

FACTORS DETERMINING ENVIRONMENTAL HEALTH IN KENYA

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Abstract: It is paramount to note the impact of environmental pollution to human beings. The key intention is to identify the causes of these diseases and create prevention schemes that would incorporate diminishing exposure to environmental pollution. In this article, a detailed overview and analysis of the different types of environmental pollution is highlighted in order to provide some clarification. These factors will be analysed from a global perspective in a way of relating our topic to the rest of the world. The African perspective allows us to depict commonalities on issues such as health promotions programs and community education. Scaling down, the analysis of environmental issues to Kenya provides a specific context given its rich biodiversity and variety of ecosystems.

Keywords: Environmental health, Environment, Health, urban growth, social determinant.

1. INTRODUCTION

The developing states have been termed by various scholars as a hub of diseases and conflict. In this region, approximately 5 children do succumb to water born and airborne diseases related to exposure to solid fuels and indoor smoke. In addition, there has been consistent increase in monthly reports, that links approximately 3000 deaths to road accidents in this region. Another 19000 death victims are experienced every month due to unintentional poisonings which is usually related to exposure to poisonous substances (pesticides and chemicals) in their home environment or workplace. Therefore, the environmental hazards and associated ailments are closely linked to millions of deaths at international platform every year. Though, the victims of environmental hazard share a common challenge, their fate is delinked from the decision formulators or modern policy agenda. In this context Environment viewed as a broad term representing the totality of the surrounding such as animals, plants, microorganisms, cultural and socio-economic factors. It also includes the physical factors such as atmosphere, water, land, taste, smell, sound, the biological factors of animals and plants and the social factors of aesthetics and includes both the natural and the built environment that surround human beings.

This study identifies that a large percentage of environmental ailments burden in Kenya as attributable to several limited risks: dirty water and sanitation, indoor smoke emanating from solid fuels, vector-borne diseases, toxic hazards, global environmental transformation, and unsustainable development patterns that contribute to traffic injury, global environmental transformation, air pollution, as well as other environmental degradation elements. In relation to population influx, the developing economies incur the economic expenses in lost productivity, resource depletion, long term social growth and carry the health sectors burden. The consistency in existence and re-emergence of these realities in Kenya is partly promoted by urbanization and poor laying down of social amenities in rural areas to enhance societal well-being

The significance of this article is knowing more about what causes these diseases and how they manifest will help us prevent or minimize exposure as well as identify pollution episodes and potential associated health diseases early.

Background

According to the 144th session of the World Health Organization Executive Board (2018), environmental hazards is considered to cause the deaths and diseases of about one quarter of the population globally, this amount to at least 13 million deaths each year. A healthy environment is crucial for human health and development. For instance, air pollution,

which is considered one of the largest risks to health, can alone cause seven million preventable deaths annually. This is as a result of having 90% of people inhaling polluted air and another 3,000 million depending on polluting fuels like kerosene for light, heat and cooking. More than half the world's population is still exposed to inadequate sanitation, unsafely managed water, and poor hygiene, which results to more than 800,000 preventable deaths each year. Diseases such as malaria are closely linked to the mismanagement of the environment, such as designing of dams and poor drainage systems. A large fraction of malaria cases and other vector-borne diseases is closely linked to the management and manipulation of the environment, such as drainage, irrigation schemes, or design of dams. More than one million workers die each year because their workplace is unsafe, and more than one million people die from exposure to chemicals.

Climate change increasingly affects people's health and well-being, as do other global environmental changes such as loss of biodiversity. It is increasing the occurrence of heat waves, droughts, extreme rainfall and severe cyclones in many areas, and modifying the transmission of food-borne, water-borne and zoonotic infectious diseases, resulting in large impacts on health.

In Africa, there is the lack of access to safe drinking water, proper sanitation and hygiene; such factors have contributed to deaths and diseases. For instance, in 2002, the deaths of 2.4 million people were as a result of environmental risks factors

In the World Health Organization (WHO) African Region, long-standing risk factors such as lack of access to safe drinking-water, air pollution (indoor and outdoor), lack of food hygiene, poor sanitation, inadequate waste disposal, absent or unsafe disease vector control, exposure to chemicals and injuries have not yet been addressed. In addition, Africa faces emerging environmental challenges to public health, all in the context of strained public health systems. These emerging challenges include climate change and other issues such as persistent organic pollutants, electronic waste, radiation and new occupational risks. Over the past two decades, policy, legislation and regulatory frameworks that address environment-health linkages have been developed. Rapid changes in lifestyles, increasing urbanization, production and energy consumption, climatic change and pressures on ecosystems result in greater negative impacts on public health and consequently increased health costs in Africa.

Throughout the region of Africa, the health promotion programs and community education for basic hygiene and sanitation are yet to achieve the desired goal. The uncontrolled poverty promotes risk-associated behaviour and attitudes by individuals regarding environmental health. More to that, there's poor communication on the knowledge generated on health and environment linkages to policymakers. The lack of awareness of existing cost-effective interventions, in conjunction with competing policy priorities as well as ineffectively built and inadequately distributed health and environment services, together hamper the achievement of related Millennium Development Goals (MDGs).

Closer home, Kenya is blessed with mega biodiversity and enjoys a unique tropical climate with varying weather patterns due to differing topographical dimensions. The country has a wide variety of ecosystems namely mountains, forests, arid and semi-arid areas (ASALs), freshwater, wetlands, coastal and marine all offering many opportunities for sustainable human, social and economic development. These ecosystems are natural capitals which provide important regulatory services (such as forests and mountains serving to regulate water flow, sustain biodiversity), provision services (such as forests providing timber and fuel wood), cultural services (such as aesthetic, recreational or spiritual values and uses) and supporting services (such as soil formation, nutrient cycling and primary production).

As good as it may sound, Kenya is not foreign to environmental hazards/risks. Communities in Kenya are highly dependent on natural resources, such as land for settling and cultivation, firewood and charcoal to be used for cooking among other things. With the rapid growing population, land areas have been cleared to meet this demand, thus it has led to more trees being cut down impacting negatively on water catchment areas. Therefore, the country's deforestation activities have contributed to environmental degradation that leads to reduction of the amount of precipitation and exposes the soil to direct sun light and rain resulting to lose soil being swept by run-off rainwater. This has caused serious soil erosion in many parts of the country as well as contamination and destruction of water sources. In turn, soil erosion has reduced the country's capacity to produce food, thereby leading to frequent famines and conflicts.

According to the Kenya Environmental Sanitation and Hygiene Policy (KESHP) 2016-2030, urbanization is occurring at a rapid rate and by 2030 more than 60 percent of Kenyans will be living in cities and towns. Kenya's Vision 2030 also identify that the future development anticipated in the country is likely to affect pollution levels and generate larger quantities of solid waste than at present. The anticipated growth in manufacturing sector is likely to give rise to an increase in effluents discharged, which requires effective disposal management.

The survival and socio-economic wellbeing of Kenyans is ultimately intertwined with the environment. Most Kenyan citizens depend directly or indirectly on environmental goods and services in their day to day activities. The multifaceted nature in Kenya's environmental resources forms a major platform for transforming directly and indirectly the local and national economy through revenue generation and wealth creation, in productive sectors such as agriculture, fisheries, livestock, water, energy, forestry, trade, tourism and industry.

Problem Statement

Environmental hazard has been transforming drastically over decades to reach alarming levels that has caused international actors to equate it with other policy priorities in economic, political, as well as humanitarian crises. Some of these crises are closely related to long abandoned environmental challenges, such as epidemics, famine and drought, and floods in a region.

This led to the international community developing agreement that put more emphasis on the need to enhance co-ordination and coherence of work at country level with intention of boosting the health, environment, economic development and reduce poverty rates in the world. As a result, demand-driven global agenda rather than supply-oriented solutions were crafted to translate evidence that can be used as information to enhance environment and health.

The governments routine tasks are mostly informed by the health ministry's priorities that mostly focuses on health care policies and services, an approach that may under focus on the broader issues on development and environment. This study acknowledges the insufficient capacity reflected by environment ministry to influence and promote resources proactively towards ensuring that government's investment policies focus on sustainable environmental health development. The absence of capability by environment ministry in Kenya is partly promoted by their focus on 'sectoral' issues such as pollution and nature conservation while undermining the aspect of health. This detachment in policy priorities by government ministries (Ministry of Health and Ministry of Environment) nurtures barriers towards developing reinforcing strategies in environmental health. As a result, governments may pursue fundamental policy as well as economic growth decisions without making a substantive input towards environment or health.

2. METHODOLOGY

This article focuses on the factors determining environmental health in Kenya. The assessment brings out the conflict in developing states identifying priority areas to focus on to boost development due to the various government ministries, Ministry of health focusing on health care policies and services and Ministry of environment concentration on pollution and environment conservation, priorities undermining the relevance of environment and health in the modern society. The article will use thematic approach where various literatures focusing factors affecting environment and health; such as environmental pollution; food pollution; soil pollution; air pollution, and water pollution, will be analyzed and its impact at national health. The qualitative data will be acquired from secondary platform from World Health Organisation(WHO) report, United Nation Environmental Program (UNEP) report, Intergovernmental Technical Panel on Soils (ITPS) findings, Kenya National Environmental Policy, and the National Environment Management Authority (NEMA). The data will be subjected to content analysis based on the identified themes and sub-themes. The major aim is to identify factors determining environmental health in Kenya both in urban and rural setting.

3. THEORETICAL FRAMEWORK

There are various theories that supports the concept of environmental health that further enhances the traditional international relations theory. Social Cognitive theory (SCT) and Agenda Building theory forms a basis for the article's argument. The Social Cognitive Theory analyzes the underlying determinants of behavior as well as mechanism of promoting change. This paradigm proposes that reciprocal determinism or as well continuous association among individuals' characteristics, individuals' behavior, and the immediate environment where their behavior takes place shapes their wellbeing. The main argument s is grouped into main behavioral determinant that includes self-efficacy, environment, behavioral capability, outcome expectation, as well as mechanisms for change in behavior that may involve observable reinforcement and learning (Baranowski, Perry, and Parcel, 2002).

Agenda-Building theory presents that mechanisms used to influence the formulation or implementation of policy process ought to be aligned to where the agenda interest is within the policy process. In this case, if the government and concerned ministries require to tackle specific aspects in the policy agenda, the relevant authority needs to cultivate media

interest and campaign for support from other interest groups in environmental health transformation. In case the environmental health interest is under review by the policy formulators, then communication should be ensured by the relevant ministry (Ministry of Health and Ministry of environment) and the government to ensure that the agenda is being framed to suite high long-term social importance. In Cobb and Elder's view, there should be three approaches engaged in the process of agenda building; the outside-initiative concept; the mobilization concept; and the inside-initiative concept. In this case, the outside-initiative model recognizes public participation towards an agenda by bringing to policy formulators attention, then ensure that there is a direct smooth communication. The public must be engaged in ensuring the environment and health policy is guided towards safeguarding their basic human rights. Secondly, the inside-initiative model reflects intrinsic origin of specific initiative within the government structure but excludes the public participation. Governments should take a key role to ensure that the Ministry Policy acts as a proper guideline towards realizing its short- and long-term goals. Finally, the mobilization model identifies the role of the government in developing proposals with support from the public to pass formal policy and effective implementation.

4. EMPIRICAL REVIEW

According to the Republic of Kenya National Environmental Policy, 2013, air, water (pollution, supply and sanitation), waste management, chemical and food safety are some of the crucial factors that determine the suitability of the environment for human health. Kenya just like all other states around the world continues to lose her biodiversity due various human activities such as; habitat destruction, overgrazing, deforestation, pollution, unsustainable harvesting of natural resources and bio piracy.

1. Environmental pollution

Environmental pollution means spreading new manmade chemicals in the environment or re-distributing and concentrating natural substances/chemicals due to human activity. The main problem with pollution is that it affects human health eventually resulting in medical conditions usually referred to as pollution diseases. There are different kinds of pollution and diseases they cause; Air pollution diseases, Water pollution diseases, Land/Soil pollution diseases, Food pollution diseases, Noise pollution diseases. All the different types of pollution come along with diverse diseases.

a. Food pollution

Food is an essential contributor to human health well-being and can also have a diverse negative impact such as worry, pleasures, and stress to the well-being of a person. (Wilcock et al., 2004).

The World Health Organization (WHO) has recognized food contamination as a global challenge in several documents and reports. Foodborne diseases (FBDs) cause numerous of illness and death worldwide. According to the UN food agency 137,000 people die in Africa due to unsafe food out of 91 million Africans that fall ill annually. In 2004, Kenya experienced an outbreak of aflatoxin leading to 125 death and 317 people affected due to the consumption of contaminated maize.

The causes of food pollution are diverse. It can be contaminated with toxic bacterial from irrigation water, groundwater, or soil. In other cases food contamination can result from toxic chemicals that are used in preservation, packaging, processing, agricultural treatments with pesticides, insecticides, and/or herbicides used.)The following are some of the diseases associated with food pollution; Thyroid Dysfunctions, Cancer, Nervous System Problems, Gastrointestinal Problems.

b. Soil Pollution

Soil pollution diseases are those diseases caused by pollutants from the land/dirt/soil. The pollutants may enter the soil/land via: Waste disposal (e.g. landfills); Air deposition, either dry (e.g. from mining and smelting activities, foundries etc.) or wet (e.g. acid rain); or contact with contaminated surface or ground waters. According to Blum, 2005, one of the key ecological function of soil is purifying, safeguarding and converting inorganic and organic contaminants, thus enhancing essential function ensures good quality of groundwater and safe food production. The pollution of the soil reduces food security both by reducing crop yields caused by high toxic levels of contaminants hence the produced crops to be unsafe for consumption (FAO and ITPS, 2015). The exposure to environmental pollution caused by soil contaminants may result in an increased risk for developing a series of conditions. The inhalation of soil particulate matter and the ingestion of contaminated food can potentially result in serious conditions, of which the most common include:

Cancer, including leukemia caused by the contact with soils contaminated with chemicals (e.g. gasoline, benzene), Nervous system damage caused especially by the presence of lead (Pb) in soil, and affecting especially children, Neuromuscular blockage and depression of the central nervous system and Kidney and liver damage caused by chemicals such as mercury (Hg).

c. Air Pollution

The quality of air we breathe in is a very high determinant of our health. Consequently this is determined by emission of poisonous and toxic emissions into the atmosphere. Kenya like any other developing country, does not regulate and the monitor the quality of air. A study done by UNEP in 2007 indicated that the quality of outdoor air in Kenya is below the set standard of air by the WHO. The main sources of air pollution in Kenya are; exhaust fumes from traffic, roadside rubbish fires, road dust, industry and the use and burning of solid fuels such as charcoal and wood to cook in open fires and leaky stoves (indoor air pollution).

Poor air quality has been linked to a wide range of health issues, including SID, asthma, lung cancer and chronic obstructive pulmonary disease. According to WHO report, air pollution causes more than 18,000 premature deaths in Kenya annually.

Furthermore, Health Effects Institute 2019, State of Global Air 2019 reported 18,000 air pollution-related deaths in Kenya in 2017.

d. Water Pollution

The access to water in Kenya for its citizens is low, some areas even lack water at all. In addition to, the water that is accessible is increasingly being polluted by organic, inorganic and microbial matter (Kithiia, 1992 & 1997).

Water pollution has been attributed to the increase in human population and industrialization in Kenya, this has resulted into the increasing amounts of liquid, solid wastes and chemical fertilizers and pesticides are released into water sources adversely affecting the quality of water and aquatic cycle.

Waterborne diseases that result from polluted drinking water; Typhoid, Amoebiasis, Giardiasis, Ascariasis, Hookworm. However, water contaminated with industrial waste such as metals (lead, mercury and hydrocarbons) have a different effect on human health. Conditions related to water polluted by chemicals are; cancer, Hormonal problems, Damage to the nervous system, Liver and kidney damage.

5. CONCLUSION

There is a lot to learn about environmental health in Kenya. The effect of environmental pollution, ranging from food pollution to water pollution, on the health of Kenyans encompasses great challenges to be faced in order to significantly reduce the number of pollution related deaths. The National Environment Management Authority (NEMA) should focus its efforts on building ecological sustainability which entails long-term commitment. These policies should reflect an effective utilization of knowledge that has direct implication on environmental challenges. Identifying the source of environmental pollution provides a technical framework on how to address it and facilitates ideas to counter the phenomenon. Such ideas can come in the form of investments in eco-innovative business activities and education programs targeting close and remote communities. The intention is to improve the livelihood of Kenyans that is directly affected environmental pollution. The task must seem monumental in nature but can strategically be tackled using a goal oriented approach that will help achieve numerous milestones.

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