Your Name

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Analysis of the effects of population Growth: Liberia

# **Introduction**

Climate change is a growing concern in the contemporary world. Global warming is increasing at an ever increasing pace which is alarming not only for resources and but also for earth and its inhabitants including human beings. United Nations is taking the matter seriously and demands a report explaining the phenomena of global warming, its affects, causes and possible solutions especially in developing countries in the world. The paper is divided into three sections including background of the problem and economic, political, and security challenges caused by these emissions especially in the developing countries of the world. Third section of the paper explains causes of increasing global warming and possible solutions to mitigate or minimize the problem. The country selected for analysis or as a case study is Liberia which is situated on the West African coast sharing borders with Guinea to its North and Sierra Leone at its northwest. The solution is artificial forestation and discouragement of deforestation and emission of carbon dioxide due to the burning of fossil fuels for different purposes.

# **Background**

To understand the effect of greenhouse gases on global warming, it is essential to understand what a greenhouse gas is? It is a gas that emits and absorbs radiant energy within the range of thermal infrared. These gases cause the greenhouse effect which is the process of warming the surface of the planet Earth through these radiations. Examples of primary greenhouse gases on Earth include Carbon dioxide (CO2), ozone (O3), Nitrous oxide (N2O), and methane (CH4)(“CO2 Emissions by Country”). Out of these gases, carbon dioxide is more common and has been used as a measure or benchmark for the things which are responsible for warming the atmosphere. The Environmental Protection agency in the United States has considered CO2 as a standard because of its ubiquity or universality and has assigned it a Global Warming Potential of 1. Earth receives and absorbs radiations from the sun as it is the primary and main source of energy. The absorbed energy is reflected back as light or either radiated to the space as heat. The temperature of earth’s surface is dependent on the balance between outgoing and incoming energy. The disturbance in this balance results in cooler or warmer surface leading to climate change. Greenhouse gases absorb the radiated energy from the earth and reflect them back towards the lower atmosphere which causes the energy/heat retention on the surface of the earth causing global warming. Based on this principle, some of the greenhouse gases remain at the earth’s surface for decades and some for even centuries affecting the energy balance of the earth.

#  **How Emissions Cause Problems for the Developing World**

As stated in the above section, greenhouse gases are responsible for global warming and climate change. Several human inventions and man-made processes are responsible for the emission of these gases. According to reports, China has been producing the biggest amount of greenhouse gases and specifically 27.52 percent of carbon dioxide due to the consumption of coal for electricity. Other producers of CO2 are The United States, India, Russia, Japan, and Germany (from high to low production of CO2).

The contribution of Liberia in global greenhouse emissions is not very significant, however, increase in global warming will have a direct impact on the economy of the country as well as result in many health challenges. Liberia is basically a low-income country where economy is mostly dependent on mineral resources, water, forests and agriculture. The country has favorable climate for agriculture and plantation which suggests that global warming and climate change will directly affect the economy of the country.

 Climate change and global warming are directly linked with the security challenges and risks in West Africa in general and Liberia in particular. Change in temperature and volatile patterns of weather have the capability to restructure the landscape leading to scarcity of energy, food, and water (Wood). One considerable aspect of climate change is natural disasters that can cause conflicts as a result of unregulated and destabilizing movements of the population. This factor may result in a clash of groups while engaging in a competition for supremacy or survival.

 In the wake of this issue, political challenges cannot be underestimated in Liberia. One of the challenges as described above is the conflict between different groups due to relocation or migration as a result of natural disasters. Also, some campaigners make a clear move to invest in relevant climate negotiations to gain political benefits by creating a place for serious compensation on GHG emissions.

# **Greenhouse Gases Causes**

Greenhouse gases are produced due to agricultural practices, livestock manure and some of the other natural processes including the burning of fossil fuels including gas, oil and coal. As discussed, carbon dioxide is one of the most common greenhouse gases in the atmosphere and is the second cause of global warming and climate change. Carbon dioxide is also produced as a result of artificial or man-made processes like the consumption of coal for the generation of electricity(“Liberia Set to Launch National Policy & Response Strategy on Climate Change - Liberia”). The excess release of carbon dioxide is responsible for deforestation as indicated by a research which was published by Duke University. Trees inhale carbon dioxide for the process of photosynthesis and exhale oxygen in the atmosphere. Do due to deforestation and wood consumption for goods or heat, an excess CO2 is released that was stored in them for photosynthesis. Wood consumption is increased due to industrialization which catalyzes deforestation and hence increased emission of CO2 which is a greenhouse gas. Population increase is also related to global warming as more population demands an increment in such activities to meet the resources. While studying the causes of the greenhouse effect, factors that affect and influence global warming must also be considered. These factors are global warming potential which is a measure of heat relative to CO2, the duration of its stay in the atmosphere in a specific time horizon and its relative abundance(“Does Population Growth Impact Climate Change?”).

Plantation of trees by introducing artificial forestation is one of the remedies to bring the concentration of greenhouse gases down. Global warming is also responsible for raising temperature of major water bodies of the world causing threats of natural disasters and hurricanes and massive sea storms. Forests are important to reduce the concentration of greenhouse gases but they cannot accommodate or sequester all of the carbon dioxide in the atmosphere. Hence it is also very important to reduce the consumption of forests and burning of fossil fuels on an urgent basis to reduce the buildup of the greenhouse effect and global warming.

**Conclusion**

It has been observed from many researches and studies that global warming has considerable economic, political and environmental challenges. United Nations should make plans to ban unnecessary deforestation, especially in developing countries. A thorough policy must be developed to make regulations regarding burning of fossil fuels so that emission of carbon dioxide and other greenhouse gases must be controlled at international level. Also, UN must give provision of funds to developing countries for artificial forestation in order to minimize climate risks associated with greenhouse gases and global warming.

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