

Towards Conserving Nigeria's Environment through Environmental Management Education

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Abstract

Environmental conservation involves the wise use of resources and their preservation from reckless exploitation and wanton destruction. In contemporary Nigeria however, the ideals of conservation have failed to be properly integrated into the National development agenda. Widespread ignorance and low levels environmental awareness have been identified as prominent factors responsible for this despicable state of affairs. Since education remains the cure for ignorance, this paper therefore, aims at emphasizing the urgent imperative for the incorporation of environmental management education as a major component of an integrative framework for the conservation of Nigeria's environment. The paper contends that effective environmental conservation may never be attained unless and until requisite skills are developed and sufficient awareness created nationally and locally through a robust programme of environmental management education. The paper recommends the adoption of environmental management education as an important component of our effort to ensure effective conservation and national development. Specifically, environmental management education should be introduced as a subject in the primary and secondary schools, while universities and other tertiary institutions should offer it as a general course and make efforts to establish Environmental Management Department in the Faculty of Environmental Studies as approved by the National Universities Commission.

Key words: Environmental Management, Education, Conservation, Resources, Awareness.

1. Introduction

The Nigerian environment is seriously threatened and fraught with all kinds of dangers which are now manifesting in environmental problems including pollution of water, air and land, erosion, deforestation, flooding, climate change, green house effect, global warming, biodiversity loss, desertification and desert encroachment among others. Truly, the handwriting is bold and clear, that the danger point has been reached and even exceeded in many places (Animashuan, 1995) and no future can be as bleak as one in which the basic resources essential for human survival and development are increasingly being destroyed by human misuse (Anijah-Obi, 2001; Harrison, Inyang & Udo, 2010)).

Given the limited and finite nature of most environmental resources and the persistent increase in the incidence, severity and complexity of environmental problems arising from unsustainable exploitation of resources, it becomes quite pertinent that the tenet of conservation be adopted and integrated into the way and manner in which environmental resources are used. The rate of species extinction for instance, must be slowed down through conservation otherwise, man may soon join the dinosaurs!

The word conservation comes from two Latin words, *con* meaning 'together' and *servare* which means 'keep' or 'guard'. Therefore, etymologically, conservation means to keep together. Conservation may be seen as the wise, rational, careful and judicious use of natural resources and their preservation from reckless exploitation and wanton destruction (Robinson, 1976). It means preservation, maintenance, sustainable utilization, restoration and enhancement of the natural environment (Ukpong, 1991). To Bisong and Ajake (2001), it implies the management of human use of the forest so that it may yield the greatest sustainable benefit to the present generation while maintaining its potential to meet the needs and aspirations of future generations. It ensures the best use of resources which guarantees the highest level of satisfaction for the longest period of time (Harrison, Inyang & Ekott, 2014).

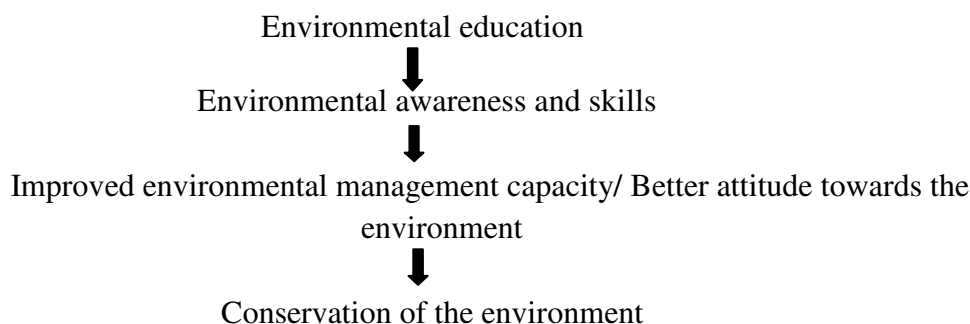
In spite of its enormous benefits, the ideals of conservation have failed to be properly integrated into the national development agenda. The basic tenets of conservation are often neglected to the extent that resources are exploited and consumed as if they were inexhaustible. Both in rural and urban areas, people are still involved in unsustainable practices without minding the consequences. This situation has been blamed majorly on ignorance and low level of environmental awareness. The cure for ignorance is education. This paper contends that the goals of conservation can better be achieved within a framework which makes provision for the creation of sufficient awareness through a robust programme of environmental management education. As noted by Harrison, Inyang and Udo (2008):

"It is painfully true that in Nigeria, a significant number of people are still ignorant of the need for forest conservation while others are simply unaware of the many socio-economic and environmental consequences of forest destruction. Forest resources are exploited as though they were unlimited or as if there is no tomorrow. This God's given

resource is subjected to all forms of misuse and even abuse. Forest communities and business men alike have developed very unsustainable resource harvesting techniques with which they assault the forest with terrible consequences. Given this scenario, the creation of sufficient awareness on forest conservation through environmental education becomes an imperative”.

The creation of conservation awareness through environmental management education has the capacity to change the attitude of people radically in support of the effort towards environmental conservation.

Environmental management education also known as environmental education, may be formal or informal, but basically aims at influencing and actually changing the attitude of the generality of the people towards sustainable use of the environment. It is a form of education that provides a system of educating the citizens about matters and issues that affect our environment, our homes, villages, cities, farmlands, water supplies, forest and weather in order to improve our awareness and skills and engender a change of attitude towards our environment and thereby arouse concern about the problems around us (Peters, Ekpoh and Bisong, 1995). The nexus, which is further illustrated bellow, shows that through environmental management education, awareness is created that eventually results in a positive change in attitude towards the environment and its management. The awareness and positive attitudinal will ultimately guarantee the conservation of the environment.



2. Historical Roots of Environmental Conservation

Concerns about the way man uses the environment is not entirely new but dates back to history. As early as the fourth century for instance, Plato observed that the landscape of Greece, which was once clothed with abundant forest of fine trees and fertile soil, became a rocky ‘skeleton of a body wasted by disease’ due to erosion by heavy rains after the trees were cut to build houses and ship. This, according to him, made farming impossible as the springs and rivers had dried up. Because of the acrid smoke it produced, King Edward I of England threatened to hang anyone burning coal in London in 1273. And in 1661, the noxious air pollution caused by coal fires and factories became a source of worry for the English diarist Evelyn John who suggested that sweet-smelling trees be planted to purify the city air. (Cunningham, Cunningham & Siago, 2005).

In modern times, however, the need for conservation has simply becomes more urgent due to the unabated increase in the number and magnitude of environmental problems arising mainly from human activities. Increase in human numbers and the resultant expansion in industrial activities and agriculture have been recognized as major drivers of contemporary environmental degradation and change (Harrison, Inyang & Udo (2010)

Contemporary practice of conservation got its foundation from the research and writings of people from diverse background, united together in their common belief that nature’s sustainability must be integrated into the human socio-economic and political system. Some of the people that have drawn attention to state of environmental degradation and the need for conservation include: Patrick Geddes, George Perkins Marsh, Ralph Waldo Emerson, Henry David Thoreau, John Muir, Gifford Pinchot, Aldo Leopold, David Brower, Barry Commoner, George Bird Grinnel, William Brewster, Rachel Carson, Roger Hooke, Barbara Ward, Rene Dubos, Gro Harlem Brundtland, Maurice Strong, among others.

Patrick Geddes

Patrick Geddes, a Scottish Professor of Botany became dissatisfied with the learning methods in schools and Universities in Britain and argued that there is a close connection between the quality of education and the quality of the environment. He therefore dedicated himself to the improvement of education and environment by establishing unique educational institution in 1889, ‘the Outlook Tower’ in the Royal Mile, Edinburgh (Wheeler, 1975).

He advocated the adoption of the so called ‘psychological time-table’ based on the ‘three Hs – ‘head’, ‘heart’ and ‘hand’, to replace the oppressive imposition of the three Rs – Reading, Writing and Arithmetic. With this, the three domains of learning experiences are represented namely: Cognitive, affective and psychomotor domains (Wheller, 1975; Anijah-Obi, 2001). The ‘head’ signifies knowledge and awareness of the total environment, the ‘heart’ signifies attitude change and the development of strong feeling of concern, commitment and empathy for the environment, while the ‘hand’ signifies the skills and competencies for solving environmental problems.

To further articulate his environmental conservation ideas, Patrick published a book the City Development earned him recognition as the father of environmental education in the United Kingdom

Ralph Waldo Emerson

He published essay titled Nature in 1836 where he noted that the rampant economic development at that time did threaten to upset the balance between man and nature. He stated that there is a ‘spirit behind and throughout” nature. He highlighted the dangers of modern economic system and commerce, pointing to the ‘invasion of nature by trade with its money, its credit, its steam and its railroads.

Henry David Thoreau (1817-1862)

Thoreau famously believed in “truth in nature and the wilderness over the deceit of urban civilization”. He described his contact with nature’s “essential facts of life” in his classic work Walden. He preferred the serenity of the rural areas to the repulsive commercialism of the cities. He wondered why men do not care for nature and ‘would sell their share in all her beauty, as long as they may live, for a stated sum – many, for a glass of rum’.

George Perkins Marsh (1801-1882)

Marsh was an American politician, diplomat, scientist, congressman, geographer and a lawyer. His popular book Man and Nature published in 1864 helped legislators and influential citizens see the need for resource conservation. The publication of the book is considered as the well spring of environmental protection in Northern America. It laid the foundation for modern conservation thinking as it was the first to provide a comprehensive account of the destructive use of natural resources. It gave a detailed examination of man’s erosion of nature and provided a documentation of the extent of depletion of earth’s resources and famously predicted that such exploitation could not continue without inevitably exhausting the ‘bounty of Nature’ (Wheeler, 1975; Anijah-Obi, 2001).

To his credit, the National Forest Reserve was established in the US in 1873, to protect dwindling timber stocks and endangered water sheds (Cunningham, Cunningham & Siago, 2005; Eni, 2005). Through his effort also, the word ‘conservation’ became recognized and used in the modern sense.

Theodore Roosevelt (1858 – 1919) and Gifford Pinchot (1865 - 1946)

Theodore Roosevelt (jnr.), the 26th President of the United State of America, apart from being a politician, was also an author, historian, explorer and conservationist. Roosevelt and his chief conservation advisor, Gifford Pinchot were among those greatly influenced by the writings of George Perkins Marsh. In 1905, Roosevelt, restructured the American forest Service and appointed Pinchot, the first native-born professional forester in North America, the head of the agency. Working with people like George Bird Grinnell, John Muir and William Brewster, they were able to stop the abuse of public domain, enact a law for games protection and set out the framework for the national forest, park and wildlife refuge systems in the United States of America (Cunningham, Cunningham & Siago, 2005). For the first time in the United States, resource management was put on a rational, honest and scientific basis. Their environmental ideas are often referred to as pragmatic utilitarian conservation. They argued that resources should be used ‘for the greatest good, for the greatest number, for the longest time’.

Aldo Leopold (1886-1946)

He authored a Sand Country Almanac, where he enunciated his idea that wilderness was essentially the raw material out of which man created the artifact called civilization. Aldo famously submitted that “the amount of space and type of forage of a wild habitat determine the number of animals that can be supported in an area”. His pioneering role in the development of the concept of game management and wilderness policy is well recognized.

Rachel Carson

She was a biologist and nature writer that published the best seller Silent Spring in 1962. The book described the immense pollution of the environment through the application of agrochemicals and pesticides

such as dichlorodiphenyl trichloroethane (DDT), aldrin and dieldrin. This publication awakened the public to the threats of pollution by toxic chemicals to humans and other species. According to Carson, every human being is now subjected to dangerous chemicals, from the moment of conception until death. Along with pioneers like David Brower and Barry Commoner, Rachel laid the foundation for the environmental movement in the United State of America.

John Muir (1833 - 1914)

A geologist, author and first president of the Sierra Club argued that nature deserves to exist for its own sake, regardless of its usefulness to humans. According to his philosophy, aesthetic and spiritual values should form the core of nature protection. His outlook, often referred to as biocentric preservation emphasizes the fundamental right of other organisms to exist and pursue their own interest. Muir wondered why man should 'value himself more than an infinitely small unit of the one great unit of creation'. His article captioned 'God's First Temples: How Shall we Preserve Our Forest' emphasized the need for government to preserve the grooves from the 'ravages of fools'. To his credit, the National Park Service was established in 1916 and was headed by one of his disciples, Stephen Mather.

3. Conservation Strategy

Robinson (1974) had suggested a number of strategies for resource and environmental conservation. According to him man must:

- i. Destroy, remove and interfere with his natural environment as little as possible and must take care not to use natural resources as wastefully as often happened in the past.
- ii. Learn to conserve his forest resources by adopting stringent forestry laws and replanting, and his natural pastures by preventing over-grazing and by judicious re-seeding (See also the 1992 Earth Summit Statement of Principles on Forest).
- iii. Take more active steps to help preserve the declining native animal populations and seek to find if some wild animals, properly husbanded could be made to yield useful food supplies.
- iv. Think of the soil as a shrinking asset and take all the necessary steps to prevent and combat soil erosion and replenished and periodically rested (not necessarily by allowing it to lie fallow) to make sure that it remains in good tilth, fertile and productive.
- v. Control and eradicate all forms of pollution, which impair the quantity and quality of air, water suppliers and land.
- vi. Seek and use substitute materials when non-renewable resources such as certain mineral are running out and are likely to become exhausted.
- vii. Make vigorous attempts to stem the growth in his own numbers, for increasing population implies increasing pressure upon available resources.
- viii. Educate himself to the vital importance of preparing the natural environment and its natural balance so that it remains economically productive, socially amenable, and aesthetically satisfying.
- ix. Institute planning (fore thought, teamwork, careful management) at every level – local, national and international.

In addition, Eni (2005) advised that man should:

- (a). adopt appropriate technology which will minimize environmental damage as much as possible.
- (b). radically change his consumption pattern.
- (c). accept the new thinking that he is an important member of the earth community and any upset in the resources equilibrium would be counter – produce.
- (d). organize more nongovernmental organizations (NGOs).

He further observed that what is of utmost importance as far as these strategies are concerned is the deliberate and conscious human will and determination to practice conservation.

4. Objectives of Environmental Education

Anijah Obi (2001) outlined the objectives of environmental education as contained in the Belgrade charter of 1989 as follows:

1. Awareness

Environmental education should help individuals and social groups acquire an awareness of and sensitivity to the total environment and its allied problems. It should create awareness about the

physical environment as well as the resources contained therein; the bounties of nature, the physical features, the vegetation, the water falls, the lakes, rivers, mountains, beaches etc and man's relationship to nature. This awareness will help individuals appreciate the beauty and usefulness of nature.

2. **Knowledge:**

Environmental education should help individuals and social groups acquire basic understanding of the total environment, its association problems and humanity's critical responsibilities and role in it. Knowledge of natural and man-made environmental problems, their cause and consequences will no doubt enlighten the individual on how human activities contribute to environmental degradation. It will also enable him to realize the irreversible damage of some of these problems to the ecosystem as well as the threat to human survival.

3. **Attitude:**

Environmental education should help individuals and social groups acquire social values, ethics and strong feeling of concern for the environment and the motivation for actively participating in its protection and improvement. Attitude change is one of the most important elements in environment education. It will help individuals change their attitudes towards nature and other forms of life, like the plants and animals because individuals to empathize with and care for the environment so as engender lasting environmental friendliness.

4. **Skills**

Environmental education should help individuals and social groups acquire the skills for solving environmental problems. This has to do with the psycho-motor domain of learning experiences whereby the individuals and social groups acquire conservation and environmental management skills such as tree-planting, flood and resosion control measures, low cost waste management strategies, sustainable agricultural practices etc aimed at protecting the environment for the present and future generations.

5. **Evaluation**

Environmental education should help individuals and social groups evaluate environmental measures and education programmes in terms of ecological, political, economic, social, aesthetic and educational factors.

6. **Participation**

Environmental education should help individuals and social groups develop a sense of responsibility and urgency regarding environmental problems so as to ensure appropriate actions to solve the problems. It should be noted that awareness, knowledge, attitudinal changes and the acquisition of skills cannot produce the desired results unless they are utilized in solving environmental problems. Commitment is required to ensure friendly decisions and actions relating to the environment.

5. Guiding Principles of Environmental Education

The Intergovernmental Conference on Environmental Education organized by UNESCO in collaboration with UNEP was held in 1977 at Tbilisi, USSR with the aim of discussing and endorsing what should constitute the guiding principles of environmental education should. According to Egu, (2004) the Tbilisi conference agreed that the environment should:

1. Consider the environment in its totality – natural and built, technological, social, economic, political, cultural, historical, moral and aesthetic;
2. Be a continuous lifelong process, beginning at the pre-school level and continuing through all formal and non-formal stages;
3. Be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;
4. Examine major environmental issues from local, national, regional and international points of view so that students receive insights into environmental conditions in other geographical area;
5. Focus on current and potential environmental situations, while taking into account the historical perspective;
6. Promote the value and necessity of local, national and international co-operation in the prevention and solution of environmental problems.
7. Explicitly consider environmental aspect in plans for development and growth.

8. Enable learners to have a role in planning their learning experience and provide an opportunity for taking decisions and accepting their consequences;
9. Relate environmental sensitivity, knowledge, problems-solving skills and values to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years;
10. Help learners discover the symptoms and real cause of environmental problems;
11. Emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem solving skills;
12. Utilize diverse learning environments and broad array of educational approaches to teaching/learning about and from the environment with due stress on practical activities and first-hand experiences.

6. Government Role in Promoting Environmental Education in Nigeria

The National Policy on Environment, as revised in 1999, recognizes education as a dynamic instrument of change that should provide the foundation for developing sound and sustainable means of resource exploitation in Nigeria. Education, according to this policy, should promote public awareness towards changing and strengthening attitudes, values and actions that are congruous with sustainable development. Governments saw the necessity to develop and support the education sector to ensure its responsiveness to changes and demands of all the other sectors, and facilitate the inculcation of environmental ethics, values and skills in the people and mobilizing them individually and collectively to accept the responsibilities of protecting the environment and ensuring rational utilization of available natural resources.

To this end, the policy states that Nigerian government shall:

- a. Promote comprehensive curriculum reviews that integrate environments and development concept in the educational system.
- b. Support the development of courses and programmes leading to the award of degrees and diplomas in environmental management and technology.
- c. Encourage gender sensitive education at all levels including continuing education opportunities and literacy programmes.
- d. Encourage practical training programmes for graduates of tertiary institutions to prepare them for labour market requirements and sustainable livelihood.
- e. Strengthen vocational training that facilitates the development and assimilation of environmentally sound, socially acceptable and appropriate technology.
- f. Establish support centres of excellence in interdisciplinary research and education in that area of environmental and sustainable development.
- g. Emphasize training and retraining of teachers, and school administrators in the area of environmental education and development issues.
- h. Assist schools to design and sustain environmental related activities including establishments of environmental awareness clubs and association.
- i. Support educational institutions including NGOs and the private sectors to develop and provide appropriate training programmes on environment and development issues to decision makers, business men, journalists, community leaders etc.
- j. Promote research on and development of indigenous knowledge to facilitate sustainable adaptation of relevant technologies.
- k. Adopt community based approaches to public education and enlightenments through culturally relevant social groups, voluntary associations and occupational organizations.
- l. Collaborate with the media, entertainments and advertising firms to promote environmental awareness.

- m. Encourage the United Nations and other donor agencies to emphasize capacity building in all development programmes through adoption of the multidisciplinary approach to skills transfer.
- n. Encourage research linkages and staff/students exchanges between Nigerian educational institutions and institutions abroad in the area of environmental studies and sustainable development.
- o. Encourage public relation activities which tend to provide a forum and context for the debate on sustainable development and the articulations of the collective vision of the future.
- p. Promote public awareness activities through traditional; and mass media and encourage the participation of social; and political structures to keep them, informed about all aspects of the policy.
- q. Support public participation in activities covering formal and non-formal education and training to help carry out needed changes.
- r. Support environmental information at the national, regional and global levels.

7. Strategies for Educating Non-School Public

This category comprises two major groups - those that have finished school and those that have never attended school (illiterates). Effective strategies for this category depend on the age and educational level of the target group. The strategies which may be used include:

- Drama/popular theatre (enter-educate)
- Targeted message on radio, tv, posters/pictorials
- Newspapers advert and hand bills
- Campaign trains/puppets shows
- Use of town criers
- Use of guest speakers
- Use of youth clubs

8. Strategies for Educating the School Children

Environmental management education may be taught to the school children through the following ways:

- Story telling
- Singing of Songs
- Field trip/excursion
- Environmental awareness/Conservation clubs
- Lecture/discussion
- Projects based approach

There has been much emphasis on the need for the integration of environmental management education into the formal school curriculum otherwise referred to as 'greening the school curriculum'. Although environmental topics have been incorporated into the curriculum of conventional subjects like geography, biology, integrated science social studies, chemistry, among others, there is the utmost need for the introduction of environmental management education as a subject in the primary and secondary school systems. In the Universities, Polytechnics, Colleges of Education and other tertiary Institutions, environmental management education should be introduced as one of the general courses. Most importantly, all tertiary institutions should make effort to establish a full-fledged department of environmental management in the faculty of environmental studies. This will facilitate the training of environmental managers, promote the creation of environmental awareness and ultimately curb the challenges of environmental conservation.

9. Conclusion

Given the limited and exhaustible nature of most environmental resources and the persistent increase in the incidence, severity and complexity of environmental problems arising from unsustainable exploitation of resources, it becomes quite pertinent that the tenet of conservation be adopted in the way and manner in which environmental resources are used. Success in the quest for environmental conservation depends to a large extent on how many individuals, groups and communities become aware of and willing to adopt environmentally friendly attitude in their relationship and interaction with the forest. Creation of environmental awareness, inculcating the right attitude in the people and helping them develop the requisite environmental management skills are essentially the major aims of environmental management education.

The paper therefore recommends the adoption of environmental management education as a major component of our conservation strategy. Formal and informal approaches should be used to reach both school and non – school public. The introduction of environmental management education as a subject in the primary and secondary school systems is emphasized. Universities, Polytechnics, Colleges of Education and other tertiary Institutions, should introduce environmental management education as one of their general courses, while sincere efforts made to establish a full-fledged department of environmental management in their faculty of environmental studies as approved by the National Universities Commission. This will facilitate the training of environmental managers, promote the creation of environmental awareness and ultimately, curb the challenges of environmental conservation.

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