



## **Enhancing Environmental Sanitation Education and Capacity Building for Sustainable Development in a Depressed Economy**

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### **Abstract:**

Environmental sanitation is a key to a healthy and beautiful environment. The success for such laid on the need to educate and enlighten people with adequate knowledge on keeping and managing the environment safe for achieving economic and sustainable development. This paper explored the Nigerian economic situation on environmental sanitation, roles of environmental sanitation education and capacity building in achieving sustainable development within a depressed economy, the challenges of environmental sanitation in a depressed economy, achieving sustainable development through environmental sanitation and use of capacity building for sustainable development to enhance environmental sanitation education. The paper noted that environmental sanitation is important for human security and economic sustainability, and polluted environment causes health problems for humans, and provides breeding ground for germs, and other organisms that endanger their health. Some essential components of environmental sanitation to achieve a sustainable development and improve the economic standard of the nation were highlighted in the paper. The authors recommend that government should provide adequate modern facilities and equipment for effective environmental sanitation to improve the people's living standard. The government should emphasized more in organizing workshops, seminars and mass campaign to sensitize and educate people on effective ways to enhance environmental sanitation.

**Keywords::** Enhancing, Environmental sanitation, Education, Capacity building, Sustainable development, Depressed economy.

### **Introduction**

Human life is incomplete without adequate and good human health. Human health is important to human economic development, it is difficult for people to enjoy economic development when they are surrounded by disease causing agents, they live in a polluted environment and an environment inundated with sewage and other domestic and industrial wastes. Globally, the problem of polluted environment has become a very disturbing phenomenon. Environmental problem plaguing the world are enormous. Perhaps the most serious and worrisome in Nigeria is the physical environment in terms of the low level of sanitation, lack of sanitation education and gross environmental indiscipline in the cities and community which lead to increased poor health conditions, which in return lead to poor productivity and economic development, suggesting need for sanitation education. (Ikeke, 2014). Sanitation education helps people to sharpen their thinking related to the utilization of



various sanitation facilities in order to make their environment clean for healthful living. World Health Organization (WHO, 2024) disclosed that poor sanitation reduces human wellbeing, social and economic development due to impacts such as anxiety, and lost of opportunities for education and work, and also poor sanitation is linked to transmission of various diseases in the environment as a result of lack adequate sanitation education.

According to the WHO (2023), in 2022, 57 per cent of the global population (4.6 billion people) used a safely managed sanitation service; 33 per cent (2.7 billion people) used private sanitation facilities connected to sewers from which waste-water was treated; 21 per cent (1.7 billion people) used toilets or latrines where excreta were safely disposed off, and 88 per cent of the world's population (7.2 billion people) used at least a basic sanitation service. Of these, 419 million still defecate in the open, for example in street gutters, behind bushes or into open bodies of water (WHO, 2024). Benjamin and Benjamin (2023) stressed that over the years, economic policy in Nigeria has been a subject of concern for policy makers. The effectiveness of this policy in providing basic necessities for Nigerians has also been in question.

There have been several controversies in terms of its implementation and sustainability over the years. Nigeria's population growth as a result of urban techno-economic development and changes in the production and consumption of materials has increased the amount of solid trash produced. The nation's existing waste management procedures are unsustainable and are putting both the environment and the economy in danger. The Nigerian environmental sanitation situation seems to have defied all odds with only minimal progress being made; coverage is worsening in urban centres because attention has been placed primarily on rural Nigeria and the prioritization of water above sanitation (Peter & Mayowa, 2022). With a huge population made up of numerous ethnicities with differing cultures and a variety of governance systems and responses to societal issues, as well as geographical structures, there is no one-size-fits-all solution to the sanitation problems of Nigeria whether you are trying to address the sanitation challenges of urban, rural or peri-urban populations (The National Environmental Sanitation Policy, 2005). Environmental sanitation entails awareness of and capacity for managing all waste in rural sub-urban and urban areas. A clean and healthy environment is important for the reduction of sanitation-related diseases, preventable deaths, increased economic productivity, poverty reduction and sustainable environment. However, if environmental sanitation does receive adequate attention, there would be increased sanitary practices but if not there would be increased sanitation-related diseases, mortality, and a devastating economy will be the sequel.

Over the years, the poor environmental sanitation condition has contributed significantly to the high prevalence of communicable diseases in the country. Most of these diseases, which include, malaria, cholera, typhoid, diarrhoea, acute respiratory infections, tuberculosis and helminthic infections account for a significant percentage of morbidity and mortality. Consequently, despite increased efforts by various successive Governments at improving public health and quality of life, basic health indicators have remained poor since these sanitation-related diseases still play a large role in creating ill-health and poverty. Good environmental sanitation contributes to low level of child mortality. It was estimated that over 10 million productive days would be gained if access to both water and sanitation in Nigeria rose to 100 per cent. It was revealed that Government or Non- Governmental Organizations (NGOs) projects often run out of funding because of political or economic shifts, thereby jeopardizing the success of sanitation projects (WHO,;UNICEF, 2012).

Environmental sanitation is crucial to living secured lives. A polluted environment causes health problems for humans. A dirty environment can provide breeding ground for mosquitoes, germs, and other organisms that endanger health. There is no way humans can live in an unsafe environment and feel safe when they are attacked by harmful organisms. Environmental sanitation is important for human security and sustainability. As a matter of fact, Sustainable Development Goals (SDG) Six, which places a premium on access to Water Sanitation and Hygiene (WASH) for all, is considered a key driver of economic growth; and also provides leverage for existing investments in health and education.

### **Environmental Sanitation and its Significance to Sustainable Development**

It is difficult for people to enjoy their lives when they live in degraded, and an environment filled with sewage and other domestic and industrial wastes. A dirty environment breeds insects such as mosquitoes, poisonous germs and bacteria. These cause various sicknesses and diseases. When people are sick they live depressing, degrading, and de-humanizing lives. People prosper better and live harmonious lives in a healthy environment. In good health people are better prepared to fulfill their roles as citizens of their nations, and carry out their roles in their families, the roles of citizens is inclusive of working for a sustainable environment (Ikeke, 2014).

Moreover, sanitation is the process of keeping places clean and healthy, especially by providing a sewage system and clean water. Also, sanitation is the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage or waste-water (News Agency of Nigeria, 2022). The Federal Republic of Nigeria (2005) in her National Environmental Sanitation Policy declared that "Environmental Sanitation is the principles and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment. The essential components of environmental sanitation include: Solid waste management, medical waste management, excreta and sewage management, food sanitation, sanitary inspection of premises, market and abattoir sanitation, adequate potable water supply, school sanitation, pest and vector control, management of urban drainage, control of reared and stray animals, disposal of the dead (man and animals), weed and vegetation control, and hygiene education and promotion." Environmental sanitation is a key factor that enhances human wellbeing. The National Environmental Sanitation Policy enunciates that the policy "represents Nigeria's commitment and determination to provide an acceptable level of environmental sanitation, thereby enabling her citizens to achieve socially and economically productive lives." Budge et al. (2022) viewed environmental sanitation as the control of all those factors in the physical environment which may exercise a harmful effect on human beings physical development, health and survival. Further, environmental sanitation includes some activities that aimed at improving or maintaining the standard of basic environmental condition. These conditions include, clean and safe water supply, clean and safe ambient air, efficient and safe animal, human, and industrial waste disposal, protection of food from biological and chemical contaminants, and adequate housing in clean and safe surroundings. Also, it is called environmental hygiene. Environmental sanitation is part of the strategic process of ensuing that the environment is kept clean, hygienic, and conducive to human living. Human life, wellbeing and dignity are seriously threatened in a hostile and devalued environment. It is right for the declaration to propound that it is a solemn responsibility to protect and improve the environment. It is a responsibility not to be taken for granted or trivialized. When this

responsibility is taken for granted it is the wellbeing of human lives that is at stake (Ikeke, 2014). This can lead to poor sanitation practices.

Poor sanitation is believed to be the main cause of deaths, and is a major factor in several neglected tropical diseases, including intestinal worms, schistosomiasis and trachoma. Also, poor sanitation contributes to malnutrition. Diarrhoea remains a major killer but is largely preventable. Better water, sanitation, and hygiene could prevent the deaths among children aged under 5 years, 395 000 in the year 2019. Open defecation perpetuates a vicious cycle of disease and poverty. The countries where open defecation is most widespread have the highest number of deaths of children aged under 5 years as well as the highest levels of malnutrition and poverty, and big disparities of wealth (WHO, 2023). Further, WHO disclosed that poor sanitation reduces human well-being, social and economic development due to impacts such as anxiety, risk of sexual assault, and loss of opportunities for education and work. Poor sanitation is linked to transmission of diarrhoeal diseases such as cholera and dysentery, as well as typhoid, intestinal worm infections and polio. It exacerbates stunting and contributes to the spread of antimicrobial resistance. Mustapha (2012) is of the view that poor sanitation which has always been prevalent in Africa, has significant negative effects on the national economy, and that 49 per cent of all reported sickness and injuries are related to poor sanitation. Lack of adequate sanitation is a major threat to the environment which includes the degradation of the urban environment by the indiscriminate disposal of solid and liquid waste and the pollution of fresh water and lakes by untreated human waste. The cost of environmental damage includes discouragement of the tourist trade, reduced overseas markets and revenue for fish products, reduced production from fisheries and increased purchase costs for chemical and mechanical clean-up operations. The failure of the numerous efforts to address the problem of environmental sanitation has been attributed to various factors. Prominent among these are: unhealthy socio-cultural practices; poor environmental sanitation education and awareness; low literacy level; bad governance over the years; disregard for the rule of law, and other forms of indiscipline (National Environmental Sanitation Policy, 2005).

### **Environmental Sanitation Challenges in a Depressed Economy**

Depressed economy is a condition characterized by a drastic decrease in a country Gross Domestic Product (GDP), massive job losses, and a sharp decline in prices for goods and services, and it is an extreme recession (James, 2023). In such circumstances, environmental sanitation may experience a down fall and the environment can become a breeding home for vectors and disease. Environmental sanitation has many challenges militating against ensuring good sanitary and public health practices. Herry, (2020) pointed out some of the challenges that confront the effective management of environmental sanitation practice in Nigeria as follows:

a. Insufficient Allocation of Funds in Budgets for Environmental Sanitation:: there is the need for increased budgetary allocation in the present national policy, as most States still are unable to manage and have a good sanitation and grossly undermine its importance by making inadequate budgetary provisions; and still expect to be left with the responsibility of managing the local environment. The government must wake-up to the realization that environmental sanitation is a mandate that can destroy us, if we are unable to discharge it. Provision of funds is a key towards discharging this mandate.

b. Provision of Engineered Sanitary Landfill: Up till this moment, Nigeria cannot boast of even one engineered sanitary landfill (Henry, 2020) which is the saddest commentary of today, it may be costly to execute, but this generation owes a duty to future generations, at



least, to have an idea of what to do if funding would not be available to service an entire population. It is possible to have the benefit of seeing an engineered landfill that can cater for at least a fraction of the population. The present day adoption of public private partnership on a variety of issues is an applaudable approach.

c. Insecurity: In Nigeria today, daily insecurity, is one of the major challenges undermining the economic and sustainable development. Those responsible for ensuring a safe environment are not health-insured or provided with aids in discharging their duties safely, there have been some instances where the waste handlers were killed, some kidnapped for ransom. All manner of criminality affect effective environmental sanitation management. For a smooth off-time evacuation of solid wastes, the present spate of criminality has to be brought to an end in Nigeria. With insecurity, nothing much can be achieved in ensuring a clean environment.

d. No Clear Cut Agenda For Disaster Management: From policy to practice, one is yet to see identifiable roles assigned to Environmental sanitation Officers in disaster management in Nigeria. Ideally, disaster management plan should be able to accommodate schedules assigned to a consortium of Environmental Health Officers; wastes Managers, Fire Service, Police among others. There is the need to modify the emergency management plans to capture the roles of all concerned personnel in a bid to safeguard lives and property in the nation..

e. Absence of Research Facilities: The absence of laboratories in most State for carrying out of analysis of assays of samples continues also to be a challenge. It's made to understand that there are only few States in Nigeria with well-equipped laboratory dedicated to the environmental issues. It is doubtful, if nuisance detection can be made successfully and conveniently without laboratories. Taking samples to private laboratories does not guarantee accurate results; instead it further complicates the process of nuisance abatement and contravention.

f. Biomedical Wastes Management: This is the same as Clinical, Hospital or Medical wastes management. It refers to the technological management of cotton wools, syringes, needles and such other items used and improperly disposed of by clinics, hospitals, maternities, residences among others. These categories of wastes are hazardous and ought not to be indiscriminately disposed of. The effective management of biomedical wastes clearly reduces contamination of the available ground water by more than 50 per cent.

g. Enforcement of Producer's Responsibility: The producers of certain consumables, such as, sachet water, bottled water, biscuits, gala, telecommunication services providers, ought to be made responsible for the necessary fallout (waste) of their products. This is major challenge to effective environmental sanitation management. These have culminated into the clogging of drains and eventual flooding of major parts of some cities. Producers of bottled and sachet water by-products litter their business premises.

h. Insanitary Management Of Slaughter House: A wide range of unwholesome practices, ranging from the slaughter of sick animals, slaughtering on insanitary platforms, washing of slaughtered beef among others in stagnant water, roasting of slaughtered animals with types thereby introducing a great number of carcinogenic substances into the beef; insanitary transportation of beef of various outlets among others. This is sadly the situation in most Nigerian cities. There is the need to evolve modern strategies in managing and monitoring slaughter houses. An effective implementation of current sanitation policy will be helpful.

I. Problem of Sewage management: in Nigeria, waste is collected daily through the use of truck load of sewage from the creeks, borrow pits, road sides.. The ultimate is not evolving a proper sewage treatment plant, which entails the transportation of human wastes to the plant through a continuous stretch of sub-surface pipelines. Is this hi-tech sewage treatment



achievable in Nigeria? So far, only few States can boast of any such facility. The Nigerian cities must evolve a strategy to tackle this to develop as a nation. Eguvbe et al. (2024) found that residents who lack knowledge of environmental education are not committed to sanitation programmes in the study area. Also, poor environmental sanitation management has adverse effects on human health, while the level of participation in environmental sanitation is high among residents. Effective methods for mitigating environmental pollution include proper storage, collection and disposal of refuse and sewage.

### **Environmental Sanitation Education in Promoting Sustainable Development**

The key to a healthy and beautiful environment is based on preventive measures rather than curative services. Environmental sanitation, therefore, must go beyond clean-up exercise. There is no doubt that the clean-up campaigns and sanitation edicts have succeeded to some extent in instilling the required sense of cleanliness among Nigerians. But Environmental Sanitation Education programme will serve to complement existing activities and strategies, such as seminars, yearly world Environment Day Celebrations, Saturday Environmental Clean-up Exercises, environmental exhibitions, competitions, workshops and even award of cash prizes to the best and cleanest schools or communities. These activities are necessary in order to effectively impart, sensitize and infuse in the citizens a sense of decency, discipline and responsibility towards the environment and in an effort to achieve a sustainable development (Anijah et al., 2013). Also, the authors opined that environmental sanitation education as a progressive policy cannot be disputed, for it is only when the majority of the people are physically and philosophical involved that sustained environmental ethics can be assured. To this end, Environmental Sanitation education should not only focus on basic hygiene, and keeping the surroundings clean, but also capacity building, campaigns against bad toilet habits, such as indiscriminate/open defecation and urination as well as inefficient disposal of waste. It must also in addition concern itself with the major problems of air and water pollution. The prevalence of communicable diseases as evidenced in the increasing number of cases of typhoid, malaria, cholera, dysentery, guinea worm infections throughout the country underscore the need to be well informed about the environment and health. The reasons for the introduction of Environmental Sanitation Education in Nigeria is very crucial to the survival of man, sustaining Developmental goals and economy, and it is a fundamental right of man to live in a clean and unpolluted environment that is worthy of his dignity and well-being. In order to ensure good sanitation, Uchegbu (2002) in Ikeke (2014) proposes the followings: In order to ensure effective waste management and basic sanitation in urban and rural areas in Nigeria, a separate department to be called environmental Safety Department need to be created whose responsibility to educate both the public and health or sanitary inspectors on how to dump wastes and the appropriate method to dispose them. Secondly, this department at local and State levels should always organize lectures, seminars and symposia for sanitary workers on how to ensure adequate safety while on duty. Have access to a weekly or monthly magazine entitled “You and Your Waste” which should be launched by the three tiers of government and interpreted in different languages in Nigeria. This will guide the public and sanitary workers on how to dump and collect or dispose waste respectively. While one might not necessarily agree with all the points raised by Uchegbu, it is important to note that basic environmental sanitation is important and necessary. There exist in Nigeria and its States, ministries of environment, and departments in charge of waste disposals and issues of public health. There are environmental sanitation laws and regulations in place, what needs be done is for government to continue to strengthen the departments and ministries responsible for environmental protection and public health, and a massive



environmental awareness and education aimed at sensitizing citizens to carry out their environmental responsibilities and thus contribute to human security and the wellbeing of the planet (Ikeke, 2014).

### **Capacity Building for Sustainable Development to Enhance Environmental Sanitation**

Capacity building is the improvement of institutional arrangements, and the strengthening of accountability mechanisms, as well as general educational activity. Capacity building is a process by which individuals, groups, institutions, organizations and societies enhance their abilities to identify and meet development challenges in a sustainable manner (Obasi & Oguche, 2016) World Commission on Environment and Development (WCED, 1987): averred that “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. Development is all about improving the well-being of people and sustainable development is fundamentally about reconciling and developing the environmental resources on which society depends.

Capacity building plays a critical role in addressing the challenges of sustainable environmental sanitation. The process involves strengthening the skills, knowledge, and resources of individuals, communities, and institutions to effectively plan, implement, and maintain sanitation initiatives. Also, it targets various stakeholders, including government agencies, non-governmental organizations (NGOs), community leaders, and sanitation workers, to ensure a well-structured and coordinated approach to sustainable environmental sanitation (Angel, 2024). The author further stated that Capacity building is fundamental to achieving sustainable sanitation practices that promote public health, environmental sustainability, and social equity. By empowering individuals, communities, and institutions with the knowledge, skills, and resources to address sanitation challenges effectively through community engagement, policy and institutional support, education and awareness, training and skills development, partnership building and policy support, the environment would improve and its challenges reduced.(Angel, 2024).

**Community Engagement and Participation:** Engaging communities in the planning, decision-making, and implementation of environmental sanitation projects is essential for ensuring their sustainability and effectiveness. These should prioritize participatory approaches that empower community members to identify their needs, priorities, and solutions, fostering a sense of ownership and responsibility for their environmental sanitation initiatives.

**Policy and Institutional Support:** Strengthening policy and institutional capacities is essential for creating an enabling environment for sustainable sanitation. It should advocate for the integration of sanitation priorities into national development plans, the allocation of adequate resources for sanitation programmes, and the establishment of regulatory mechanisms to ensure compliance with sanitation standards and guidelines.

**Education and Awareness:** Promoting hygiene education and raising awareness about the importance of sanitation are fundamental aspects of capacity building through providing relevant information about the health risks of poor sanitation practices and demonstrating the importance of adopting hygienic attitudes and practices.

**Training and Skill Development:** Providing training programmes and skill development opportunities for sanitation professionals, community health workers, and other stakeholders can enhance their capacity to design, implement, and manage sustainable sanitation projects. The training may include behaviour change communication, technical skills, project management, and monitoring and evaluation.



Partnership and Collaboration: Developing partnerships and fostering collaboration among government agencies, NGOs, private sector entities, academia, and community-based organizations private sector entities is vital for leveraging resources, expertise, and networks to support sustainable sanitation efforts. Collaborative approaches can facilitate knowledge sharing, innovation, and the scaling up of successful interventions (Angel, 2024).

### Conclusion

Environmental sanitation is the principles and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment. Environmental sanitation is important for human security and economic sustainability. The essential components of environmental sanitation include: solid waste management; medical waste management; excreta and sewage management; food sanitation; sanitary inspection of premises; market and abattoir sanitation; adequate potable water supply; school sanitation; pest and vector control; management of urban drainage, control of reared and stray animals; disposal of the dead (man and animals); weed and vegetation control; hygiene education and promotion. A polluted environment causes health problems for humans. A dirty environment can provide breeding ground for mosquitoes, germs, and other organisms that endanger health of the people and making them unproductive economically. Environmental sanitation education is needed at all levels and capacity building campaigns and programmes are of paramount importance to achieve a sustainable development and improve the economic standard of the nation. However, the authors recommended among others that government should provide adequate and modern facilities and equipment for effective environmental sanitation to improve the people living standard. More empirical studies should be conducted on the impact of environmental sanitation education on human health in Nigerian major cities, the government should emphasize more on organizing workshops, seminars and mass campaign to sensitize and educate people on effective ways to enhance environmental sanitation, and strategies for enhancing environmental sanitation education in a depressed economy should be reviewed and strengthen through: Integration of sanitation education into school curricula at all level, community-based education programs to enlighten the public on the need for free and healthy environment, and training of healthcare professionals and educators, for sustainable development and strengthen the economy.

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