

Public Perception and Awareness of Health Risks of Climate Change: A Potential for Adaptation and Mitigation in Kenya

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Abstract

There is widespread scientific consensus that the world's climate is changing. This change has been found to have adverse consequences on human health as well as exacerbates health risks. Mounting evidence suggests current and future effects on human health, including injuries and illnesses from severe weather events, floods, and heat exposure; increases in allergic, respiratory, vector-borne, and waterborne diseases; and threats to food and water supplies. Indirect effects may include anxiety and depression. The discourse of climate change must thus be framed from public health perspective with a focus on reducing its impacts. Health consequences of climate change can be a useful lever for enhancing individuals' engagement in adaptation and mitigating strategies to climate change. This paper discusses the potentials posed by perception and awareness of health risks of climate change as a step to individual adaption and behaviour change in Kenya. Kenya, like other nations in the world, is faced with the serious threats of climate change to livelihood and human health. Being a developing country, Kenya is more vulnerable to such impacts. However, potentials lie on adaption and mitigation measures of which behaviour change is a critical factor. Research has shown that public risk perceptions strongly influence the way people respond to hazards. When a community or individual perceives a problem to be a very serious threat, then it is likely to initiate appropriate intervention measures, hence the potential of public perception/awareness of health risks of climate change for adaptation and mitigation strategies in Kenya.

Key Words: *Climate Change, Public Perception, Health Risk, Mitigation, Kenya*

INTRODUCTION

There is scientific consensus that the global climate is changing, with rising surface temperatures, melting ice and snow, rising sea levels, and increasing climate variability (IPCC, 2007; Omoruyi & Kunle, 2012). The results are fiercer weather lasting for longer cycles; extreme scorching heat, precipitation of rainfall, increased intensity of storms, hurricane, floods, droughts, outbreak of fire, induces earthquake, acid rain, among other (DeBono, Vincenti, & Calleja, 2012; Omoruyi & Kunle, 2012). The potential health effects of climate change is real and of great concern (Ebi & Semenza, 2008; Haines, Campbell-Lendrum, & Corvalan, 2006). Mounting evidence suggests current and future effects on human health, including injuries and illnesses from severe weather events, floods, and heat exposure; increases in allergic, respiratory, vector-borne, and waterborne diseases; and threats to food and water supplies (Semenza *et al.*, 1996). Indirect effects may include anxiety and depression (Frumkin, Hess, Luber, Malilay, & McGeehin, 2008). The World Health Organization (1990) and Nzeadibe, Egbule, Chukwuone, and Agu (2011) consider the consequences of global warming as the most pressing problem of the 21st century and a serious threat to sustainable development.

In Kenya, one of the main impacts of climate change identified by the National Climate Change Response Strategy (NCCRS) is that diseases such as malaria, cholera, Ebola, Lyme disease, plague, tuberculosis, sleeping sickness, yellow fever, and Rift valley fever are expected to spread as temperatures rise and precipitation patterns change. In addition, during floods, diseases such as typhoid, amoeba, cholera, and bilharzias reach epidemic levels (Government of Kenya, 2010).

According to Shisanya and Khayesi (2007), Otieno, Pauker, and Mania (2009) and Republic of Kenya (2013), the Kenyan public is yet to perceive climate change to be a very significant problem. This perception is not limited to the ordinary citizens but is also reflected in the priorities delineated by the government, which is focusing primarily on poverty alleviation, fighting graft, improving education and fighting crime (Shisanya and Khayesi, 2007). A casual observation of living style in Kenya like dumping of refuse in water channels, burning of solid waste, purchasing second hand cars, bush burning, use of firewood for cooking and waste disposal implicate a low understanding of their effects on climatic changes that needs to be addressed. Public awareness and perception of climate change as a human health risk presents a good platform for addressing the issue of climate change. According to Omoruyi and

Kunle (2012) mitigation process could be dynamically inclusive if the society develops adequate perceptions of health risks and climate changes, thus removing the illusions thereof. Drawing upon the available literature, this paper addresses the potential of risk perception of health risks of climate change as a strategy for behaviour change.

MATERIALS AND METHODS

This paper is based on the review of current papers and reports on public perception and awareness of the human health risks of climate change and its implication on behaviour change.

RESULTS AND DISCUSSIONS

What is Public Health?

Public health according to Samet (2009) refers to the approaches taken to protect and improve the health of communities which is different to clinical medicine, which addresses the health and disease of individuals. Prevention is fundamental to public health; primary prevention involves the control of the causes of disease, which has been found to be more important in disease control than actual treatment which is more costly. Scholars have applied these disease control concepts to public health, proposing that mitigation is analogous to primary prevention and that adaptation is comparable to secondary and tertiary prevention, as it involves —...efforts to anticipate and prepare for the effects of climate change, and thereby to reduce the associated health burden. (Frumkin *et al.*, 2008, p. 435). This paper adopts the reasoning that risk perception is an important component in behaviour change that will slow down the impact of climate change and its consequences on human health, thus a critical point on prevention.

What is Health Risk?

Health risk according to Omoruyi and Kunle (2012) is a combination of two words, that is, health and risk which in essence explains the concept. World Health Organization (1948) defines health as —a state of complete physical, mental and social well-being and not merely an absence of diseases or infirmity (p. 100). While risk, according to World Health Report (2002) is —the probability of an adverse outcome, or a factor that increases that probability (p. 6). A combination of the definitions of health and risk means health risk is —danger to health, —chances of loss of health, variability from health and —worsening of ill health (Omoruyi & Kunle, 2012, p. 208). Climate change is a factor that can increase the frequency and severity of ill health or exacerbate health risks.

Climate Change Awareness

Climate change according to IPCC, —refers to a change in the state of climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer (IPCC, 2007, p. 30). Although climate change has been identified as one of the most serious challenges of the 21st Century, however, according to Bord, O'Connor, and Fisher (2000), research has indicated that climate change is poorly understood and not prominent as to draw a lot of public concern, thus posing unique challenges in terms of public attitude and response to actions that would affect global climate change. This may be the basis of the public weak behaviour response and concern. Yet public awareness and concern is believed to be an important step towards climate change mitigation and adaptation strategies (DeBono *et al.*, 2012). In Kenya according to Otieno *et al.*, (2009), Shisanya and Khayesi (2007), Republic of Kenya (2013) many people do not yet regard it as a significant problem compared to other socio-economic problems like unemployment, corruption and crime.

Health Risk of Climate Change

The consequences of climate change for health range from direct (e.g. heat wave) to indirect (e.g., infectious disease outbreaks and changes in allergic diseases associated with shifts in aeroallergens) (Samet, 2009). According to Frumkin *et al.* (2008) indirect concerns include mental health consequences, population dislocation due to adverse effects of climate change such as drought and floods, and civil conflict arising from competition over scarce resources rendered by the impacts of climate change. In addition, changes in the patterns of pests, parasites, and pathogens affecting wildlife, livestock,

agriculture, forests, and coastal marine organisms can alter ecosystem composition and functions, and changes in these life-support systems carry implications for human health (Epstein, 2005). Changes in food productivity due to prolonged climate events like drought can lead to malnutrition and even death from hunger (Haines *et al.*, 2006). In Kenya, the NCCRS has warned that diseases such as malaria, cholera, Ebola, Lyme disease, plague, tuberculosis, sleeping sickness, yellow fever, and Rift valley fever are expected to spread and even reach epidemic levels as temperatures rise and precipitation patterns change (Government of Kenya [GoK], 2010).

Mitigation and Adaptation

Mitigation involves taking measures to minimize the occurrence of climate change. According to McCarthy, Leary, Dokken, and White (2001) mitigating against climate change entails reductions in greenhouse gas emission and augmentation in greenhouse sinks. Mitigation at individual level includes switching to cleaner sources such as biogas and solar, conservation of energy such as use of public transport, cycling, walking, and recycling; and avoidance of burning wastes among others (Semenza, Ploubidis, & George, 2011). These actions are very important in limiting the rate, magnitude and impacts of climate change. Adaptation on the other hand entails adjustments of environmental or social settings in response to past, current or anticipated climatic events and their impacts in order to moderate their consequences (IPCC, 2007). Mitigation and adaptation are mostly dependent on the perceived susceptibility to and severity of climate change.

Potentials of Health Risk Awareness of Climate Change for Behaviour Change in Kenya

Climate change has become widely recognized as a threat to livelihood activities as well as a danger to human health (Cardwell & Elliot, 2013). The most vulnerable to the impacts of climate change are the people in the less developed countries like Kenya. Therefore to reduce their vulnerability and slow down the impacts of climate change, people in less developed countries have to develop sustainable adaptation and mitigation strategies of which behaviour change is a very important component. Awareness and perception of the risk has been found to have a lot of influence on behaviour change (Slovic, 2000).

Risk perception involves the attitude of an individual towards a risk and the resultant behaviour. According to Leiserowitz (2006) social scientists have found that public risk perceptions strongly influence the way people respond to hazards. Therefore, in addressing public response and likelihood of behaviour change it is important to consider people's perception. Weber (2006) argues that people must clearly perceive risks in order to take actions to manage them. Risk perception has widely been used in health promotion programs, where it has been found that individual perception of risk is the strongest motivation of behaviour change (Hale & Dillard, 1995). Thus the threat of climate change should be a strong motivator for people to adopt measures to reduce its health risks and associated impacts in Kenya.

According to Stern (2000), voluntary reduction in energy consumption by individuals is contingent on their state of awareness and concern about climate change, their willingness to act, and their ability to change. Consequently, if most Kenyans become aware of climate change and perceive it as a serious threat to their health and well-being they will likely engage in activities that will reduce or slow down climate change such becoming more energy efficient by using energy from renewable sources (IPCC, 2007).

Successful stories of the impact of risk perception that lend credence to it have been recorded in HIV/AIDS. The reduction of the prevalence of HIV/AIDS in Uganda has been rightfully attributed to the government efforts to make the public be aware of and perceive the severity of the disease (Asiimwe, Kibombo, & Neema, 2003).

A number of studies have shown that public perception of climate change as a human health risk leads to behaviour change. Thus pointing to the fact that in Kenya if the issue of climate is to be adequately addressed, climate change must be framed from the health perspective and adequately engage the public to garner support for climate change mitigation policies and willingness to change.

A study by DeBono *et al.* (2012) on public perception of climate change as a human-health threat in Malta demonstrates that the perception among the Maltese public that climate change poses a risk to one's

health (increased disease, water shortages) and general well-being (impact on standard of living) is the strongest driver behind support for climate change mitigation policy and a willingness to take measures to mitigate climate change. They report that risk perception was found to have the strongest correlation with support for policy and willingness to act.

In a study on personal motivation for adaptation and mitigation in the United States, Semenza *et al.* (2011) underscores the importance of perception on behaviour change. They report that motivation for voluntary mitigation was mostly dependent on the perceived susceptibility to and severity of climate change, and that autonomous adaptation was largely dependent on the availability of information relevant to climate change and its impact. They found out that those who clearly perceived climate change as a threat to their health reported to have reduced their energy consumption and gasoline use and were also prepared to deal with emergency.

A study by Semenza *et al.* (2008) on the public perception of climate change and its potential for behaviour change in Cities of Portland and Houston reported that of those who were aware of climate change 63% reported having changed their behaviour. For example, in terms of specific behavioural changes, of those who changed behaviour, 43% decreased their energy usage at home, 39% reduced gasoline consumption, and 26% cited other behaviours. Studies by Leiserowitz (2006), Bord, O'Connor, and Fisher (2000) and Bulkeley (2009) in Australia and USA have also shown that risk perception is an important means of influencing behaviour and garnering support for policy, and about inadequacy of only providing scientifically sound information to educate the public.

Brody, Zahran, Vedlitz and Grover (2008) in their report on the relationship between physical vulnerability and public perceptions of global climate change in the United States argue that the level to which individuals understand the causes and consequences of climate change, and the extent to which they regard climate change as harmful to their well-being is likely to correspond to their personal lifestyle decisions and willingness to support climate change. Cardwell and Elliot (2013) also note that studies have demonstrated that Americans who view climate change as being harmful to people or who understand that it is a current threat are more likely to support climate policy and personal behaviour change.

Maibach, Nisbet, Baldwin, Akerlof and Diao (2010), in another study in America where they segmented the population as alarmed, concerned, cautious, disengaged, doubtful and dismissive in relation to their concern to climate change reported that there was clear evidence that the alarmed and concerned segments responded positively to the public health framed essay they presented to them and were likely to change their behaviour to mitigate climate change.

It can therefore be clearly deduced from the findings of the above studies that if the public clearly perceive climate change as a threat to their health and well-being, they are likely to take measures that will mitigate against climate change. Thus, in Kenya where the perception of climate change as a significant problem is still low (Shisanya and Kheyesi, 2008; Otieno, Pauker and Maina, 2009; Government of Kenya, 2010; Republic of Kenya, 2013), campaigns to engage the public should involve messages that increase their risk perception.

CONCLUSION

Climate change is mainly a human induced phenomenon that has adverse consequences on human health. Mitigation against climate change lies with change in behaviour of which perception of health risks of climate change presents the potentials. Policy makers in Kenya have an opportunity to frame climate change as a health issue as a way to make the public support policies to mitigate climate change and take measures to mitigate and adapt to unavoidable changes.

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BIO-DATA

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