

Curbing Human Activities That Degrade the Environment: The Relevance of Environmental Adult Education

Batombari Gbidum Gimah² and Tombari Bodo^{1*}

¹Department of Geography and Natural Resource Management, Faculty of Social Science, University of Uyo, Uyo, Akwa Ibom State, Nigeria

²Department of Environmental Adult Education, Faculty of Education, Ignatius Ajuru University of Education, Iwofe, Rivers State, Nigeria

*Corresponding author

Tombari Bodo, Department of Geography and Natural Resource Management, Faculty of Social Science, University of Uyo, Uyo, Akwa Ibom State, Nigeria.
E-mail: tombarib@gmail.com

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Abstract

Human quest for development and increase production has led to activities that destroy the natural environment. Environmental challenges like global warming, climate change, ozone layer depletion, habitat loss, species extinction and flooding; results from unplanned housing projects, bush burning, deforestation, oil spillages, oil theft, gas flaring, sewage disposal, overgrazing, industrial waste and emissions. Every activities of man that is done by an environmentally illiterate person, that is not conscious of the consequences of his or her actions can lead to the depletion and destruction of the natural resources in the environment. Man continues to suffer from all the consequences of his actions on the environment; it will also take only man through Environmental Adult Education to solve these environmental problems. Environmental Adult Education identifies the activities of man that destroys the environment; educate man on how to use the available natural resources in a sustainable manner and also suggest alternative ways for development. Thus, Environmental Adult Education is the best tool that can enable man to live friendly with his environment and enabling ecological balance.

Keywords: Environmental Adult Education, Human Activities, Environment, Pollution and Environmental Literacy.

Introduction

Humans in the process of making life more comfortable have used up every natural resource within their space to meet up their needs, thereby destroying their naturally endowed environment [1]. Many societies consciously engaged in this unsustainable way of utilising natural resource because of the benefits they derive presently. They failed to be socially minded by not thinking of the effects of their actions on others before taking it [2]. These societies where people engage in acts that destroy their environment without considering the after effects or the effect of their activities on the environment may end up in devastating future for their children; as such environment may be unsustainable [3].

According to Gimah and Bodo, without environmental adult education and a strong plan to create terrestrial and marine protected areas, the environment will continue to suffer degradation [1]. These destructions arises as a result of human activities like dredging, transportation, pollution, industrialisation, oil exploitation, bulldozing and paving of new roads, deforestation and bush burning [4]. Generally, these human activities are product of societal developments, which are giving room for more lands for agricultural production and housing projects to accommodate more people. Environmental Adult Education inculcated into the society that every activities of man in the environment directly affect man.

The environment is naturally made for the benefit of man and to ensure maximum enjoyment of all its habitats and such environment has to be protected in order to maintain ecological balance [5]. In the recent years, this balance has been seriously threatened by excessive demand of petroleum products, over population, over grazing, industrial mining and housing facilities; resulting in many devastating consequences like oil spills, overheating, land erosion, land slide and flooding [6-8].

Before the discovery of oil in 1950s in Nigeria, the traditional society believed in preservation of the environment against all forms of adulteration and misuse [9-11]. Most forests were inaccessible or preserved for special purposes as some were called evil forest or reserve for their gods to scare people from using the forest resources [1,2]. The streams and rivers were also protected against all forms of misuse within the period. Farmers practiced shifting cultivation to allow use land regains soil nutrients before returning after many years. Unfortunately, in our present society, natural resources are being used up without any consideration for preservation or sustainable usage. In Nigeria majority of existing forest and game reserves suffered from little or no effective management thereby leading to food scarcity and depletion of the natural resources in such area [12].

Human activities and actions have broken and destroyed the unity of natural habitats through the transmutation of natural ecosystem to agricultural lands, urban or suburban lands, roads and housing

facilities [13-15]. This adulteration is likely to diminish the population of organisms within the environment [1,16]. Globally, environmental concerns are created by the activities of humans [17,18]. There are mounting evidence that global prosperity and human wellbeing depend on the sustainability of world ecosystem and services that they provide [19]. The world's ecosystems are now under pressure and the prospects for sustainable developments are also under serious threats from human activities [20,21].

Consequently, pollution is one of the biggest threats to global health and it is capable of depleting the soil fertility, contaminate the air and destroy aquatic life [22,23]. World Health Organisation asserted that 8.9 million persons die every year from disease caused by pollution in the poor countries of the world [24]. Pollution has influenced people's occupation and sources of livelihood, thereby further reducing the standard of living in areas of massive pollution [25-28]. Anijah-Obi saw man as a critical agent who can make and unmake the environment; whose life has become endangered by his own action and ignorance [29]. Change in attitude and complete transformation can be achieved through deliberate campaigns of public enlightenment, interactive and information exchange on environmental sustainability [30,31]. Environmental adult literacy can help to manage, appreciate and understand the impending and existing woes of environmental degradation and provide necessary knowledge for the interpretation of complex problems and transformation in the environment [32-34].

Environmental problems affects everyone, hence, everybody should be conscious in solving the problems. Nevertheless, the collective successes that bring about sustainable environment will depend on the level of environmental education of the people and how they apply it. Environmental literacy is required by every member of the society for the proper use of our natural resources without contaminating the environment. Thus environmental Adult Education is imperative to achieve environmental sustainability.

Effects of Human Activities on the Environment

Every attempt of man to use the natural resources for his comfort and development affects the environment. This kind of thinking is supported by the same belief that humans are supposed to dominate and use the environment as it pleases them. This ideology does not consider other living things to be important for ecological balance, and as such; they use every available resources within their space indiscriminately.

The impacts of human's activities on the environment include; destruction of ecosystem, biodiversity loss and depletion of natural resources [1]. These human activities further lead to global warming, death of coral reefs, decline in amphibian population, habitat destruction, land degradation, desertification, oceans acidification, ozone depletion, water degradation, disruption of the nitrogen cycle [1,2]. Some of these consequences of human activities are highlighted on Table 1.

Table 1: Human activities and its consequences on the environment

AREAS	HUMAN ACTIVITIES	CONSEQUENCES
OVERPOPULATION	Industrialization	Discharge of waste materials like effluents, dust, smoke and solid waste from the heavy factories pollutes the environments; heating up of the environment; increase of waste.
	Unplanned housing	It will lead to flooding, congestion and traffic jam
	Over consumption	Depletion of natural resources; increase of waste, pollution of the environment
AGRICULTURE	Deforestation	Loss of species, soil erosion and destruction of carbon sinks
	Bush burning	Extinction of microorganism, destruction of habitats, lost of soil fertility and soil erosion.
	Over grazing	Soil erosion, land degradation, food shortage and loss of species.
	Ploughing	Soil compaction and flooding,
	Use of gun power for fishing	Extinction of fish species and destruction of aquatic habitats.
	Irrigation	Decrease in water quality and shortage of underground water.
	Use of fertilizers and pesticide	Decline of microorganism in the soil, soil contamination of air, soil and non-target vegetation and organisms.
EXPLORATIVE ACTIVITIES	Mining	Sudden collapse of overlying structure, flooding and soil erosion. It can also increase the murkiness of water.
	Illegal bunker, oil theft and sabotage	Oil spillages, pollutions, wild fire outbreak, loss of lives and properties.
	Gas flaring	Air pollution, outbreak of cardiovascular diseases on man, depletion of the ozone layer and global warming
	Oil drilling and pipeline installation	Could lead to fire outbreak, loss of lives and properties.

Over Population

Human overpopulation has resulted in technological advances which have increases human lifespan and fertility, and consequently placed pressure on global resources [35]. Over population is now an ultimate factor in environmental discourse [36]. Human population has grown into an epidemic since mortality rates have decreased because of the improvements in the medical services and methods of agricultural production [37]. An increased in population require humans to take more space, which will be useful for more farmland, industries or accommodations that will further damage the environment. Human overpopulation has been recognised as a global problem as the exponential growth of human population has caused encroachments into wild habitats and the destruction of biodiversity [38]. Human over population is among the most pressing environmental issue, recently one of the forces behind global warming, environmental pollution, habitat loss, the mass extinction of biodiversity, indiscriminate agricultural practices and the consumption of finite natural resources, such as fresh water, arable land and fossil fuels, at faster than the rate of regeneration [1]. More than 2700 species are being lost every year [39]. The quality and quantity of a particular type of habitat is determined by the number and different varieties of its inhabitants. Human encroachment into the space of other habitats has lead to the loss and degradation of several species. As the population of humans increase, so there increases in the destruction of other species and their habitats [40].

According to Lockley, the loss of species is losing the very web of life on earth [41]. The issue of habitat loss is not just the loss of the species, there is also the loss of genetic diversity of different types of ecosystem which can contribute to or hasten the whole species extinction [1,42].

Agriculture

The survival of the whole world depends on agriculture for food production and raw materials for the industries. As a result, the intensity of agriculture has increased soil erosion due to the physical disturbance of soil vegetation due ploughing, overgrazing and logging [43]. The environmental impact of agriculture varies base on the different type of agricultural method that is practice in the world. Agriculture has been known to produce significant effect on climate change primarily through the production and release of greenhouse gasses such as carbon dioxide, methane, and nitrous oxide [44]. Also a form of agriculture that practises tillage, fertilization, and pesticide application also releases ammonia nitrate, phosphorus and many others pesticides that affect air, water, and soil quality as well as biodiversity [45,46].

Through clearing, fallowing, and bush burning the earth's land cover is altered changing its ability to absorb or reflect heat and light. Deforestation and desertification, together with the use of fossil fuel are major anthropogenic sources of carbon dioxide [47]. Agriculture is the major factor in the increase of methane and nitrous oxide concentration in the earth atmosphere [44].

Deforestation which is the clearing the earth forest on a large scale worldwide has destroyed many lands. Deforestation can also be caused by clearing land for pasture or crops. Deforestation is a driver of change because it can lead to the loss of several species. Trees play a vital role in the ecosystem, as the excess carbon in the atmosphere is absorbed by the trees and this helps to reduce

greenhouses gases in the atmosphere.

Explorative Activities

Pollution is the consequence of human activities that are generated from different sources. For instance, air pollution results from the discharge of toxic materials from man's domestic and industrial activities into the air which remains suspended in the air for a period of time [48]. Constantly, pollutants like carbon monoxide, particulate matter, sulphur dioxide, hydrocarbon and nitrogen oxides are discharged into the atmosphere [3]. These pollutants are obtained from burning of agricultural combustion and space heating [48-50]. Industrialisation and urbanisation has lead to discharge of waste materials like industrial effluents, dust, smoke, and solid waste with severe consequences on the health of man and animals [12].

The Niger Delta region of Nigeria is a typical case of where environmental pollution necessitated by the activities of operating oil companies has devastated the entire region [21]. The people of Ogoni in the Niger Delta reacted against all activities of Shell Petroleum Development Company (SPDC) that was destroying their environment; as there were several cases of oil spillages, forest fires and gas flaring [11,51]. Mining is another source of pollution to the environment. Mines produce waste that can increase the amount of minerals and salt in the leading to the murkiness of the water [43]. Other source of pollution can through the washing of human excreta into nearby rivers and streams; which results into organisms that cause diseases called *pathogens*. These pathogens could be bacteria, viruses and parasitic organisms that infect humans and cause illnesses like typhoid, cholera, dysentery, polio and hepatitis [22,43].

Industries produces waste that can affect the PH of water bodies like lake, stream, river, stream, pond, ocean and underground water when it contaminated through sewage leaks, agricultural runoff and chemical spills [43]. This same water that is not clean ends up in our homes for drinking and washing of dishes.

Ways Environmental Adult Education Can Check Human Activities That Affect the Environment

Environmental Education

Environmental programmes can come in the form of environmental education [1,19]. Environmental education can: help protect human health; promote sustainable development; create interest in a wide variety of jobs in various environmental fields; enhance learning in all areas of the needed education (like geology, geography, biology, hydrology, meteorology, etc) and reinforce the desires to protect natural resources for future generations [43,52]. Environmental programmes can be aimed at reaching people in the local communities where pollution is common, on the need to protect their environment [2]. Environmental education does not come as an imposition on the people, rather it recognises values and clarifies concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among the people; putting into consideration, their culture and biological surroundings [43,51,53].

Through environmental education, total understanding of environment is achieved; the knowledge, attitudes, motivation, motivation, commitment and skills to work individually and collectively toward solutions of current problems and prevention of new ones [43,54].

Participatory Development

For development to be called *participatory* it must be all inclusive and needed by the majority. Government initiated projects in a community is participatory, when such projects were designed and carried out by the supposed beneficiaries [8]. Environmental degradation is the product of repetitive activities by man on his environment [55]. One could even assume that it will take team work of the adults to successfully pollute an environment. For instance, the oil exploration companies, and other heavy metal industries of the world are made of adult individuals; that cooperatively carry out actions that destroys the environment. Hence, it is mostly the adults that degrade the environment. Environmental adult education can use participatory development mode as a path way to sustainable environment [19]. This is possible if the people who bear the consequences of environmental degradation are actively conscious of their goal and purpose of their actions. Participatory development is a process through which stakeholders can influence and share control over development initiatives, and make decisions on their resource management that affect them [56]. Participatory development takes many forms; it requires the involvement of the local community in every aspect of the programme from planning to implementation [8]. Environmental Adult Education when using participatory approach recognises the existing power structure of the people and the participatory model in the community of which the approach will be employed. Recognising this power structure will enable easy communication, cooperation, negotiation and implementation of the project [10]. Participatory approaches do not change indigenous power structure rather it uses the power structure to fortify the approach. When participatory approach is not bottom-top, participatory power is disvalued [8,10].

Environmental Adult Education can curb environmental degradation when it is all encompassing; and encourage bottom-top participatory approach to avoid resistance from the local community where projects will be located [8]. For example, it is easy for communities to accept projects that clears their natural forest and replaced it with a mining or exploration company; compared to projects that focus on agricultural investments like the planting of perennial crops and the beautification of their environment with flowers and trees [55]. The role of Environmental Adult Education is to enlighten the local communities on the consequences of their indiscriminate use of the natural resources and also educate them on how to use their blessed natural resources sustainably [19]. Environmental education rightly informs the people that they are the *objects and subjects* of every abuse of the environment. That is, they are part of the problem and will also suffer from the consequences created from such problem [19]. The Environmental Adult Education stands to conscientise them through a participatory model on how to be environmentally friendly.

To have a successful participation, some basic values orientations will be required, these include among others; sharing, cooperation, participation, coordination, mutual trust, delegation, and concern for the people whose environment has been polluted. Environmental Adult Education allows members of the communities to articulate their needs, wants, problems and proposed solutions. Previous studies reveals that, anytime the people are involved in a process of development, they take ownership of the process, making it to work and also sustain it as well [8,16,55].

Participation approach is not without problems in spite of the huge advantages. Many people and organizations are using the participatory approach and its techniques without following keenly to the philosophy of participatory approach [57]. A typical example of the wrong use of participatory model approach is the case of Ogoniland in the Niger Delta region of Nigeria, where the remediation of polluted sites had been said to be on-going and successful with only the involvement of few privileged persons [8,10,51]. Even without the participation of the Ogoni people, the government and the Hydrocarbon Pollution Remediation Program (HYPREP) continue to give successes and progress reports on clean up exercise that is presumed to be on-going.

Again, when participatory approach's techniques is transfer through inexperienced person or trainer; it becomes a problem that will takes only a qualified person or trainer to counter, correct and further enlighten as many that received the wrong information [19,58]. Most times, such information usually emanates from a top-down source (which could be the government, advocacy groups or politicians) leading to confusion among the participants on the nature and use of participatory approach [58].

Formations of Laws and Policies

Environmental Adult Education educates people on the environmental policies. This is done in relations to their activities that degrade the environment. Many people that engage in activities that degrade the environment are not aware of the environmental policies and laws in place that guilds their activities, hence they destroy their environment in ignorance [59]. Most of the activities of man that destroys the environment are sources of livelihood to man. Nevertheless, environmental adult education guides such people on the sustainable way of going about their business. For the farmers, Environmental Adult Education can conscientise them on the ills of felling trees, burning bushes, and other discriminate agricultural practises. Environmental Adult Education also promotes public awareness and trainings which encompasses environmental policies and laws, through Non-Formal Education, Environmental Literacy and Adult Education. Environmental adult education places emphasis on implementation of the environmental policies and strict adherent to environmental laws upon which environmental sustainability can be achieved. Enlightenment on the environmental policies and legislations using environmental adult education should cut across the communities, industries, and government at all levels.

The role of legislation in inducing responsible attitudes and behaviours towards the environment cannot be overlooked [59]. Legislation serves as an effective instrument for environmental protection, planning, pollution, prevention and control. Every country has its own legislation on the environment. For instance, the following provides a summary of Nigerian legislation on the environment [60].

- The Constitution of the Federal Republic of Nigeria (1999)
- National Environmental Standards and Regulations Enforcement Agency (NESREA) Act
- Environmental Impact Assessment Act
- The Land Use Act
- Harmful Waste (Special Criminal Provisions) Act
- Hydrocarbon Oil Refineries Act
- Associated Gas re-injection Act
- The Endangered Species Act

- Sea Fisheries Act
- Exclusive Economic Zone Act
- Oil Pipelines Act
- Petroleum Act
- Petroleum Products and Distribution (Management Board) Act
- Territorial Waters Act
- Nuclear Safety and Radiation Protection Act
- Nigerian Mining Corporation Act
- Quarantine Act
- River Basins Development Authority Act
- Pest Control of Production (special powers) Act
- Agricultural (Control of Importation) Act
- Animal Diseases (control) Act
- Bees (Impact Control and Management) Act
- Civil Aviation Act
- Factories Act
- Water Resources Act
- Hides and Skins Act
- Federal National Park Act
- Niger-Delta Development Commission (NDDC) Act.

As part of proactive measures by government to preserve the environment and protect its inhabitants from hazardous wastes and nuisance, the Nigerian government and several states therein have established various governmental authorities and agencies that would ensure efficient and effective mode of management waste in the country [60]. The following are a list of solid waste management stakeholders and major actors in Rivers State [60].

- River State Environmental Protection Agency
- River State Ministry of Environment, Port Harcourt
- River State Environmental Sanitation Authority, Port Harcourt

Regulations in Rivers State [60].

- River State Environmental Protection Agency Law

The above regulations are put in place to protect the environment from every form of abuse and encourage sustainable use of available resources. The responsibility of Environment Adult Education is to enlighten the people on the available legislation on the environment and the need to adhere to them.

Conclusion

Environmental Adult Education is the best tool that can enable man to live friendly with his environment. Environmental Adult Education identifies the activities of man that destroys the environment; educate man on how to use the available natural resources in a sustainable manner and also suggest alternative ways for development. Every activities of man that is done by an environmentally illiterate person that is not conscious of the consequences of his/her actions degrade the environment. Such activities are grouped under urbanization, explorative activities and agriculture as shown on Table 1. These lead to the destruction of the natural resources. These activities affects man in different areas, such as cardiovascular diseases, skin burnt and cancer, reduces production, global warming, ozone layer depletion and climate change. Man continues to suffer from all the effects of his actions on the environment; it will also take only man through Environmental Adult Education to solve these environmental problems.

References

1. Gimah BG, Bodo T (2019) Creation of Awareness through Environmental Adult Education as a solution to the Problem of Habitat Loss in Ogoni, Rivers State, Nigeria. *International Journal of Advanced Research and Publications* 3: 22-28.
2. Bodo T, Gimah BG (2018) Government Programmes in checking the occurrence of habitat loss and their implications for maintaining sustainable environment in Ogoni, Rivers State, Nigeria. *European Journal of Biomedical and Pharmaceutical Sciences* 5: 64-71.
3. Bodo T, David LK, Gimah BG (2019) Isolation and identification of microorganisms associated with bioremediation of oil spilled site in Bodo West, Rivers State, Nigeria. *Journal of Geography, Environment and Earth Sciences International* 21: 1-8.
4. UNEP (2011) *Environmental Assessment of OgoniLan*. Nairobi, Kenya: United Nations Environmental Programme.
5. Nnadi EJ, Tobenna OC, Chukwutobe CJ (2018) Environmental adult education as a strategy for protection and management of the environment in Ideato North and South Local Government Areas, Imo State, Nigeria. *International Journal of Advanced Education and Research* 3: 35-41.
6. Patnaik R (2018) Impact of industrialization on environment and sustainable solutions-Reflections from South Indian region. *IOP Conference Series: Earth and Environmental science* 120.
7. Patnaik R (2018) Impact of industrialization on environment and sustainable solutions-Reflections from South Indian region. *IOP Conference Series: Earth and Environmental science* 120.
8. Bodo T, Ukpong IE (2018) Community Participation in the Remediation of Petroleum Impacted Sites in Ogoni, Rivers State, Nigeria. *Multi-disciplinary Journal of Research and Development Perspectives* 7: 97-104.
9. Vidona WB, Wadioni A, Okeke SN, Bodo T (2017) Evaluation of Psychoactive substance use and it Risk Factors Among Public School Students of Rivers State, Nigeria. *Asian Journal of Pharmacy Research* 7: 175-182.
10. Bodo T (2018a) Community perception of remediation of the environment impacted by petroleum exploitation in Ogoni, Rivers State, Nigeria. PhD Dissertation, Department of Geography and Natural Resource Management, University of Uyo, Uyo, Akwa Ibom State, Nigeria.
11. Nduka JK, Orisakwe OE (2009) Effects of Effluents from Warri Refinery Petrochemical Company WRPC on water and soil qualities of "Contiguous Host" and "Impacted on Communities" of Delta State, Nigeria. *The Open Environmental Pollution & Toxicology Journal* 1:11-17.
12. Legbosi P (2005) The impact of oil spills on biological diversity: The Ogoni Experience.
13. Bodo T (2019a) Deep Issues behind the Crisis in the Niger Delta Region: The Case of Oil Exploration in Ogoniland, Rivers State, Nigeria. *Asia Journal of geographical Research* 2: 1-12.
14. Cooney AT, Bodo T, Owunari PT (2019a) The statistical based approach to flood impact by farmers in Rivers State. *Asian Research Journal of Arts and Social Sciences* 8: 1-15.
15. Cooney A T, Bodo T, Owunari PT (2019b) Health risk implications among solid waste workers in Obio-Akpor Local Government Area of Rivers State. *Asian Research Journal of Arts & Social Sciences* 9: 1-6.
16. Bodo T (2018b) Community Understanding of the Environmental and Socio-economic Consequences of Petroleum Exploitation in Ogoni, Rivers State, Nigeria. *International Journal of Advanced Research and Publications* 2: 51-55.

17. Levy BS, Nassetta WJ (2011) The adverse health effects of oil spills: a review of the literature and a framework for medically evaluating exposed individuals. *Int J Occup Environ Health* 17:161-
18. Latton B, Pasaro E, Valdiglesias V (2016) Effects of exposure to oil spills on human health: Updated review, *J. Toxicol Environ Health B Crit Rev* 19: 105-128.
19. Gimah BG (2019) Contributions of Adult Vocational Education Programmes to Community Development in Gokana and Khana Local Government Areas of Rivers State, Nigeria. *Asian Journal of Advanced Research and Report* 3:1-11.
20. Afsah S, Aplante B, Wheeler D (1996) Controlling Pollution: A New Paradigm. The World Bank Policy Research Department, Environment, Infrastructure and Agriculture Division. Policy Research Working Paper 1672.
21. Bodo T, David LK (2018) The Petroleum Exploitation and Pollution in Ogoni, Rivers State, Nigeria: The Community Perspective. *European Scientific Journal* 14: 97-212.
22. David L K, Bodo T (2019) Environmental Pollution and Health Challenges of the Ogoni People, Rivers State, Nigeria. *International Journal of Advanced Research and Publication* 2: 28-32.
23. Udoh IA (2018) Public Health Emergency, UNEP. Environmental Assessment and the Cleaning up of Nigeria's Niger Delta. *Arts and Humanities Open Access journal* 2: 386-389.
24. World Health Organisation (2014) 7 million deaths linked to air pollution.
25. Aguilera F, Mendez J, Pasaro E, Laffon B (2010) Review on the effects of exposure to spilled oils on human health. *J. Appl. Toxicol* 30: 291-301.
26. Cantor KP (1997) Drinking water and cancer. *Cancer Causes Control* 8: 292-308.
27. Godish T (1997) *Air Quality*, Third Edition. Published by, Boca Raton, New York.
28. Obafemi AA (2004) Pollution and the human environment. In Bellgam WI Arokuyu SB, Umeuduji JE (eds): *Perspective of the Human Environment*, Amaethyst and Colleagues Publishers, Port Harcourt.
29. Anijah-Obi F N (2002) *Fundamental of environmental education and management*: University of Calabar Press Ltd, Calabar.
30. Peter KR (2013) The Benefits of Mainstreaming Environmental Education in the School Curriculum. *Research Journal in Organizational Psychology and Educational Studies* 2: 54-59.
31. Safari Z, Naderi S, Ghasemi Z (2014) Examine the Role of Education in Reducing Environmental Pollution. *Indian Journal of Fundamental and Applied Life Sciences* 4: 1178-1183.
32. Adewale L (1992) Adult education and the promotion of indigenous knowledge and skill. In Omolewa M, Osuji E (Eds) *Retrospect and renewal: The state of adult education research in Africa*, UNESCO, Dakar Senegal.
33. Adewale L (1992) Adult education and the promotion of indigenous knowledge and skill. In Omolewa M, Osuji E (Eds) *Retrospect and renewal: The state of adult education research in Africa*, UNESCO, Dakar Senegal.
34. Kimiti R, Cherulo K (2013) The Need to Integrate Themes of Environmental Education in the School Curriculum in Kenya. *International Journal of Academic Research in Progressive Education and Development* 2: 51-57
35. Desherbinin A, Carr D, Cassel S, Jiang L (2007) Pollution and Environment *Annu Rev Environ Resour* 32: 345-373.
36. Bodo T (2015) Urbanisation problem and coping strategies in Port Harcourt metropolis, Rivers State Nigeria. Masters Thesis, Department of Geography and Environmental Management, University of Port Harcourt, Rivers State, Nigeria.
37. Camilo M (2004) revisiting the environmental and socio-economical effects of population growth; a fundamental but fading issues in modern scientific public and political circles. *Ecology and Society* 19: 38.
38. Kimmel R (1989) Energy as a factor of Production and Entropy as a Pollution Medical or Macroeconomic Molding. *Ecological Economic* 9: 161-180.
39. National Wildlife Federation (2008) *Back Yard and Habitat Programmes*.
40. Gorma J (2010) *Total Penguin*. New York. Prentice Hall Press.
41. Lockey R (2010) *Penguins Seabirds of the World*. New York Press.
42. Gimah BG (2014) Relevance of Environmental Adult Education, in the Prevention of Habitats Loss, in Ogoni Rivers State. Master Theses, Department of Adult and Non -Formal Education, Faculty of Education University of Port Harcourt Choba.
43. Karatas A, Karatas E (2015) Environmental Education as a Solution tool for the Prevention of Water Pollution. *Journal of Survey in Fisheries Sciences* 3: 61-70.
44. UN (2017) *Report on Climate Change 2017*: 11-14.
45. Vander WH, Petit J (2002) Evaluation of Environmental Impact of Agriculture on the Farm Level. A Comparison and Analysis of 12 Indication-Based methods. *Agriculture Ecosystem and Environment* 93:131-145.
46. David LK, Bodo T, Gimah B G (2019) Petroleum pollution and decrease neuroplasticity in brain development of the Ogoni children in Rivers State, Nigeria. *Journal of Advances in Medicine and Medical Research* 29: 1-13.
47. Cookey A T, Bodo T, Owunari PT (2019c) Evaluation of the perception and control measures towards environmental health risk in Obio-AKpor Local Government Area in Rivers State of Rivers State. *Asian Journal of Geographical Research* 2: 1-5.
48. Obafemi AA, Eludoyin OS, Akinbosola BM (2012) Public perception of environmental pollution in Warri, Nigeria. *J. Appl. Sci. Environ. Manage* 16: 233-240.
49. Abumaizar RJ, Smith EH (1999) Heavy metal contaminants removal by soil washing. *Journal of Hazardous Materials* 70: 71-86.
50. Makino T (2009) Heavy Metal Pollution of Soil and a New Approach to its Remediation. *National Institute for Agro-Environmental Science* 3-1-3 Kannondai, Tsukuba, Japan.
51. Bodo T (2019b) Engineering properties of Awgu Shale in Enugu State, Nigeria. *Asian Journal for Geological and Environmental Research* 1:1-8.
52. Amand SV (2013) Global environmental issues. *Open Access Scientific Reports* 2: 1-9.
53. Palmer JA (1998) *Environmental Education in the 21st Century. Theory, Practice, Progress and Promise*. London, England Routledge.
54. Skanavi C (2004) *Environmental Education Applied to Agricultural Education*. Editor: Walter Leal Filho. *Ecological Agriculture and Rural Development in central and Eastern Europe* 59-73.
55. Bodo T (2019c) Garden City or Garbage City: the case of Port Harcourt Metropolis, Rivers State, Nigeria. *Asian Journal of Advanced Research and Reports* 3:1-1.
56. World Bank (1994) *Participatory Development Toolkit*. World Bank. Washington.

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57. Chambers R (1997) Whose Reality Counts? Putting the First Last. IT Publications London.
58. Richards P (1995) Participatory Rural Appraisal: A Quick and Dirty Critiques. In PLA Notes. No.24. IIED London.
59. Bodo T, Christiana T B (2019) The Applicability of the Rule in Rylands V. Fletcher to Petroleum Activities in Nigeria. Asian Journal of Advance Research Reports 3: 1-10.
60. Environmental Law Research Institute (2011).

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