

A Brief Study on Climate Change

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Abstract:

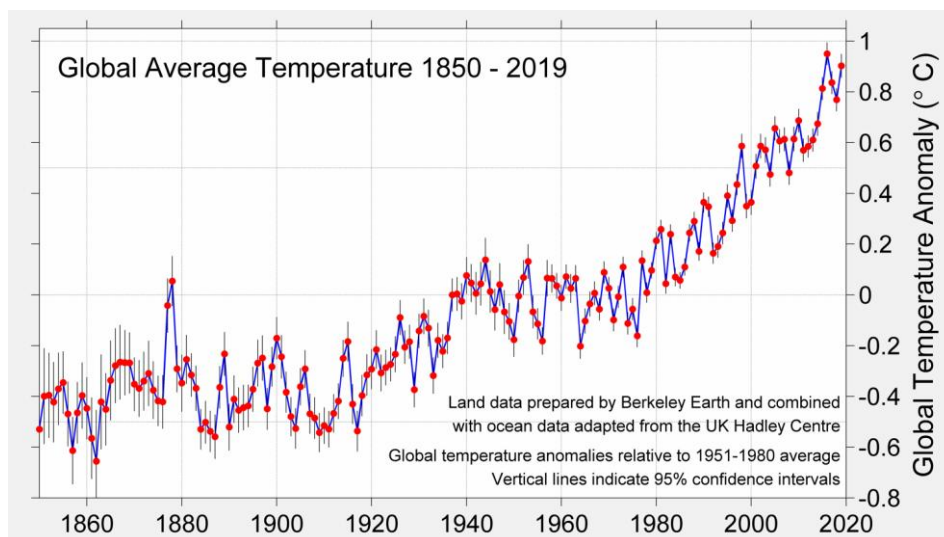
With the advent of globalization, urbanization and modernization the quality of environment is degrading at an alarming rate. Since the last two centuries we can observe drastic change in science and technology. With the advancement in science, the mankind is leading a more sophisticated life, however, at the cost of our environment. The ever rising population is putting forth new challenges and more demands in terms of natural resources (like water, food), employment, materials and equipments and many more. In order of meet these demands, we have constantly been exploiting nature. Due to intense interplay of social, economic and technological activities, the impact on our environment is now a topic of major concern. Because all the living creatures are a part of environment and any imbalance in the same, disturbs the biotic components of it. In the present condition depletion of ozone layer due to greenhouse gases has resulted in global warming which in turn is causing, melting of ice, increased average temperature of the planet, irregular seasons etc. It is now an urgent need to all the governments and public of the world to call for an sustainable development. International organizations are working to protect and preserve environment. The major challenge is now to shift towards sustainable development without hindering the progress in science and technology.

Key Words: Globalization, Urbanization, Modernization, Global Warming, Greenhouse gases, Biotic components, Sustainable development, Ozone layer

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UNFCCC stands for United Nations Framework Convention on Climate Change. It is an international protocol that came into effect in 1994, with the objective to address global climate change resulting from anthropogenic activities and to achieve greenhouse gases stabilization. According to UNFCCC, climate change is defined as, "Change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods"[UNFCCC].



Image

Source : Google

The graph above illustrates the global temperature anomalies from 1850 to 2019. It can be clearly interpreted that over the decades the average temperature of the planet has been increasing though there are some downfall seen in the graph. The average temperature of Earth has risen by 0.76 degree centigrades over

170 years and the process has been found to have intensified over past 5 to 6 decades. According to the 'global climate report' by NOAA, "The global land and ocean surface temperature for January 2020 was the highest in the 141-year record, with a temperature departure from average of 1.14°C (2.05°F) above the 20th century average."

The major cause for this is anthropogenic activities.

The earth is covered by a blanket of gases called atmosphere, of which Nitrogen comprises of 78%, Oxygen comprises of 21%, Carbon dioxide and other gases comprises of around 1%. There are certain gases in the atmosphere that are capable to absorb the solar radiations from the sun. These are called greenhouse gases and they include Carbon dioxide, methane, and other chemicals like hydrofluorocarbons, sulfur hexafluoride etc. These gases are essential as they are responsible for keeping the earth surface warmer and preventing it from freezing. However, excess amount of these gases result in excess warming of earth's surface which is known as global warming.

Global warming is now a major concern for international environmental organizations and the governments of the countries. The ill impacts of global warming are catastrophic and devastating.

- 1) Global warming has caused melting of ice glaciers at North and South poles due to which the global sea level has been rising around 3 mm annually.
- 2) Due to global warming some species of plants and animals are at the verge of being endangered. Also, animals are migrating from their original places due to destruction of their natural habitat.
- 3) Global warming has immensely affected the monsoon rains over the years. Irregular rains destroy crops and affects cultivation.
- 4) It is also observed that excess warming of earth has caused increase in pest population. Insects that harm agricultural crops are seen to multiply more in number in changed climatic conditions of excess heat.
- 5) Excess warming of Earth's surface temperature can pose a lot of health challenges among human populations. This includes higher exposure to harmful ultraviolet radiations due to depletion of ozone layer. Thanks to higher concentration of greenhouse gases. Human tissues too can be affected due to increased temperature along with increased risk of hyper blood pressure, skin cancer, dehydration and fatigue.
- 6) Increased surface ocean temperature can cause bleaching of coral reefs. It takes many years together for marine animals to adapt to their new environment. In this process, some species might be expected to vanish.

While global warming refers to increase in the average temperature of the planet, climate change in the trends observed in the climate measuring parameters such as annual precipitation, average temperature, moisture content in air, pH of rain etc of a place over a period of duration.

Though both are different and global warming is not the only cause for climate change, it definitely leads to climate change. The impacts of global warming on climate change have largely and majorly been adverse.

How the climate will change in the future depends on the amount of greenhouse gases we release into the atmosphere. It also depends on how the Earth responds to the increased heating. We are generally sure of the direction of change (e.g. the world will become warmer and global average sea-levels will rise). We can also give plausible ranges for those changes. In an agricultural based economy like India, climate plays a major role in production of agricultural and animal husbandry products which is the source of income for more than 75% of the households either directly or indirectly. Adverse weather conditions affect their livelihoods to a greater extent, which in turn creates numerous other problems like shortage of food for exploding populations, shortage of potable water etc.

Many organizations throughout world are joining hands and fighting against climate change issues. These organizations not only address climate change and global warming issues, but also work to take suitable measures to combat the ill effects of climate change and to spread awareness among public. Some of these organizations have joined hands with United Nations and are operating at international level while others at their national levels.

The Intergovernmental Panel on Climate Change is a specialized body jointly established by the United Nations Environmental Programme (UNEP) and the World Meteorological Organization mandated to prepare

scientific assessments on various aspects of Climate Change. "The IPCC has started work on the preparation of its Sixth Assessment Report, which will provide an update of knowledge on the scientific, technical and socio-economic aspects of climate change, its causes, potential impacts and response strategies"[environment.gov.au].

Greening the blue is an initiative undertaken by UN Environment and launched in 2010, to spread awareness about sustainable development. As UNV says, "UN and other global leaders have repeatedly highlighted the need for the engagement of volunteers and communities to achieve the Millennium Development Goals (MDGs) and sustainable development. A strong people-centred approach to development through voluntary action is already happening in the field, integrating social, economic and environmental transformation."

Climate change is an urgent need for us to take initiatives about, rather than just a subject of research and discussions. All the nations, industrialists, and public equally play a major role in this. If the adverse conditions prevailing today continues, mankind will definitely struggle to survive.

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