



ENVIRONMENTAL CHALLENGES AWARENESS IN NIGERIA: A REVIEW

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ABSTRACT: *The environment encompasses all aspects of nature, both living and nonliving. The environment has an impact on the quality of life of plants and animals. Every living organism requires clean air, water, shelter, better living conditions, and a more ideal habitat because these factors influence one's quality of life. It is advantageous to have a safe and quality environment. Anthropogenic and natural activities have deteriorated the environment, resulting in climate change, pollution, and health issues worldwide. This review paper explored environmental issues experienced globally and in Nigeria through reviewing different works of literature. Findings show that man's activities on the environment include urbanization, deforestation, improper waste disposal, unregulated agricultural practices, among others, which have resulted in desertification, pollution, ocean acidification, health issues, global warming, and ecosystem instability. Environmental issues have a cyclical and spiral effect. One environmental problem can exacerbate another, hence the need for humans to be aware of the environmental issues. Man has a greater role to play in tackling environmental issues.*

KEYWORDS: Environment, Environmental Challenges, Environmental Awareness, Pollution, Global Warming, Fossil Fuels.



INTRODUCTION

The knowledge of the environmental and its challenges is critical to human existence and sustenance. It is a fact that the ecosystem must find a degree of balance for the continuation of life. The environment consists of living and non-living things; it consists of biotic (plants, animals and microbes), and abiotic (edaphic, climatic, pyric and topographic/relief) components. Humans need and depend on a healthy environment for survival. In recent years, the environment has been plagued with many pollution issues, thus making it unhealthy and unsafe for habitation. According to Population Matters (2022), the environment is under greater strain than ever before. Demands for food, water, and land, as well as our increasing demand for energy, are destroying habitats, contaminating the air and water, and driving animal and plant species to extinction. Presently, as indicated by BioExplorer (2021), biodiversity is being lost at a rate that is up to ten thousand times quicker than it was 100 years ago. The physical and biotic setting in which people, animals, and plants live and work is referred to as the environment (Benny, 2009; Anderson, 2019; Orisakwe, 2019 as cited in Pona *et al.*, 2021). Environment is everything in nature, both living and non-living. The quality of life of plants and animals is influenced by the environment. Every living entity requires clean air, water, shelter, improved living conditions, and a more favorable habitat, since they influence one's quality of life. It is expedient to have a safe and quality environment. Degradation of the environment is hazardous to animals, plants, microbes, and humans, compromising their long-term health and security (Anderson, 2019). Environmental pollution and habitat degradation have attracted considerable attention (Tanee & Ochekwu, 2010).

Environmental issues are described by Giving Compass (2022) as the negative impacts of human activity on the earth and its natural systems. Human actions can cause environmental issues. Environmental issues have negative influence on plants and animals. Some of these environmental problems are climate change, global warming, pollution, deforestation, and ocean acidification. Anderson (2019) alluded that although some of these environmental problems such as climate change can occur due to natural causes, human conduct as well has resulted in a rise in greenhouse gas emissions. Human actions have an impact on the environment, necessitating the need for people to be aware of environmental issues and to conduct environmentally friendly acts that will help to maintain and sustain the environment for future generations. Being aware of environmental problems and understanding that human factors contribute to environmental degradation are steps towards finding sustainable solutions to environmental challenges. Environmental awareness is being aware of our surroundings and understanding how our actions impact the health of the ecosystems in which humans live (Lauwrens, 2021; Fasolya, 2016). Human activities have continued to reduce environmental quality in many parts of the world (Tanee & Ochekwu, 2010).

Evidence of environmental deterioration can be seen and felt globally; the state of the environment has deteriorated considerably. Faroog and Meraj (2017), as cited in Pona *et al.*, (2021) stated that climate change and the greenhouse effect are on the rise, causing a plethora of natural disasters such as glacier melt, floods, tsunamis, air pollution, and the emergence of infectious and non-communicable diseases, all of which endanger human health. This review paper will examine some of the environmental problems experienced around the world, and in Nigeria specifically.



BACKGROUND OF LITERATURE

This section examines global environmental challenges as well as environmental issues in Nigeria. It also explores ways to create environmental challenges awareness.

Global Environmental Issues

As news regarding environmental deterioration is often publicized in the media, the quality of our environment has degraded to an alarming level. Several studies conducted have indicated knowledge of environmental issues globally. A study was done to better understand the environmental issues knowledge and awareness of secondary students. Based on their green behaviors in their daily routines, secondary school students were found to have a broad understanding of environmental issues such as pollution, flooding, oil spill and global warming (Salleh *et al.*, 2016). In Grenada, a survey was done in 2016 to assess household knowledge about climate change. Data was collected from participants aged 15 and above, the convenience sample technique was used, and a structured questionnaire was used. A face-to-face interview was held. There were 519 interviews. Hurricanes, pollution, and tropical storms were named by 35% of respondents as the most devastating environmental experiences (UNDP, 2016). The gravity of the situation is demonstrated by the occurrence of several environmental problems around the world, including greenhouse effects, global warming, waste generation, soil degradation, flooding, deforestation, unregulated land use, climate change, acid rain, ozone layer depletion, pollution, intensive farming, overfishing and chemical toxicity (Akpanfun, Ndinwa & Chukwumah, 2020). It is necessary to use the knowledge of basic science to educate people on these environmental issues. A good illustration is acid rain. The careless release of acid gases by human activities is a major cause.



In both equations 1 and 2, the careless burning of tire and firewood can lead to the release of the Sulphur dioxide and Carbon dioxide respectively. Both acidic gases dissolve in atmospheric moisture and rain (water) to Trioxosulphate (vi) acid and Trioxocarbonic acid respectively. This in turn acidifies the soil and water bodies. The understanding and appreciation of the mechanism of environmental issues will prompt adequate positive response.

Olajire (2020) discovered that energy consumption, improper wastewater and solid waste management, and green gas emissions remain major environmental challenges in the brewing industry in a study to raise awareness of the impact of beer production on the environment and practices to reduce environmental impact. Olajire also said that industries such as brewing industries contribute to environmental issues. Similarly, Pachamama Alliance (2021) described other causes of environmental degradation by humans and their effects. They are oil drilling, deforestation, and production of plastic. Oil drilling is a problem that has a significant impact on the environment. The addiction to fossil fuels is a global problem that impacts every part of life. Oil drilling damages marine life, oil drilling on land suffocates the earth, and fossil fuel burning contributes to rising atmospheric carbon dioxide (CO₂), which leads to global warming and ocean acidification. Similarly, oil spill damages the environment; it causes loss of habitat for fishes and animals and affects human life. Every year, from 2010 to 2019, there was an average of 1.8 significant oil leaks caused by tanker accidents. The Gulf War oil spill in January



1991 was the largest global oil disaster since commercial drilling began. The Iraqi government purposely spilled 380 to 520 million gallons of oil into the ocean. The Deepwater Horizon wellhead blowout in 2010 was the second greatest oil leak and one of the most recent tragedies. Over 200 million gallons of oil were spilled into the Gulf of Mexico, and 11 people were killed due to the tragedy (Sonnichsen, 2022).

The second is deforestation. Thousands of acres of forests are cut down for road and building construction, industrial purposes like large-scale farming, oil extraction, and paper manufacturing. Since, the loss of habitat threatens the existence of many species, deforestation causes wildlife and biodiversity extinction. The International Union for Conservation of Nature (IUCN) maintains an up-to-date Red List of ecologically vulnerable species, some of which are dragonflies, European bison (Europe's largest animal), freshwater dolphins, Oaxaca treefrog and oak trees (Pachamama Alliance, 2021).

Thirdly is the production of plastic. Currently, civilization produces a lot of waste, and a lot of that waste is made up of plastic. The Environmental Protection Agency (EPA) estimates that 31 million tons of plastic garbage were generated in 2010. The plastic waste is a problem, but so is plastic production, which is reliant on fossil fuel combustion. According to the US Energy Information Administration (EIA), 191 million barrels of liquid petroleum gases (LPG) and natural gas liquids (NGL) were used to make plastic items in the United States alone in 2010 (Pachamama Alliance, 2021). Furthermore, Clark (2019) explained that every day, 38.5 million plastic bottles are consumed in the United Kingdom, with over half of them ending up in landfills and the oceans. Most of the plastic that enter water bodies end-up as microplastics, which enter the human body through the food chain with disastrous consequences (Denchak, 2018). This is startling, especially considering how much money that can be saved by using reusable bottles. Buying a somewhat more expensive bottle and refilling it as needed is far less expensive than buying plastic bottles and throwing them away every day. Also, choosing recyclable plastic over non-recyclable plastic is a better option.

There has been a major reduction in biodiversity in the US due to specific hunting and harvesting methods, driving roughly 230+ animals to extinction (BioExplorer, 2021). In Kenya, the natural resources are crucial to its economy, although these natural resources are gradually being degraded as well as going into extinction due to lack of environmental issues awareness (Ontinga, 2014). Similarly, in Cameroon, reports have been made of the effects of oil spill, gas emissions and improper waste disposal such as food poisoning, health issues, climate change and pollution. Cameroon has made enormous efforts to address a wide range of multi-factorial environmental health challenges (Abia, Mbako & Njoya, 2018). In South Africa, some of the significant environmental challenges are global warming and climatic variability, biodiversity loss, deforestation, desertification–land degradation, waste and littering, urbanization, pollution, poverty, and health hazards (Bernard & Darkoh, 2009).

Pollution is a global environmental issue. Pollution is the process of making land, water, air, or other components of the environment filthy, unsafe, or unfit for use. Pollution occurs when a pollutant is introduced into a natural environment (LiveScience, 2018). Pollution can be due to natural causes such as drought, floods, melting snows, volcanic eruptions, storms, and it can be in relation to anthropogenic activities such as urbanization, waste disposal, untreated sewage ways, oil spills, industrial activities, and agricultural practices (Blaettler, 2019; Denchak, 2018; Texas Disposal Systems, 2020). The World Health Organization reported in 2016 that around 90% of people worldwide are breathing poisonous air, with an annual death rate of



approximately 3 million (BioExplorer, 2021). Low- and middle-income countries, primarily in Asia and Africa, account for more than 90% of air pollution-related mortality, followed by low- and middle-income countries in the Eastern Mediterranean, Europe, and the Americas. As a result, improving the environment can prevent approximately 13 million deaths per year and reduce 13 to 37 percent of the world's disease burden, including 40% of malaria deaths, 41% of lower respiratory infection deaths, and 94% of diarrheal disease deaths (World Health Organization, 2018). Soil contamination is an environmental problem which can have a negative impact on not just the health of those who live nearby, but also the future growth of plants due to a decrease in soil fertility. According to BioExplorer (2021), soil contamination is one of the current environmental problems in the United States (US). Soil contamination is due to large-scale industrialization and human intervention, such as the spraying of various chemicals to kill pests and herbs, which can cause hazardous agents and chemicals to leach into the soil, resulting in higher amounts of toxic agents and chemicals in the soil. Soil pollution weakens the plants that succumb to natural stresses such as insects, diseases, or climate extremes that would have been withstood (Ochekwu *et al.*, 2012). According to the most recent U.S. Environmental Protection Agency water quality surveys in 2018, more than half of the rivers and streams, as well as more than one-third of our lakes, are filthy and dangerous for swimming, fishing, and drinking. Nutrient pollution, which includes nitrates and phosphates, is the most common type of contamination in these freshwater sources. While these minerals are necessary for plant and animal growth, they have become a major pollutant due to agricultural waste and fertilizer runoff (Denchak, 2018).

Global warming is another environmental challenge. Human activity is to blame for global warming, which is the constant heating of the earth's surface, oceans, and atmosphere caused by the combustion of fossil fuels, which emit carbon dioxide (CO₂), methane, and other greenhouse gases into the atmosphere. The consequences and repercussions of global warming are increasingly seen and apparent over the planet (Bradford & Pappas, 2022). Bradford and Pappas (2022) continue by claiming that both the polar ice caps and alpine glaciers are melting. Lakes all over the world—including Lake Superior—are rapidly warming, sometimes faster than the surrounding environment. One of the most evident and direct consequences of global warming is the rise in global temperatures. The average worldwide temperature has risen by around 1.4 degrees Fahrenheit (0.8°C) over the previous century, according to the National Oceanic and Atmospheric Administration (Bradford & Pappas, 2022). In addition, a global BBC analysis indicated that the frequency of extremely hot days with temperatures over 50°C per year has increased globally since the 1980s. They are currently found in more regions of the world than ever before, posing significant hazards to human health and way of life. High temperatures can be lethal to humans and animals, as well as wreaking havoc on structures, roads, and power grids. In the Middle East and Gulf region, temperatures of 50 degrees Celsius are most prevalent (Dale & Stylianou, 2021). Chavara Karachi, Pakistan's largest city with a population of over 16 million people, is one of the world's largest and hottest cities, and its residents endured a 45-degree Celsius heat wave in 2015, during which 200 people died from dehydration and heatstroke. The temperature in 2021 was nearly as high as it was in 2015, and it is virtually uncomfortable to be out on the street in the late morning hours of the day in Chavara Karachi (Okwoche, 2021). According to Climate Central, experts expect that extreme weather events including heat waves, droughts, blizzards, and rainstorms will become more common and intense due to global warming. Climatic models suggest that global warming will cause severe changes in worldwide climate patterns. These changes are expected to have a major impact on wind patterns, annual precipitation, and seasonal temperature differences.



Because high levels of greenhouse gases are expected to stay in the atmosphere for many years, the EPA anticipates that these effects will endure several decades or longer (Bradford & Pappas, 2022).

Ocean acidification as a global environmental issue is the long-term uptake of carbon dioxide by oceans caused by a decrease in pH. Ocean acidification is caused by anthropogenic activities such as the use of fossil fuels. The extinction of marine organisms and ecosystems has been caused by ocean acidification (BioExplorer, 2021). According to the EPA, as indicated by Bradford and Pappas (2022), the acidity of the oceans has grown by around 25% since the beginning of the industrial revolution of the early 1700s. As more CO₂ is added to the water, it becomes more acidic, dissolving more and more sea creature shells. It goes without saying that this is harmful to their health. Coral reefs are likely to become increasingly rare in locations where they are now prevalent, including most U.S. seas. Bleaching, a condition in which a coral eject their symbiotic algae, struck parts of Australia's Great Barrier Reef in 2016 and 2017. Bleaching is a symptom of stress caused by overheated seas, imbalanced pH, or pollution; coral can recover from bleaching, but repeated instances make recovery less likely (Bradford & Pappas, 2022). According to IUNC (2018), Latin American and Caribbean countries are experiencing the first signs of the effects of ocean acidification on people's lives. According to research, increased ocean acidity is already affecting the ability of species in the region, such as shellfish and corals, to create shells and skeletons. This has the potential to jeopardize regional food security and livelihoods in Latin America and the Caribbean.

As has been discussed, the globe is indeed experiencing environmental catastrophe that is affecting the ecosystem. On the other hand, Nigeria is faced with similar environmental problems experienced around the world.

Environmental Challenges in Nigeria

Environmental issues did not gain official prominence in Nigeria until the 1988 Koko toxic waste dumping saga, which also highlighted the urgent need to establish the Nigeria Federal Environmental Protection Agency (FEPA), the Federal Ministry of Environment, and other relevant agencies in the country, ostensibly to address environmental issues (Evelyn & Tyav, 2012; Akambe & Kpae 2017 as cited in Ibrahim *et al.*, 2020). Environmental challenges in Nigeria include pollution, poor sanitation, ozone layer depletion, desertification, flooding, erosion, bushfires, deforestation, and soil contamination (Evelyn & Tyav, 2012). Evelyn and Tyav also noted that the indiscriminate use of pesticides, insecticides, and herbicides, as well as the indiscriminate dumping of rubbish, excreta, and animal dung, crude and refined oil spillages and large-scale bush burning are causes of pollution in Nigeria. Oil pollution incidents leave the environment with negative impact on agriculture and health (Ochekwu & Eneh, 2012). All these environmental challenges are common and hazardous to Nigeria's ecology.

Environmental pollution has been connected to human activities and, to a lesser extent, long-term human contact with the environment. Environmental abuse and pollution are intensified when a country's population grows, putting strain on the environment, particularly in the wake of improved technologies, with corresponding consequences on people's lives and other living organisms. The overgrowing Nigeria's population is negatively affecting the environment. As the population increases, there is a need for shelter, food, and survival. Hence, since the land area does not increase, there is competition among the growing population within the same land area. Nigeria has a population of approximately two hundred million people (Gani, 2019).



The interactions of millions of individuals with their environment have left an everlasting mark on the terrain. People endeavor to satisfy their seemingly insatiable want for food, shelter, recreation, and infrastructure, which causes these changes. Even though these objectives contribute to the country's wealth, the injudicious use of land and resources has a negative impact on Nigeria's environment (Omofonmwan & Osa-Edoh, 2017). Anthropogenic activities in Nigeria have contributed some of the environment challenges in Nigeria. Some of these environmental challenges in Nigeria are pollution, improper waste management, health problems, flooding, and erosion. These problems are discussed below:

Pollution

Dopheide (2019) stated that according to statistics, air pollution killed 150 people per 100,000 in 2016, and that Nigeria's air quality is among the most dangerous in the world, according to the Health Effects Institute's (HEI) State of the Global Air Report. Pollutants in the atmosphere, such as generating gases, traffic emissions, and agricultural burning, contribute to air pollution. Generator fumes emit air pollution which produces the deadly chemical carbon monoxide. Older vehicles are also more likely to emit toxic fumes into the environment. In households, kerosene burners create flames, which contribute to insufficient air ventilation. Nigeria creates over 3 million tons of garbage every year, and most Nigerians prefer to burn their waste in their neighborhoods rather than dispose of it, contributing to air pollution. Another issue contributing to Nigeria's air pollution crisis is the usage of firewood and coal for cooking. (Dopheide, 2019). Another environmental issue in Nigeria is land contamination. Bolaji and Alatise (2021) define land pollution as any changes in the physical or chemical composition of land. When toxic substances enter the land to such an extent that they harm the ecosystem and those who live there, the land is polluted. Land pollution in Nigeria is caused by improper rubbish disposal, mining, urbanization, agricultural chemicals, air decomposition, and soil erosion (Ileanwa, Atachegebe & Ekule, 2020). Human health is jeopardized by land contamination. Landfills for garbage serve as a breeding ground for disease-carrying bacteria, pests, and rodents (mosquitoes, rats, snakes, and so on). This source could be the source of disease epidemics such as malaria, yellow fever, Lassa fever, and bubonic plague. When harmful chemicals pollute the soil, the air picks up some of the deposits in the form of microscopic particles, which can become trapped on the human body, causing skin illnesses, and even clogging human breathing organs. As a result, numerous diseases and infections are attributed to indiscriminate rubbish disposal, either because of their proximity to crops cultivated on land for human consumption or because of direct effect on humans (Kempa & Castanas, 2008 as cited in Ileanwa *et al.*, 2020).

Nigerian water is contaminated by a variety of pollutants, both point and non-point sources. Most industries dump their waste products directly into surface water sources such as lakes and streams, without proper treatment. Pollutants originating from untreated effluents are key contributors to Nigeria's declining water quality. Inadequate treatment of industrial waste pollutes water used for domestic purposes, posing a serious threat to human health (Okafor *et al.*, 2021). As a result, deadly diseases pose a substantial threat to Nigerians' health in the presence of contaminated water and a lack of secure access to good quality water. Infections caused by contaminated water are a major concern in Nigeria and other developing nations with contaminated water supplies. Water-borne diseases such as typhoid, diarrhea, intestinal parasites, and cholera; water-washed diseases such as typhoid and trachoma; and water-based diseases (spread by insects) such as river blindness, yellow fever, and malaria are examples of water-related diseases (Alfarra, 2010).



Improper Waste Disposal

Water systems in Nigeria have been contaminated because of open solid waste dumpsites and untreated sewage. People who live near these waste sites, particularly in urban areas, end up eating or drinking food contaminated with high levels of nitrate and other hazardous compounds. During the rainy season, rain combined with rubbish can taint pure surface water and seep through the soil into underground water (Pona *et al.*, 2021). Similarly, plastic rubbish is a neglected environmental concern in Nigeria, and if not handled, it will continue to harm the ecosystem and future generations. Plastic bag use and poor disposal contribute considerably to Nigeria's rubbish problem. Plastic bags have practically become a national symbol of waste and decadence in Nigeria. Salami (2018) articulated that the impact of plastic garbage on the marine life is becoming more apparent in Nigeria. Plastic bags are not the only source of pollution in Nigeria, but they are the most obvious, clogging drainage systems, littering streets, and poisoning sewage systems. Plastic garbage is not adequately disposed of or recycled in the country. Salami went on to explain that Lagos alone generates 9000 metric tons of garbage each day, with plastic bottles and bags accounting for 86% of the garbage. The lack of an effective waste management system in the country, as well as a lack of environmental consciousness among the general populace, explains why garbage ends up in the river and the ocean. Research is needed to be done on ways plastic items can be reused or recycled as this will reduce the amount of plastic waste disposed indiscriminately.

Flooding

Another environmental concern in Nigeria is flooding, particularly in the country's largest cities. Flooding harms both the natural environment and property. Flooding happens due to rainfall and can be caused by natural reasons such as excessive rain or by human activities such as project building and waterway blockage. On the other hand, the impacted people have always shown a cavalier attitude towards environmental preservation through inappropriate waste management, excessive deforestation, and other behaviors that have a long-term harmful influence on the environment, culminating in the loss of many lives and properties (Muhammed *et al.*, 2018). Every year, the Nigerian Hydrological Service Agency is tasked with educating Nigerians on flood prevention measures. More than 70% of states in Nigeria are at risk of flooding. Nigeria is subjected to natural and man-made flood disasters on an annual basis; this issue should be handled from the start. In 2021, the Director General of the Natural Emergency Management Agency (NEMA) claimed that flooding in Nigeria is caused by anthropogenic activities. It was mentioned that dams utilized for energy are occasionally exploited for agricultural reasons and a call was made for efficient dam utilization (Channels TV, 2021).

Erosion

Erosion is widely considered as one of the most pressing environmental concerns confronting the world today. In Nigeria, particularly in the south-eastern region, soil erosion has harmed agricultural production sustainability, and management for food security and subsistence. The main sources of soil erosion in Nigeria are human activities, climate conditions (rainfall), underlying geology, undulating topography, and soil type (Chude, Ezendu, Ugadu & Adiaha, 2020). Soil erosion has been identified as a serious threat to the long-term viability of the environment. It has an impact on life on earth by degrading land resources, reducing agricultural productivity, decreasing soil fertility due to topsoil loss, and contributing to climate change by compromising soil C-sink potentials. Despite a paucity of data, land degradation



remains a severe issue. Another concern is that erosion management programs do not contain sustainable home-bred alternatives. Such knowledge could benefit both research and practice in building strong environmental conservation strategies that are responsive to the cultural and socioeconomic realities (Okenmuo, 2021). According to Chude *et al.* (2020), overgrazing, excessive farm activities, tillage, bush clearing, extractive industries, road construction, bush burning, overpopulation, tree felling, residential buildings, development of urban centers, industrialization, pesticide fumigation, stone and sand quarrying, and mining are just a few of the human factors that have caused soil and land degradation, soil loss, and erosion. Furthermore, human interaction with the environment, such as continuous borrow-pit excavation, has resulted in the distortion and removal of soil vegetative cover, which is critical to soil erosion in most states in Nigeria's south-eastern region. Vanguard Editorial (2021) reported that soil erosion is a major contributor to desertification, in addition to displacing people; it can convert habitable areas into deserts, resulting in biodiversity loss, soil degradation, and ecological disruption.

Creating Environmental Challenges Awareness

According to Pachamama Alliance (2021), environmental awareness is all about comprehending the fragility of our ecosystem and the importance of safeguarding it. Human activities have the potential to protect the earth. This effort will be fruitless unless the public is educated and aware of environmental issues (Marsh, 2021). Marsh went on to explain methods of raising environmental issues awareness, such as using social media and the school setting. These platforms can be used to help more people get an education on environmental challenges. Sharing environmental themes that can inform people, remark, and share posts, for example, may not appear to be much, but they may have much influence on people. Using online avenues to publish environmental knowledge, such as blogs and YouTube, also helps individuals become more aware of environmental problems. The media, both print and electronic, can help to raise public awareness of the environment and natural resource conservation. This could be accomplished through its multi-channel regional and network service, which includes programming such as talks, interviews, dramas, and documentaries (Mondal, n.d). Mondal emphasized that through electronic media, influences affecting the natural and even man-made environment can be discovered and stopped. Similarly, teaching Environmental Education (EE) at primary and secondary levels is a way to educate students on environmental issues. Akpafun *et al.* (2020) stated that EE is a branch of education that focuses on strategies to lessen the consequences of human activities on the environment; this is critical in raising awareness of environmental challenges. To reduce pollution and improve environmental quality, it is necessary to raise public awareness.

CONCLUSION

Environment is where humans and animals live and operate. Man is part of the environment and benefits from the environment. Man relies on the environment for production, physiological functioning, and consumption. Unfortunately, the quality of the environment has been compromised due to natural events and anthropogenic activities such as greenhouse gas emissions, deforestation, improper waste disposal, urbanization, construction and vandalism of oil pipes, thus resulting in environmental challenges like global warming, pollution, instability of the ecosystem, flooding, erosion, health problems and ocean acidification. These



environmental challenges have jeopardized healthy lifestyles and natural resources sustainability. Environmental challenges are exacerbated by a lack of knowledge on environmental issues. change education in schools.

The use of fossil fuel is a worldwide environmental problem. The burning of fossil fuel such as coal, oil and natural gas produces greenhouse gas. Most energy production around the globe is from fossil fuels. Manufacturing industries emit greenhouse gas in its production of goods; they burn fossil fuels for energy generation to produce goods. When there are oil spills, it affects marine life and contributes to pollution and global warming. Global warming causes a lot of environmental problems such as rise in temperature, rise in sea level, ocean acidification (when there is a reduction of the pH level of the ocean due to uptake of carbon dioxide), severe weather events such as storms, hurricanes, droughts and melting of ices in the sea. Furthermore, plastic production causes a wide range of problems; it contributes a lot to environmental problems starting from its production to its disposal. Petroleum is used for its production. The production of plastic relies on fossil fuel combustion. The improper disposal of plastic causes flooding and pollutes the environment. When plastic ends up in the ocean, it negatively affects both human and aquatic lives.

Climate change originates from global warming; global warming is due to the release of greenhouse gases into the atmosphere from the burning of fossil fuel. Some of the environmental problems can be linked to global warming. Environmental problems have a spiral effect which is cyclic in nature. One environmental problem can lead to other environmental problems. Flooding, for instance, can cause erosion. Erosion on the other hand, can lead to land, water and air pollution. Pollution causes flooding and health problems. Pollution can also result in global warming, and global warming can lead to heavy rains which could cause flooding.

Environmental problems occur on land, air, and water. Hence, environmental issues can be grouped under three categories which are air pollution (air quality, macroclimate, and microclimate), water pollution (streams, oceans, lakes, groundwater, rivers, storm water, and runoff water), and land pollution (soil, animals, plants, rocks, and geology and topography beneath the surface). The environmental issues experienced globally occur in these three categories. Unfortunately, what happens in a category affects the other two categories. When the air quality changes, it results in global warming, and then in climate change. Climate change affects the amount and temperature of water. The water quantity and quality are affected. Too much water can result in flooding; thus, flooding may mean washing away of soil nutrients, destruction of forests/vegetation/trees, erosion, sewage blockage, and contamination of water. Destruction of trees is detrimental to the environment since trees provide oxygen, absorb carbon dioxide, and help to moderate temperature (reducing ocean acidification). In essence, trees cool the air, intercept and absorb precipitation, and then restore it to the atmosphere. Vegetation cleanses the air. When trees and forests are destroyed, it could affect the air quality, microclimate, and temperature. Environmental problems not only affect humans but microbes and plants as well. Environmental contamination has a spiral effect on the ecosystem.

The environmental problems experienced globally are also experienced in Nigeria. Although some of these environmental problems are of natural causes, some of them are man-made. Humans and animals need to have a healthy environment to live healthy lives. Environmental issues awareness is being knowledgeable and conscious of the problems in the natural surroundings of where animals and plants live and operate. Environmental awareness is crucial



to solving environmental problems. This could be said to be the first step in solving environmental challenges. The knowledge of environmental problems in Nigeria and the globe at large will help individuals offer the needed solutions to the environmental problems. Anthropogenic activities affect the quality of the environment and environmental elements affect human health. Healthy environment is essential in maintaining quality life and sustainable development.

The issues that jeopardize the physical environment could be addressed by alerting friends and family about its fragility and importance. Research and articles on environmental issues could be means of disseminating environmental problems to the public. Also, public education and campaigns on environmental issues could make the public aware of environmental issues. The electronic and print media can be avenues for disseminating problems relating to the environment. There are other traditional methods of spreading information in communities, such as the usage of a town crier, community meetings, and community gatherings. Community and religious leaders can also assist in raising environmental issues awareness among their members. These channels can be utilized to raise environmental awareness in municipalities and communities. The benefit of the traditional strategies is that messages are communicated in a manner and language that residents of the community or towns can easily understand.

There should be a holistic approach to responding to environmental problems in Nigeria. The government, organizations and individuals all have a part to play in maintaining a healthy ecosystem. To maintain a healthy environment, efforts should be made to preserve and protect the environment. The actions taken today will determine the kind of environment for today and for the future. Environmental issues awareness could be created through teaching Environmental Education in primary and secondary schools. Engaging in eco-friendly activities—such as using the three R's (Reduce-Reuse-Recycle) at homes and organizations, planting trees, buying local, reducing carbon footprint, and enacting and enforcing laws and policies regarding the use of environment—will help in mitigating environmental challenge and its effects on the planet. Greenhouse gases emission, which is one of the most pressing environmental problems, can be reduced if countries, organizations, and individuals take eco-friendly actions.

It is essential to tackle environmental problems from the source, and this calls for a collective and holistic action. Man has a greater and crucial role in combating environmental problems.

RECOMMENDATIONS

The state of the environment has deteriorated causing harm to the ecosystem. Thus, there is a need for urgent actions to mitigate environmental degradation. Safeguarding the environment calls for a holistic action. Large tree planting, the addition of mulch and boulders to the soil to restrict erosion on slopes, and the building of fiber logs to keep soil from washing away can all assist to reduce erosion. In addition, every home should have an adequate drainage system in place to allow water to flow into appropriate waterways. There should be environmental policies and laws to guide the activities of man in the environment. These policies and laws should not only be on paper but enforced and implemented at the national, state, and local levels in Nigeria. Such policies will guide against unregulated agricultural practices and constructions. There should be an environmental impact assessment done before, during and



after any construction project. Also, the public should be educated through the media, schools, campaigns, traditional methods such as town criers and community gatherings, and workshops on environmental challenges and their roles in protecting the environment. The public should be educated on how to reduce their carbon footprint through activities such as planting of trees, reusing, and recycling items, proper disposal of waste, and using LED bulbs. Every little eco friendly action today will help to safeguard the environment for future generations.

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