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The Question of Environmental Illiteracy in Nigeria: An Empirical Analysis and Response

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Abstract

The challenge of widespread and virtually endemic backwardness and poverty among African nations has been traced to the mismanagement of the Continent's environment and the resources therein. The genesis of the mismanagement has also been traced to the general prevalence of environmental illiteracy/ignorance all over the continent. The purpose of this paper is to address the question of the extent of the prevalence of the Environmental Illiteracy (EI) Syndrome in Nigeria. Using the findings of four relevant empirical studies and documented practical manifestations of EI by rural dwellers, urban inhabitants and industrial entrepreneurs in Nigeria, the paper has analyzed the established massive prevalence of the syndrome and has recommended, as a response, provision of Formal, Non-Formal and Informal modes of Mass Environmental Literacy Education (MELE) for the citizenry of Nigeria.

Keywords

The African Crisis, environmental illiteracy, environmental resources management, environmental literacy education, backwardness, poverty

1. Introduction

The African Crisis, as it has come to be popularly known, is the culmination of many generations of mismanagement of the affairs of the African continent. This mismanagement has been practiced at all levels-social, economic, political and environmental. The resultant effect of all this mismanagement is a destruction of the continent's resource base, the degradation of its environment, and the impoverishment of its people, leading to death of millions of them (Wangoola, 1986, p. 3).

The issue of mismanagement of Africa's environment which provides the continent's resource base and the resultant impoverishment of the African people, which Paul Wangoola, former Executive Secretary

of the African Association for Literacy and Adult Education (AALAE) bemoans in the above excerpt, has equally become a matter of serious concern to many contemporary African intellectuals. Specifically, attention has been focused on the inability of African nations to control or manage their natural environment and its resources generally due to ignorance. Ignorance in this context refers to the lack of knowledge, understanding and positive attitude required of an individual or government to be able to control, preserve, protect and sustainably utilize the resources of the natural environment as a basis for sustenance of human existence, community/societal progress and overall development. This lack of the said enabling positive attributes in relation to environmental management is usually referred to as *Environment Illiteracy*; and this has resulted in the emergence of other interrelated phenomena of economic and social underdevelopment in Africa; namely, Backwardness and Poverty (Ibikunle-Johnson, 1986).

Backwardness arises from lack of intellectual and physical capacities to propel desirable growth and development of an individual or a nation. Education that focuses on alien cultures and neglects how best to channel intellectual and physical development to the harnessing and sustainable utilization of material and human resources within one's immediate environment would generate backwardness as is the case with many African countries, including Nigeria. *Poverty*, on the other hand, arises from failure to mobilize environmental resources and use them rationally to provide, on a self-reliant, self-sustaining basis, the basic need for food, shelter, clothing, health, education and productive work. Figure 1 below shows graphically the said concomitants of environmental illiteracy.

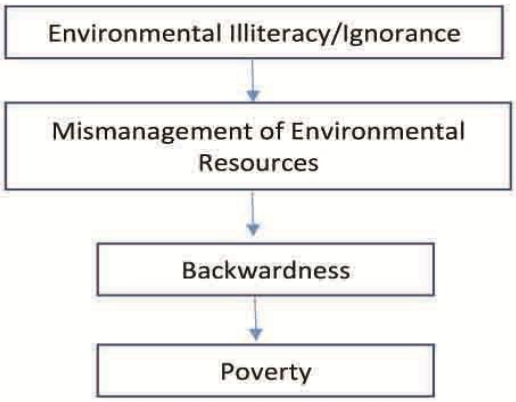

Figure 1. Outgrowths of Environmental Illiteracy/Ignorance in Relation to Economic and Social Development

Adapted from Ibikunle-Johnson, 1986.

A close examination of the above outgrowths of environmental illiteracy/ignorance would reveal the centrality of the illiteracy phenomenon in the lack of requisite knowledge and skills for proper management of environmental resources which results in the prevalence of both backwardness and

poverty.

Environmental Literacy (EL) involves the acquisition by beneficiaries of the attributes of an environmentally literate person which include basic awareness, knowledge and understanding of the human environment, its fundamental processes as an aspect of life-support systems and its associated challenges. It also involves inculcation in the beneficiary of rudimentary skills and positive attitudes to deal with environmental challenges as well as the need for individuals and groups to protect and preserve the environment as the resource base for sustainably meeting human needs (Roth, 1992; NAAEE, 1999). In effect, an environmentally illiterate person would not have the necessary awareness, knowledge, skills, understanding or the requisite positive predisposition or commitment to control, manage or respond to environmental challenges effectively. Such a person would thus remain ignorant, poor and in a protracted state of backwardness.

The three offspring of Environmental Illiteracy (EI), as it were; namely, environmental resource mismanagement, backwardness and poverty are virtually endemic in the Nigerian State. For instance, it was reported by July, 2018 that 87 million Nigerians (about half the population of the country) were living in extreme poverty below $1.90 a day (The Leadership Newspaper, July 4, 2018). Again, the overall level of backwardness among Nigerians would in no way be better than the level of poverty-judging from the high illiteracy rate involving 65-75 million Nigerians as recorded by September, 2017 (The Vanguard Newspaper, Sept. 21, 2017).

In the light of the related facts above, the situations of ignorance, backwardness and poverty in Nigeria raise the question of the extent of prevalence and spread of Environmental Illiteracy in the country. This question begs urgent analysis and response as it touches on the critical issue of inadequate utilization of resources in the Nigerian environment for national and individual growth and development. The purpose of this paper is to address the question. To do so, the writer relies on two empirical sources of evidence for the analysis of and response to the question; namely, Field Research Results on and Practical Manifestations of the Prevalence and Spread of Environmental Illiteracy in Nigeria.

2. Analysis of the Question of Environmental Illiteracy (EI) in Nigeria Using Empirical Sources of Evidence

Four published field research results and seven documented practical manifestations are presented below as sources of evidence for the analysis of the question of EI in Nigeria.

2.1 Field Research Results

In 2014, the author of this paper published the result of her empirical study of the levels of acquisition of Environmental Literacy (EL) by Final-Year Nigerian University students. The purpose of the study was "to ascertain the extent to which Nigerian students attain appropriate levels of EL that would enable them later, as adult members of society, to effectively contribute towards national and global sustainable development" (Eheazu, 2014, p. 20). In the assessment of the levels of EL acquired by the

students, the researchadopted Roth's (1992) three levels of EL as follows:

i. Environmental Literacy Level one (ELL_1) which Roth identified as a *nominal level*;

ii. Environmental Literacy Level two (ELL_2) the *functional level*;

iii. Environmental Literacy Level three (ELL_3) which Roth also identified as the *operation level***.**

Each of these levels has got expected attributes to be manifested by those who are environmentally literate at the level. The attributes involve certain acquisition of knowledge, skills, attitudes, behaviour or action specific to each level. Breadth of knowledge of the environment and the ability to feature effectively in environmental issues are minimal at ELL_1, more ingrained at ELL_2 and advanced at ELL_3. In all, environmental literacy aims to provide the citizenry with creativity and responsibility in the solution of environmental problems. Universities are considered to have a major role to play in the production of the requisite environmentally citizenry (McIntosh et al., 2001). Nigeria is a signatory to an international ten point action popularly known as the ***Talloires Declaration*** which is an agreement by committed colleges and universities to promote education for societal sustainability and environmental literacy (ULSF, 1990).

A total of 1,514 students in seven Departments/Programmes within four Faculties in three Nigerian Universities were involved in the study under reference. The three universities were selected from the South-South Geopolitical Zone of Nigeria. This zone forms part of the Niger Delta of the country which experiences serious environmental problems (various forms of pollution, land and water degradation and so on)arising from vast oil and gas explorations and related industrial activities. Accordingly, the zone presents ample opportunities and/or reasons for educational institutions (especially the Universities) located therein to promote knowledge and understanding of hazards of and necessary responses to the prevailing environmental problems. Percentages, means, the Pearson Product Moment Correlation Coefficient, the Spearman-Brown Formula and the Analysis of Variance (ANOVA) were the statistical methods used to analyze data obtained through a questionnaire. From the analysis, it was established that the students acquired the Nominal Level of Environmental Literacy (ELL_1) most, less of the Functional Level (ELL_2) and least of the Operation Level (ELL_3). It was also established, among other facts, that the three Universities studied did not differ significantly in exhibiting this trend of limited student EL acquisition. The findings were discussed, conclusions drawn and some remedial suggestions made, clearly emphasizing the need for inclusion of core environmental protection and management courses in all Nigerian University Undergraduate Programmes to equip students with desirable knowledge, values and skills for tackling contemporary environmental issues and problems.

A similar study was carried out by Ndulor (2016) in which the Environmental Literacy levels of Secondary School Teachers in selected Local Government Areas (LGAs) of Rivers and Imo States of Nigeria were ascertained. Roth's (1992) levels of Environmental Literacy were also adopted in the study. A sample of 709 teachers from a population to 5,288 from 179 secondary schools in 16 LGAs (7 from Rivers and 9 from Imo State) were involved in the study. The teachers were graduates who

variously possessed the B.Ed., M.Ed., NCE and PGDE with specializations in Agricultural Science, Biology, Chemistry, Geography and Home Economics. The data obtained through a structured questionnaire were analyzed using statistical methods relevant to the five guiding research questions and four null hypotheses posited for the study. The analysis revealed, among other facts, that the teachers had ELL_1 as their highest and ELL_3 as their lowest levels of EL. Based on this finding, it was recommended that the curriculum of teacher training programmes in Nigeria should be reviewed to include more environmental education/literacy content.

The third research study in relation to the topic of this paper was conducted and published by the author (Eheazu, 2016). Titled "Evaluation of Environmental Sustainability Education Provisions for Effective Management of Wastes in Oil and Gas based Industries in Rivers State of Nigeria", the purpose of the study was to assess the availability and worth of provisions made by oil and gas industries in Rivers State of Nigeria for the environmental sustainability education of their workers to elicit effective waste management and disposal in the industries. In the research study, the term, *environmental sustainability education* was used by the researcher to refer to (Eheazu, 2016, p. 245):

The building of a holistic environmental stewardship through skills development, capacity enhancement and inculcation of relevant knowledge and attitudes among oil and gas workers for their ethical handling of wastes in a manner to promote the health of the workers themselves and that of the host communities, as well as protect the environments of the industries and the adjoining communities against pollutants that may jeopardize future availability and use of biodiversity and developmental resources currently obtainable in the environments.

The Nigerian Environmental Policy Guidelines (Federal Republic of Nigeria, 1991), require each of the industrial companies to establish a Health, Safety, Security and Environment (HSSE) Unit. The unit oversees the Safety, Health and Environmental Issues of the company in which it is established. Twenty-five selected oil and gas industries were involved. A questionnaire designed by the researcher was used to obtain requisite data from the twenty-five Environmental Officers and seven hundred and seventy six base workers in the selected oil and gas industries. Two research questions and two null hypotheses guided the study. Percentages, means and the Chi-square (X^2) were the statistical methods used to analyze obtained data. Following results from analysis of the research questions and hypotheses testing, it was established that the oil and gas industries involved in the study have inadequate provisions (with special reference to strategies/programmes and delivery methods/techniques) for the environmental sustainability education of their workers. The implication of this finding is obvious with respect to the overall environmental literacy level of the workers. Specifically, both the environmental officers and the base workers acquired minimal (low) levels of environmental literacy from the inadequate provisions made by the industries for their environmental sustainability education.

The fourth and final field research report analyzed in this paper as an empirical source of evidence of environmental illiteracy among Nigerians is that of a Pilot study conducted for the purpose of concretizing in an Annual Public Lecture the cited incidence of "over 80% level of unawareness of the

causes and effects of global warming and climate change among a large segment" of Ndigbo living in the rural and sub-urban areas of the five South-East States of Nigeria (Eheazu, 2011, p. 10). The pilot study involved the use of an Interview Schedule to achieve the purpose stated above. Five research assistants, who were Igbos and could speak Igbo language fluently were employed, trained and sent to their home States where they could use the local dialects (when necessary) to interact with the subjects. The subjects of the study included 30% illiterate (could not read or write); 50% semi-literate (dropped out from primary school) and 20% literate (first school leaving certificate and above) members of Igbo society. The areas covered by the study were rural and sub-urban habitations in the core Igbo States of Abia, Anambra, Ebonyi, Enugu and Imo. The samples used were one hundred willing Igbo people in the five States (20 from each State). Altogether 25 LGAs, 47 Autonomous Communities and 68 villages were involved in the study.

The subjects interviewed were made up of 30 rural farmers (including palm wine tappers), 17 civil servants, 12 students, 6 traders 18 educationists (teachers at different levels of education) and 17 others (with over ten types of occupational orientation; including vulcanizers, nurses, musicians, auto-mechanics, drivers and surveyors). Accordingly, majority (30%) of the subjects were rural farmers. The respondents were between 25 and 80 years of age. The result of the pilot study showed that overall, every respondent (100%) indicated having noticed the unusual rise in temperature. 90% of the respondents observed the temperature increase between 3 and 5 years prior to the study; about 10% observed same between 6months and 2 years before the study. On what has (have) caused the observed increasing heat, 70% attributed the phenomenon to the anger of the gods against contemporary criminalities among the younger generation; 10% (mainly educationists and students) made some tangential reference to global warming/climate change, while 3% did not indicate knowledge of any cause(s) of the phenomenon. Almost all the respondents (98%) identified the essence of planting trees around their homes to include protection of family members against excessive heat from the sun, increase in fresh air around and creation of a cool environment for relaxation. 75% also included provision of edible fruits for family consumption and for sale. The use of tree sheds for village/community meetings appeared to have become history as only 7% of the respondents said they still conducted such meetings under tree sheds at the village square (*mbara*); the rest (93%) indicated use of modern village/town halls for such meetings. Again, only 6% said they still had shrines/evil forests in their villages/communities where nobody was allowed to tamper with the trees. Concerning how the present hot weather condition affected their occupation, the farmers indicated crop failure (including rotting of yams and cocoyams in the soil after planting), low crop yield (including scorching of vegetables and shrinking of groundnut seeds) and delay as well as uncertainty of planting time. The civil servants complained of stress and discomfort in their offices, while the student respondents complained of inadequate concentration in their studies. Regarding health, the general complaints included heat rashes, rise in blood pressure, excessive perspiration and fever. About 90% of the subjects indicated that they were doing nothing to counter the effects of the unusually warm weather except

through prayers. 10% (who were mainly civil servants and teachers) indicated planting more trees around their compounds.

In line with the purpose of this paper, the findings of the above pilot study could be summarized as follows:

i. While the generality of the Igbos in rural and sub-urban areas have noticed increase in atmospheric temperature, most of them are not aware of the cause(s) of such phenomenon.

ii. Majority of the Igbo population in rural and sub-urban areas are also not aware of what to do to mitigate or even adapt to the incidence of global warming and climate change.

These summed up situations clearly portray the high level of environmental illiteracy among the subjects of the reported pilot study.

2.2 Practical Manifestations of Environmental Illiteracy in Nigeria

The practical manifestations of the prevalence of environmental illiteracy in Nigeria are discussed here by citing some significant environmental and human challenges caused by rural dwellers, urban inhabitants and industrial entrepreneurs largely as a result of their ignorance of the deleterious consequences of their actions due to profound environmental illiteracy. Among the rural dwellers, deforestation (felling of trees without their replenishment) is a major fault. This occurs, among other reasons, as a result of the incessant use of wood as fire fuel for domestic heating and cooking (see plate 1 in the appendix), as well as through bush slash-and-burn to prepare land for agriculture (see plate 2 in the appendix). Deforestation leads to disequilibration of biodiversity as a result of the extinction of various types of flora, wild life and other living organisms. Most of the rural inhabitants causing deforestation are generally ignorant of this as they lack the relevant environmental literacy education. Besides the highrate of demand for fire wood for domestic use by as many as 76% of Nigeria's population (Halidu, 2009), it had long been estimated that by 2030, a cumulative total of 7.5 hectares of fire fuelwood plantation (in addition to the existing forests) would need to be established in order to meet the impending shortfall in fire wood availability (Federal Republic of Nigeria, 2003). A lot needs to be done to avert this by way of providing the necessary environmental literacy education for the rural population in Nigeria.

With respect to manifestation of environmental illiteracy among urban dwellers in Nigeria, attention here is drawn to the practice and effects of indiscriminate creation of waste dumps and dumping of refuse in sewages in Nigeria's urban centres. In the appendix to this paper, plate 3 shows the dumping of various types of refuse very close to a food market in an urban centre; while plate 4 shows the blockage of a drainage in an urban area with various solid wastes. The effect of the action in plate 4 (flooding) is shown in plate 5. Obviously, the citizens perpetrating the actions and the effects shown in plates 3, 4 and 5 (including the dangers to health posed by the juxtaposition of refuse dump and a food market in plate 3) lack the necessary knowledge and understanding of the hazard they unwittingly imposed on the environment and themselves. They surely require what they lack—appropriate contents of environmental literacy education as highlighted in the introductory section of this paper.

Another group of Nigerians that manifest the prevalence of environmental illiteracy in the country are industrial entrepreneurs, with particular reference to their activities that adversely affect both the rural and urban dwellers. One of such activities is the degradation/pollution of artisanal waters which provides sources of potable water (for drinking, bathing and even laundry) for local inhabitants. This is usually brought about by the effluents (water mixed with various types of waste materials) from industries into nearby rivers and streams. Plate 6 in the Appendix shows a gold ore processing industry in Zamfara State of Nigeria which in 2010 directed its effluents to a nearby artisanal water. This resulted in lead poisoning of the water that caused the death of several children who ingested the water (WHO, 2010). The trauma generated by this sad incident for both the affected families and the entrepreneurs could have been avoided if the entrepreneurs has been aware of the environmental and human challenges that would follow their action. This again points to their lack of knowledge of, skills in and the requisite attitude towards proper utilization of the available environmental resources (river, gold ore, and so on) in a sustainable harmless manner. There was also apparent ignorance on the part of the entrepreneur(s) regarding the need to have conducted an assessment of the possible impacts of the gold ore processing plant on the surrounding environment before it was established. This, surely, is an indication of environmental illiteracy on the part of the entrepreneur(s). Another case like that of the gold ore processing plant in Zamfara, is the flaring of fossil gas from a ground hole within a rural or sub-urban habitation without being aware of the disastrous effects of the heat and other pollutants so generated on the surrounding ecosystem, including humans living nearby. Plate 7 in the Appendix to this paper is an example of gas flaring in a sub-urban habitation in Rivers State of Nigeria. Although this has been sealed off recently, the scars it left within the environment are still evident.

3. Response to the Question of Environmental Illiteracy in Nigeria

The research results on and practical manifestations of the prevalence of Environmental Illiteracy (EI) in Nigeria analyzed above clearly show that EI is rife among various segments of the Nigerian citizenry, including graduating University students, secondary school teachers, industrial workers, rural and urban dwellers and business entrepreneurs, among other classes of Nigerians. In the light of this fact, and given the adverse import of Environmental Illiteracy (EI) on national and citizenry development (mismanagement of natural resources, backwardness and poverty) as shown in Figure 1 above, it surely goes without saying that EI is a major factor of underdevelopment in a country like Nigeria immensely endowed with various natural resources and human talents.

Appropriate Response to the Question of Environmental Illiteracy in Nigeria, in relation to the economic and social advancement of the country, would therefore be to provide Mass Environmental Literacy Education (MELE) for all citizens (including the leaders) of the country. The content, modes and processes for effecting such education are discussed immediately below.

3.1 The Content of Mass Environmental Literacy Education (MELE) for Nigerian Citizens

Roth (1992, p. 16) succinctly defined the content of Environmental Literacy (EL) as consisting of: …a set of understandings, skills, attitude 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 relationship with other people and the biosphere… The essence of EL is the way we respond to the questions we learn to ask about our world and our relationship with it; the way we seek and find answers to those questions; and the way we use the answers we have found.

As indicated earlier in this paper, Roth sorted the content of EL into three levels of ascending expansion from basic understanding through a broader knowledge and interaction to a higher level of understanding and skills in dealing with the environment and its problems. Roth's views about EL are very much reflective of the five-component model of the attribute of an environmental literate person, usually referred to as the "*AKASA*" model. This model was proposed in the Declaration of the Intergovernmental Conference on Environmental Education organized by UNESCO in Tiblisi (USSR) in 1977. This Declaration, popularly called the "Tiblisi Declaration", specified five categories whereby goals and objectives of environmental literacy and the attributes of the environmentally literate should be identified. The ***AKASA*** model is an acronym of the categories which are (UNESCO, 1977):

i. **Awareness,** including sensitivity to the total environment and its allied problems;
ii. **Knowledge—**involving a variety of experiences and understandings about the environment and its problems;
iii. **Attitudes,** depicting appropriate values, concern and motivation to participate in environmental improvement and protection;
iv. **Skills,** indicating possession of appropriate capacity for identifying and solving environmental problems;
v. **Action,** depicting readiness to initiate or be involved at all levels in work towards solution of environmental problems.

In harmony with these germane theoretical opinions, Environmental Literacy Education (ELE) could be defined as the process of disseminating the content of EL in order to develop in beneficiaries environmental responsible behaviour expected of environmentally literate persons as contained in the AKASA model above. On the other hand, Mass Environmental Literacy Education (MELE) which is suggested in this paper as an appropriate response to the question of environmental illiteracy and the concomitant mismanagement of natural resources, backwardness and poverty in Nigeria, could be rightly defined as the educative process which provides the entire spectrum of citizens of the country (young and old, illiterate and literate, farmers, fisher folk, professionals and non-professionals, industrialists and so on) with functional environmental literacy education which would enable them to:

i. understand the interrelatedness of human systems (political, social, economic, cultural and technological) with natural system (physical and biological);

ii. acquire the necessary knowledge, skills and attitudes required for effective management of environmental resources in their various communities;

iii. be aware of their individual roles towards sustainable development through protection, preservation and conservation of the available resources within their environments of work and domicile;

iv. individually and collectively undertake the identification of environmental problems and issues; collection of environmental information and disseminating them; and development of alternative solutions to identify the environmental problems in their various communities, the Nigerian nation and the world at large. Ibikunle-Johnson (1986, p. 38) sees MELE as Education for Development and suggests that the items of concentration in Mass Environmental Education should include:

environmental health, improved practices in agro forestry, proper management of rangelands, conservation of wildlife and their habitats, low-income housing, environmentally sound technologies, transportation, local air and water quality, deforestation, solid waste disposal and recycling, use of biological fertilizers, simple energy systems, conservation of other natural resources and the ecosystem, soil erosion, climatic effects of pollution, land utilization, etc., all of which can affect the community and ecosystems in which people live and the quality of their lives.

3.2 Modes, Methods and Techniques for Mass Environmental Literacy Education (MELE) for Nigerian Citizens

The definition, objectives and content of Mass Environmental Literacy Education (MELE) presented above clearly shows that MELE has the capacity to provide the entire citizenry of Nigeria with functional environmental literacy education which would appropriately tackle the genesis of mismanagement of natural resources and the resultant backwardness and poverty in Nigeria. That all the citizens would be involved makes it essential for MELE to filter through every level of the usual three-tier system of education with the constant consciousness of the ultimate goal of sustainable social and economic development. Accordingly, MELE needs to adopt the Formal, Non-Formal and Informal modes of education to achieve its desired goal. For further clarification, it would be useful to describe, though briefly for want of space, the involvement of the three modes in the implementation of MELE as shown immediately below.

3.2.1The Formal Mode of MELE

Implementation of MELE under the Formal mode of education involves inclusion in the syllabuses/schemes of basic literacy centres, primary, secondary and tertiary institutions in Nigeria, appropriate MELE content in accordance with what Roth (1992) has identified as the *nominal*, *functional* and *operational* levels of Environment Literacy (already highlighted in this paper). In this way, children in primary education as well as adolescents and adults at the secondary, basic literacy and tertiary levels of education will have the opportunity to, among other things, understand the interrelatedness of human and natural systems, as well as acquire the knowledge, skills, attitudes and other relevant attributes (listed above) which are required for effective management of natural

resources in their various communities or places of work. The method of delivery of the contents of MELE in the various institutions would largely be pedagogy (except perhaps in the case of basic literacy classes involving illiterate adults, where andragogy should be the method of facilitating learning). Various forms of Information and Communication Technology (ICT), such as films and videotapes could be used to practicalize the teaching or learning facilitation processes which should be carried out by trained experts of environmental literacy education.

3.2.2 The Non-Formal Mode

This mode of MELE is an alternative to the institutionally based formal mode. In effect, learning activities in the non-formal mode are not systematized or hierarchically arranged as in a school curriculum, but would create individual, group, community and corporate awareness of the symbiotic relationship between humans and the natural environment in which they live as well as the need to ensure, protect and sustainably utilize the resources of the environment in the operation of their livelihood assets. Issues about the effect of pollution, depletion of forests and bush burning would also be harped on among other environmental degradation matters. As many of the focus groups involved in the Non-Formal MELE (especially rural inhabitants) may not find it convenient to leave their places of domicile or work to attend the Seminars, Conferences, Workshops and Short training programmes which constitute the approaches/methods of presentation of the requisite MELE contents, the programmes should be accomplished in situ for the group(s) concerned by commissioned experts in environmental literacy education from relevant institutions of higher learning. In all, school halls, basic literacy centres, industrial locations, and so on, would serve as veritable centres for the Non-Formal mode of MELE.

3.2.3 The Informal Mode of MELE

Usually, learning through informal education occurs spontaneously, unintentionally or even accidentally. Again, informal education like its non-formal counterpart, takes place outside an institutionalized or school setting. It is usually informative and could take place anywhere and at any time. However, differences exist in delivery methods and materials among informal modes of education, based on the objectives to be achieved and the target beneficiaries involved (Eheazu, 2016). In the particular context of the topic of this paper, the Informal Mass Environmental Literacy Education (MELE) being addressed here is the type that would focus on the need for various sectors of the Nigerian populace to acquire the necessary knowledge, skills and attitudes required for effective management of environmental resources in their various communities and to become aware of their individual and group roles towards sustainable development through the preservation, protection and conservation of the resources while operating their livelihood assets. The radio, the television, bill boards and mobile megaphones are among the avenues for imparting learning and for mobilization of the population towards effective management of the resources available within their environments. Professional artists and environmental literacy education experts in relevant institutions of learning would need to be commissioned to design appropriate radio and television jingles and dramas,

megaphone talks, posters and so on. Support/sponsorship for the Informal MELE programme, could be sought form relevant government Ministries and Non-Governmental Organizations (NGOs).

4. Summary and Conclusion

The issue of widespread backwardness and poverty among African nations has been traced to the mismanagement of the continent's environment and the resources therein. The genesis of the mismanagement has also been traced to the general prevalence of environmental illiteracy/ignorance all over the continent. This paper has addressed the question of the extent of the prevalence of the syndrome of Environmental Illiteracy in Nigeria, using results of related empirical studies and documented practical manifestations to analyze the syndrome and suggest appropriate response. The analysis reveals that environmental illiteracy is rife in every segment of Nigeria's population, a situation which invariably contributes to the overall backwardness, poverty and underdevelopment in the country. After x-raying details of the finding, the paper concludes that an appropriate response to the Question of Environmental Illiteracy in Nigeria would be the provision of Mass Environmental Literacy Education (MELE) for all the citizenry of the country, using the Formal, Non-Formal and Informal modes to be able to include all segments of the country's population. The Content, Methods and Techniques to be adopted under each mode have also been briefly addressed.

5. Recommendation

Following the detailed discussions above on the topic of this paper and the conclusion arrived at, it is considered pertinent to recommend that, as a matter of urgency, Nigeria should adopt Mass Environmental Literacy Education (MELE) as a veritable tool for addressing environmental resource mismanagement and the resultant backwardness, poverty and overall low socio-economic development in the country.

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Appendix

Plates Depicting Manifestations of Environmental Illiteracy among Various Groups of Nigerians (Adapted from: Eheazu, 2011, 2016)

Plate 1. Domestic Cooking with Wood as Fire Fuel

Plate 2. Sample of Deforestation through Bush Slash-and-Burn and Tree Felling

Plate 3. Indiscriminate Dumping of Refuse near Food Market

Plate 4. Blockage of Drainage with Solid Waste

Plate 5. Flooding as a Result of Indiscriminate Dumping of Refuse in a Sewage in a Nigerian City

Plate 6. Artisanal Water Degradation from Waste Water Discharge from a Local Gold Ore Processing Plant in Zamfara State, Nigeria; 2010

Plate 7. Gas Flaring within a Rural Habitation