



Achieving sustainable development goals (SDGs) through environmental education in Nigeria

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ABSTRACT

On September 25, 2015, the United Nation General Assembly adopted the 2030 Agenda for sustainable development. At the core of the 2030 Agenda are 17 sustainable development goals (SDGs). While the SDGs covered three domains of economic, social and environment in its 17 goals, it is instructive to note that 10 out of the 17 goals are directly or indirectly linked to the environment suggesting the importance of the environment in achieving the SDGs. Therefore, to achieve the SDGs, individuals and communities need to be equipped with relevant environment knowledge, skills, values and attitudes that empower them to contribute to sustainable development. Environmental education therefore becomes crucial for the achievement of SDGs. While Nigeria has realized the importance of environmental education, the resultant implementation of environmental education in Nigeria is not encouraging as manifested by the declining Environmental Performance Indicators (EPI) since 2012. This study examined the prospects and challenges of environmental education in Nigeria with a view to proffering strategies for increasing environmental education in Nigeria. The above was achieved using historical and desk-based research design. It involved content analysis of existing literature to help situate the current study within the context of existing evidence. Findings identified interdisciplinary nature of environmental education, shortage of trained teachers, high illiteracy level among the population, poverty among others as the challenges of environmental education in Nigeria. The study calls for training of environmental education teachers at all levels of education and designing of special informal environmental education awareness programmes and campaigns in Nigeria.

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INTRODUCTION

The environment is the home to all living and non-living organisms and the basis for sustenance and survival of man. Humans who are the most dominant of all living organisms participate in different socio-economic activities, making use of the resources of the environment in order to survive. These various socio-economic activities contribute to an individual's upward or downward livelihood trajectory in which an individual is defined as either rich or poor in their respective societies (Onwuemele, 2011). Thus, the environment provides vital resources with which individuals and their respective

societies construct their livelihoods. Humans' involvement in different socio-economic activities by making use of the resources of the environment has brought about rapid reduction in environmental quality in different regions of the world; hence it has attracted the attention of national governments and international development agencies (Onwuemele, 2011).

In September 2015, world leaders converged at the United Nations Headquarters in New York to consider and adopt a new comprehensive, ambitious and transformational development agenda. The Outcome Document

Table 1. The 17 sustainable development goals (SDGs).

| S/N | SDGs |
|-----|--|
| 1 | No poverty – End poverty in all its forms everywhere |
| 2 | Zero hunger – End hunger, achieve food security and improved nutrition and promote sustainable agriculture |
| 3 | Good health and well-being – Ensure healthy lives and promote well-being for all at all ages |
| 4 | Quality education – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all |
| 5 | Gender equality – Achieve gender equality and empower all women and girls |
| 6 | Clean water and sanitation – Ensure availability and sustainable management of water and sanitation for all |
| 7 | Affordable and clean energy – Ensure access to affordable, reliable, sustainable and clean energy for all |
| 8 | Decent work and economic growth – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all |
| 9 | Industry, innovation and infrastructure – Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation |
| 10 | Reduced inequalities – Reduce inequality within and among countries |
| 11 | Sustainable cities and communities – Make cities and human settlements inclusive, safe, resilient and sustainable |
| 12 | Responsible consumption and production – Ensure sustainable consumption and production patterns |
| 13 | Climate action – Take urgent action to combat climate change and its impacts |
| 14 | Life below water – Conserve and sustainably use the oceans, seas and marine resources for sustainable development |
| 15 | Life on land – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss |
| 16 | Peace, justice and strong institutions – Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels |
| 17 | Partnerships for the goals – Strengthen the means of implementation and revitalize the global partnership for sustainable development |

Source: <http://www.un.org/sustainabledevelopment/sustainabledevelopment-goals>.

adopted during the summit outlines a set of 17 Sustainable Development Goals (SDGs) and 169 targets aimed at eradicating poverty in all its forms and shifting the world onto a sustainable and resilient development pathway while ensuring that 'no one is left behind'. The SDGs seek to build on and complete the unfinished business of the Millennium Development Goals (MDGs); realize the human rights of all; achieve gender equality in all sectors and spheres of life; and importantly, strike a balance between economic, social and environmental dimensions of development (Federal Republic of Nigeria, 2015). The goals cover three core dimensions of sustainable development: economic growth, social inclusion and environmental protection.

It is pertinent to state that while the SDGs is made up of 17 goals, 10 of these goals (SDG 1, 2, 3, 6, 7, 11, 12, 13, 14, 15) are directly or indirectly related to the environment domain justifying the importance of the environmental domain for sustainable development (Table 1). Evidence indicates that many countries

including Nigeria have established laws and formal institutional framework for maintaining environmental integrity as well as addressing the environmental challenges emanating from the exploitation of the natural resources of the environment. In Nigeria, the laws include Water Ways Act (1915); Public Health Act (Amended 1958); Forest Ordinance (1937); Petroleum Drilling and production Regulation Act (1969); Navigable water Act (1968); Minerals Act (1969); Associated Gas reinjection Decree (1979); Federal Environmental protection Agency Act (1989); Natural Resource Conservation Council (1989); Land Use Decree (now Act 1978); Environmental Impact Assessment Act (EIA 1992); Federal Ministry of Environment Act (1999); National Oil Spill Detection and Response Agency (NOSDR 2006) (Robinson, 2013). In spite of the gamut of policy frameworks, the environment is continuously under serious threat and degradation from both anthropogenic and natural forces in constituting a challenge to attainment of the SDGs goals. In this respect, scholars and other United Nations agencies

have called for increased effort in promoting environmental education as a strategy for addressing the plethora of environmental problems in Nigeria. According to UNESCO (2017), achieving the SDGs, will require environmental education that empower the right uses of environmental resources in a sustainable manner.

Environmental education, therefore, becomes crucial for the achievement of sustainable development. It is in this context that the paper examines the prospects and challenges of environmental education in Nigeria with a view to proffering strategies for increasing environmental education in Nigeria.

The goal of this paper is to examine the prospects and challenges of environmental education in Nigeria with a view to proffering strategies for increasing environmental education in Nigeria. The study approach is desk-based research and involved the examination of existing literature on environmental education and degradation in Nigeria which help to situate the current study within the context of existing evidence. It involved an analysis of published reports, databases and research papers.

Conceptual and analytical framework

The term environment can be defined as the sum total of our surrounding including the air, land, water bodies and their endowed resources. It refers to a natural resource base that provides sources (material, energy, and so forth) and performs “sink” functions (such as absorbing pollution). The term can include resources that people relied on in the past but no longer rely on (either because they are depleted or because they have been substituted by some other resource or technology). Similarly, it can include resources that people do not yet use but could be used with a change in knowledge or technology (Leach and Mearns, 1991). Environmental issues are often concerned with public or semi-public goods, such as an open-access air-and watersheds, or common -property grazing land. Some aspects of the environment can also involve private goods, such as air inside a house or workplace or house hold drinking water. In this paper we use the term environment in a broad sense to include these various meanings of the term.

It is the resource endowment of the environment that makes it a centre of attraction for humans and other living things. This has also generated adverse environmental conditions posing threat to sustainability of the environment. Education has been identified as a critical driving force for change and many countries have adopted a range of strategies for implementing programmes in environmental education (Fien, 1999). Environmental education is now being seen as an instrument and a process that enables participation and learning by people of all ages, based on two-way communication rather than the old paradigm of a one-

way flow of information, from teachers to pupils.

Environmental Education conditions refer to the act of teaching or training people about the working system of the environment. It hinges upon the need to create and maintain congenial environment. It deals with public enlightenment to prevent environmental hazards, or to reduce the effects of environmental problems. It involves the implementation of actions to improve and sustain the environment (Ibimilua and Amuno, 2014). Akintude (2008) defined environmental education as “the expansion of the study of ecology; a branch of biology dealing with the interrelationship of living organisms with one another and with their surroundings. Therefore, the fundamental role of environmental education is to give concrete awareness about the environment and how to use it for sustainable development. Abubakar (2010) outline the objectives of environmental education as follows:

- Awareness: To help social groups and individuals acquire an awareness and sensibility to the total environment and its allied problems and/or issues.
- Sensitivity: To help social groups and individuals gain a variety of experience in and acquire a basic understanding of the environment and its associated problems and/or issues.
- Attitude: To help social groups and individuals to acquire a set of values and feeling of concern for the environment and motivation for actively participating in environmental improvement and protection.
- Skills: To help social groups and individuals acquire skills for identifying and solving environmental problems and/or issues.
- Participation: To provide social groups and individual with an opportunity to be actively involved at all levels in working toward, resolution of environmental problems/or issues.

Environmental education according to the United States Environmental Protection Agency (2008) is the deliberate “increase in public awareness and knowledge about environmental issues and providing the skills necessary to make informed environmental decisions and to take responsible actions” (United States Environmental Protection Agency, 2008). Similarly, the Tbilisi Declaration (UNESCO, 1977) sees environmental education as equipping individuals with the knowledge, values, and skills that enable individual transformation and behaviour change. It notes that the aim of environmental education is to provide opportunities for participation in solving environmental problems (UNESCO, 1977). Thus, environmental education aims at raising the awareness and understanding of environmental issues which provides the basis and rationale for commitment and meaningful action towards environmentally sound and sustainable development.

The year 2015 marks the end of the implementation of the MDGs. Determined to complete the development progress driven by the MDGs and to ensure that no one is left behind, the world leaders gathered at the UN Headquarters in New York in September 2015 to adopt a new program on sustainable development now referred to as sustainable development goals (SDGs).

The SDGs are a set of goals which build upon the MDGs and converge with the post-2015 development agenda. They are one of the main outcomes of the Rio +20 Conference, aimed to be achieved by 2030.¹ This new 2030 Development Agenda includes 17 new SDGs, which will guide the development policy and financing for the next 15 years. Before now, sustainable development (SD) as a concept has gained increasing recognition worldwide as a framework for development that recognizes the interdependencies between economic growth, social equity and environmental integrity. Though SD thinking is widely recognized to have its origins in the 1972 UN Conference on the Human Environment, SD as a concept began to gather momentum following the 1987 Brundtland Report, *Our Common Future*, and the 1992 UN Conference on Environment and Development (UNCED), also known as the Earth Summit. For the first time, the Brundtland Report introduced the need for the integration of economic development, environmental protection, and social justice and inclusion. Although many definitions abound, the most often used definition of sustainable development is that proposed by the Brundtland Commission (Cerin, 2006; Stoddart, 2011). The Brundtland commission defined sustainable development, as development that; 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (United Nations, 1987). The overall goal of SD is the long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns through out the decision-making process. This initial conceptual underpinning of the SD laid the foundation for the emergence of the SDGs in 2015.

Status of environmental education in Nigeria

The origin of environmental education Nigeria can be traced to the development of biology syllabus by the West Africa Examination Council in 1950. This was used in the teaching of biology in schools and this syllabus contained environmental contents such as soil conservation. Later on, environmental education was taught in schools in form of hygiene and nature studies in the 1960's in Nigeria primary and secondary schools although the content was based on the happenings in

British society. However, it was after the dumping of toxic waste in Koko port in Delta State that the Federal government started to infuse environmental education elements into the citizenship education review conference (Bosah, 2013). This was followed by a national workshop on the integration of environmental education into the national school curriculum and teacher programme. All these efforts culminated in the establishment of environmental education unit in some universities in Nigeria including University of Calabar, University of Benin and the Lagos State University (Above, 2011). In spite of these efforts, scholars and stakeholders have noted that environmental education effort is yet to translate into anything concrete as the curriculum is yet to be fully operational in schools (Anijah-Obi et al., 2013).

Challenges of environmental education in Nigeria

There are multiples of challenges which hinder the effective adoption and implementation of environmental education programmes in both formal educational institutions and informal settings in Nigeria.

- I. The most crucial factor in this instance is the lack of integration of environmental education into policies, strategies and programmes. In Nigeria, the only policy with environmental education content is the national policy on education. All the other policies and programmes have little or no content of environmental education. This has hindered the effective implementation of environmental education as a cross-cutting issue in Nigeria. According to UNSECO (2014), environmental has to be "integrated into sub-national, national, sub-regional, regional policy frameworks, plans, strategies, programmes and processes related to education and to sustainable development."
- II. The second major challenge is the limited number of teachers. Teachers are powerful change agents who can deliver the educational response needed to achieve the SDGs. Their knowledge and competencies are essential for restructuring educational processes and educational institutions towards sustainability. However, in Nigeria, there is limited number of teachers with relevant knowledge of environmental issues. This has created a major gap in the effort to implement environmental education in Nigeria. One of the major causes of the limited number of environmental education teachers as heightened above is the low interest in environmental issues among different groups in Nigeria. One of the corollaries of this is that there are few institutions in Nigeria offering courses in environmental education.
- III. In the informal setting, Ononugbo (2005) identified the absence of public initiative for environmental education

¹<https://sustainabledevelopment.un.org/?menu=1300>

and difficulty in encouraging public participation in environmental activities as some of the obstacles to successful implementation of education in Nigeria.

- IV. The next major challenge is the low level of environmental literacy in Nigeria. Environmental awareness is still low and whatever efforts exerted made a little change due to low literacy rate. According to Roth (2002), environmental Literacy is a set of understandings, skills, attitudes, and habits of mind that empowers individuals to relate to their environment in a positive fashion, and to take day-to-day and long-term actions to maintain or restore sustainable relationships with other people and the biosphere. The essence of environmental education is to impact on the way we respond to the questions we learn about our world and our relationship with it; the ways we seek and find answers to those questions; and the ways we use the answers we have found” (Roth, 2002). One of the implications of this is the low level attached to environmental issues by diverse groups in Nigeria.
- V. Additionally, the high level of poverty in Nigeria has constituted a major threat in the successful implementation of environmental education programmes. The result of this is that people shows less interest in environmental issues as they are preoccupied with several other life issues like how to feed their family and other demands from the homes. One of the results of this is that people use the resources of environment recklessly and unsustainably. They tend to consider and value the short-term economic gain derived from the exploitation of the environment without being mindful of the damage being done to it and the sustainable use of the natural resource available in the environment (Menyu, 2010). On the part of government, this scenario also plays out. There are so many competing development issues facing the government that demands immediate action. Consequently, environmental issues such as environmental education is hardly consider in the policy formulation and implementation circles.
- VI. Bosah (2013) has identified inadequate funding at the Federal, State and Local Government to cater for teaching/learning of materials to enhance environmental. The poor funding of education tells on both teachers, the school and pupil. Poor services, large number of pupil, dilapidated buildings, insufficient materials due to poor funding retards the system. Regular payment of salary and other rewards and remuneration of various kinds, proper equipment of schools at all levels (current laboratory equipment, machines, conducive environment well-constructed classroom and other basic amenities is better formed would help in achieving the teaching and learning of environmental education.
- VII. Another critical challenge is the low environmental awareness programmes on the part of government and the civil society. Evidence from the literature shows

importance of environmental education programme in increasing public awareness on environmental issues (Mene and Deepti, 2017). In Brazil, Ecuador and India, different types of environmental programmes have been initiated by the government to raise public awareness on environmental issues. These approaches have proven effective in raising public consciousness of the use of environmental resources (Mene and Deepti, 2017). In Nigeria, the situation is different as there are little or programmes that have sustainably been implemented to raise public awareness. This has constituted a challenge in raising the environmental literacy among the general public.

- VIII. Finally, another major challenge of environmental education and training in Nigeria is that it deals with many new concepts and areas of knowledge such as climate change, biodiversity, ecosystem services, ecosystem-based adaptation, green economy, renewable energy and so forth. This tends to limit public understanding of the basic concepts. Thus, there is a need to develop clear descriptions of the main concepts that are used in environmental education to facilitate good understanding of the field (UNEP, 2017).

Strategies for promoting environmental education for attainment of SDGs in Nigeria

Environmental education plays an important role in enabling the integration of the principles of sustainable development intonational and local policies and programmes for the environment and for education. They also influence how the three pillars of sustainable development - environment, economic and social are understood and implemented. This requires a reorientation of educational systems, policies and practices to provide citizens with appropriate knowledge, skills and ethical commitment to engage critically in decision-making and action on current and emerging environmental and development problems (UNEP, 2005). This can be achieved through several strategies as presented below.

Advocacy and promotion of environmental education

Among the general public in Nigeria, there is poor understanding of the important role of environmental education in achieving the sustainable the SDGs as greater emphasis has been placed on the role of science, technology and management expertise. This strategy seeks to strengthen public understanding of the important roles of environmental education through advocacy to enhance the integration of environmental concerns into decision making processes (UNEP, 2005).

Professional development and training programmes

The strategy seeks to promote and strengthen professional development and training programmes. This will involve development of environmental educators in institutions of higher learning, governments and amongst other stakeholders as reflective practitioners.

Learning support materials

The aim of the strategy is to promote the production and distribution environmental education learning support materials that are flexible and adaptable to diverse and changing contexts. It will take into consideration the diverse languages in Nigeria, culture and age group in the production of different kinds of learning support materials (UNEP, 2005).

Networking and partnerships

This strategy seeks to establish and strengthen mechanisms for flexible cross-sectoral, multi-stakeholder and inter-governmental cooperation amongst relevant organizations, institutions and civil society to enhance the shared development and wise use of environmental education resources and programmes.

Raising awareness

This will be achieved by involving decision makers, communities and the media in initiatives that provide a better understanding of the links between social, economic and environmental issues as well as its consequences to the environment and people's quality of life.

Media and public education

The strategy seeks to promote and support diverse training to improve the skills of environmental journalists to enhance effective reporting for public education and action for sustainable development. This will be achieved by the development of resource kits and training programmes which will encourage environmental journalists to go beyond making people aware of environmental issues and take a more proactive role in addressing environment and development issues (UNEP, 2005).

Monitoring and evaluation

This strategy recognizes the importance of monitoring

and evaluation as key components of environmental education in Nigeria. This requires the development of indicators of progress of environmental education mainstreaming across sectors to help determine if key outcomes are being attained.

Prospects of environmental education implementation in Nigeria

There are several prospects for the implementation of environmental education with a view to achieving the lofty goals of the agenda 2030 in Nigeria. The most important of this prospect is the legal framework of Nigeria. The 1999 Constitution of Nigeria reinforces the policy and legal basis of sustainable development in Nigeria. Pillars of sustainable development are embedded in many parts of the Constitution. The Constitution promises to all Nigerian citizens' justice encompassing the social, economic, political, equality of status, opportunity and the dignity of the individual. With particular emphasis on the environmental pillar of sustainable development, Article 20 (sub-section 2) of the Constitution states that, "the State shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria". This legal framework provides a golden opportunity for environmental education as a strategy for attainment not only the goals of the constitution but also that of the SDGs in Nigeria.

- I. The second major prospect for environmental education implementation is the multitudes of global declarations which Nigeria is a signatory which calls for stimulation and reorientation of global implementation of environmental education programmes in schools and in contemporary society. The United Nations Conference on the Human Environment held in Stockholm (1972) and the Tbilisi declaration in 1977 both stresses important role of environmental education in the preservation and improvement of the world's environment². These commitments led to the integration of environmental education into the National Education Policy in 1981 (Adara, 1997).
- II. Another seemingly prospect for environmental education implementation in Nigeria is the availability of legislations and promulgation which supports environmental education outside the formal school systems. Ahmad (2008) identified this type as an education that takes place outside the highly regimented classroom walls and situations. It is used to incite or promote awareness, knowledge, attitudes, skills or levels of participation in a given task. It is for all ages, social groups and societies. In this context, the Nigeria

² <https://www.gdrc.org/uem/ee/tbilisi.html>

government legislations and promulgation of some decrees such as the Endangered Species Decree No 11 of 1985, Environmental Sanitation Decree, Natural Resources Conservation Decree and Federal Environmental Protection Agency (FEPA) Decree 58 among others provide an important prospect for the implementation of environmental education outside the formal classroom environment.

III. In addition, environmental education is being embedded in most school's curriculum which presents another opportunity for the implementation of environmental education in the institution of learning. According to Adebisi and Alawepo (1997), the following approaches of integrating environmental education have been adopted in Nigeria.

1. Introduction of specific EE units into existing subjects;
2. Reappraisal or restructuring of the whole content of different subjects to include EE components;
3. Creation of brand new subjects such as citizenship or human ecology with strong EE components;
4. Integrating the content of various subjects by teachers in a cross-curricular arrangement on in an interdisciplinary manner, through team teaching;
5. The generation of environmental education topics from each of the units of the existing education incorporating them into lessons by teachers.

IV. Another major prospect for implementation of environmental education in Nigeria is the increasing level of diverse environmental problems across the regions in Nigeria. In this light, the Government has taken the issues of environmental degradation serious, and various national efforts have been put in place at all levels of governance to promote environmental sustainability in the context of national sustainable development. Government recognizes that effective environmental governance is critical for sustainable development. The 1989 National Environmental Policy was revised in 1999 and one of the goal of the revised Policy is to raise public awareness and promote understanding through environmental education of the essential linkages between environment and development and to encourage individual and community participation in environmental improvement efforts.

CONCLUSION

The full adoption and implementation of environmental education is a necessary precondition to achieving the SDGs in Nigeria. Environmental education can equip learners with the specific cognitive, socio-emotional and behavioural learning outcomes that enable them to deal with the particular challenges of each SDG. It is vital not

only to include SDG-related contents in the curricula, but also to use action-oriented transformative pedagogy. Education officials, policy-makers, educators, curriculum developers and others are called upon to rethink education in order to contribute to the achievement of the SDGs within their timeframe, between now and 2030. The various challenges highlighted above should be addressed by relevant agencies in Nigeria in order to meet the targets of the SDGs. The training of environmental education teachers, Journalist and designing of special informal environmental education awareness programmes and campaigns should be made a top priority in Nigeria.

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