**Environmental health – PH**

 Global warming and green-house effect are two concepts which are closely related; they both point to the rise of earth’s temperatures. The term global warming has often been used interchangeably with climate change (Bulkeley & Betsill 2013). Nevertheless, global warming has been defined as the average and constant increase in temperature in the earth’s climatic system; whereas climate change could refer to any historical change in climate caused by an array of factors. Scientific research indicates that there has been a general trend of rise in global temperatures in recent times (Shao, Keim, Garand & Hamilton 2014). The research shows that on average ninety percent of the energy stored in the earth’s climatic system starting from 1970 has gone into ocean warming, while the remaining ten percent has gone into warming the atmosphere and melting glaciers. It has been established that that global warming has largely been caused by the proliferation of greenhouse gases in the earth’s atmosphere; the highest percentage of the gases has come from human activities (Swann, Fung & Chiang 2012).

In 2013, the intergovernmental panel on climate change (IPCC) projected that the earth’s surface temperature is expected to rise further by 0.3 degrees to 1.7 degrees Celsius within the 21st century (Bulkeley & Betsill 2013). Global warming has been the key driving force behind climate change. Global warming has different impacts in different regions of the world, however most regions have been adversely affected (Swann, Fung & Chiang 2012). Some effects of global warming include: changes in pattern of precipitation in different parts of the world, general rise in sea and ocean levels; potential extension of subtropical deserts, extreme weather patters such as cyclones, hurricanes, extreme snowing, heat waves and heavy rainfall. Global warming is also believed cause ocean acidification (Howard-Grenville, Buckle, Hoskins & George 2014). Other potential impacts of global warming include species extinction due to changes in climatic patterns, increased threat to food security and destruction of human habitat (Shao, Keim, Garand & Hamilton 2014). Mitigating measures to global warming include: cutting down the production of green house gases into the atmosphere, building infrastructures that can withstand the impact of climate change and adaptation to the impacts of climate change. It is also anticipated that climatic engineering could in the future provide solutions for global warming (Swann, Fung & Chiang 2012).

 The greenhouse effect is closely related to global warming. It is defined as the process through which the thermal energy emitted by a planetary body is soaked up by greenhouse gases such as carbon dioxide and later re-emitted in all directions (Fragkias, Lobo, Strumsky & Seto 2013). Some of the thermal energy re-radiated is directed towards the surface of the earth, this has the effect of increasing the earth’s surface temperatures beyond the levels which would be experienced in the absence of the greenhouse gases (Khanna & Chen 2013). The solar thermal energy is usually passes through the atmosphere to warm the earth’s surface; the energy is then emitted by the earth’s surface in the form of infrared radiation (Howard-Grenville, Buckle, Hoskins & George 2014). Some of the infrared radiation released by the earth’s surface is absorbed by greenhouse gases in the atmosphere after which much of the energy is re-radiated back to the earth’s surface and the lower atmosphere; this phenomenon is known as the greenhouse effect and results into general temperature increase within the earth’s atmosphere (Khanna & Chen 2013). The phenomenon is named after the process through which sun’s thermal energy passes through a glass to warm the air inside a greenhouse, however, the mechanism used in a greenhouse is significantly different from the mechanism of greenhouse gases, as a greenhouse operates by reducing airflow, such that air inside is locked from air outside to prevent loss of heat energy through convection (Howard-Grenville, Buckle, Hoskins & George 2014). The Mother Nature’s greenhouse effect to maintain temperatures within the earth’s atmosphere at a life-supporting optimum, however, the proliferation of greenhouse gases has distracted this natural balance (Piguet & Pécoud 2011). Human activities such as clearing forests and burning of fossil fuels have increased the levels of greenhouse gases in the atmosphere to alarming levels, hence intensifying the mother nature’s greenhouse effect which as consequently resulted to global warming (Fragkias, Lobo, Strumsky & Seto 2013).

 Global warming is akin with climate change which could have very extensive impacts on human life. To begin with, global warming has potentially harmful impacts to human health. It impacts on human health in three main ways. To begin with, global warming has direct adverse impact on human health; for instance, it could cause adverse events such as hurricanes and tsunamis which could directly impact on human health by causing physical injuries (O’Brien 2012). Secondly, global warming could impact on human health indirectly through altering environmental and ecological conditions. For example, general rise in temperatures could favor certain disease parasites such as mosquitoes. Mosquitoes do very well in warm climates. Therefore, increasing temperatures could favor the prevalence of mosquitoes in regions they did not exist before. This could have a debilitating impact on human health because mosquitoes are the vectors of the malaria disease (Howard-Grenville, Buckle, Hoskins & George 2014). Another indirect impact of global warming on human health is that it causes impoverishment of various global societies. For instance, climatic changes could result into harsh climate conditions that could make farming impossible; it could also affect natural resources for instance high temperatures could cause drying up of water bodies used for fishing (O’Brien 2012). These adverse factors impoverish the people living in such areas; this would reduce their capability of accessing healthcare and consequently lead to deterioration in the general health of the societies. . In addition extreme weather patterns such as flashfloods which occur as a result of global warming could cause poor drainage and cause proliferation of waterborne diseases (Howard-Grenville, Buckle, Hoskins & George 2014).

 Global warming also has adverse psychological impacts on human life. For instance, extreme weather patterns such as wind gusts and unanticipated heavy downpours could result into direct psychological impacts on individuals’ lives, for instance they could experience psychological trauma (Hendrix & Salehyan 2012). In addition, global warming has indirect psychological impacts such unstable emotional well being caused by uncertainty of future risks that could come about as a result of climate change (O’Brien 2012). It also has negative psychosocial impacts, for instance, it can cause people to migrate from their ancestral lands and lead to separation of communities which were once bonded. Global warming causes disruption in settlements as people migrate to escape adverse climatic conditions (Gleditsch 2012). Global warming could also have an indirect impact on security. For instance, as people migrate to new areas they may cause strain in natural resources which could fuel conflicts between different communities. In addition, global warming could adversely impact human life by causing lack of sustainability in global energy production, for instance it could cause drying up of rivers used for hydro-electric power generation; lack of adequate energy could lead to poor economic conditions (Bulkeley & Betsill 2013).

References

Bulkeley, H & Betsill, MM 2013 “Revisiting the urban politics of climate change.” *Environmental Politics*, Vol. *22*, no. 1, pp 136-154.

Fragkias, M., Lobo, J, Strumsky, D & Seto, KC 2013 “Does size matter? Scaling of CO2 emissions and US urban areas. *PLoS One*, Vol. *8*, no. 6, pp e64727.

Gleditsch, NP 2012 “Whither the weather? Climate change and conflict.” *Journal of Peace Research*, Vol. *49*, no. 1, pp 3-9.

Hendrix, CS & Salehyan, I 2012. “Climate change, rainfall, and social conflict in Africa.” *Journal of Peace Research*, Vol. *49*, no. 1, pp 35-50.

Howard-Grenville, J Buckle, SJ, Hoskins, BJ & George, G 2014 “Climate change and management.” *Academy of Management Journal*, *57*(3), 615-623.

Khanna, M & Chen, X 2013. “Economic, energy security, and greenhouse gas effects of biofuels: implications for policy.” *American Journal of Agricultural Economics*, aat037.

O’Brien, K 2012 “Global environmental change II From adaptation to deliberate transformation.” *Progress in Human Geography*, Vol. *36*, no. 5, pp 667-676.

Piguet, E & Pécoud, A 2011. *Migration and climate change*. Cambridge,, UK: Cambridge University Press.

Swann, AL, Fung, IY & Chiang, JC 2012 “Mid-latitude afforestation shifts general circulation and tropical precipitation.” *Proceedings of the National Academy of Sciences*, Vol. *109*, no. 3, pp 712-716.

Shao, W, Keim, BD, Garand, JC & Hamilton, LC 2014 “Weather, Climate, and the Economy: Explaining Risk Perceptions of Global Warming, 2001–10\*.” *Weather, Climate, and Society*, Vol. *6*, no. 1, pp 119-134.