**Climate Change and Greenhouse Gases**

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**Abstract**

Environmental change on global scale first become a matter of public concern in the 1960s. Before then, the perceived environmental problem was urban pollution, which affected human health and the quality of life of so many people. Although urban pollution became prominent from the period of Industrial Revolution.

With the onset of Industrial Revolution in Western Europe, around 1780, the use of coal energy increased and cities became heavily polluted with smog, a mixture of fog and smoke. Diseases such as bronchitis and tuberculosis were wide spread following the industrial Revolution. (friedlingstein et al, 2010).

The term climate system is often used to refer to an interactive system consisting of five major components: the atmosphere, the hydrosphere (e.g oceans, lakes, rivers), the cryosphere (e.g. ice, snow, glaciers), the land surface and the biosphere (e.g. vegetation). Lockwood (1999).

The climate system is driven by various external and internal forcing mechanisms, the most important of which is the sun. the atmosphere is the unstable and rapidly changing part of the climate system. In particular its composition, which is continually changing together with the resulting climate changes have become of major international concern.

The stern Review (stern, 2006) and the IPCC report (2007 a, b) commented that an overwhelming body of scientific evidence indicates that the earth’s climate is rapidly changing, predominantly as a result of increases in so-called greenhouse gases caused by human activities. Greenhouse gases trap heat near the Earth’s surface and cause the surface temperature to increase. Carbon dioxide (CO2) and methane (CH4) are among the most important anthropogenic greenhouse gases.

For the first time in human history, the concentration of climate-warming carbon dioxide in the atmosphere has passed the milestone level of 400 parts per million (ppm). The last time so much greenhouse gas was in the air was several million years ago, when the Arctic was ice-free, savannah spread across the Sahara desert and sea level was up to 40 metres higher than today. Allen et al, (2009).

These conditions are expected to return in time, with devastating consequences for civilization, unless emissions of CO2 from the burning of coal, gas and oil are rapidly curtailed. But despite increasingly severe warnings from scientists and a major economic recession, global emissions have continued to soar unchecked. Allen et al, (2009).

Experts say the extreme speed at which CO2 is now rising-perhaps 75 times faster than in pre-industrial time-has never been in geological records and some effects of climate change are already being seen, with extreme heat waves and flooding.

The emergence of historically rapid climate change in the twenty-first century due to increasing atmospheric greenhouse gas concentrations adds new and urgent dimensions to the age-old challenges of, among others, poverty, inequality, infection and environmental stress. Concern about the greenhouse effect raises two issues: how human activities might enhance the natural effect, and the likely impacts of such an enhancement, since the industrial revolution human activities have increased atmospheric trace gases such as carbon dioxide.

Before the start of the industrial era (around 1750) atmospheric CO2 concentration have been approximately 280 parts per million (ppm) for several thousand years. It has risen continuously since then, reaching 383 ppm in 2007. Hansen et al (2008).

Largely as a result of increasing atmosphere greenhouse gas concentrations, global mean temperature have increased by 0.70C since around 1900. Over the past 30 years, global temperature have risen rapidly and continuously at around 0.20C per decade, bringing the global mean temperature to what is at or near the warmest level reached in the current interglacial period, which began around 11700 years ago.

This paper therefore reviews the various factors that cause climate changes and greenhouse gases, and brings to focus the different measures by which they can be brought under control.