SOME STRATEGIES TOWARDS MAINSTREAMING ENVIRONMENTAL EDUCATION IN DISASTER RISK REDUCTION IN NIGERIA

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ABSTRACT
Environmental education (EE) is a long-term process of developing the skills and behaviour necessary to understand and accept the relationships between people, culture and the natural environment. Its aim is to prepare society in practical decision making and to teach environmentally friendly behaviour. Nigerians are increasingly living with risks of a number of human and natural disasters. As the country’s disaster management strategy has shifted from that of post-disaster response, relief and rehabilitation to that of mainstreaming disaster risk reduction in development processes, there are the needs to ensure that Nigerians become aware of disasters, their causes, how to prevent them, how to respond to them when they occur and how to minimise the risks to which they are exposed to disasters. Thus, EE has important role to play in Nigeria’s disaster management efforts. This paper examines the ways in which EE can be mainstreamed into Nigeria’s disaster risk reduction programs. The paper examines the ecological disasters Nigeria is at risk of, how people can be integrated into disaster management process, the need for EE and how it can be effectively mainstreamed into DRR efforts of the country. The paper concludes with a submission that the people should be made to have more important and proactive roles to play in this regard than what is presently obtainable and for this to be done, there is the need for a holistic, more comprehensive and all-encompassing approach that should cover all ensure full integration of EE in disaster risk management arrangements in the country at all levels so that the people can live in harmony with disaster risks. Some of the activities that are required in this regard include more effective involvement of the people in disaster risk vulnerability assessment, planning, information systems, institutional framework of development, warning systems, public education and training, development of a short-term and longer-term mitigation strategy.

INTRODUCTION
The landmass of Nigeria runs from about longitude 20 401 to 140 451 east of the Greenwich meridian and from latitude 40 151 to 130 551 north of the equator. The country has a population of over 120 million and covers an area of 923,768 km2. At its widest, it measures about 1,200 km from east to west and about 1,050 km from north to south. From the Atlantic up to the edge of the Sahara all tropical ecozones are found. These include: the southern zone of Mangrove swamp located between latitude 40 and 60 301 N, the Tropical rainforest found around latitude 60 301 to 70 451 stretching from the southwest to the southeast, the Guinea Savannah belt around latitude 70 451 N to 100 N, the Sudan Savannah belt around 100 N to 120 N and the Sahel Savannah in areas above latitude 120 N.

The unique location characteristic of Nigeria made the country vulnerable to climatic change and environmental externalities resulting from both natural and anthropogenic driving factors. In terms of climate change driven land degradation, Nigeria is being ‘attacked’ in all fronts - serious coastline erosion, the pervasive gully erosion in many parts of the country, and the ferocious wind erosion and desertification in the sudano-sahelian zone.

Nigerians suffer significantly from various types of disasters such as floods, landslides, tidal waves, coastal erosion, sand-storms, dust-storms, locust/insect infestations, oil spillage and other man-made disasters which been claiming many lives and rendering many homeless. The country has a relatively weak economy with an under protected and expansive environment and thus political economy as a cause of disaster (Albala-Betrand, 1993) is an important one in the country. The contribution of these characteristics make Nigeria’s environment especially vulnerable to disasters.
Disaster is an event, natural or man-made, sudden or progressive, which impacts with such severity that the affected community or individual has to respond by taking exceptional measures. This phenomenon has become an issue of growing concern throughout the world. Most disasters (including flood, droughts, desertification, land degradation, subsidence, etc.) are not random events without underlying causes; they are sudden manifestations of slow but continuous degradation processes.

There has been a dramatic rise in the frequency and magnitude of ecological disasters in the country, threatening large populations living in diverse environments in recent years. Natural disasters had tripled since the 1960s killing hundreds of people and destroying millions of dollars of property each year. These losses will increase as more people reside in areas that are subject to these disasters. The general increase in population in the last two decades has placed more people at risk whenever an extreme event occurs. Also the significant increase in human settlement particularly on floodplains over the past thirty years has increased the risk of flooding. If these trends continue, the costs associated with natural disasters will continue to increase.

Human beings are constantly asked to make decisions that may directly or indirectly affect the environment. The education we receive growing up plays a huge role in developing competent citizens. To ensure citizens are making intelligent and responsible decisions concerning any issue, it is vital that our educational system equips individuals with the relevant knowledge and skills. Environmental education (EE) is one such means that will assist in this process.

The goal of EE is not to produce "EE graduates or environmental activists", but citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution. This paper examines the major ecological disasters to which Nigerians are facing serious risks and the ways in which environmental education can help Nigerians to learn to live with those risks. The paper is divided into five parts. The section that follows the current one looks at the major ecological crises that constitute disaster risks in the country and the main ecological disasters that keep on recurring. The next examines the concept of environmental education and in the one that follows it the main approaches, structures and major challenges for ensuring effective mainstreaming of making EE in DRR in Nigeria are treated

ECOLOGICAL DISASTERS IN NIGERIA

Key Ecological Features of the Country
Ecological regions in Nigeria can be classified into the following seven regions, namely Mangrove forest (9,723km²), Freshwater swamp forest (21,135 km²), Lowland rainforest (190,053 km²), Derived Savanna (75,707 km²), Guinea (367,000 km²) and Sudan-Sahel (350,000Km²).

According to a countrywide study by JICA (1999), Nigeria as at 1999 had an estimated number 5,081 different animal species (of which only 205 are indigenous), 22,090 different plant species (including 1,502 indigenous ones), 1,489 different species of microorganisms, 6 national Parks, and natural reserves. Based on the Nigeria’s National Policy on the Environment, the key priority areas for ecological protection include Population, Land use and soil conservation, Water resources management, Forestry, wildlife and protected areas, Marine and coastal area resources, Sanitation and waste management, Toxic and hazardous substances, Mining and mineral resources, Agricultural chemicals, Energy production and use, Air pollution, Noise pollution, Occupational health and safety, Settlements, recreational space, greenbelts, monuments and cultural property while Public participation, International and intergovernmental arrangements, Legal arrangements, International treaties and obligations and Monitoring and Evaluation issues are considered as very fundamental to ecological sustainability in the country.

These imply that protection of biotic and abiotic factors that cause ecological disasters in the country is the prime focus of the Nigeria’s environment policy.

Recurring Ecological Disasters in the Country

Floods
Floods are among the most devastating natural disasters in the world, claiming more lives and causing more property damage than any other natural phenomena. In Nigeria, at least 20 per cent of the population is at risk...
from one form of flooding or another (Odemerho, 1993). An average of about 100 people is killed and millions of Naira of property is damaged by heavy rainstorm and flooding each year.

Floods in the country are caused by siltation of existing streams, excessive prolonged rainfall, human manipulations of drainage basins and undeveloped drainage. In Niger Delta, many flood plains of major inland river systems and other coastal areas floods are recurring events. Loses resulting from such floods every year translate into billions of Naira, thousands of destroyed houses and hundreds of lost lives.

**Coastal Erosion**

The 832km stretch of the Nigerian coastline and its coastal zone is classified into four geomorphic units.

a) Sandy barrier beach - lagoon complex of about 150km in the west from Badagry in Lagos State to Ajumo village in Ondo State

b) Transgressive Mud coast in Ondo for about 100k up to the mouth of the Benin River
c) The Niger Delta from Benin river estuary for about 500km eastwards to the mouth of the Imo River
d) The Strand coast east of the Niger Delta for about 85km terminating at the Cross River estuary with Nigerian-Cameroon border.

Heavy erosion is seen in Victoria Island in the Barrier Lagoon, Awoye and Molume in Transgressive Mud Coast, Escravos (Ogborodo) Forcados - South point and Brass in the Niger Delta and Ibene - Eket in the strand coast.

**Forest Fires**

Bush fire threat tends to be seasonal. Speed of onset may vary. It can be rapid under conditions of high temperatures and high wind, when major fire fronts advance very quickly. Also, fragments of fire from a front may be carried forward by the wind, starting new fires further ahead. Effects of bush fire can be very destructive, especially in loss of building, timber and livestock. Recovery from effects on the environment may take several years.

Wildfires occur almost everywhere in Nigeria where combustible materials are available, particularly in the dry season. Nigeria suffers enormous losses through uncontrolled wildfires. A comprehensive study in seven cocoa and palm fruits producing states in Nigeria indicates that of the 12, 274 hectares of plantation established, 1,122 hectares was affected by fire while 1, 788.3 hectares or 14.55% was completely destroyed in 1992/93 alone. This loss amounted to over 20million Naira and the trend seems to be on the increase. The effect of this to agriculture and human settlement is unimaginable.

Official records of the Federal Ministry of Environment show that a total 216,905 ha were destroyed by forest fire in 9 states. Such fires particularly affect Cocoa, oil palm, rubber, African pear, coffee, resulting into estimated damages of over 10 billion Naira between 1995 and 2002.

**Drought**

Drought is one of the most important natural disasters in Nigeria. It is often aggravated by human actions. Since drought affects very large areas for months, even years, it has a serious impact on regional food production, often reducing life expectancy for entire populations and economic performance of large regions (van Apeldoorn, 1981). Areas of Sokoto State, Kano State, Katsina State, Jigawa State, Yobe State and Borno State covering about 230,000 km² of land area was severely affected. Other droughts, though not as much severe occurred again in those areas in 1983/1984 and 1993.

Beside widespread devastations of vegetation resources and desiccation of soils, the two droughts resulted into deaths of over 1 million cattle, goats and sheep and over 100,000 lives. During the drought of 1972-1973 alone, about 300,000 animals representing 13 per cent of the livestock population of northeastern Nigeria were estimated to have died (Mortimore, 1989). Agricultural yields dropped to between 12 per cent and 40 per cent of the annual averages. In the drought of year 1987, crop yields ranged between 56 per cent and 75 per cent of the 1986 totals. The consequences of environmental breakdown as a result of a prolonged drought led to massive economic losses, destruction of ecological resources food shortages and starvation for millions of people.
Fashona and Omojola (2005) have presented a picture of rainfall changes (which is a critical element of climate and climatic changes causing drought in tropical Africa) in the guinea-sudan-sahel (GSS) zone of Nigeria. Virtually all the stations in the Sahel region covered in the study recorded deficit (less than average) rainfall over a 6 decade (1940-2000) period. The decade 1950s recorded the highest rainfall while the decade 1980s had the least rainfall from the total decadal mean. The pattern of land cover changes between 1976 and 1995 strongly indicated loss of prime arable lands resulting from climate change, which is in turn leading to opening up of new virgin lands towards the south.

**Oil Spill**

Oil spill disaster is caused either by tanker break up at sea, illegal discharged and tanker clean up. Oil spill especially in Nigeria could also result from sabotage. Oil is both physically and chemically hazardous with disastrous consequences in marine environments that are exposed to both chronic and acute pollution.

Crude oil spill occur daily in the oil field in the Niger Delta. 5,400 oil spill incidences released 112.8 million barrels of crude oil into the sea and coastal area in the Niger Delta between 1976 and 1996. In a single major oil spill, resulting form a blow out at the Texaco Funiwa-5 oil wells, 400,000 barrels were released into the sea off Bayelsa State. A second largest oil spill occurred in January 1998 at Mobil Producing Nigeria where 40,000 barrels were released from the pipeline at offshore in Akwa Ibom State.

**Water Hyacinth**

Water Hyacinth widely spread and covered all of the surface fresh water in the coastal area from the Benin Republic in the west to the Cross river to the Cameroons in the East and this has been an issue f much concern to the ECOWAS. In a number of inland water ways, water hyacinth and other associated weeds are major impediments to the effective navigation and other uses of the waterways. In Hadejia-Nguru wetlands, Grema (2004) has documented how weed invasion of river channels has increased incidence of flood events and disasters.

**Gully Erosion**

Gully erosion is a very serious ecological disaster that affects all parts of the country. The causes are many and varied but the principal include land scarification, unwise cultivation, poor soil structure, deforestation, high erosive power of rainfall and runoff and roads development. In southeastern and southwestern parts of the country where population pressure on land is very high, the very limited land for settlement development and farming is being heavily attacked by gullying resulting into substantial ecological, economic and human losses. Gully erosion is widespread in Abia, Imo, Anambra, and Bayelsa States while coastal erosion is commonly found along the nation’s 853 km long coastline with estimated mean shoreline retreats of 2-30 metres per year. The worst affected areas include Victoria Beach in Lagos, Awoye/Molume in Ondo State, Ogborodo/Escravos and Forcados in Delta State, Brass in Bayelsa State, and Ibeno-Eket in Akwa Ibom State.

Severe cases of gully erosion have also been noted in many parts of northern Nigeria where unfortunately because of low population pressure, the per capita loses are not as devastating as in say southeastern Nigeria. In Toto and Wamba towns of Nassarawa state for examples, more than half of the built-up areas have been abandoned and their occupants relocated to new areas as a result of gully erosion.

It is estimated that over 90% of the total land area of Nigeria is under severe sheet, rill, and gully erosion, with the severest gully erosion on 80% of Nigeria’s total land area. Sheet erosion leads to soil impoverishment as nutrients are washed away, loss of livelihood as farmlands become wasteland, and pollution and siltation of available sources of drinking water. Human lives and properties, especially buildings, are endangered as they collapse into gullies. There are currently over 2,000 active gully erosion sites spread around the country.

In recent years, the Federal Government has spent almost ₦91 billion on periodic rehabilitation aid for sand replenishment projects of the Bar Beach in Lagos. In the far north, where vegetation cover is scarce, wind erosion is a common land degradation factor frequently sweeping away the top soil.

**Land Slides**

Landslides occur in areas of relatively steep topographic slopes underlain by unstable materials. Slides are often the result of high concentrations of soil moisture that lubricate the surface materials. Landslides may...
cause severe damage to structures and systems (building may be buried or villages swept away). Rivers may be blocked, causing flooding, crops may be affected.

Sometimes, areas of crop-producing land may be lost altogether. When landslides are combined with very heavy rain and flooding, the movement of debris (e.g. remains of buildings uprooted) may cause high levels of damage and destruction.

**Soil Degradation**

In 1990, estimates indicated that 82 million hectares out of Nigeria’s total land area of about 91 million hectares were arable. The major soil types in the country are the Alfisols, Oxisols, Entisols, Ultisols and Vertisols all of which beside the latter are notoriously difficult to manage for agriculture because of the inactivity nature of the dominant clay mineral (kaolinite) of the soils. Because of this, and also that crop cultivation in the country is done largely in a non-sustainable manner, the soils tend to undergo the process of degradation if placed under continuous use, a situation which use of fertilizer cannot reverse. Many farmlands have now been abandoned due to this problem while those still under cultivation are having their nutrients being increasingly mined.

The problem of soil degradation in the country is being compounded by the ever increase in the proportion of land area being brought under varying agricultural practices. For instance, over 1976 to 1995 period, an increment of between 20% to 3,200% in areas under Agricultural Tree Crop Plantation, Extensive (grazing, minor row crops) Small Holder Rainfed Agriculture, Extensive Small Holder Rainfed Agriculture with, Floodplain Agriculture, Irrigation Project, Intensive (row crops), Livestock Project and Rainfed Arable Crop Plantation.

Perhaps a very glaring evidence of occurrence of land degradation processes affecting especially different areas of the country is the fact that over 1976 and 1995, decrease of between 4% to 46% of areas covered by discontinuous grassland dominated by grasses and bare surfaces, dominantly grasses with discontinuous shrubs and scattered trees, dominantly shrubs and dense grasses with a minor tree component and dominantly trees/woodlands/shrubs with a subdominant grass component while areas covered by denuded areas and sand dunes/aeolian mantles and disturbed forest all increased by between 32% to 426% over the same period.

**Desertification**

Areas lying roughly north of 12° latitude (parts of Kebbi, Sokoto, Zamfara, Katsina, Kano, Jigawa, Yobe and Borno stats) in the country, commonly called the Sudan-Sahel, represent the most marginally fragile and delicately balanced ecosystem in the country (Mortimore, 1989). Total annual rainfall average less than 600mm, soil productivity very low, vegetation cover very scanty and annual temperatures very high resulting in excessive water loses from soils, surface and sub-surface waters and plants. Consequently, wind and water erosion, soil fertility loses and other processes of land degradation are very important in the area. Land degradation processes occurring in these areas are referred to as desertification. Because of this problem, per capita crop production in those areas annually falls below what is potentially required such that food shortages and poverty incidences are quite common.

**Disastrous Landcover Changes**

Disastrous land cover changes are one of the major causes of both soil degradation and desiccation in the country. A land cover changes due influences of both human activities and natural factors like soil and climatic changes. The changes can be for good or bad of the ecosystem and can thus a major cause of ecological disasters. Recent research evidence (Fashona and Omojola, 2005) has indicated that of the 35 different land cover types in the country that can be mapped out from satellite data; none has undergone any significant ecologically beneficial change over the 1976 and 1995 period. For instance while afforested sites increased by only 58% during the same period, naturally vegetated sites like Forested Freshwater Swamp, Graminoid/Sedge Freshwater Marsh, Grassland, Mangrove Forest, Montane Forest, Montane grassland, Riparian Forest, Shrub/Sedge/Graminoid, Freshwater Marsh/ Swamp, Teak/Gmelina Plantation and Undisturbed Forest decreased by between 10% and 90%

**Siltation**

Inappropriate agricultural practices, the destruction of watersheds, and the opening up of river banks, and other critical areas have led to silting of man-made drainages in built-up areas, irrigation canals, river beds,
reservoirs and loss of water courses. These result into cases of upstream and downstream flooding of reservoir areas, river bank flooding, 'death' of floodplains and acute water shortages in the country. There is unfortunately lack of information on the extent and seriousness of siltation problems in reservoirs in the country even though over 60% of water resources requirements of the country are met by these reservoirs. However, the muddy nature of storm runoff is enough evidence, even to the uninformed that erosion is taking place and that sediments are moved downstream into drainage systems and surface water storage systems like reservoirs.

**Destructive storms**

Violent storms during rainy period continue to wreck havoc every year. In 2005 rainy season alone, estimates from various newspaper reports put damages to settlements by such storms as running into billions of Naira across the country.

**Epidemics**

There are certain epidemics that plague the country almost every year whose occurrence could be traced to weather conditions. Principal of this is meningitis which every year claims several lives in especially areas of the country with long term hot climatic conditions. This epidemic is so serious that annual vaccination against it is usually conducted in such areas.

**GETTING PEOPLE TO BE PART OF DISASTER RISK MANAGEMENT IN NIGERIA**

To live with disaster risk, people must learn how to manage disasters and their risks. Disaster management is the systematic observation and analysis of disasters to improve measures relating to prevention, mitigation, preparedness, emergency response and recovery. It is a continuous and integrated multi-sectoral, multi-disciplinary process of planning and implementation of measures aimed at prevention and mitigation, preparedness, response, and recovery in relation to natural and man-made disasters (Bender, 1992; Bates and Peacock, 1995). Disaster management therefore refers to programs and measures designed to prevent, mitigate, prepare for, respond to and recover from the effects of disasters.

Disaster management should include administrative decisions and operational activities that involve prevention, preparedness, response, recovery and rehabilitation at all levels of government. It does not only involve official bodies, because non-governmental organisations and community-based organisations also play a vital role. Disaster management can be viewed in a number of ways. The more traditional approach has been to regard disaster management as a number of phased sequences of action (or a continuum) involving interrelated activities such as preparedness, Mitigation, prevention, recovery, response and development (Ologe, 2004).

Disaster management is best seen as a continuous process where disasters are managed in a parallel series of activities rather than in a sequence of actions. The relative weighting of the actions (contracting and expanding as needed) will also vary depending on the relationship between the hazard event and the vulnerability of the community involved (Lewis, 1999). This approach acknowledges that disaster management usually includes a number of interventions and actions that may occur simultaneously and not always in phased succession. In the case of droughts, for example, drought relief, recovery and mitigation may often occur at the same time.

The literature on the principles of disaster management is extensive. However, from this extensive literature, the following are clearly identifiable as the major principles for managing disasters, as follows:

- It should address important human needs by focusing on the real causes of disasters and not merely symptoms.
- It should be driven at all levels of government.
- It should be transparent and inclusive.
- It should ensure community involvement.
- It should accommodate local conditions.
- It should have legitimacy.
- It should be flexible and adaptable.
- It should be efficient and effective.
- It should be affordable and sustainable.
- It should be needs-orientated and prioritised.
It should involve other role-players, including non-governmental organisations and community-based organisations.

It should have a multidisciplinary and integrated approach.

It should focus on key issues.

At all times, the first priority of disaster management is the protection of the people who are most at risk. The second priority is the protection of the critical resources and systems on which communities depend. In both two occasions, the people must not only be involved but always carried along.

THE NEED FOR ENVIRONMENTAL EDUCATION

The world over, it is now appreciated that individuals must live in a sustainable way. Environmental Education (EE) is a field characterised by a paradox. As explained by Palmer (1998), environmental education refers to the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biological surroundings. It also entails practice in decision making and self-formulation of a code of behaviour about issues concerning environmental quality. EE is thus about learning to live in a sustainable way.

It is apparent that EE is as good for human development as formal schooling system. But while few would doubt the urgency and importance of learning to live in sustainable ways, EE holds nowhere near the priority position formal schooling enjoys around the world. To bridge this gap, international attention has for long been attracted especially in face of the recurring tendencies of the various ecological disasters plaguing different parts of the world.

The world’s first intergovernmental conference on EE was organized by the United Nations Education, Scientific, and Cultural Organization (UNESCO) in cooperation with the U.N. Environment Programme (UNEP) and was convened in Tbilisi, Georgia (former USSR) from October 14-26, 1977 and came up with what is better known as the Tbilisi declaration. The declaration noted the unanimous accord in the important role of EE in the preservation and improvement of the world’s environment, as well as in the sound and balanced development of the world’s communities. The Tbilisi Declaration together with two of the recommendations of the Conference constitutes the framework, principles, and guidelines for EE at all levels—local, national, regional, and international—and for all age groups both inside and outside the formal school system.

A basic aim of EE is to succeed in making individuals and communities understand the complex nature of the natural and the built environments resulting from the interaction of their biological, physical, social, economic, and cultural aspects, and acquire the knowledge, values, attitudes, and practical skills to participate in a responsible and effective way in anticipating and solving environmental problems, and in the management of the quality of the environment.

EE also aims to clearly show the economic, political, and ecological interdependence of the modern world, in which decisions and actions by different countries can have international repercussions. It should, in this regard, help to develop a sense of responsibility and solidarity among countries and regions as the foundation for a new international order which will guarantee the conservation and improvement of the environment.

TOWARDS EFFECTIVE MAINSTREAMING OF EE IN DRR IN NIGERIA

To ensure effective mainstreaming of EE in DRR in Nigeria, special attention should be paid to understanding the complex relations between socio-economic development and the improvement of the environment. This is because development processes and disaster risks are intricately linked in the country. For this purpose, EE in the country should:

- Provide the necessary knowledge for interpretation of the complex phenomena that shape the environment.
- Encourage those ethical, economic, and esthetic values which, constituting the basis of self-discipline, will further the development of conduct compatible with the preservation and improvement of the environment.
- Provide a wide range of practical skills required in the devising and application of effective solutions to environmental problems.
To carry out these tasks, EE should bring about a closer link between educational processes and real life, building its activities around the environmental problems that are faced by particular communities and focusing analysis on these by means of an interdisciplinary, comprehensive approach which will permit a proper understanding of environmental problems.

In addition, EE should cater to all ages and socio-professional groups in the country and be addressed to:
- the general non-specialist public of young people and adults whose daily conduct has a decisive influence on the preservation and improvement of the environment;
- to particular social groups whose professional activities affect the quality of the environment; and
- to scientists and technicians whose specialized research and work will lay the foundations of knowledge on which education, training, and efficient management of the environment should be based.

To achieve the effective development of EE, full advantage must be taken of all public and private facilities available to society for the education of the population, such as:
- The formal education system,
- Different forms of non-formal education,
- The mass media.

To make an effective contribution towards improving the environment, educational action must be linked with legislation, policies, measures of control, and the decisions that governments may adopt in relation to the human environment.

There is also the need to orient the goals of EE in the country towards:
- Fostering clear awareness of, and concern about, economic, social, political, and ecological interdependence in urban and rural areas;
- Providing every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;
- Create new patterns of behavior of individuals, groups, and society as a whole towards the environment.

When all these are done, the guiding principles of EE in the country should comprehensively be made to:
- Consider the environment in its totality—natural and built, technological and social (economic, political, cultural-historical, ethical, esthetic);
- Be a continuous lifelong process, beginning at the preschool level and continuing through all formal and nonformal stages;
- Be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;
- Examine major environmental issues from local, national, regional, and international points of view so that students receive insights into environmental conditions in other geographical areas;
- Focus on current and potential environmental situations while taking into account the historical perspective;
- Promote the value and necessity of local, national, and international cooperation in the prevention and solution of environmental problems;
- Explicitly consider environmental aspects in plans for development and growth;
- Enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences;
- Relate environmental sensitivity, knowledge, problem-solving skills, and values clarification to every age, but with special emphasis on environmental sensitivity to the learner’s own community in early years;
- Help learners discover the symptoms and real causes of environmental problems;
- Emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills;
- Utilize diverse learning environments and a broad array of educational approaches to teaching, learning about and from the environment with due stress on practical activities and first-hand experience.
CONCLUSION

This paper has examined the nature of ecological disasters and some conceptual and fundamental issues in making environmental education to assist Nigerians in learning to live with ecological disaster risks in Nigeria. It argues that the present structure for managing ecological disasters in the country places too much load on institutional components (especially federal and state institutions) rather than the people component. Since development efforts in the country are generating ecological disaster risks, then people should be made to learn how to live with such risks. The people therefore should be made to have more important and proactive roles to play in this regard than what is presently obtainable.

The paper thus advocate for a holistic, more comprehensive and all-encompassing approach that should cover all ensure full integration of EE in disaster risk management arrangements in the country so that the people can live in harmony with disaster risks. Some of the activities that are required in this regard include more effective involvement of the people in disaster risk vulnerability assessment, planning, information systems, institutional framework of development, warning systems, public education and training, development of a short-term and longer-term mitigation strategy. These activities should be an integral part of “normal” local government activities of the various communities in the country. For example, vulnerability assessment is a long, involved process that cannot be conducted only when an isolated disaster occurs.

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