

Global warming: Future implications

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Most greenhouse gases are really life supporting gases. Without these gases, heat would escape back into the outer surface and the earth would be cooler. What we see now is a stronger greenhouse effect trapping more heat than required as a result of which the earth becomes less habitable for human beings, plants and animals.

Human activities cause an imbalance in the natural cycle of the greenhouse effect, particularly in carbon dioxide. When fossil fuels are burnt continuously for cooking, transportation, power production and manufacturing, more CO₂ is released into the atmosphere than is been removed naturally through sedimentation of carbon. Further, deforestation which supports agricultural production transfers carbon from living bio-mass into the atmosphere since dry wood accounts for 50 percent of carbon.

Planet earth may adjust slightly with increased level of greenhouse

gases; however too much gases will affect the whole planet. Human-induced climatic change causes rapid carbon cycle than the earth can bear. Ecosystems have less chance of adapting to the changes that would result in worst forms of climatic change.

Further, scientists have pointed out that if bogs dry out due to global warming, the methane will oxidise and escape into the air as carbon dioxide. However, if bogs remain wet, then the methane will be released straight into the outer atmosphere. Methane is 20 times as potent as Co₂. Nitrous oxide is 300 times more powerful than carbon dioxide. But due to low concentration of these gases, they do not add warmth to the atmosphere.

Increased greenhouse effect leads to global warming, even though some regions may experience cooling or wetter weather. The World Meteorological Organisation (WMO) pointed out that the 1990's was the warmest decade and the last century was the warmest century during the last 1000 years - and that is why there is much concern among all the countries. Keep-

ing the percentage level of global temperature at the same level is not possible at the existing level of human activities. Therefore, climate scientists have suggested containing global temperature increase to an average level of 2 degrees centigrade. Even this small increase will have a huge impact on world biodiversity and agriculture. It would heat upland in Arctic and other high altitudes. In view of this, glaciers in the Arctic region and Mount Himalayas would be reduced. This would result in an increase in sea water level, causing inundation in low-lying coastal areas. The result would be disastrous for farming operations in coastal areas, forcing the people including fishermen to migrate to interior land areas.

Extreme weather would lead to occurrence of more cyclones, hurricanes and droughts, causing longer space of dry season or intense rainfall in some other regions. Scientists have highlighted that northern Europe could be affected severely with cold weather, due to melting of ice glaciers in Arctic region. This fresh water moving towards south would effectively cut off the

Gulf Stream that brings warmth from the Gulf of Mexico. In South Asia, Himalayan glacier melting would lead to water scarcity in the region over a long period.

Further, WMO has noted that a new record of drastic climate events occur everywhere, but in recent years the number of such events has been increasing, leading to violent hurricanes and super storms as witnessed in the USA and Caribbean Islands recently.

As the global warming debate is raging, it is essential to know how the earth has become warmed.

-Global surface temperature: It is reported that the earth's surface temperature has increased by one degree Fahrenheit since 1950

-Melting of glaciers: Arctic sea ice has declined during the period 1978 to 2007 by nearly 30 percent, according to the National Snow and Ice data Centre

-Sea level rise: Scientists have pointed out that melting of ice from the Arctic region raises sea level. In addition to this, when water warms up due to increase in air temperature, sea water expands leading to increase in sea level by 1.7mm. per

year for the period 1870 to 1992. However, after 1993, the rate of change in the water level has doubled to 3.26mm. per year.

-Carbon dioxide levels (Co₂): The IPCC has highlighted periodically that carbon dioxide has increased as a result of human activities such as burning of fossil fuels in factories and in various modes of transportation, as well as in natural processes involving plant and animals, besides volcanic eruptions. The level of Co₂ has increased at 392 ppm. for the period 1950 to 2010.

It is observed that due to global warming, an increase in the sea level has resulted in a rise in carbon dioxide; because oceans will release more Co₂. Further, when there is less ice in the Arctic region, the earth will absorb more of sun's rays, leading to increase in global temperature.

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