

EFFECTS OF POOR ENVIRONMENTAL SANITATION IN NIGERIA

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ABSTRACT

Environmental sanitation is a way of improving the health of the community and individual through minimizing human contact with waste hazards. However, with population explosion and increase in developmental activities, waste management is becoming problematic. This situation is mounting serious health problems which could be prevented by improved hygiene practices and sanitation standards. This paper focused on the effects of poor environmental sanitation evidenced in water pollution and increased water related diseases. It also discussed how to improve sanitation standards and challenges of improving those standards. It was recommended among others that government at all levels should enforce strategies aimed at penalizing non-compliance with sanitation and rewards of efficient compliance.

Key Words: environment, sanitation, pollution, waste hygiene.

Introduction

Nigeria has been rated low in respect of global development indicators such as water resources, water supply and sanitation coverage, poverty and childhealth, life expectancy and quality of life (Federal Republic of Nigeria, 2007).

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Environmental sanitation according to United Nations International Children Emergency Fund (1991a), towards a better programming. A manual on hygiene promotion water and environmental sanitation. If the principle of hygiene conditions in the environment to promote public health and ensure sustainable development. It involves a range of interventions designed to improve the management of excreta, sludge, drainage and solid waste. 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 disease, 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.

Environmental Health

The terms Environmental health and

environmental sanitation are often used loosely to convey the same meaning.

In the past the term environmental sanitation was commonly used to mean the provision of portable water and sanitary disposal of human wastes, especially excreta. Nowadays, the term environmental health is more appropriate than the term environmental sanitation because the former is more embracing in scope and has wider meaning when used in the context of great complexity of present day human physical surrounding.

The term environmental health may therefore be defined as the provision and the control of all those factors in people's physical surrounding which can effect their health. The environment plays a predominant role in man's health. World Health Organization. (1974). Health aspects of environment pollution, control, planning and implementation of National programmes. Report of a WHO Experts committee Geneva.

Environmental Sanitation

This is the process of taming the environment so that it no longer constitute a hazard to man. WHO expert committee on environmental sanitation defined environmental sanitation as the control of all those factors in man's physical environment which exercise or may exercise deleterious effect on his physical development, health and survival.

Environmental sanitation deal with provision of adequate and safe water supply disposal of wastes, Safe – guarding of food. Provision of good housing, control of animal resources of infection, air hygiene and prevention of atmosphere pollution, elimination of other hazards, noise, radiation etc.

Effects of poor sanitation on the environment societal growth is evidenced by an increase in its economic and developmental activities which are marked by production and consumption patterns. These activities are heightened by improved standards of living and commercialization levels resulting in

increased waste generation (United National Economic and Social Council, 2006).

The failure to focus on the effects of poor environmental sanitation and its impact on the society has resulted to change in solid waste management as one of the compelling problems of urban environmental degradation, waste generation has been classified as municipal solid waste (including plastic waste), construction and demolition waste, hazard solid waste, bio-medical waste and electronic waste. The ability to properly manage waste generation in the society is tied to a sustainable economic development.

Water Pollution

Kinniburgh and Sweedley (1999) asserted that ground water may be contaminated by surface activities, underground storage tanks, septic systems, municipal landfills, agricultural activities and abandoned hazardous wastes. Water pollution means alternation in composition or condition such that it is unsuitable for its usage by humans. Ground water is

contaminated when the filtration is impaired by shallow water tables and soils with low permeability. In these conditions, the waste does not have enough soil to pass through adequate filtration.

A study was carried out by Kinniburgh and Sweedley (1999) to examine the wide spread problem of arsenic contamination of groundwater in Bangladesh, West Bengal and India: The results of the findings showed that there were about ten million private wells in Bangladesh alone and the number of contaminated wells was over a million. The survey involved collects sample from the homes of arsenic affected patients which gave a confirmation of the severity of the arsenic problem. Observations were also made of chronic arsenicosis. Brooks (1999) studied the problems of high levels of naturally occurring fluoride in drinking water. Their findings revealed that about sixty million people had a painful and crippled life from fluorosis, six million of these were children.

Bisi and Hogman (1998) studied the

deterioration of the quality of well water supply to a town where untreated tannery wastes were discharged on a nearby land. The results showed that the concentration of the total dissolved solids increased from 700mg/l before the discharge to 1900mg/l after the discharge and chlorides from 90mg/l to 820mg/l. The contamination effect was observed to a distance of 8km from the point of discharge.

Another study by Kinniburgh and Sweedley (1999) was carried out to assess the quality of groundwater in Ludhiana India, where most of the important textile mills were located; these industries dispose their untreated industrial effluents through drains into the nearby rivers. The results showed that the water quality of shallow tube wells was contaminated by these effluents while the deep wells unaffected. Some of the localities around had pollutants like cyanides, hexavalent chromium and undue loads of heavy metals.

In Nigeria, especially in Lagos, Kaduna and Kano, textile industries

daily discharged liters of untreated effluents as wastewater into open public drains that empty into a river. Ajayi and Osibanjo (1980) carried out a study on the pollution of surface of water by effluent streams. The result revealed that such rivers had high values of Ph, and were highly coloured and unsuitable for fishing and water supply; little or no attention has been given to it. According to Ajayi and Osibanjo (1980), in Lagos, more than 70% of the water supply used by the population and industries are groundwater in some cases, some of these ground waters are packaged directly after some forms of treatment in plastic bags and sold as drinking water (sachet or pure water) to the public.

Iwunze (2007) stated that the haphazard disposal of solid and liquid wastes and the eutrophication of fresh water bodies and contaminated fish catches are enormous: there is a linkage between nitrogen from sewage treatment plants and nitrous oxides in rivers and lakes. Sridhar and Oloruntunba (2005) wrote on the effects of drugs and drug metabolites,

hormones, antiseptics and disinfection wastes dumped into water sources for human consumption; these chemical substances evaporate into the atmosphere resulting to green houses effect and ozone layer depletion.

Environmental damage also leads to discouraged tourist trade, reduced foreign markets and revenue for fish production, increased cost of chemical and mechanical clean-up operations.

Health impacts of poor environmental sanitation

Poor sanitation and communicable disease are synonymous. A number of gastro intestinal health problems result from unsanitary conditions of the environment. According to UNICEF (1999b), study on knowledge attitude and environmental situation programme. New York. Stated that one gram of human faeces harbours about 10,000,000 viruses, 1,000,000 bacteria, 1000 parasite cysts and 100 parasite eggs. Many pathogenic organisms are transmitted through improper sanitation and poor hygiene practices. Some of these pathogens include: vibro-cholerae, eschechia

coli (e-coli), salmonelis, shigelia, polio-viruses, hepatitis A, Entamoeba, giardia, ancylostoma and ascards. These organisms cause wide range of intestinal disorders in humans.

Most hospital beds globally are occupied by patients plagued by one form of intestinal infections or the other. In the developing countries, more than 2.2 million people die annually due to diseases connected to poor water and sanitary conditions. UNICEF, (1999a), UNICEF (1999b), study on knowledge attitude and environmental situation programme. New York. Stated that diarrhoea and malaria which are water related account for and 17% and 8% mortality respectively of all under-five children. Other health conditions transmitted by water, person-to-person contact, food borne, droplet and aerosol routes are: Infectious diarrhoea, cholera, salmoneliasis, shigellosis, amoebiasis and other protozoal and viral intestinal infections. Diarrhoea in children results to malnutrition which in turn leads to stunted growth and mental retardation.

Several studies have been done to show

the relationship between poor sanitary conditions and the incidence of water borne diseases. In a study conducted by Omokhodion, Oyemade, Sridhar, Olasheya and Olawuyi (1998), data were collected on the diarrhoea risk factors in a large market in Ibadan and related it with knowledge, attitude and practice of the mothers who were traders in the market. The results reveled that poor sanitation and hygiene were the contributory factors. In Brazil during 1986, a study on the impact of improved water supply and excreta disposal facilities on diarrhoea diseases and intestinal parasitosis was carried out on 254 children aged 6 years. The estimated incidence of diarrhoea was 6.2. Episodes/child/year while the estimated period prevalence was up to 31.0 episodes/child/year.

Another study was carried out in the slums of North Jakarta where drainage and standing water are major problems. The finding revealed that occurrence of diarrhoea was 342 episodes per 1000 population. The peak incidence is during the raining season which affects infants from six to 12 months.

The findings revealed that about 43% of children between five years of age are infected with ascaris and trichuris or both. The prevalence of parasitosis was 70.7%, *Ascaris lumbricoides* 55.4%, *Trichuris*. *Trichuria* 19.6% and *Gardia lambia* 17.9%. school education and weaning practices were other determinants vital to diarrhoea (Gross, 1998). The impact of improvement supply and sanitation facilities on diarrhea and intestinal parasites.

McGill School of Agriculture (2007), reported seasonal outbreaks of cholera, scabies, malaria and boils. In the United States of America, the number of water borne outbreaks and cases per outbreak has been on the increase since 1940 and inadequate disinfection or non-treatment of water supply were implicated (Hunter, 1997). According to Esrey (1998), the Coliform counts in major Rivers in Europe and South America have been on a steady increase. In rural Bangladesh, women have more urinary and vaginal infections due to use of dirty water during menstrual flow.

Effects of Poor Sanitation on Urban Agriculture

Urban Agriculture is a method of growing food and vegetables wherever there is a drain or stream and this is becoming popular. In most urban areas, it is the source of vegetable for the urban population especially during the dry season. However, these vegetable are prone to contamination by domestic wastes, human excreta and untreated industrial effluence (Sridhar, 1995; you, your health and the environment, a chapter in Nigeria's endangered environment, Adeipe, 2005). Development Strategy/action plan implementation Guidelines for the National Water Supply and Sanitation Policy According to Karen, Lock and Henk dew (2007), said that urban agriculture is a method of growing food and vegetable. Health risks associated with urban agriculture could be contamination of crop and drinking water contamination by agrochemicals. Others include transmission of disease from domestic animals to people (Zoonosis), human disease related to unsanitary post harvest, processing, marketing and preparation.

Socio-economic Impact of Poor Environmental Sanitation

Most children miss school because they are busy fetching water or are sick from water related diseases. According to Gender and Water Alliance (2006), some girls who are at the age of menarche are often reluctant to stay in school when there is no privacy in toilet and washing facilities. The alliance observed that of more than 120 million school aged children who do not go to school, 35% are from sub-Saharan Africa. Poor hygiene, sanitation and water increase poverty by causing a reduction in productivity and increasing health care costs.

Improving Environmental Sanitation

In order to reduce the effects of poor environmental sanitation, certain measures have to be in place and improved upon. Esrey (1991) and Huttly (1997) opined that hygiene behaviour risks include excreta disposal, use and maintenance of toilets, lack of hand washing with soap or its alternative, unhygienic collection and storage of water and unhygienic preparation and storage of

food. Esrey and Huttly (1997) further reported that several studies in different parts of the world in day care centres and in communities indicated that frequent hand washing, with or without soap, results in lesser incidence of diarrhea. The studies collectively reported a 33% reduction in diarrhoea from hand washing alone. Another study in Karachi, Pakistan reported that under-five children who practiced an improved hand washing with soap had a 50% lower incidence of pneumonia than children in the control areas (United Nations Economic and Social Council, 2006). Having access to safe water and sanitary facilities as well as better hygiene practices can reduce morbidity rates of water related diseases (UNICEF, 1999a: United Nations Economic and Social Council, 2006). Improvements in drinking water quality through household water treatment can reduce diarrhoea episodes. They added that hygiene promotion as a strategy should entail a dialogue with communities about hygiene and related health problems. They should be educated on proper hand washing

with soap, latrine management and disposal of dead bodies disposal.

Challenges in Improving Environmental Sanitation standards

Most African countries are poor in meeting the standards of environmental sanitation. In Sub-Saharan countries including Nigeria, estimate of one in two people have no access to improving environmental sanitation (Marshal, 2004). According to him, Nigeria and the Democratic Republic of Congo have most of the region's water and environmental sanitation deprived people. Generally, he added that there is chronic water shortage in developing countries.

Adedipo (2000), Development Strategy/action plan Implementation Guidelines for the National Water Supply and Sanitation Policy. Stated that the cost of sanitation is high; water-related to sanitation requires huge supplies of fresh water to transport human wastes to another location. The purchase of this water may not be affordable to many. Most cultural practices do not permit

improved sanitation. Many remote areas do not accept having toilets inside their houses; the place of the toilets is in the bush or cleared open lands.

Due to population explosion, the minimum toilet requirements per individuals will not be actualized. The National Environmental Sanitation Policy, Nigeria (2005), stipulated the following guidelines for toilet usage:

| | | | | |
|----|---|--------------|---|---|
| 1 | - | 10 persons | : | 1 toilet |
| 11 | - | 20 persons | : | 2 toilets |
| 21 | - | 40 persons | : | 3 toilets |
| 41 | - | 75 persons | : | 4 toilets |
| 75 | - | 100 persons | : | 5 toilets |
| | | 100 persons: | | 1 toilet to every additional 30 persons |

Conclusion

Based on the foregoing, it is hereby concluded that the effect of poor environmental sanitation is related to poor health practices like flooding the streets with plastic bags, cans, and other domestic wastes. These habits without doubt impose serious health hazards: lives are lost due to increased sanitation related diseases. This condition which is man-made is preventable through worthwhile

healthful practices, leading to a substantial economic development.

Recommendations

Due to health and economic consequences of poor environmental sanitation, the author suggests, firstly, that health education should be intensified especially in the rural communities and schools on the importance of improved hygiene practices like adequate hand washing with soap. Secondly, more specialized trucks should be provided for transporting solid wastes from dumping sites and dumping sites should be tarred to reduce contamination of ground water by effluents from the refuse.

Thirdly, Federal, State and Local Governments should enforce strategies aimed at penalizing non-compliance with environmental sanitation standards and rewards of efficient compliance.

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