

Causes of Green House Effect in Atmosphere and its Effect in Life

Pijush Basak*

Department of Mathematics, Dream Institute of Technology, West Bengal, India

*Corresponding Author: Pijush Basak, Department of Mathematics, Dream Institute of Technology, West Bengal, India.

Received: April 01, 2019; Published: May 08, 2019

DOI: 10.31080/ASAG.2019.03.0468

The design of a green house is built in such a way the heat inside it is trapped and the plants inside get adequate heat to sustain. Even in cold winter days, there is warmth inside the green house. Like a green house, the atmosphere on Earth also contains some gases that trap some energy that enters from sun and blocks it from escaping back from the Earth. The mechanism of green house is such that the atmospheres of Earth contains gas molecules called green house gases that trap adequate heat and energy for animals and plants to sustain comfortably.

However, during last century the problem is that green house effect is warming up the atmosphere rapidly as excessive greenhouse is released in our atmosphere leading to climate change. Green house gases occur naturally in the atmosphere and also occur due to human activities. The naturally occurring green house keeps adequate heat and energy balance for living. However, different human activities like deforestation, industry and automation disturbs the energy and heat leading to warming of atmosphere that invariably causes inconvenience for the inhabitants in land and sea.

Some information of Green house gases and its effects

- Carbon dioxide (CO_2): Of all green house gases, the most prominent is Carbon dioxide (presently 0.0391 % in atmosphere). The chief sources of Carbon dioxide in the atmosphere include manmade activities such as clearing of land, burning of fossil fuels, production of cement and natural sources such as volcanoes, respiration by oxygen-using organisms, combustions and decay of organic matter. The natural sinks that absorb Carbon dioxide from the atmosphere involve the process of photosynthesis which is very important for life but is disturbed due to deforestation. The marine life also absorbs the Carbon dioxide dissolved in the oceans. But, the deforestation and cutting of plants at huge level without new tree plantations is harming the environment very badly.
- Water vapour (H_2O): Water vapour which varies largely place and altitude is one of the most powerful green house gases in the atmosphere of the planet. The warmer the climate on the earth, the greater the evaporation of water from earth's surface. The greater the evaporation, the more the concentration of this powerful green house gas leading to warming up the atmosphere [1].
- Methane (CH_4): Methane is present in lesser concentration in the earth's atmosphere [2]. Methane also resides in atmosphere for shorter duration compared to Carbon dioxide [3]. The sources of methane include volcanoes, wetlands, seepage vents. Methane oxidises bacteria, livestock farming; accelerates burning of natural gases and coal, helps decomposition of landfills, biomass combustion and so on. The natural sink for the gas is soil and atmosphere.
- Nitrous oxide (N_2O) and fluorinated gases: Green house gases produced due to industrial activities include fluorinated gases and nitrous oxide. The three main fluorinated gases are hydro fluorocarbons (HFC), sulphur hex fluorocarbons (SF_6); Fluorinated gases are manmade and not natural. These are created by human activities mostly due to industrial processes. The sources of Nitrous oxides

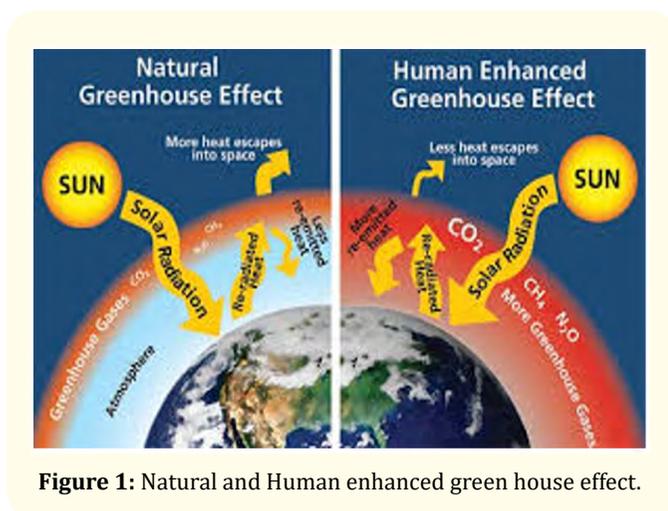


Figure 1: Natural and Human enhanced green house effect.

include bacteria in soil, livestock waste management and use of fertilizers in agriculture [4].

- Surface level ozone (O_3): Surface ozone is the most significant green house gas in the atmosphere. It is caused due to air pollution and it has a very difficult role in balancing radiation on Earth. Ozone occurs in both, Earth's upper and ground level atmosphere. It is harmful air pollutant produced in the atmosphere when contaminants are released by vehicles, power plants, chemical plants, industrial boilers, refineries and other such sources chemically react in the presence of sun radiation and invariably damaging environment.

Consequences of global warming

It is fact that Global warming is the premier cause for continual rise in the Earth's temperature and this rise is triggered by the massive emission of green house gases. Inspection of scientists from analysis figure out that specially in the last few decades the gases are affecting the climate and would further up in the present decay [5]. This high rate of rising of temperature has, of course, negative impact on the life of earth. Human activities over the last few decades have led to the warming of the climate system on the planet. A detailed look at the consequences of global warming is presented.

Effect on climatic conditions

First of all, Global warming has altering precipitation pattern in different regions across the globe. Thus, certain regions are experiencing draught-like situation whilst others are facing floods contradicting usual system. Due to this anomaly condition wet areas are becoming wetter and dry areas are getting drier. This anomaly also leads to formation of cumulus cloud causing storms, cyclones, heat waves and wild fires. Some regions on earth are experiencing extreme weather conditions as a result of global warming and the problem is expected to aggravate in future (Figure 2).

Effect on the sea

The global sea level has risen over the 20th century [6]. The global warming has also adverse effect on sea level. There are two main factors for bad condition on sea-level. Firstly, the thermal expansion occurs for warming of ocean water whilst the increased melting of land based ice increases the rise in sea level. Undoubtedly, the rise in sea level affects specially the coastal and low-lying areas.



Figure 2: Cause and effect of global warming.

Effect on environment

Besides, the overall environment of the earth has been affected due to global warming. The rise in temperature already focused is accelerated air pollution further by raising the ground level ozone which is formed when the smoke emitted by cars, factories and other sources come in contact with heat and sunlight. Undoubtedly, this leads various health problems and the condition is worsening day by day.

Effect on agriculture

It has been experienced that agriculture has been vastly damaged as a result erratic rainfall pattern. As a result, many areas experiencing frequent drought-like rainfall pattern whilst some area experiencing flood like situations damaging various crops from place to place. Consequently, agricultural lands are losing their fertility affecting volume of agricultural products. Global warming is a series concern. Its repercussions are devastating. Carbon emission needs to be controlled immediately in order to lower in order to lower consequences of global warming. This can be done if each and every individual contributes his/her bit towards the cause.

Finally, everyone would have to attempt for controlling the emission of green house gases to get rid of Global warming in order to pollution free environment.

Bibliography

1. Dlugokencky E., *et al.* "Observing Water Vapour". Bulletin n^o, 65.2(2016).
2. Bridgham SD., *et al.* "Methane emission from wetlands: biogeochemical, microbial and modelling perspectives from local to global scales". *Global Change Biology* 19 (2013): 1325-1346.
3. Howarth RW. "A bridge to nowhere: methane emissions and the green house gas footprint of natural gas, Society of Chemical Industry". John Wiley and Sons Ltd., 2.2 (2014): 47-60.
4. Griffis TJ., *et al.* "Nitrous oxide emissions are enhanced in a warmer and wetter world". *Proceedings of the National Academy of Sciences of the United States of America* 114.45 (2017): 12081-12085.
5. Nandi S and Basak P. "Analysis and prediction of methane emission in India, China, Japan South East Asian countries". *Asian Journal of Science and Technology* 7 (2016): 2275-2279.
6. Weston Nathaniel B. "Declining Sediments and Rising Seas: an Unfortunate Convergence for Tidal Wetlands, Estuaries and Coasts". 37 (2013): 1-23.

Volume 3 Issue 6 June 2019

© All rights are reserved by Pijush Basak.