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Environmental Security and Sustainability of Community Resources in Nigeria. Promoting Community Participation through Adult Environmental Education.

Christiana Uzoaru Okorie[1] and Dokubo Chidinma[2]

[1] *Department of Adult and Non-Formal Education, University of Port Harcourt, Port Harcourt, Rivers State, Nigeria*

[2] *Department of Educational Foundation, Rivers State University of Science and Technology, Rivers State, Nigeria*

Abstract.

This paper examines the question of how daily human activities have created environmental insecurity and the implications for the sustainability of community resources in Nigeria. Particular reference is made to examples in Rivers State and Ebonyi State. Through its different agencies working at state and local levels the government has started to introduce various measures to monitor the effects of human activities on the environment and resources in the state. In this respect, we discuss the introduction of adult environmental education programmes for environmental sustainability and security. When adults receive adequate information through awareness-raising activities, we consider how they can be equipped with the necessary knowledge and skills to manage the environment in a sustainable manner and prevent environmental insecurity.

Key words. environmental insecurity · community resources · sustainability · community participation · adult environmental education · environmental security awareness

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Corresponding Authors: Okorie Christiana Uzoaru, Department of Adult and Non-Formal Education, University of Port Harcourt, Port Harcourt, Rivers State, and Dokubo Chidinma, Department of Educational Foundation, Rivers State University of Science and Technology.

 E.mail: christiana.okorie@uniport.edu.ng; chidinmadokubo@yahoo.com

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Introduction

Development in any community setting involves all sectors - social, economic, political and cultural - of the life of the community. Major determining factors of that development are the availability and sustainability of abundant material and human resources present within the environment of the community. Sustainable use of the available resources is dependent upon the level of consciousness within the community concerning the different measures necessary for guaranteeing environmental security and which the community itself can adopt. In recent decades, many community resources have been partially or totally depleted due to unsustainable ways in which they have been utilized, thereby creating environmental insecurity. When the environment of a community is insecure because of unavailability of resources, the life of the inhabitants will be at risk and this will in turn affect environmental security on a large scale that goes beyond the single community. In order to achieve environmental security, human beings that utilize the resources for their own developmental activities must be educated about the dangers their activities can pose to the environment and about the appropriate ways in which they should use these resources in order to maintain community sustainability. What follows is a discussion of issues concerning how to render community resources secure through adult environmental education and security awareness programmes.

A community and its environmental resources

A community can be defined as a group of people living together with a common interest and who are attached in various ways to their place of residence. In their working document, the sub-committee of the *Welfare Advisory Council for Black Communities* in South Africa (1993) defined a community as a collection of people living within a geographical bounded area, who have a physical tie with their place of residence and socially interact with each other. In addition, Ross (in Midgely, 1995) considers a community as a group of people with a common culture, religion, education and other features. Ferinho (1980) offers a broad definition of community which includes characteristics such as a way of life, defined by a set of common values and interests upon which institutions are developed and with which residents identify themselves (cultural approach); a network of social interaction with which people relate to one another (social approach); a place from which human populations receive the energy they need to live and survive (ecological approach).

In this paper, a community is considered as a collective number of people who live in the same environment which in turn provides them with the human and material resources which they depend upon for survival, who share same cultural values, human needs and social interests. Moreover, a community is characterized by different kinds of natural resources which the community members depend on for their developmental activities.

Communities in Nigeria have long enjoyed plentiful natural resources necessary for the sustenance of their members. Today, however, in many communities these resources have been totally depleted due to ways in people utilize them for satisfying their present needs without considering the availability of the same resources in the future. The unsustainability of community resource exploitation has already rendered current new generations unable to access many natural resources present in their communities up to 20 or 30 years ago, including forest and water resources as well as various parts of a rich cultural heritage.

The growth of environmental insecurity in Nigeria

The issue of community environmental insecurity is related to those negative environmental outcomes that occur naturally or are mainly caused by humans' interaction with the environment. Such outcomes affect the security and sustainability of environmental resources. Promoting environmental security is concerned with safety measures adopted in

order to avert possible dangers which result from natural events or human activities that pose threats to the environment and all its associated resources and can also be referred to as freedom from the risk of loss or damage to environment. Key elements of environmental security as outlined by King (2000) are public safety from environmental dangers caused by natural or human processes due to factors such as ignorance, mismanagement and misuse; amelioration of natural resource scarcity; maintenance of a healthy environment; amelioration of environmental degradation; prevention of social disorder and conflict and the promotion of social stability.

In Nigeria, the threat to the environment was not widely considered as a national issue until the incident that occurred in Koko in 1998, where toxic waste threatened the lives and properties of the inhabitants of that village. This incident led to environmental issues becoming a priority at national level and the establishment of the Environmental Protection Agency (FEPA). However, despite the efforts, numerous threats to the environment occur daily as a result of human activities. The Report of the *Vision 2010 Committee* (Fagbohun, 2010) classified three types of threat to the Nigerian environment. *Internal threats* can be defined as those that affect a nation's domestic tranquillity, health or prosperity. *External threats* include international and transnational entities or actions that threaten a nation's interests such as free trade, commerce, diplomacy and national safety. *Immediate threats* are those (mostly physical) that pose an immediate danger to the population's wellbeing or livelihood.

Fagbohun further established that Nigeria's environment is faced with many problems across the length and breadth of the country. These include population pressure and the continuous exploitation of marginal lands, aggravating the process of drought and desertification in the north; severe gully erosion in Eastern and Northern states together with coastal and marine erosion, and land subsidence in coastal and riverine states; flooding in the low-lying belt of mangrove and fresh swamps along the coast, the plains of large rivers and short-lived flash floods in the inland river; uncontrolled logging, with inherent problems of the destruction of bio-diversity,
together with the destruction of vast agricultural lands and inappropriate agricultural practices; destruction of watersheds and soil-crust formation caused by loss of water; creation of burrow pits associated with bad mining practices and road works; oil pollution from spillage and gas flaring related problems; urban decay and squatter settlements; industrial pollution and municipal waste generation; climate change and ozone depletion.

Moreover, all states in Nigeria experience two categories of environmental problems that causes insecurity in the environment. These environmental threats are classified by Bowonder (1987) as problems caused either by underdevelopment, which includes lack of a protected water supply, unhygienic equation settlement (mostly on the water front) and deforestation, or by activities aimed at economic development which include water logging from irrigation projects and individual pollution.

The examples of Rivers State and Ebonyi State
Some of the principal resources that are found in communities in Rivers State include forest resources, water resources, crude oil and land. All these components of the environment have been threatened by human developmental activities, thereby causing widespread environmental insecurity. Some of the environmental insecurity issues that affect community resources are:

1. Population Increase. Most of the urban cities and towns in Nigeria such as Rivers State have experienced influxes of people from different parts of the world who, through their developmental activities, contribute to the degradation of environmental resources. They also exploit the marginal land for shelter and economic purposes, ignoring any

negative impact this has on the environment of the community.

2. Deforestation. Uncontrolled felling of trees and the consequent depletion of forest resources also pose a great threat to the environment and the inhabitants of the community. This leads to desertification, contributes to an increase in temperature and the depletion of ozone layer which causes generalized climate change. According to Eheazu (2016), deforestation occurs in the quest for firewood and for land for agricultural and other developmental purposes in response to population increase linked to urbanization, estate development, road construction and other related developments. He further shows how deforestation leads to disequilibrium in biodiversity through the destruction of wild life involving various kinds of flora and other living organisms. In Rivers State, the mangrove is continually disappearing due to expanding economic activities in the riverine areas. Trees are being felled for various reasons such as farming and the building of houses to accommodate the increasing populations.

3. Flooding. According to Okorie (2016), flooding in Nigeria is basically caused by human interaction with the environment. This interaction stems from such factors such as urbanization, technology development, deforestation, agricultural activities, improper waste disposal and blockage of canals. Rivers State was among the many states in Nigeria that were hit by the 2012 floods and large numbers of residents were trapped, rendered homeless or lost their lives during the period of their displacement.

4. Erosion. Land and water resources are depleted daily due to gully and marine erosion. Gully erosion is on the increase due to human activities in the environment. In Rivers State, there is an increase in marine erosion due to the disappearance of mangrove as well as dredging activities. The high risks associated with dredging activities have contributed to marine erosion and the displacement of people living along the coastal areas.

5. Creation of burrow pits. Artificial burrow pits created by construction activities also create danger and insecurity for the environment of host communities. Some of these burrow pits have grown to become large ponds which pose a threat to the lives and property of people living within the vicinity.

6. Inappropriate agricultural practices. In Rivers State, crop and fish farming are the basic farming activities practiced. Recently other farming activities such as poultry, piggery, and snail rearing are scattered in some parts of the state. Some of the methods used by the farmers are aggressive practices that pose a threat to the environment and the associated resources.

The particular problems facing Ebonyi State derive from the fact that many resources that formed part of the cultural heritage that was a mainstay of the indigenous economic life are no longer available, due to unsustainable use of the resources which derives from a lack of environmental education among the community members. Such resources include exploiting salt lakes in Uburu and Okposi, pottery using clay in Ishiagu and Uburu, quarrying in Amasiri, Afikpo, Abomege, and many others. Some of these resources have served as main source of income in particular to women in the communities where they are found.

The Okposi and Uburu communities have long been well known for salt making. These communities have been characterized by the presence of salt lakes called "Nmahi" from which women fetched salt water from the lake and boiled it so as to produce salt. Today, however, the lakes are gradually drying up because of negligence and the unsustainable way in which they have been managed. Even during the civil war in the late 1960s Uburu and Okposi were known for their salt trade and the rich proceedings these furnished for the people in these areas, but today a once thriving trade in

these communities has ceased.

A special type of clay used for moulding characteristic local pots, saucepans, vases, plates and many other objects was once abundant in the Ishiagu and Uburu communities. This unique cultural heritage served as an income-generating resource for the local people until very recently. Today these types of pot have disappeared from homes and the present generation are indeed even unaware of their existence.

Abundant quarry resources present in communities throughout Ebonyi State have also been exploited by both men and women on a daily basis without consideration for their sustainability. There has been a lack of awareness of how, for community-based resources to be preserved so that future generations can benefit from them, current users must practice sustainable ways of utilizing such resources. As Hornby (in Okorie, 2016) asserts, sustainability of community resources is a process whereby these can replenish themselves and continue to be used for a long time. Thus, building awareness of the need for conservation and preservation of the natural environment is essential for maintaining community sustainability.

The effects of environmental insecurity on the community

The effects of environmental insecurity on the community can be seen through the extent of environmental degradation resulting from human interactions with the environment. Natural habitats are destroyed or rendered unusable through pollution or contamination or when natural resources are misused, over-used, made scarce and eventually depleted (Fagbohun, 2010).

These types of situation are both a threat to the environment in general and lead to deprivation of basic resources such as water, food and the quality of the air upon which the community members depend for their survival within the environment. Numerous manifestations of environmental degradation such as climate change, the increase in atmospheric heat, desertification, drought, the contamination of water and its sources, the loss of land nutrients, acid rainfall, the loss of biodiversity, the outbreak of diseases and various other connected health problems put at risk the bonds between members of the community. For example, as in the case of climate change, the impact of global warming and persistent drought and desertification has been identified as the primary cause of reduction of the inflow of water into the Lake Chad, causing the shrinking of the lake and resulting in conflicts between the people living along its borders. The shrinking of the lake has led to reduction of land available for cultivation and this has contributed to food insecurity and reduction of land for grazing. The environmental insecurity caused by the shrinking of lake inevitable brings about conflict between shepherds, farmers and fishermen.

Environmental security strategy

Promoting environmental security requires the adoption of effective measures to respond to various issues that pose threats to the environment and thereby create insecurity. Environmental security thus refers to the protection of ecosystems. Some of the components of Environmental Security Strategy as outlined by Vest (1997) consist of:

1. Restoration. Restoration processes as environmental security strategy involves prompt identification of environmental threats, evaluation of the extent of threat, and designing measures of containment, treatment, and/or removal of contamination so that it no longer poses a threat to public health and the environment.

2. Compliance. This entails following applicable statutory guidelines toward management of environmental issues. There are different environmental policies that are formulated to guide the use and management of environmental resources that need to be followed when interacting with environmental resources and serve as guidance for maintaining the security of environmental resources.

3. Conservation. Environmental conservation should be the primary concern of mankind and involves planned management, use, and protection of environmental resources, sustainable use of environmental resources for the benefit of present and future generations, and prevention of over-exploitation and consequent destruction.

4. Pollution prevention. Environmental pollution of any form, be it land, water or air, poses a serious threat to the community and its resources. The degradation caused by pollution contributes to insecurity in terms of lives and other environmental resources. Pollutants such as oil spillage, waste (household or industrial waste), gas flaring, and many others, are dangerous both to human beings and the ecosystem at large. Prevention control measures need to be adequately put in place to avoid the occurrence of pollution and related environmental insecurity problems.

5. Safety. Different kinds of safety measures should be put in place to mitigate the threats to the environment. These mitigating measures also require the training of personnel to educate people about the processes underlying environmental insecurity.

Promoting the sustainability of community resources for environmental security

The sustainability of community resources is the process by which community resources can continue to be used and be available over a long time. As Arokoyu (2004:19) puts it:

Sustainability is a new form of development perspective which integrates the production process with resources conservation and environmental enhancement; it should meet the need of the present without compromising our ability to meet those of the future. It recommended that there should be a break away from the past pattern of development and seeks security through change, reduce risk to survive and put future development on the paths that are sustainable.

According to Perman et al. (in Arokoyu, 2004:21) the sustainability of community resources for environmental security can be seen in terms of six broad concepts. A sustainable community is one in which utility (for consumption) is non-declining through time; resources are managed so as to maintain production opportunities for the future; natural capital stock is non-declining through time; resources are managed so as to maintain a sustainable yield of resource services; minimum conditions for maintaining the ecosystem are satisfied; there is stability and resilience through time;

there is a capacity for consensus building. Thus, for community resources to be beneficial to present and future generations of the community, the various resources that are peculiar to that community should be secured through maintaining a process of environmental sustainability and this will create the basis for community environmental security. In order to achieve this, it is necessary to provide environmental education programmes for the members of the community in order to promote learning outcomes such as awareness of and sensitivity to the environment and environmental challenges; an attitude of concern for the environment and motivation to improve or maintain environmental quality, the skills necessary to identify and help resolve environmental challenges; participation in activities that lead to the resolution of environmental challenges (UNESCO, 1978a). In this respect, Rivers State offers an example of how the Ministry of the Environment, together with organizations such as the Environmental Sanitation and Management Agency, the Waste Management Agency and the Sustainable Development Agency, are all working on educational programmes to promote environmental awareness; to check on people's actions in terms of harming or maintaining the environment; to create incentives for a sustainable use of resources.

Adult environmental education and environmental security awareness

Environmental education is thus a learning process that increases people's knowledge and awareness about the environment and its associated challenges, develops the necessary skills and expertise to address the challenge, and fosters the necessary attitude, motivation and commitments to make informed decisions and take responsible action (UNESCO, in Ifoni,2013). Furthermore, Nag and Vizayakumar (2005) observed that the objectives of environmental education are based on three domains of learning which are cognitive, affective and psychomotor domains. In each of these domains of learning, the learner should achieve the following objectives.

Within the cognitive domain the learner acquires knowledge of biotic and abiotic factors and components of the environment; understands unchecked population growth and its significance for the socio-economic development of the country; is able to check unplanned resources utilization in the environment; diagnoses the different causes of environmental pollution and envisages remedial measures; diagnoses the causes of social tension and develop methods for avoiding them.

Within the affective domain the learner should acquire an interest in the flora and fauna of the locality and other more distant areas; know community inhabitants and understand their problems; value equality, justice and truth; respect the national boundaries of all countries. Within the psychomotor domain, the learner should actively participate in programming for reforestation, minimizing air, water, soil and noise pollution, preventing food adulteration and contribute to rural and urban developments such as solar heaters and solar gas plants.

Of particular importance is showing how environmental security is dependent on public awareness of those activities that pose threats to the environment. Somanathan (2010) argues that if people are not aware of environmental risks, they will be less willing to bear the cost of reducing them. Adding to this, Okorie (2015)

affirms that every citizen has a role to play in the task of protecting the environment since we all in one way or the other contribute to the deterioration of our environment. The knowledge built through environmental security awareness programmes can lead to significant changes in people's values, attitudes, skills and behaviour. Programmes and topics dealt with include waste prevention awareness, water conservation awareness, pollution awareness, biodiversity awareness and climate change awareness.

Perspectives on community participation in sustainability of community resources.

Education for community participation in sustainability of its community-based resources aims to empower the community members through developing participation skills that will lead to change in their perception of management, use and ownership of resources (UN Agenda 21, 1992:320):

> … there is still a considerable lack of awareness of the interrelated nature of all human activities and the environment, due to inaccurate or insufficient information … there is a need to increase public sensitivity to environment and development problems by involving them in activities that will bring about solutions to identified environmental issues … participating in these activities will foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development.

Community participation in sustainability of community resources is thus a process that involves joint effort on the part of all members of a community. When community members are integrated into processes that will promote sustainability of resources in their community, they will be willing to effectively participate in those processes. According to White (1981), the depth of participation is the extent to which all members of the community are involved in all aspects of a project. Slocum and Thomas-Slayter (1995) emphasize that participation is a process

of empowerment that helps to amplify traditionally unacknowledged voices, strengthen the confidence of all members of a group in the knowledge and capacity of each, and can also foster the ability to question and contribute to both local and international systems of knowledge. They argue that participation involves consciousness-raising, a shared understanding of problems and a vision for the future that leads to commitment and ownership by the community. In this respect, Musch, (2001) proposes a ladder of participation, which involves the community being in control, jointly managing, being consulted, informed, persuaded and not excluded or coerced in all activities that will lead to the sustainability of their community resources.

Benavides (1992:43) argues that environmental adult education must be a process that enables human beings and societies to "reach their fullest potential in order that they might live in harmony among themselves and in nature"; empowers all who participate in the learning process, learners and educators; creates interest and motivation by helping people to feel ownership and also a sense that collectively they can make change (LEAP/Ecologic, 1994).

Empowerment comes when "communities seize the right to manage their immediate environments through open and democratic institutions, that this is community environmental democracy". Clover (1999), asserts that environmental adult education is empowering when it teaches people how to be leaders in their own homes and neighbourhoods as contain in ASPBAE, (1993); strengthens women's "contribution to environmental conservation" (Tabiedi. 2000); moves people towards self-reliance - not just financial self-reliance, but self-reliance in skills, knowledge, information - so that dependence on others on the outside is reduced.

For Grossi, (1999), empowering people in the context of environmental adult education must be education that help people to 'learn how to learn', to take risks and use their imaginations and creativity to make a change. ASPBAE

(1995:6), observes that:

> environmental adult education to empower people can be realised only when and where local communities are free to participate, think, discuss, be critical, organise and implement solutions they see fit to address these environmental problems and the other issues that confront them.

Tilbury (2004:107) proposes a view of structured community-based learning programmes that empower those involved, promote lifelong learning and promote the ability of the community to influence, share and/or control the decision-making process. She also argues that this is much more influential than classroom approaches to environmental education. In the same way, Guevara (2000) argues that adult environmental education is empowering and transformative when it helps people to believe in their capacity to change themselves, their community and their environment.

Approaches to Adult Environmental Education for Promoting Community Participation in Sustainability of Community Resources

In order to be empowering and transformative, environmental adult education needs to be based on certain types of approaches to human learning.

Interactive and practical

Interactive and practical approaches enable people to learn more by doing and that process of practicing can be an avenue for others to learn. Adult learners have a wealth of experiences that educators can tap into in the process of facilitating learning (ASPBAE in Clover (1999). Environmental adult educators should make provision for discussion during their meetings with their target audience. Rendael and Mason (in ASPBAE, 1995) contend that knowledge-based education is not enough to change behaviour, that even those with conservation-oriented attitudes do not necessarily translate into conserving behaviour but can be encouraged and assisted to change through interaction.

Participatory and experiential

According to Taylor (1995), a participatory and experiential approach to environmental adult education engages educators, students and community members in a process that not only addresses environmental needs but also legitimates the role of the individual to be critically conscious and be an active participant in the shaping of his or her own reality. Ibikunle-Johnson (1989) argue that people's environmental awareness, knowledge, attitudes and perceptions can be better understood through a participatory approach and these grassroots attributes mobilised and transformed skills for effective environmental management. Ibikunle-Johnson and Rugurnayo, (1987), assert that participatory approaches are framed in terms of hands-on approaches that go beyond merely critique' towards individual and, more importantly, collective action.

Action oriented

According to Ibikunle and Rugurnayo (in Clover, 1999), adult education must ultimately be 'gains and solutions' oriented. Orr (1992) observes that in the reciprocity between thinking and doing, knowledge loses much of its abstractness and becomes its application to specific places and problems, tangible and direct. Orr (in Clover, 1999), further asserts that in terms of actions, adult environmental education must also recognize the plethora of forms of action that exist, that taking action does not always have to be 'doing something' but also entails decision making, revising a particular point of view, posing a new problem or question or reframing a structure of meaning.

Freirian strategy or dialogic method of problem solving

Usang in UNESCO (1992), suggested that adult environmental education should be based on Freirian Strategy or dialogic method of problem-solving, through critical thinking and reflection in a shared process of non-directed learning. This approach will promote in adults the ability to question the condition of their environment and to seek for answers to the questions raised. Usang (in UNESCO, 1992), also explains that

when people begin to ask questions about the conditions of their environment, that they will develop a change of attitude and be encouraged to rethink ways of acting and work towards challenging and changing external processes that impact on them.

Feminist approach

According to Clover (1999), a feminist approach to adult environmental education will promote ideas of teaching based on responsibility, protection, nurturing, caring and training. It emphasizes how we need to orient our education practices towards sustaining life, rather than generating profits. She asserts that as feminist adult educators we learn that consciousness-raising is simply not enough, that consciousness-raising must be combined with active participation so that people not only understand their society, but are willing to participate in efforts to sustain the environment and its associated resources.

Conclusions

Our intention in this paper has been to analyse reasons for an increasing level of environmental insecurity in Nigerian communities and to consider how this issue can be addressed through adult education environmental awareness programmes. In many cases, community-based resources have either been abandoned or not properly maintained and their income-yielding capacity neglected or severely depleted. Largely this is because community members have diverted to alternative sources or failed to utilize their resources in a sustainable way. To bring about a change and move towards environmental security, it is necessary to create new educational pathways based on empowering and transformative approaches that enable community members to understand how their activities and their environment are interrelated and learn how to practice sustainable uses of their resources.

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