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Essay

Global Warming Climate Change

'You have stolen my childhood and my dream with your words, but I am lucky one! People are collapsing. We are in the beginning of mass extinction. All you can talk about is a money, fairy tale of external economic growth. How dare you!' -- Greta Thunberg

The Swedish teen climate activist's emotional speech at United Nations "Climate Action" summit in New York on 23rd September 2019 toward the world leader. Source: the Guardian

The planet is warming, from North Pole to South Pole. Since 1906, the global average surface temperature has increased by more than 1.6 degrees Fahrenheit (0.9 degrees Celsius)—even more in sensitive polar regions. And the impacts of rising temperatures aren't waiting for some far-flung future—the effects of global warming are appearing right now. The heat is melting glaciers and sea ice, shifting precipitation patterns, and setting animals on the move.

Intergovernmental panel on climate change IPCC stated that we are less than 12 years away from not being able to undo our mistakes. In that time unprecedented changes in all aspect of society need to have taken place, including a reducing of on CO2 emission by at level 50 %. From inundation of 80% area of Venice from flash flood, wildfire of Australia to spread of pneumonic plague in China all blames were on climate change.

With the words of Wikipedia – *'Climate change happening now is both global warming because of humans, and also weather patterns changing because of the global warming.'*

According to United Nation, Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, but since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels (like coal, oil and gas), which produces heat-trapping gases.

Recent scenery and climate crisis:

Rising climate related disaster is a global phenomenon. Recent years' heavy rains have caused devastating floods in different countries like Bangladesh, India, China etc. Floods have taken a heavy toll on lives and properties. The poorer countries are bearing the largest brunt. An increase in temperature is predicted to occur because of an increase in greenhouse effect resulting, especially, from pollution. The whole process of global warming may also be known as 'climate crisis.' When the natural disaster triggered by rapid climate change or climate crisis exert a bad effect on the whole world, it is called 'global climate crisis'.

Causes of Global Climate Change:

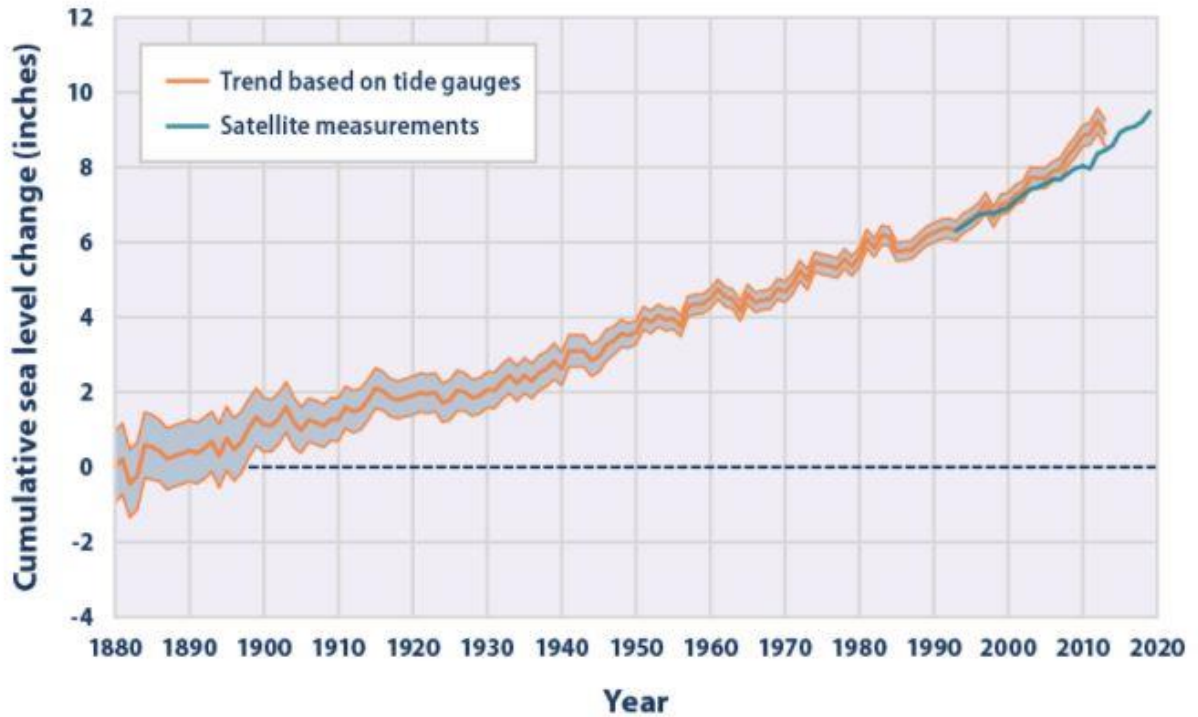
The cause of global climate change can be divided into two categories- human and natural.

A. Natural causes: The earth's climate changes thought natural factors like volcanic eruptions. When a volcano erupts, it throws out large volume of Sulphur dioxide water vapor dust and ash into atmosphere. Large volumes of gases and ash can influence climate patterns for years. The greenhouse gas, carbon dioxide, also produces, but the produced CO₂ is insignificant when compared to emissions process by humans. The oceans play an important role in determining the atmosphere concentration of CO₂. Changes in Ocean circulation affect the climate through the movement of CO₂ into or out of the atmosphere.

B. Human factors: it is now a global concern that the changes occurring today has been speeded up because of human activities. Fossil fuels as oil, and natural gas supply most of the energy needed to run vehicles, generate electricity for industries and households. The energy sector is responsible for about 3/4 of the carbon dioxide emissions, about 1/5 of the methane emissions and a large quantity of nitrous oxide. Changes in the land use pattern, deforestation, land cleaning, agriculture and other activities- all lead to a rise in the emission of carbon dioxide. Methane is another important Greenhouse gas in the atmosphere. Methane is emitted in the process of oil drilling, leaking gas pipelines, landfills and waste dumps.

1. Rise of Sea Levels: Due to climate change, average sea level around the world rose about 8 inches in the past 100 years. Coastal Cities of the world are seeing an increased number of floods. By 2050, many cities on earth will see the rise of sea level. It will increase the number of devastating storms and floods. Hurricanes and typhoons also will be increased.

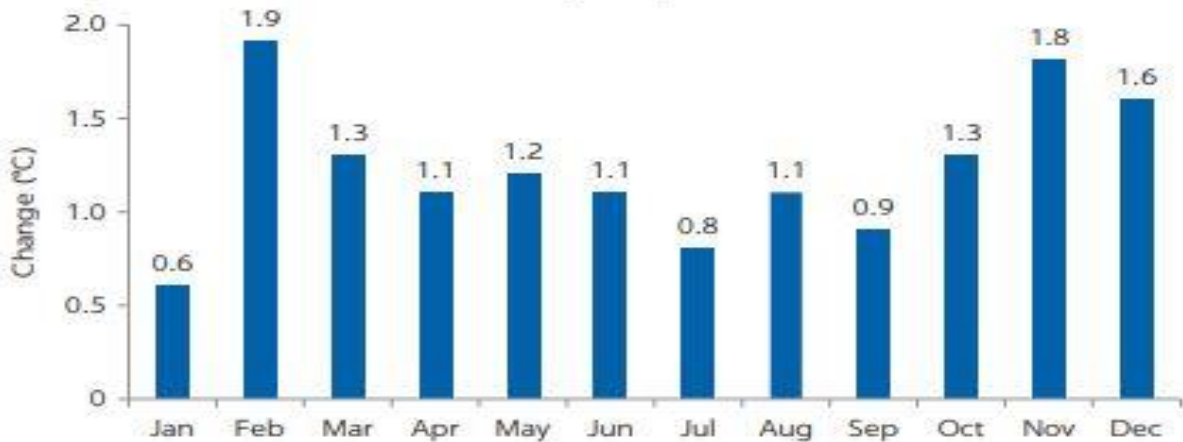
Figure 1. Global Average Absolute Sea Level Change, 1880–2019



Source: National Geography

2. Heat Waves and Droughts: Despite downpours in certain places, droughts and prolonged heatwaves occur frequently. Hot and dry places will get hotter and drier happening in the places which were once temperate.

Change in historical mean monthly temperature, 1901–2019



Source: Calculation based on data from the Bangladesh Meteorological Department and the Climate Change Knowledge Portal database of the World Bank, <https://climateknowledgeportalworldbank.org>.

Here in the report of World Bank where a projection is showing the difference of the temperature of over the 100 years. On an average of 1 to 2 degree Celsius change is prevalent in this statistics.

3. Change of ecosystem: As the world warms, entire ecosystems are changing. Colder water increases fisherman's catches and warmer water eliminates fishing. Farmers in temperate zones are finding drier conditions difficult for crops.

4. Reduction of food security: One of the most striking impacts of temperature rise is in the decrease of food and its supply. Different crops grow largely at specific temperatures when these temperatures change, their productivity changes a lot also. Rice yields declines by 10% with every 1°C increase in temperature.

5. Use of Chemicals: Huge amount of chemical are used in industry and agricultural sector NO₂, Methane, CFC, lead, heavy metal, complex organic / materials, carbon monoxide all these are liberated in atmosphere and polluting the environment. Chemical weapons are also used by the developed world. Acid rain occurs because of the use of these chemicals.

6. Unplanned Urbanization and Deforestation: People are shifting from rural area to urban area in reach of livelihood as result to accommodate this increasing population. Forest are vanishing to provide them with space the overpopulated countries and trees use of trees as fuel material for house building. That's making itself the most terrible cause for the Global Warming. We know that 25% of a country's total space should be covered with forest. Let's see what's the actual scenario of the South Asia in this respect-

Country	Most Recent Year	Most Recent Value
Afghanistan	2020	1.9
Maldives	2020	2.7
Pakistan	2020	4.8
Bangladesh	2020	14.5
India	2020	24.3
Sri Lanka	2020	34.2
Nepal	2020	41.6
Bhutan	2020	71.4

Source: UNEPA

Scientists already have documented these impacts of climate change:

- ❖ Ice is melting worldwide, especially at the Earth's poles. This includes mountain glaciers, ice sheets covering West Antarctica and Greenland, and Arctic sea ice. In Montana's Glacier National Park the number of glaciers has declined to fewer than 30 from more than 150 in 1910.
- ❖ Much of this melting ice contributes to sea-level rise. Global sea levels are rising 0.13 inches (3.2 millimeters) a year, and the rise is occurring at a faster rate in recent years.
- ❖ Rising temperatures are affecting wildlife and their habitats. Vanishing ice has challenged species such as the Adélie penguin in Antarctica, where some populations on the western peninsula have collapsed by 90 percent or more.
- ❖ As temperatures change, many species are on the move. Some butterflies, foxes, and alpine plants have migrated farther north or to higher, cooler areas.
- ❖ Precipitation (rain and snowfall) has increased across the globe, on average. Yet some regions are experiencing more severe drought, increasing the risk of wildfires, lost crops, and drinking water shortages.
- ❖ Some species—including mosquitoes, ticks, jellyfish, and crop pests—are thriving. Booming populations of bark beetles that feed on spruce and pine trees, for example, have devastated millions of forested acres in the U.S.

Other effects could take place later this century, if warming continues. These include:

- ❖ Sea levels are expected to rise between 10 and 32 inches (26 and 82 centimeters) or higher by the end of the century.
- ❖ Hurricanes and other storms are likely to become stronger. Floods and droughts will become more common. Large parts of the U.S., for example, face a higher risk of decades-long "megadroughts" by 2100.
- ❖ Less freshwater will be available, since glaciers store about three-quarters of the world's freshwater.
- ❖ Some diseases will spread, such as mosquito-borne malaria (and the 2016 resurgence of the Zika virus).
- ❖ Ecosystems will continue to change: Some species will move farther north or become more successful; others, such as polar bears, won't be able to adapt and could become extinct.

Global initiatives to tackle climate change:

There are much- talk about saving climate and trying to reduce CO2 emissions to decrease effect on climate. the international charming initiatives taken by the whole world on the protection of climate change are cited below:

1. Earth Summit 1992: In 1992, more than 100 heads of states made in Rio de Janeiro, Brazil for the first international Earth Summit convened to address argent problems of environmental protection and socio-economic development.

2. Kyoto Protocol 1997: Kyoto Protocol is another significant initiative signed in December 1997. Kyoto Protocol set and internationally binding emissions targets, recognizing the developed countries are principally accountable for current high levels of GHG emissions in atmosphere. Many developed countries have agreed to legally binding limitations /reductions in their emissions of greenhouse gases.

3. Conference of Parties (COP): The Conference of Parties evaluates the implementation of the convention. It considers and adopts as required amendment to the convention and its annexes to list new chemical brought forward by the president Organic Pollutant Review Committee.

4. Paris Agreement (2015): Paris Climate Agreement with in UNFCC deals with greenhouse gas emissions mitigation, adaptation and finance starting in the year of 2020. The aims of the conversation convention are given below:

- a. Holding the increase in global average temperature to well below 2°C above pre- industrial levels and to pursue efforts to limit temperature increase to 1.5°C above pre-industrial levels.
- b. Increasing ability to adapt to adverse impacts of climate change.
- c. Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development.

5. Madrid Climate Change Conference, 2-13 December, 2019: The Madrid Climate Change Conference -COP25 - will bring the world together to consider ways to strengthen the implementation of the Paris Agreement. Taking place from 2 to 16 December in Madrid, the Conference comes at a time when new data shows the climate emergency is getting worse every day, and is impacting people's lives everywhere, whether from extreme heat, air pollution, wildfires intensified flooding or droughts.

6. Netherlands GCA Climate Adaption Summit in 2020: The Netherlands will host the Global Commission on Adaptions (GCA) Climate Adaption Summit in October 2020. Following the UN Climate Action Summit on 23 September 2019, convened by UN Secretary General Antonio Guterres to meet the climate challenge, the GCA will begin its Year of Action. The GCA Year of Action will: advance recommendations from the Commissions Flagship Report titled, 'Adapt Now :A Global call for Leadership on Climate Resilience, released in September 2019, and the Climate Action Summits action tracks, including food security, infrastructure, finance, urban resilience and nature -based solutions, with tangible and actionable targets.

Bangladesh and Global Warming:

To address the sea level rise threat in Bangladesh, the Bangladesh Delta Plan 2100 was launched in 2018. The government of Bangladesh is working on a range of specific climate change adaptation strategies. Climate Change adaptation plays a crucial role in fostering the country's development. This is already being considered as a synergic urgent action together with other pressing factors which impede higher growth rates (such as the permanent threat of shocks – natural, economic or political – the uncertain impact of globalization, and an imbalanced world trade). As of 2020, it was seen falling short of most of its initial targets, still leaving 80 million people at risk of flooding where it should have been reduced to 60 million people.

We will finish the climate change resulting Global Warming with the keen and frustrated tone of Elon Musk-

“If we don't take action, we could see anywhere from 5% to 10%, maybe more of the land mass absorbed by water.” — Elon Musk

The very sad observation is that it may seem we are all waiting to see the prediction foretold by Elon Musk rather than working to stop it anyway.