

## **Non-Formal Environmental Adult Education Strategies and Communication Techniques for Addressing Environmental Degradation Challenges Associated with Grassroots Populations in Nigeria**

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### **Abstract**

*The conception of Non-Formal Education (NFE) as short-term education programmes capable of promoting rapid developmental change and adjustment arose from the realization that formal education would not be able to fully address the basic needs of people in the complex process of development. Non-Formal Environmental Adult Education (NFEAE) serves both the general purpose of NFE and, with special approaches, the overall concerns of Environmental Adult Education. Nigeria's grassroots/rural populations face various environmental degradation challenges traceable to the rural peoples' life styles and unsustainable exploitation of their livelihood assets. The purpose of this paper is to articulate the NFEAE strategies and communication techniques desirable to effectively address the rural anthropogenic environmental challenges. After further stress on the importance of the highlighted strategies and techniques, the authors finally recommend their adoption in any effort to solve grassroots/rural anthropogenic degradation challenges in Nigeria and other similar environments.*

**Keywords:** Non-Formal Education, Non-Formal Environmental Adult Education, Grassroots Populations, Environmental Degradation Challenges, Communication Techniques.

**1. Introduction: Some conceptual clarifications.** The idea of Non-Formal Education (NFE) was conceived in less developed countries of the South at a time when development organizations and experts in the North came to realize that global development was a complex issue and that diverse strategies were needed to address the basic needs of people. Hoppers (2006:39) describes the situation in the following words: Policy-makers and development experts expressed particular concern over the attuning of educational goals to social development goals. It was noted that formal education was rather unwieldy as it had medium-term goals and its social products would not be available until quite some time after its inauguration. In a context in which many issues, such as food production, health needs and political participation had to be tackled, one could not wait until all people had a basic formal education. Thus the development of 'short-term education programmes' capable of promising rapid change and adjustment was deemed imperative.

Coombs (1968:178) had earlier advised along these lines that: A developing country ... must use NFE not only to build upon the previous formal education of a small fraction of its citizens, but more especially to raise the economic and social level of the vast majority of its citizens who never acquired literacy. The priority for such countries at present must go to work-oriented literacy and training programmes, which have an early impact on individual and national economic development.

In apparent endorsement of Coombs' advice, Bock (1976:348) considered the significant aspect of NFE as being its conception as "a new force through which educational and socio-economic change is believed to occur at both the individual and societal levels, and the vision of it as an exciting new strategy for combating poverty, ignorance, inequality, ill-health and oppression". The Corollary of the above eloquent views is that NFE is considered to be a distinct form of education for achieving rapid results in and for providing bridges to needed areas of development.

Environmental Adult Education (EAE), on the other hand, has been defined by UNESCO (1977) in her Tbilisi Declaration as a learning process which increases people's (adults') knowledge and awareness about the environment and associated challenges, develop the necessary skills and expertise to address the challenges, and fosters the right attitudes, motivations and commitments to make informed decisions and take responsible action. Eheazu (2016a) has specified seven objectives of EAE which further highlight the importance of the subject in addressing environmental degradation challenges. Although EAE emerged relatively recently as a distinct field of study (cf UNESCO, 1997), it has, like its older counterparts, Formal, Non-formal and Informal forms. While the formal EAE is provided within institutional settings to, among other responsibilities, bring up experts to carry out the non-formal and informal aspects, non-formal EAE which takes place outside an institution is an alternative to the institutionally based formal system as it serves both the general purpose of NFE and, with special approaches, the overall concerns of EAE highlighted above. Informal EAE, on its own, provides learning (outside institutions) which occurs spontaneously, accidentally or unintentionally through selected media and techniques that deliver the required information to be internalized by target groups.

The purpose of this paper is to project the potentials of Non-Formal Environmental Adult Education (NFEAE) strategies, using relevant communication techniques, to effectively address environmental degradation challenges attributable to the life styles and unsustainable exploitation of the livelihood assets of the grassroots people in Nigeria.

## ***2. Population Dynamics, Environmental Degradation Challenges and Environmental Education: The Focus on Adults***

A question that commonly arises regarding the provision of environmental education for the grassroots people is: "why the emphasis/focus on adults?" A precise answer to this question would require some elucidation on who an adult is and why adults are given pride of place in the consideration of matters relating to environmental degradation. A consensus definition of adulthood is rather difficult to come by because of the social, cultural and legal considerations that may inform identification of who an adult is at community and national levels. However, the American Central Intelligence Agency (CIA) has published standardized age ranges for children, adults (young and old) and senior citizens (older adults) as 0-14years, 15 – 64 years and 65 years and above respectively (CIA World Fact Book, 2012). These calculations were based on global demographic dynamics (including population size, growth rates, densities and population structure).

As has been observed by Eheazu (2013), census classification of population groups and their economic contributions by age groups (population structure) shows that adults (no matter the cultural or formal age-range criteria by which they are identified in time and in place) usually constitute the greatest percentage of economically productive and active members of society. In Nigeria, for instance, the population structure by July 2010 has been calculated to be 42.8%, 53.8% and 3.4% for ages 0-14years, 15-64 years and 65years and above respectively (Wikipedia, 2011). Again by July 2014, the population structure of the country was documented as 43.2%, 53.8% and 3% for age ranges 0-14years, 15-64years and 65 years and above respectively, thus showing marginal difference with the 2010 structure (CIA World Fact Book, 2015).

In the light of these statistics, adults, invariably, are the largest groups of humans to impact on the environment through their socio-economic activities (such as farming, road construction, building of estates, use of fossil fuels for transportation and industrial activities) which could bring about tremendous anthropogenic (manmade) environmental degradation phenomena like deforestation, disequilibrium of the ecosystem, land degradation, environmental pollution, global warming and so on. This demographic fact, obviously, underscores the need for special environmental education for the adult population to ensure an enduring and sustainable level of utilization of the earth's resource (Parker and Towner, 1993).

In the specific case of rural areas/communities, the CIA World Fact Book (2015) population statistics further indicate that people aged 0-14years (children) constituted 43.8% of Nigeria's population in 2014. When applied to the rural areas, this well-articulated population structure clearly leaves a proportionately small adult labour force who, in addition to being responsible for the education of their young, must also care for the aged and the infirm most of whom belong to an apparently limitless extended family system. The resultant general penury and lack of savings associated with the responsibilities of the rural adult often lead to inability to pay school fees and a tendency for many rural youths to drop out of formal education and eventually constitute a large body of unskilled labour (Eheazu, 1990).

Such youths face frustrations in their future attempts to fit themselves into available employment opportunities in the rural communities and this serves as a 'push factor' for youth migration to urban centres. Thus, the comparatively small percentage of rural adult population, most of whom are illiterates, constitute the core of rural labour force and the hub of rural productivity. Put in other words, adults still predominate as the economically productive and active group whose socio-economic activities could, as indicated earlier here, bring about tremendous environmental degradation in Nigeria's rural communities. The above empirical facts, obviously, provide ample justification for the emphasis on *adults* in any discourse on environmental education of any group of humans, including grassroots populations in Nigeria.

### **3. Profile of the Grassroots Populations in Nigeria**

In the context of this paper and in agreement with The Free Dictionary (2014) definition, grassroots populations or people in Nigeria refer to the common or ordinary citizens (as contrasted with the leadership or elites of political parties and social organizations) who inhabit the agricultural and rural areas which are located outside towns and cities of the country. A basic attribute of rural communities in Nigeria is that, as has been long established for many other developing countries (UNESCO, 1980), the greatest percentage of Nigeria's population are found in the rural communities. For instance, the World Bank (2016) has shown that the population statistics of Nigeria's rural communities were 53% and 52% of the country's total population in 2014 and 2015 respectively.

Unfortunately, these rural communities are characterized by a host of social and economic problems, including high levels of illiteracy and low economic returns from occupational endeavours essentially caused by low productivity and inadequate road networks and transportation systems for exchange of goods and services. There are also the problems of inadequate health provisions, improper sources of potable water as well as near absence of reliable source of power and illumination (Eheazu, 2017). Olisa and Obiukwu (1992:65) highlight this sombre situation in Nigeria's rural areas in the following words: The main features of the rural areas are depression, degradation and deprivation. Many rural villages are immersed in poverty so palpable that the people are the embodiment of it. In most rural areas in Nigeria, basic infrastructure where they exist at all, are too inadequate for meaningful development.

Subsistence agriculture (including farming, fishing and herdskeeping) is usually observed as the mainstay of the economy of rural communities in developing countries like Nigeria (National Geographic Society, 2016). However, due to the low economic returns to agriculture experienced by the rural communities with the negative welfare implications as described above, the rural community members engage in diversification of their livelihood assets. They involve themselves in off-farm and non-farm activities like weaving, carving, sculpturing, tannery, blacksmithery, metal works, masonry, and so on. In spite of these efforts to survive economically, the International Fund for Agriculture (IFAD) recently (IFAD, 2016) published that the number of rural poor in Nigeria by 2014 was 50,010,839 out of a total rural population of 94,165,210. In other words, 53.1% of the total population in Nigeria was identified as poor. The situation has hardly improved currently (2018), in spite of ongoing national attempts at rural transformation through rural electrification schemes to encourage establishment of cottage industries, and Credit Schemes to Small and Medium Enterprises (SMEs) for improved productivity in farming and other rural occupations (Eheazu 2017). This can also be said to be true of the National Economic Empowerment and Development Strategy (NEEDS) initiated by the Nigerian Federal Government in 2003 with the aim to eradicate poverty and bring about sustainable development through agencies such as the National Poverty Eradication Programme (NAPEP) established in 2001.

### **4. Environmental Degradation Challenges Associated with the Grassroots Populations in Nigeria**

Aside from the problem of poverty which has virtually become endemic in Nigeria's rural communities, environmental degradation constitutes a major threat to human health and sustainable development in the rural communities. Eheazu (2016b:4) defines environmental degradation in simple terms as "deterioration or reduction in quality of the environment through any undesirable change, depletion or alteration of elements of the natural environment such as air, land, water, forest and wildlife". Many of the factors of environmental degradation challenges in the rural communities are mainly anthropogenic (manmade) and are associated with, among other things, population pressure on natural resources, low level of education among the rural inhabitants,

Adoption of primordial lifestyle and production processes, as well as improper methods of utilizing available livelihood assets. Specifically, the anthropogenic factors of the rural environmental degradation challenges include:

- i. Deforestation (felling of trees without replanting them) which occurs mainly as a result of the incessant quest by the rural populations for wood as fire fuel (see fig. 1 in Appendix) and for land for agriculture and other developmental purposes;
- ii. Inadequate management of wastes from domestic processes which gives rise to environmental pollution (see fig. 2 in Appendix);
- iii. Adoption of farming processes, such as slash-and-burn (see fig. 3 in Appendix) and application of Sulphur and nitric oxide fertilizers, which promote destruction of natural habitats, soil deterioration, soil erosion and agricultural run-off that pollute streams and rivers which provide sources of water for domestic use and drinking and for artisanal fishing (see fig. 4 in Appendix);
- iv. Desertification (the gradual transformation of habitable/arable land into a desert). This results from a number of prevalent causes, including overgrazing by pastoralists and felling of the scantily available trees to provide firewood in arid and savannah rural environments (see fig. 5 in Appendix).

### **5. Non-Formal Environmental Adult Education (NFEAE) Strategies for Addressing Anthropogenic Rural Environmental Degradation in Nigeria**

Non-Formal Environmental Adult Education (NFEAE) for the grassroots population in Nigeria should address rural communal and societal needs for awareness of causes of various environmental degradation challenges and the different ways to tackle them. NFEAE should as well generate the necessary levels of individual and communal commitment to bring about solution of the attendant problems posed by the degradation challenges. Specifically, the strategies NFEAE should adopt to discharge its envisaged responsibility towards addressing the already highlighted issues of anthropogenic rural environmental degradation challenges in Nigeria would include:

- i. Awareness creation seminars and workshops on the various forms of environmental degradation in the rural areas, the hazards of such degradation, and the inadvertent contributions of the rural inhabitants to the generation of the degradations;
- ii. Organization of short training programmes not only for solving existing challenges, but also for minimizing or even preventing further environmental degradation arising from improper lifestyles and unsustainable exploitation of livelihood assets at homes, markets, on farmlands, and so on. This would include discussions, training and skill development in such areas as conservation farming, sustainable fishing and herdskeeping to reduce or prevent destruction of natural habitats through slash-and-burn, use of chemicals for fishing and overgrazing;
- iii. Development of appropriate methods of management and disposal of various biodegradable and non-biodegradable wastes (solid, liquid, and gaseous) by the rural dwellers during their day to day activities;
- iv. Inculcation in the rural dwellers of basic techniques of controlling pollution which may result from environmental disasters like flooding, oil spillage and so on;
- v. Organization of workshops on how to produce and use improved clay stoves which require minimal quantities of wood as fire fuel for domestic cooking and heating. The essence of this workshop would be to reduce the quantum of deforestation occasioned by large dependence on wood as fire fuel. The clay stove also helps to reduce domestic air pollution which occurs through discharge of large volumes of smoke in the process of cooking on the “traditional tripod stove” with plenty of firewood (cf Eheazu, 2016b : 23-24).

### **6. Communication Techniques for Effective Implementation of the NFEAE Strategies for Addressing Anthropogenic Grassroots/Rural Environmental Degradation in Nigeria.**

Communication could be viewed as a transactional process. The process is made up of many components. The components as noted by Hassan (2013) and Agee et al (1982), include: the channel, the encoder, receiver and the decoder. The channel is the vehicle through which a message is carried from the communicator to the receiver. The channels of communication could be radio, television, books, newspapers, magazines, social media, and so on. The success or failure of effective communication depends to a large extent on the choice of the right channel of communication.

The process of encoding involves the formulation of messages in the communicator's mind. The communicator should not only translate his purpose (ideas, thoughts or information) into a message, but should also decide on the medium to communicate his planned messages. The encoder should choose the medium that the receiver can comprehend well. The receiver is at the other end of the communication process. He/she is the recipient of the message and should possess the same orientation as the communicator. Decoding is the interpretation of the message by the receiver.

In order to decode the message successfully, the receiver should be conversant with the symbols, signs and similar cues to facilitate the process. In another view, the receiver could be called the decoder. The receiver looks for the meaning in the message which is common to both the receiver and the communicator. Akpan (1987) sees communication as a means of sharing meaning with oneself or with others. For effective communication to take place, meaning should be shared by the parties concerned. In a learning situation, meaning is supposed to be shared between the instructor and the learners. The extent to this sharing of meaning within the communication process is known as feedback. Ndimele & Innocent (2006) see feedback as very important in communication. They assert that feedback enables the participants in the communication process to see whether their ideas and feelings have been shared in the way it was intended.

In terms of devising appropriate communication framework for achievement of non-formal environmental adult education strategies for addressing anthropogenic rural environmental degradation, attention should be paid to the various domains of learning: cognitive, affective and psychomotor. The mode of communication should direct the emotional and mental attitudes of the learners towards their commitment to and involvement in solving their environmental challenges. To achieve this, the following techniques should be considered germane:

### **6.1 Linguistic Technique**

Language is very central in the transmission of knowledge. For this reason the language of instruction for the adults in a non-formal learning setting should aim at results. Results can only be achieved if the language is familiar and accessible to the learners. The composition of the target groups in terms of linguistic backgrounds would also determine the choice of language. If all the group members are from the same linguistic stock, vernacular reflecting their mother tongue would be apt. Where, on the other hand, members of a group are from different linguistic backgrounds, the most widely spoken common language would be the right choice. For instance, in Rivers State of Nigeria with over twenty-two indigenous languages (Naku, 2013), Nigerian pidgin or "broken" English is used.

### **6.2 Space or Location Technique**

This refers to choice of appropriate venue of meetings for inculcation of learning experiences. Environmental issues are practical oriented and demand observations and field study. Much of the instructions and learning required are to be done at the site of the environmental incident or degradation; while other activities like workshops involving use of gadgets could be done in appropriate venues like school buildings/halls. Much emphasis should be placed on the field study and practical application or demonstration of learned skill to deal with environmental hazards like erosion menace and other ecological challenges. In all, the space or location chosen should be conducive to facilitation of the learner's internalization of instructions and practicalization of skills being inculcated. Among such locations would include markets, village/community halls, and environmentally polluted locations and so on.

### **6.3 Speed and Space Orientation Technique**

This technique calls for proper spacing and lay-out of instructions in a manner that would bring about a well-coordinated learning process. Environmental issues are procedural and require systematic framework that would enable the learners to participate in the unfolding process. An issue like oil spillage and its damage to the environment for instance, would be made a practicable experience and domesticated for the learners. The instructions should gradually present the various steps and stages of the environmental hazards to enable the learners participate in designing the appropriate remedies.

### **6.4 The Frequency Technique**

Frequency here refers to the number of times and/or various ways that the learners' understanding is reinforced on each subject.

The ultimate concern should be to equip the learners with the capacity to understand and appreciate causes of common environmental degradation occurrences in the community as this will afford the learners the opportunity to develop commitment to seek remedies for the prevalent environmental issues.

### **6.5 Instructional Mode Selection Technique**

This is concerned with the form the instructions are presented to the learners, depending on their literacy levels and experiences. In this situation, the instructor should aim at being practical in order to effectively communicate his or her messages to the learners. While the learners should be provided with learning materials for practical application, they should be exposed to scenes and sights in matters of environment through pictorial recordings, films, slides and even video clips where possible. Whatever method of instruction is used, provision should be made for message recall and comprehension. The rate at which adults react to and assimilate instructions is not the same for the younger ones. Every group of adult learners should be involved by making the learning process vibrant with participatory exercises such as group assignments and discussions. Again, the mode of instruction chosen should provide a means for feedback between the instructor and the learners so as to measure the level of understanding of the encoded messages. This is quite important in workshops and seminars on such issues as control of pollution, deforestation, desertification and management of wastes.

## **7. Summary and Conclusion**

The necessity of Non-Formal Education (NFE) for the achievement of rapid results and for providing bridges in needed areas of educational and socio-economic change and development, at both individual and societal levels, has been strongly advocated overtime, especially for developing countries of the South. Non-Formal Environmental Adult Education (NFEAE) is in no way less necessary, especially in matters concerning environmental preservation and maintenance. This is the main thrust of this paper with particular reference to Nigeria's grassroots/rural environments. After x-raying the profile of Nigeria's grassroots/rural populations and the various environmental challenges arising from the rural peoples' lifestyles and unsustainable socio-economic activities, the authors unequivocally conclude that the environmental degradation challenges in focus could be very well addressed through application of the articulated NFEAE strategies and communication techniques.

## **8. Recommendation**

In the light of the overall discourse and conclusion in this paper, the authors hereby recommend that NFEAE strategies and relevant communication techniques be adopted to assist in solving the anthropogenic environmental degradation challenges of not only Nigeria's grassroots/rural communities but also those of similar communities in other developing countries.

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## APPENDIX

Figures Referred To In the Text

**Fig. 1:** A Village Firewood Market in a Nigerian Grassroots/Rural Community Rural Garri Processing Industry in Nigeria



**Fig 2:** Environmental Pollution due to inadequate Management of Waste in a



**Fig 3:** Destruction of Natural Habitats through Slash-and-burn method of Farming



**Fig 4:** Effects of Artisanal River Pollution on Aquatic Life



**Fig 5:** Desertification due to Overgrazing in Rural Nigeria

