

**Environmental Adult Education for Promoting Sustainable Livelihood in Bayelsa State,
Nigeria**

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Abstract

Naturally, people depend or acquire their livelihoods from the available resources that surrounds them since the available resources are prerequisite for a sustainable living. Likewise, the rural community dwellers who depend squarely on their natural environment, (soil, water and forest resources) as a means of gaining their livelihoods. However, most of these rural dwellers are on the verge of losing their means of livelihoods owing to environmental pollution. Natural disaster, oil pollution, agricultural activities and other related activities cause significant damage to the environment, destroying local livelihoods of community members and placing their lives at risk. This paper therefore examined sustainable livelihoods, livelihood activities of rural dwellers in the area, environmental adult education and the relevance of environmental adult education programmes in promoting sustainable livelihoods activities among rural dwellers in Bayelsa State. The paper concluded that environmental adult education through its programmes is a veritable tool for promoting sustainable livelihood activities among rural people and therefore should be encouraged.

Keywords: Sustainable Livelihood, Adult Education, Environmental Education.

Introduction

Naturally, people derive their livelihoods from the natural resources that surrounds them since natural resources are prerequisite for a sustainable living. Likewise, the rural community dwellers depend squarely on their natural environment, (soil, water and forest resources). Communities surrounded by water gain their livelihoods from water bodies mostly as fishermen and women, while those that are surrounded by forests depend on forest resources for livelihoods. However, one significant challenge that has gravely affected these sources of livelihood for rural dwellers is environmental pollution. There has been a steady decline of the natural resources found in the environment over the past years. This continually decline sometimes, as a result of natural occurrences but in most cases, results from the effects of anthropogenic activities carried out by humans in the environment.

Crude oil production and agricultural activities are the most prominent amongst other sources of environmental pollution in the region. This has caused great damages on the livelihood activities of rural dwellers leaving them with little or nothing but struggle to meet their daily needs and those of their families. When livelihoods are not sustainable, poverty sets in as there is no steady flow of income or income generating resources. The water bodies are massively polluted through oil spillage, threatening fisheries and severely affecting ecological system. This becomes difficult for the present and future generations who live off the streams, lakes and rivers. Dadiowei (2003) affirms that, oil wells in Bayelsa State, destroy the seasonal creeks, lakes, swamp pools and ponds which hitherto had being relied on by fishermen and women from the area for fish, shrimps, lobsters, etc. This is further worsened by outbreak of diseases and sicknesses emerging from the breathing of contaminated air caused by gas flaring and drinking from contaminated water. It is to this end that the paper seeks to examine the relevance of

environmental adult education as a tool for promoting sustainable livelihoods in Bayelsa State.

Environmental Education (EE)

Environmental education aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve the problems and motivated to work toward their solutions (Stapp, Havlick, Bennett, Bryan Jr, Fulton, MacGregor, Nowak, Swan and Wall (1969:34)). It is the type of the education that teaches the public past and current environmental issues and challenges, which threaten the ecological system and human existence. In support of this view, Jackson (2013) adds that environmental education is a tool for increasing public awareness, concerns and knowledge through campaigns and published materials on issues pertaining the environment. It seeks to develop in people the consciousness of their attitudes and actions and their effects on the environment and encourages people to have a positive attitude towards their environment and its resources.

Environmental Adult Education (EAE)

African Association for Literacy and Adult Education (AALAE) in Eheazu (2013) conceptualized EAE as generating the means and creating the mechanism, for developing environmental literacy, laying emphasis on grassroots communities to acquire basic knowledge, understanding and skills to initiate elementary solutions to local environmental problems and to further motivate people to be committed to the pursuit of environmental quality for ensuring a quality of life. Sumner in Haugen (2009:1) defines environmental adult education as “a hybrid outgrowth of the environmental movement and adult education, combining an ecological orientation with a learning paradigm to provide a vigorous educational approach to environmental concern.” Following from this definition, Clover (2003) asserts that environmental adult education adds another critical lens, an ecological lens through which we

can address environmental problems and give voice to the needs of those who are most affected. This view corroborates Walter (2009) view which affirms that “the field (environmental adult education) is well positioned to lead the way forward in fostering environmental awareness and action among adults, social institutions and social movements.” This branch of environmental education according to Mbalisi (2016) is vested with the responsibility of educating adults (whose activities degrade the environment) about the environment through the application of the theories, principles, methods, approaches and programmes of adult education with the conscious intention of developing in them knowledge, attitudes and skills required to generate a sense of responsibility and commitment towards resolving present environmental problems and preventing future ones.

Oduro-Mensah in Mbalisi, (2013) outlined some objectives of EAE as the following:

1. to develop in individuals the right mindset of their immediate environment, the forces that contribute to its deterioration and how environmental quality could be improved.
2. to develop skills for solving and improving environmental quality.
3. to develop aesthetic values that will encourage a culture of environmental beautification and maintenance.
4. plan appropriate action programmes and mobilize citizens to actively function in the protection and restoration of the environment.
5. promote among adults the practice of sustainable development to ensure a continuity of resource base.

Sustainable Livelihood

Sustainability is not a new concept but has long existed and evolved over time. Notably, this evolution has been influenced by various scholars with different streams of thought that has

helped shaped the concept of sustainability. Environmental wise, sustainability has often times been referred to as a liaison existing between men and his natural environment. On the other hand, Chamber and Conway in Okorie (2016) define livelihoods as capabilities, assets and resources required to gain a living. Livelihood is a way of making a positive advancement pertaining the sustenance of one's living condition. Melaine (2005) views livelihood to be a means of improving and sustaining one's living condition. Livelihoods can be seen as a variety of activities ranging from fisheries, farming, trading etc. which lead to economic empowerment. Livelihood can therefore be said to be sustainable if it can cope with shocks and setbacks (natural disasters and economic or social upheavals) without destroying or reducing the quality of its natural resource base for present and futuristic use.

Livelihood Activities of Rural Dwellers in Bayelsa State

Bayelsa State is endowed with rich tropical vegetation characterised by mangrove forests, rich alluvial farmland and surrounded by water. As a result, most of her rural populace engage in farming, fishing and other related activities. Fishing is predominant among those living close to the river. It does not only entail the harvesting of fishes but also, shrimps, crabs, periwinkles and other sea animals for food and income generation. While crop cultivation is primarily, the traditional occupation of rural dwellers living in upland areas in Bayelsa State. Basic crops planted by farmers in the area are cassava, coconut, cocoyam, corn, groundnut, plantain, sugarcane, yam for sustenance and generation of income. Other livelihood activities include fruit gathering, hunting/scouting for snails, palm oil milling, palm wine tapping/trading, logging, traditional healing/birth attendance and petty trading.

Effects of Environmental Pollution on Sustainable Livelihoods of Rural Dwellers

Environmental pollution poses a grave challenge to the livelihoods of people living in rural

communities in Bayelsa State. The sources through which they derive their livelihoods are polluted through oil spillage, gas flaring, farm run-off and such like. Environmental pollution has left many communities to remain dependent and underdeveloped. Fisher folk in host communities of oil companies incur high costs of production and poor fish harvest from exploitation and exploitation activities leading to lower profit in the business of selling and catching of fishes in Bayelsa State. This condition has increased the hopelessness in the people.

Unproductive soils due to soil spillage and excessive use of agrochemical has reduced people's interest in agricultural activities, especially in crop production and fishing (Ejiba, Onya & Adams, 2016). They further explained that this is a negative consequence on livelihood sources and livelihood. A small leakage of oil is capable of wiping out an entire year's food supply for a family thereby wiping out income from products sold for cash. Hence, leading to children withdrawing from school, because of the inability of parents to pay school fees and other necessary demands by their parents and guardians. Streams, rivers and wells which provide drinkable water remain heavily contaminated and highly toxic.

Intensive clearing of fertile lands by oil companies causes a drastic fall in agricultural production in the South-South geo-political zone of Nigeria (Okafor, 2016). This dislodges the economic base of these people leaving them with less option for earning a living thereby amounting to increase in poverty and difficulty in providing the basic needs of their household. Many rural dwellers particularly those in the state survive through the act of picking periwinkles, (this act is endemic to the Nembe people) catching of crabs, catching of shrimps and scouting for snails for consumption and commercial purposes. These activities are greatly affected by environmental pollution. People who reside in these oil spilled areas lament severely of lack of marine animals in their rivers and death/extinction of forest life.

Gas flaring degenerate the biodiversity and causes noise which is disturbing to residents that live close to oil fields. Excessive heat that emanate from gas flare, has the tendency of stunting the growth of plants and sometimes, killing them thereby diminishing agricultural productivity of farmers. WHO (2014), estimates that about 10,000 of the world's population die due to breathing of poor quality air. There is high level of carbon monoxide, sulphur oxide and other toxic chemicals flowing in the blood stream of individuals living within the affected communities where gas is flared, damaging their lungs and other organs in their body. This lowers the financial status of the villagers. In like manner, there is low patronage on sales of their harvested commodities as these goods are contaminated in one way or the other by either land, water or air pollution. The palm tree is one very essential economic tree in Nigeria and an income generating source to people. Its fruits are used for producing palm oil, the nut is used for making of soaps and a locally made body cream called *kernel oil* and the shell is used for filling of eroded areas and fuel for cooking. Furthermore, broom is got from the palm fronts and lastly, palm wine is sapped from this same palm tree. Sadly, thousands of these trees are been destroyed by producing companies. They clear bushes and fell trees for the construction of pipeline ways.

In the olden days, people depend on herbs, roots and shrubs gotten from the forest for healing wounds, infections and diseases. But in our present society, people no longer place much value on them due to the arrival of western medicine and improved facilities. Nevertheless, a few number of the people especially people living in villages, depend on the traditional healing methods. The declination of the quality of the land resources by pollution has caused depletion of plant species in the plant kingdom (Plantae). Some of these plants are of medicinal value to man. This has amounted to many traditional healers dropping the act for other livelihoods activities.

Environmental Adult Education (EAE) and Sustainable Livelihood

Adults constitutes the work force of any given society and are seen as the major people who deplete the environment. They engage or carry out several actions in the course of going through their daily routines that affect the ecosystem. Therefore, it is very important to develop in these adult citizens certain attitudes, skills and knowledge that will foster a successful interaction between them and the environment and enable them live harmoniously with the forces and elements that surround them as they engage in their daily activities for survival (Eheazu, 2013). Environmental adult education targets the entire population whether big or small, rich or poor. It focuses towards developing environmentally literate citizens with required knowledge and skills to make informed decisions concerning the environment. Mbalisi (2016) maintains that EAE is delivered through programmes which provide the adult individuals the opportunities to focus on issues pertaining their social, economic and environmental welfare, to promote active participation in decision-making processes and team-work for solving their immediate problem as it regards their environment. He therefore defined EAE programmes as purposeful educational activities developed, organized and facilitated for finding solutions to existing environmental problems and forestalling future ones. Mbalisi (2016) further states that EAE programmes provides them with basic knowledge and skills imperative for solving these problems, and preventing future occurrence. Some of these environmental adult education programmes that are relevant for promoting sustainable livelihood in Bayelsa State are:

Environmental Literacy Education Programme: Literacy is a fundamental tool to all aspect of learning. It unlocks the access to a boarder array of experiences. Becoming a literate increases one's opportunity in all aspects of life. Environmental literacy in Desinger and Roth in Mbalisi (2016) is the competency in perceiving and interpreting the relative health of environmental

structure, to take appropriate action to restore, improve and to maintain the health of the ecosystem. Exposing rural dwellers to environmental literacy programme will develop in them basic communication skills that will enable them comprehend simple information concerning the condition of their environment. It is noteworthy that the decisions we take during our everyday endeavours affect the environment. Therefore, it is pertinent for the public to learn and understand how their actions and lifestyle intersect with the environment. It is also aimed at seeking to change human behaviour so as to create a sustainable and environmentally friendly quality of life and as well, gaining access to environmentally related information through self-discovery and acquiring skills to solve the environmental problems affecting them.

Reserve and Conservation Education Programme: Environmental conservation and reservation according to Mbalisi (2016) are measures that are taken to maintain or preserve the quality and condition of the natural environment and its resources. This programme is also designed with the sole aim of equipping the rural dwellers with information necessary for achieving environmental sustainability. It suggests that community educational approaches to environmental conservation should be incorporated in programmes that will educate them on sustainable ways of exploring, exploiting, transforming and utilizing environmental resources on which they base their survival with little effect on the ecological system.

Vocational Environmental Education Programme: This is an educational programme that educates the farmers, fishermen/women possible ways of managing their fishing and farming businesses without polluting the environment. Vocational education programme helps in developing socio-economic and occupational competence in its learners. This would give them the enablement to enhance their occupational competency and manage their businesses. In line with this, vocational education programme is a qualification triggered towards becoming

conversant with theories and practices of a vocation with a view to enabling them apply technical expertise (Hassasn and Oyebamiji 2012).

Such programmes should be designed in a way to enable learners to adopt environmentally friendly approaches in their occupations. It also exposes these adults to the consequences of their socio-economic activities on the environment, thereby, giving them caution on the looming dangers associated with environmental pollution as one of the consequences of their socio-economic activities on the environment.

Consumer Education: consumer education is a systematic education that creates the awareness on the type of goods to buy for economic consumption and to dissuade them from consuming commodities that are not environmentally friendly. In other words, consumer goods that are liable for creating environmental hazards should be minimally used or completely avoided.

Community Education Programme: This is a programme designed to predispose the adult population to solving environmental issues affecting them. It enables them to invent new methods of growing crops, scouting and fishing to ensure environmental sustainability. It has specific contents, purpose, delivery system and control. This programme is intended to raise the perception, sensitivity and the cognitive power of the adult recipients for innovative actions for the social and economic base of the community. It encourages the utilisation of learning resources within their neighbourhood with the intention of mobilising the community's resources for their benefit. The programme identifies the community's needs, accesses available community resources and uses these resources to develop appropriate learning programmes to meet identified problems.

Agricultural Extension Programme: Agricultural extension as observed by Robert as cited in Eferé (2014) is a programme designed for the transfer of new techniques of farming to rural

farmers through communication and interaction. It is the appliances and the utilisation of technical and scientific investigation and knowledge to agricultural practice through farmer's education. Furthermore agricultural extension is the delivery of information through extension programmes used in reaching out to rural people in their extension settlement to teach them ways to manage and prevent environment from diminishing. It is organised for them by the extension officers including adult education facilitators to broaden their knowledge for the sustainability of their occupations.

Farming populace consists mostly of peasant rural farmers, who cultivate average hectares of land with low productivity which results in a decline of food productivity in the economic sector. To be effective, and come to the arrival of obtaining a high level of agricultural productivity, there is need to point out the likely impact that has caused reduction in the agricultural sector (Efere, 2014). This is a non-formal approach designed for improving behavioural change in farmers. Increasing their effective productivity through the establishment of research firms, suggesting possible ways of solving farmers' problems and ensuring adequate supply of farm inputs. Chauhan in Mbalisi (2016) rightly puts, agricultural extension programme is a professional non-formal system of learning which is geared towards inducing behavioural changes, adequate supply of inputs and using proven methods of communication for a rapid diffusion and adoption of new innovations.

Knowledge acquired through agricultural extension programme educates the farmers on ways through which farm produce can be produced without causing much harm to the environment. It also encourages them to embrace sustainable methods of farming and not disrupting the ecosystem by avoiding extravagant usage of agrochemicals and indulgence in bush burning.

Public education programme: Public education is defined as popular education or public

enlightenment education in some societies. It is an educational strategy used to raise the consciousness of its participants and allows them to be aware of the needs and concerns of the ordinary people (community dwellers) and raising their consciousness on socio-environmental matters in the society. It is a tool for addressing issues because it provides the members of the public with the necessary knowledge, attitudes and skills basic for social, economic and environmental viability in the society.

Environmental health education programme: Environmental problems affect not just the immediate environment of man but also his social life (education, politics, and other social endeavours). Therefore, the universal goal worldwide is that of finding solutions to these problems. There is an existence of a cordial relationship amongst man and his surroundings. The environment has a significant influence on man as it determines the quality of life with respect to social, economic and health status. The numerous environmental issues which are felt by all and sundry therefore calls for the need to educate the public on improved and sustainable measures of doing things.

Environmental health education programme is the study of people's behaviour towards their immediate environment. It has to do with using educational processes, methods, strategies and techniques to facilitate and sensitize the public on the impact of pollution on their health. Encouraging them to fully partake in sanitary exercises for a healthy living. Environmental health education is not just limited to creating awareness and disseminating health related information, it is also for fostering the motivation, skills and confidence necessary to take improved health related actions and communication regarding the underlying economic, social and environmental conditions acting on health, individual factors and behavioural risk and the adequate use of health system (Ben, Kwok and Don, 2006).

Population Education: Nigeria is rated as the most populated nation in Africa. To this end, the demand for meeting the daily needs of this large population is high, mounting pressure on the nation's natural resources. Olawepo in Mbalisi (2016) defined population education as a programme that teaches population situations in household, community, nation and international levels. The function of this population education is for a better quality of life of individuals, families, communities and the entire society. It encompasses family needs and resources, family and its surrounding, family and population, reproduction in man and family health care. The 2015 World Environmental Day with a theme "Seven Billion Dreams, One Planet, Consume with Care" established that there is a relationship between population growth, consumerism and degradation and or depletion of environmental resources. It therefore called for the control of population growth rate as an effort towards achieving sustainability of environmental resources (Mbalisi, 2016). This objective can be achieved through population education. Hence the need for population education.

Conclusion

The sources where these rural dwellers derive their livelihoods have drastically declined over the years and as a result making life difficult for people living in these areas. People suffer severe outbreak of epidemic, famine, and abject poverty largely due to man's unhealthy relationship with his environment. Thus, the menace of depleting the environment especially in Bayelsa State owing to oil spillage, agricultural practices and other related activities have considerably distorted ecosystem balance. Nevertheless, Environmental Adult Education programme is a veritable tool for promoting sustainable livelihood activities among rural people in the area and therefore should be encouraged.

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