

HAZARDOUS ENVIRONMENT AND POPULATION HEALTH CONSERVATION: THE NEED FOR SAFETY AND QUALITY MANAGEMENT

ACHAMA GODWIN IKECHUKWU

Department of Business Administration and Management, Imo State Polytechnic, Umuagwo

ABSTRACT

Environmental hazards are numerous and constitute a threat to human health. And since healthy living is only possible where resources are available to meet human needs, it is only but necessary that the living and working environment is protected from life threatening and health-threatening pollutants, pathogens, and physical hazards. This paper discussed the hazardous environment and population health conservation requirements needed for safety and quality management for sustainable development. Its focus was specifically geared towards determining respectively the traditional and modern hazards associated with lack of development, conservation of human health and un-sustainability of the environment and life's supporting systems therein. Review of pertinent literature was done, and the paper revealed that health challenges calls for concerted efforts to ensure safety and quality management policies necessary to reduce the risks of hazardous environment. The study recommended among others, that government should enforce daily hygienic operations and monitoring through existing agencies for laboratory analysis and quality control which should be regulated by law to ensure standard for environmental quality and safety.

Keywords: *Hazardous environment, population conservation, sustainability, safety, quality management.*

INTRODUCTION

The environment refers to all conditions, circumstances, and influences surrounding and affecting the development and behaviors of persons and groups, with particular consideration of mutuality of persons and earth resources (Roy, 2011). Environmental threats to human health are numerous, however, only the “traditional hazard” that is, (those that are associated with lack of development) and “modern hazards” (those associated with inadequate conservation and un-sustainability are being considered in this paper). According World Bank (2001), traditional hazard which are related to poverty and insufficient development include lack of access to safe drinking water, inadequate basic sanitation in the household and the community. In-door air pollution from cooking and heating using coal or biomass fuel, and inadequate solid waste disposal. On the other hand, modern hazard are related to development that lacks health and environmental safeguards, and unsustainable consumption of natural resources. They include water pollution from polluted areas, industries and intensive agriculture, urban air pollution from

vehicle, coal and industry, climate change, stratospheric ozone depletion and trans-boundary pollution.

According to Achama et al (2012), in the exercise of the free-will endowed man by God, man allowed himself to be pre-occupied only with the mentality of exploitation and consumerism to the extent of depleting and polluting the natural qualities embedded in his environment without giving thought to the consequences of his laxity and unguarded passion for environment exploitation and degradation. It is only recently, when he stretched his avarice for exploitation beyond bounds that he began to realize his folly. It became clear to mankind that his health if not his very existence, stands threatened unless he makes a deliberate efforts to protect his environment. Human health is a vital cross-sectional issue and is dependent on the continued availability of environmental resources and on the integrity of the environment. This explains

why Pruss-Ustrun and Corralan (2006) estimate that environmental risk factor currently play a role in more than 80 percent of the major diseases and injuries affecting the populations health. In the recent past years, international initiatives have drawn more attention to global environmental issue and the importance of conservation and sustainability on population. This included the earth's summit in Rio de Janeiro (United Nations Conference on Environment and Development, 1982) and the Kyoto protocol agreement (United Nations Framework Convention on Climate change, 1997).

Population Health and Conservation

The integration of environmental issues into population health framework and its conservation, is now widely accepted and can be seen in Dahlgren and Whitehead's rainbow model of the social determinants of health (Dahlgren and Whitehead's, 2007). In this model, environmental conditions interact with the socioeconomic and cultural context, with working and living conditions, and influence population health. Other authors have stated that sustainable population health depends on the viability of the planet's life - Support Systems (McMichael et al, 2003), and investments in environmental sustainability policies are necessary to reduce poverty and inequalities (Sachs and Reid, 2006): Furthermore, in the millennium Development Goal (MDG) strategy, environmental sustainability directly influences other MDG strategy such as the eradication of hunger, the reduction in infant mortality, the improvement of maternal health and the fight against infectious diseases (Menick et al, 2005; McMichael and Buther 2006; Anyanwu et al, 2006; Pruss et al, 2002; Varis, 2007). Given the effect of climactic change, environmental sustainability is currently a priority in the agenda of many governments in developed countries. Nevertheless, it is the developing countries who face the greatest challenges in achieving the environmental development goals and predictive models presented in some papers show the situation worsening in the forth coming decades (Salin and Stifel, 2003; Chakray Varty and Majumder, 2008, Agenor et al, 2006). An annual report made by the United Nations which monitors the progress of the MDG (United Nations 2000a,b) shows that the situation of the

MDG 7 (which aims at ensuring environmental sustainability and conservation of population health) is not very promising especially for countries with greater socioeconomic problems (United Nation 2009); the number of people who continue to use solid fuel in developing countries is increasing, the forest mass is still decreasing at a rate of about 13 million hectares per year, and although the percentage of people without access to drinking water and basic sanitation facilities is falling, it does so, too slowly, especially in the poorest countries.

Furthermore, although the number of people living in slum conditions is declining (United Nations, 2009), the rapid expansion of towns and the mass exodus towards urban and peri-urban areas are causing an increase in the number of settlements without basic sanitization and health conditions (Satterthwaite, 2003; Varis, 2006) [Ensuring environmental sustainability is the aim of the Seventh Millennium Development Goal (MDG 7), and includes target 9 which refers to integrate sustainability development and conservation of population health into the policies and reverse the loss of environmental resources, target 10, refers to halve the proportion of population without access to safe-water and basic sanitization and target 11 refers to improve living conditions of slums dwellers].

Hazardous Environmental Population Threats to Health and Safety:

According to Ogwuche (2013), everywhere in the world, the environment is changing as a result of pollution and loss of natural resources. All around us, the deleterious effect on health arising from environmental degradation can be felt and seen. It has become clear that mankind, its health and safety stand threatened, unless he makes deliberate managerial efforts to protect his environment and the public health, which as a matter of fact remain the fundamental objective of environmental policies. This requires efforts and actions on the part of individuals, government and agencies at all levels, so as to achieve sustainable development where human health, human well-being and the integrity of the environment are assured. WHO (1996) opines that environmental factors are significant determinants of health and illness, especially in the third world countries. Health according to WHO (1992) is a state of complete physical, natural and social well-being, and not merely the absence of disease or infirmity. Health therefore is only possible where resources are available to meet human needs, and where the living and working environment is protected from life threatening and health threatening pollutants, pathogens and physical hazards. Health also includes a sense of well-being and security. Deficient living and working environments are associated with both physical and psychological health problems. Violence and alienation are also associated with overcrowded poor quality housing, deficient services and inadequate provisions of leisure and reactions (WHO, 1992). Depression is a common mental disorder and affects more than 350 million people world wide (WHO, 2012a). It is characterized by sadness, loss of interest or pleasure, and poor concentration. WHO (2012a) went further to say that while 14 percent of the global burden of disease is attributed to these disorders, and most of the people affected (75 percent in many low income countries) do not have access to the treatment they need. Health outcomes that are result of environmental

condition are classified under the category of environmental health. Environmental health, according to World Bank (2001), refers to those aspects of human health, including quality of life, that are determined by physical, biological, social and psychological factors in the environment. The growing understanding of this link has led to the concept of health-promoting environment where, not only are health risks minimized but personal and community fulfillment, self-esteem, and security is encouraged.

One can look at environmental health problems from the view point of the burden of death, disease and disability, and analyze the relative importance of the different environmental factors. The burden of disease on a per capital basis is about 100 times higher in the less developed countries than in the developed countries (WHO, 1995), due mainly to contribution of environmental factors of poor housing and living conditions, poor sanitization, lack of access to clean water, and safe food. Also inequalities based on wealth and location, together with flawed policies, mean that poor people pay the most and travel the furthest for environmental infrastructure (WHO, 2011). However, achieving even the basic minimum standard of access to say, water (20 liters per persons per day of safe water from an improved source which can be maintained if the source is within 30 minutes round trips from the home) remains a huge challenge (WHO, 2011). This means that availability of good environmental infrastructure close to the home has numerous benefits, especially in terms of human health with subsequent linkages to all other dimensions of lively-hoods. Such gains in human health have an intrinsic value in terms of quality of life as a developmental end, and as a means to higher economic productivity. The environment also plays a particular important role in determining the distribution of vector-borne disease. In addition to water and temperature, other factors such as humidity, vegetation, density, patterns of agriculture and housing may be critical to the survival of the different species of diseases – carrying vectors. Such diseases, according to UNCED (1992), include acute respiratory infections, diarrhea diseases, infectious diseases, malaria and other topical vector-borne diseases, allergies, reproductive health problems etc. According to NPC & ICT Macro. (2009), air, water and soil pollution, poor housing, and poor sanitary conditions are major environmental factors associated with malaria, pneumonia and diarrhea. Only 55.8% of Nigerians have access to improved drinking water sources, and 31.2% to improved sanitary facilities such as sewer connections, septic system connections, pour-flush latrines, ventilated improved pit latrines with a slab or covered pit. Studies show that respiratory conditions including pneumonia as asthma are higher among children carried on their mothers back while cooking with coal and biomass such as wood, charcoal animal dung, crop wastes (Chanhan and Johnston, 2003; Von Schirvnding et al, 2002). Only a few of affected children get appropriate care for pneumonia and diarrhea (UNICEF, 2011). Authors maintained that exposure to air pollution in pregnancy was related to prenatal mortality and low birth weight (Rehifunness et al, 2006). The use of coal and biomass has been consistently implicated in low birth weights, still births and neonatal deaths, especially in the first week of life (Von Schirnding et al, 2002). Ritz

and Yu (1999), found out over a decade ago, that exposure to high levels of carbon monoxide in the last trimester was associated with high risk for low birth weight. Today the level of air pollution is probably higher, with increased green house gasses, climate change and global warming. There are increased vehicular movements, use of household power generating sets by individuals and small scale industrialist, illegal mining activities as in the case of over seventy children killed in Northern Nigeria during the lead poisoning crises of 2009/2010, and unhealthy farming and cooking practices. Salem et al (2004) reported strong association between early-life asthma and exposure to wood/oil smoke, soot or exhaust, pesticide, herbicide, farm environment in the first year, and with early day care attendances in the first-four months of life. Climate change, oil-related air and water pollution (Amnesty International, 2009), environmental degradation and depletion of natural resources (Denton, 2002), have been associated with damage to means of livelihood of women who depend on the ecosystem for survival, worsening their impoverished status, and increasing risk of poor maternal outcome (Denton, 2002). All of these diseases are most serious in the poorest countries and those living in the most difficult and impoverished environmental conditions (WHO, 2007).

Environmental Quality and Safety

In view of its importance to health; according to Achama et al (2012), it is logical to expect that the control of safety and quality environment should be accorded primary importance in the health delivery policy of any state. It is in the realization of this fact that the world organization (WHO, 1992) accords the environment, hygiene and sanitization a primary health care status. Accordingly, in the developed countries environmental safety is strictly regulated by law, which require daily hygienic operations and monitoring for laboratory analysis and quality control. Nigeria as a former British colony had a similar policy. The then Government chemist in the Ministry of Health was vested with the authority to regulate the safety of water and the environment. Environment of major cities – Lagos, Ibadan, Kaduna, Enugu, Port-Harcourt etc. were disinfected by health officials (the Town Council) to get rid of mosquitoes and other dangerous pollutants of the environment including Ebola virus that is presently threatening environmental health and safety in Africa. Daily samples of various items including water, food etc. were taken for analyses, and the results together with necessary instructions promptly communicated to respective authorities. Occasionally, members of the public were also advised on ways of handling waste, water and food items against contamination and environmental pollution. Even the rural areas were not left out as special schemes were devised to meet their needs. In the fifties and sixties, our traditional environment was clean and green. This tradition was copied and implemented during the governance of late chief Samuel Onunaka Mbakwe in Imo State. In those days all surroundings and pathways were regularly swept and maintained. The colonial masters had high premium placed on environmental sanitation at both the community and household levels. It was mandatory for each house to own a refuse bin of its own while a regular system of refuse collection was maintained. A group of sanitary inspectors also

monitored to ensure compliance, while defaulters were prosecuted to serve as deterrent to others. It is sad to observe that fifty years after independence, this laudable policy has virtually lapsed. Today, the only national law on environmental safety as far as we know is the National Agency for food and Drug Administration and Control (NAFDAC), decree 15 of 1993 which among others are limited to deal with cosmetics, chemicals, bottled and sachet water, food and drugs only. The vast majority of the Nigerian environment, including land, air, water, river and other component of our environment remains largely unregulated. In virtually all states with exception of Lagos state, the State Ministry of environment which is saddled with the responsibility of policy administration and control, are also the authorities that execute and pronounce judgment on environmental waste and safety related jobs. (Alifa 2004). In other words, there is no visible private participation in environmental safety, monitoring, environmental and quality audit in any part of Nigeria. The present state of affairs, therefore, pre-supposes that in Nigeria today, environmental safety and sanitization is not yet a tool for promoting health. Indeed, it may be true to some extent, to say for now at least, that it is a veritable instrument for propagating diseases. This situation clearly constitutes a serious flaw in the health delivery programme of Nigeria and it is reasonable to infer that our frequent but seemingly ineffective battle against such epidemic as malaria, cholera and typhoid can be traced to this lapse. It is also possible that the increasing occurrence in this country of strange diseases like Ebola virus disease and sudden unaccounted death could also originate from increasing polluted breath, contaminated bodies of man and animals and ingestion of contaminants from polluted environment through variety of sources. There is no gainsaying the fact that environmental quality is an important direct and indirect determinant of human health. Deteriorating environmental conditions are major contributory factors to poor health and poor quality of life, and hindrance to sustainable environment. The problem facing the health sector today are increasingly complex and multi disciplinary in nature. The health sector cannot address these problems on its own. New and innovative approaches are needed to integrate and operationalize the concept of environmental sustainability, which incorporates economic, social and political dimensions. Wide-ranging reforms are also needed to more adequately deal with assessment and management of environmental health risks within a framework of sustainable development. In the analysis of the approximate environmental contribution of health conditions, a long-term sustainable prevention rather than curative measures is advocated. For example, Africa and Asia, including China, are most affected by environmental health-related diseases, as 24 percent of all deaths can be prevented through interventions (Pruss, Ustin and Corvalan, 2006). Effective and sustainable prevention or significant mitigation of environmental health risks requires, first, environmental preventive action through environmental management. Reducing modern risks call for sound environmental management through pollution control and abatement measures, which in turn require setting and enforcing environmental standards, developing a culture of environmental compliance and creating effective incentives. As a device to promoting environmental quality and safety all hands should be at work to reduce obstacles and barriers that hinders the

achievement of environmental quality and safety. Donat Castello, et al (2009) identified socio-economic inequalities, lack of proper infrastructures and deficient management, lack of political will at the local level, and contamination of the sources assigned to provide water to the population as the main barriers which hinder the progress and achievement of environmental sustainability. This information is relevant in terms of political action, especially at the local and national level, and helps to build new policies to avoid obstacles of its achievement. Fotso et al (2007), also analyzed how urban growth, access to drinking water and vaccination coverage affect progress towards MDG 4 (reduction of child mortality) in Sub-Saharan Africa. Patma-Solis et al (2009a,d) analyzed policy determinants of the MDGI (hunger and poverty), identifying government consumption as a barrier to achieving MDGI. Furthermore, Houwelling et al (2007) propose research to demonstrate how socio-economic inequalities in maternity care affect Goal 5 (reduction in Maternal Mortality). According to the World Bank (2006) health promotion and communication strategies have made significant impact on maternal, newborn and child-health at provider and consumer levels. To reduce maternal, Newborn and child mortality rates successfully in Nigeria, related behavioral patterns among health workers and providers of care, the women, the men and the entire community must be reviewed and attended to (FMOH, 2005b; FMOH et al, 2005). Over the years, several studies across developed and developing regions of the world have shown that health workers lack required fundamental Interpersonal Communication and Counseling (IPCC) skills to communicate appropriate and correct messages that could facilitate behaviour change by consumers, and therefore should be trained (Casey 2007; de Negri et al, 2005; Hoving et al, 2010; Rowan, 2008; Senarath et al; 2006; Waisbord and Larson, 2005; WHO, 2008). Primary level provider of maternal, Newborn, and Child Health (MNCH) care services (WHO; 2008) therefore, have unique roles to play in promoting environmental safety behaviour that support maternal and child health, that could lead to reductions in the morbidity and mortality rates.

Environmental Management for Sustainable Conservation of Population Health

According to Ogwuche (2013), Environmental management provides a sustainable and supportive environment for health, which is free from major health hazards, satisfies the basic needs of health living, and facilitates equitable social interaction. Environmental management does not mean management of the environment, but is the intelligent management of activities itself and with full consideration of ecological factors. It is a requirement of health where the global cycles and systems on which all life depends are sustained through environmental management. According to WHO (2006), sound environment management brings health benefits and is essential to a sustainable interaction between people and their environment, in a world where finite resources are being depleted and the capacity of natural cycles and systems to absorb wastes are being exceeded. Human health therefore depends on society's capacity to manage the interaction of human activities and the physical, social, psychological and biological environment in ways that safeguard and promote health but do not threaten the integrity of the

natural systems on which the environment depends. This is the heart of environmental management and sustainable development. Interventions such as draining marshland within or close to settlements in malarious areas can greatly reduce the incidence of malaria by removing mosquitoes breeding sites (Ceccato, Connor, Jeanne and Thompson, 2005). Other physical environmental remedial measures include improved water and sanitation, house hold energy, housing, vector disease control, and pollution management. For instance, Health in Housing (HIH), a World Health Organizations collaborating programme for research, is an approach based on helping families to learn how to improve their health while upgrading their housing and physical environment (WHO, 1996). UNICED (1992), identifies positive forces that can mediate mental disorders and social pathologies. They include policies, legislation, educational and preventive intervention programmes, environmental action programmes, community self help programmes, urban renewal programmes, etc. Enger and Smith (2004), advocates individual environmental ethics, noting that if we are to respond successfully, our environmental ethics must express itself in broader fundamental ways. Ogbonnaya et al (2012). Opines that the urgency of environmental issue demands all hands on the deck. In the same vein, integrating activities for conservation and development through people's participation and collaboration among different institutional and social actors is being increasingly recognized as the most promising approach to sustainable natural resource management (Warren, 1998). Government involves a range of organization including government, civic society and private sector (Whitelaw et al, 2006). Rather than confine public participation to the purpose of Environmental Impact Assessment (EIA) of projects proposed or on-going, it is required that a holistic, effective, efficient and integrated public participation be adopted as an environmental management practice for developing nations, including Nigeria. Poor public awareness, concern and commitment to environmental issues counteracts sustainable development endangering the future of the people, the environment and ecosystem. The attitude whereby environmental concerns are easily foregone in the scale of preference of land use for other economic benefits demands change. A situation where peoples' own benefit overrides the environmental behaviour and environmental friendly attitude as just an "idea" encourages a care-free attitude of natural resources exploitation and consequently exacerbates environmental degradation (Tuohino, 2002).

CONCLUSION AND RECOMMENDATION

There is no doubt that our environment is heavily polluted with various types of pollutants and there is urgent need for population control. The practice of government assuming sole responsibility for providing wholesome environment often backed up by the notions that environmental issues must always only be addressed financially, has failed to sustainably conserve the important components of the environment. An inter-sectoral approach is the most effective means of formulating environmental health policy hence it can help ensure that priorities are coherent and not conflicting with those of individual sectors. Also, a joint

programme involving ministries of health, environment and others would enable much more to be achieved in environment and health issues. Finally, this paper recommends that:

- (i) Governments should enforce daily hygienic operations and monitoring through existing agencies for laboratory analyses and quality control which should be regulated by law to ensure standards for environmental quality and safety.
- (ii) That integrating activities for conservation and development through peoples participation and collaboration among different institutional and social actors should be recognized as one of most promising approach to sustainable resources management.
- (iii) That sustainable campaign strategies should be maintained to reduce poor public awareness and stimulate concern and commitment to developing a culture of environmental compliance geared towards reducing environmental factors which counteracts sustainable development that endanger public health, the environment and the ecosystem.
- (iv) That new and innovative approaches and wide-ranging reforms are needed to integrate and operationalize the concept of sustainability and more adequately deal with assessment and management of environmental health risks within the framework of sustainable development.
- (v) That Government and its agencies, public and private sectors should review and attend to behavioural patterns among health workers, the providers of care, the women, the men and the entire community in terms of human resource training and development. These should be geared towards improving skills for motivating others through modeling that can change the behaviour of mothers for favourable maternal health, child health outcomes, and interpersonal communication skills in promoting environmental safety behaviours.

REFERENCES

- Achama et al (2012), Environmental Pollution and public health. International Journal of Research and Advancement in environmental science. vol.2 No1 Pp. 154-162.
- Akin-Otiko B.O (2013), Environmental challenges of Millennium Development Goals (MDGs) 4,5 and 6: The roles of midwives in Nigeria. Academic Journals, vol 8 (38) Pp 1829-1836.
- Carman. R (2003), Air Pollution Primer, American lung Association, New York.
- Ceccato P, Cennor SJ, Heanne Mc (2005), Application of GIS and Remote sensing Technologies for assessing and monitoring Malaria risk, Parasitologies 47, Pp. 81-98.
- Dahlgreen, G, Whitehead, M. (2007), European strategies for tackling social inequalities in health; leveling up, WHO regional office for Europe. Available from <http://Euro.who.int/document/e89384.pdf>.
- Denton F. (2002), climate change vulnerability, impacts and adaptation: why does gender matter/ Gender Dev. 10(2) 10-20.

- Donat Castello, L, et al (2009)., The environmental Millennium Development Goal: progress and barriers to its achievement. *Environmental science and Policy* vol. 770 Pp 001-10.
- Ekundayo J.A (1999), Environmental consequences of the pollution of the Lagos Lagoon. *Bulletin of the science of Nigeria*. Vol. 3 No2.
- Ogwuche J. (2013), Environmental Management: Its health implications, *Herald Journal of Geography and Regional planning* vol. 2 (1), Pp 043-047.
- Pruss-Ustrum A, Corvalan C. (2006). Preventing diseases through healthy environments: towards an estimate of the environmental burden of disease. Geneva, World Health Organization.
- Roy. C. (2011). Roy adaptation model in nursing theories: A framework for professional practice. Jenes & Barnett Learning, LLC chapter 10 Pp. 127-142
<http://samples.jbpub.com/9781449626013/72376Ch10>.
- Salam M.T, L. Y-F, Langhoiz B, Gilliland F.D (2004), Early-life Environmental Risk factors for Asthma: Findings from the children's Healthy study, *Environ. Health Perspective*, 112 (6): 760-765.
- WHO (1995), *The healthy route to a sustainable world: Health environment and sustainable development*, Geneva.
- WHO/UNICEF (2010), *Progress in sanitation and drinking water, 2010 update. Report of the WHO/ UNICEF joint monitoring programme*/Geneva/New York; WHO/UNICEF.
- World Bank (2011), *Health and Environment, Environment strategy paper No 1* Washinto D.C.