Enabling acts/laws/bye-laws of legislature on health and environmental issues.
- viii. Relevant international conventions and treaties signed by the government of Nigeria.

The contents of VCA and contingency plans which are tools for DRR plans clearly spelt the role of land use planning in DRR. The land use planning is an important contributor to sustainable development. It includes studies and mapping, analysis of economic, environmental and hazard data, information on alternative land use decisions and design of long-range plans for different geographical and administrative scales.

Land use planning can mitigate disasters and reduce risks by discouraging settlements and consideration of key installation in hazard prone areas, including consideration of services routes for transport, power, water, sewage and other critical facilities.

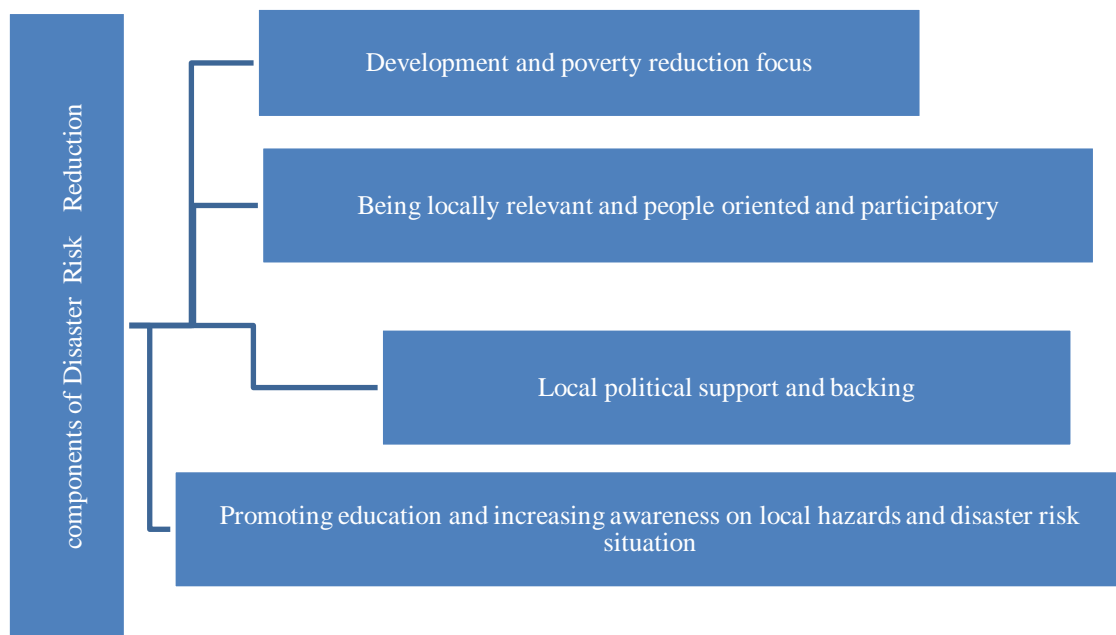
**Disaster Risk Reduction**

The underlying conditions of disaster risks are aggravated by unsustainable development policies and practices. Hence, for sustainable development disaster risks in the context of reducing vulnerability of communities and enhancing resilience need to be reappraised.

The focus of disaster risk reduction is to prevent or mitigate loss of life and destruction of property. DRR assist communities to get ready for and reduce impacts of unavoidable natural disaster and also prevent human induced ones. Disaster reduction’s major goal is to motivate communities to propagate more in the identification and management of risk and reduction of vulnerability. Disaster risk reduction involves systematic development and application of policies, strategies and practices to reduce vulnerabilities and disaster risks in a community to limit server impacts of hazards.

**Components of Disaster Risk Reduction**

The components of disaster risk reduction (DRR) have the potential for risk reduction, disaster readiness and effective addressing the reduction of social, economic and environmental consequences associated with disaster. DRR tend to protect and insure democratic dividends as such realizing the huge amount hitherto need used in perennial relief interventions for more positive and sustainable development is paramount.



Source: Ojo 2013

**Disaster Risk Reduction Activity**

1. *Risk Assessment and Analysis:* The communities need to know the risks that they are facing and to minimize their vulnerability to the risk. The risk assessment activity identifies potential risks hazards and their location. It assesses the magnitude of impacts and monitoring to comprehend signs of stress, pattern and time of occurrence.
2. *Education and Awareness:* this shall constitute-basic training on signs of Environmental stress and risks existence-community participation in risk assessment and analysis process.
3. *Development of Early Warning System:* This involves forecast and prediction of slowDown-on-set and rapid-on-set of disaster by collecting data and mounting of the environment. Announcing warning by community leaders through available means like radio, GSM, and town criers.
4. *Disaster Risk Management:* this is the peak of DRR activities which involves buildingPeople’s capacity to protect their lives and properties. - teaching the community environmental management measures to reduce the likelihood of

onset of some disasters like flooding, desertification and bush fire. – establishing precautionary measures and safety in times of disasters.

### **Disaster Risk and Education**

According to UNIDR (2005), education for DRR is an interactive process of mutual learning among people and educational institutions. Its importance is beyond formal education at schools, universities as it affects several aspects of life through the concerted efforts to overcome global barriers of ignorance, apathy, individual interests and lack of political will available in community. Disaster risk education (DRE) involves the recognition and application of traditional wisdom and local knowledge for protection from natural hazards. In other words the DRE intend to translate available human knowledge into local action to reduce disaster risks.

APEC (2009) initiated a set of principles for DRE at schools. The principles present the general objectives and the scopes of DRE at schools and education materials in order to teach all stages of DRR. Moreover the principle outlined the need for involvement of local community and civil society groups in the development of quality education materials in order to successfully integrate school disaster education. The major principles developed are as follow:

1. Ensuring that DRR is a national, local priority with a strong institutional basis for implementation.
2. School should teach all stages of DRE cycle which include disaster prevention, mitigation, preparedness, response and recovery.
3. They should introduce students to land use planning, building codes and environmental stewardship where applicable as means of managing and reducing disaster risks.
4. They should supplement a range of academic subjects rooted in existing learning materials, suit the local context and taking into account indigenous knowledge.
5. DRE requires regular collaboration efforts of all stakeholders at all levels of government, private sectors and communities.
6. Local communities should be involved in the development of DRE materials for schools to assist identify local risks and response measures.
7. To ensure effectiveness there should be regular monitoring and evaluation of DRE.

OCED (2008) reported that risk awareness education encompass realizing the natural and social mechanism that may create hazards and human vulnerability to the hazards. Essentially, DRE activities need to involve preparedness (learning how to commence and maintain preparation for disaster) mitigation behavior (what to do before during and after a natural disaster), adaptive capability (how to change and maintain systems and networks and build community competencies to minimize the impacts of disaster and post-disaster learning) (Dufty, 2009).

### **Disaster Risk Education in Nigeria**

The societies need knowledge in order to manage their situation. Education provides passage of important life skills messages especially in the area of health hygiene and DRR. It paves ways for preventing and mitigating disaster in the future and makes DRR cost effective. Education is transmitted through experience, established warning arrangement, information technology, staff training among others to facilitate sharing of information and knowledge to citizens, professionals, organisations and policy makers (UNISDR, 2005).

Agboi (2005) reported that to build a good educational structure for DRM and planning for DRR in Nigeria, the following are needed:

1. Formal Education: integrating DRR into all levels of formal education from the pre-primary to tertiary institutions. This requires long term planning and capacity building. Focus should be made on curricula, teachers training and assessment of learning. School-based curriculum work in DRR takes three main forms, each appropriate to context. Stand-alone courses short modules (specific subjects and grade levels), and infusion in the curriculum (multi-subjects using reading, examples and activities) (IFRC, 2013).
2. Non-formal education: non-formal education activities can be the rapid entry point for DRR education, indigenous knowledge for DRR should be emphasized especially early warning system (UNESCO, 2007). Informal education should engage wider people for action and behavior to increase safety and resilience. Informal education can be used as a tool such as publications, posters, guidelines, flier, brochures, booklets, activity books, story books, assembly kits and teacher resources (UNISDR, 2005).
3. Policy development and advocacy for DRR in education: Existing institutional setups need to be structured and DRR need to integrate into the policies and programmes of Nigeria education.
4. Linkages to other sectors and departments in order to ensure wider access to resource capacity building and support in times of emergencies.
5. Seminar and campaign and be piloted with a view to teaching risk reduction techniques to the rural-urban poor who engages in informal construction with regard to compliance with building codes and planning regulation.
6. Specialist research centres for DRM should be encouraged and properly equipped to carry out their roles of teaching, research and consultancy.
7. Risk awareness and knowledge of hazards resistant construction for construction workers, builders and professionals. The content of DDR in school curricula needs standardization in line with the global best practices (IFRC, 2011).

### **The Way Forward and Sustainability of Disaster Risk Education**

Sustainability of DRE means continuing public education intervention effort over a long period of time to achieve a paradigm shift culture of safety. The challenges of DRE are:

1. New technology that produce greater risk like construction materials and practices;
2. Lack of awareness of technologies available to reduce risks;

3. The long interval between some natural hazards impacts like earthquakes and Tsunami;
4. The ever increasing impacts of climate change;
5. Reduced inter-generational transmission of indigenous knowledge;
6. Funding;
7. Expectation of new rather than improved and sustained approaches; and
8. Failure to measure progress telethons.

A major weakness in DRR according to Dufty (2009) is the lack of evaluation to gauge their effectiveness using measures. The effectiveness of DRE stages according to him can be measured at several intervals. These include recipient's level of understanding of hazards risks; their level of understanding appropriate readiness behavior, their preparation and maintenance of emergency management plan a family or community and the ability to cope with and learn from a disaster if it happening, monitoring and evaluation enhances effectiveness as propagated by quality education goals. Community-level assessment and base line measures focuses on how successful there is increase in quality education and change in behavior. This can be ensured by assessing the following:

- i. Content clarity, simplicity, accuracy. Relevance and appropriateness.
- ii. Design appeal, user-friendliness, easy to use and understanding
- iii. Engagement quality that promote interaction and participation

## II. Conclusion

Disaster is a global phenomenon that can happen in any country, community or to an individual irrespective of location, ethnicity or social status. Disaster portrays the impacts of a natural, natural, man-made event that negatively affects life, property and livelihood which often result in permanent changes to human society, ecosystem and environment.

The DRR is necessary to reduce exposure to hazards, minimize vulnerability of people and property, good land and environmental management and improved readiness for negative effects.

This paper propagates the need of knowledge by the society in order to manage their situation. Quality education passages of vital life skills messages especially in the area of DRR and health hygiene. Quality education paves ways for preventing and mitigating disaster in the future and makes DRR cost effective. The basics are to present the general objectives and the scopes of DRE at schools and education materials in order to teach all stages of DRR. DRE needs to be sustained by ensuring continuing public awareness intervention efforts over a long period of time to achieve a paradigm shift culture of safety embedded in quality education.

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