# INTERDUCTION

Climate change means a long-lasting, large-scale change in the average temperatures and the earth’s weather patterns. The cause of climate change is fossil fuels like coil, gas, oil. When we use fossil fuels, the trapped carbon dioxide stored inside them gets released into the air, which results in climate change. The world is already affected by climate change earth is getting hotter, the sea level is rising, and rainfall patterns are changing. These changes can increase the risk of floods, fires, heat waves, droughts.

# WHAT IS CLIMATE CHANGE

**Climate change refers to a long-term shift in the earth’s weather pattern. Before the mid-1800s, climate change was natural. For example, changes in the earth’s orbit or volcanic eruptions were the cause of climate change. But since the mid-1800s, the cause behind climate change is human activities because humans have increasingly used fossil fuel for their everyday life. Fossil fuels have loads of greenhouse gases inside them. When we use fossil fuel, the greenhouse gases inside them gets released into the air, which results in climate change. For example, the Global mean sea level has risen about 8–9 inches (21–24 centimeters) since 1880, with about a third of that coming in just the last two and a half decades. The rising water level is mostly due to a combination of meltwater from glaciers and ice sheets and the thermal expansion of seawater as it warms. And some greenhouse gases can trap more heat than other greenhouse gases. Methane can trap 25 times more heat than Carbon dioxide.**

Causes of climate change

In the past 4.5 billion years, the climate has been changing rapidly. The cause behind these climate changes were natural disasters that included changes in the earth's orbit or volcanic eruptions. In the past one million years our planet has faced multiple ice ages that included colder periods and warmer periods. Glacial and interglacial periods occur every 100000 years due to changes in the earth's orbit around the sun. However, since the Industrial Revolution in the 1800s, the global temperature has increased at a much faster rate. By burning fossil fuels and changing how we use the land, human activity has quickly become the leading cause of changes to our climate.

Greenhouse gases live in the atmosphere, trap heat and cause the planet to heat up these are also known as greenhouse effects. These greenhouse gases are getting produced by humans and natural resources. Greenhouse gases are Carbon dioxide, Methane, nitrous oxide naturally form in the atmosphere. When the radiation of the sun reaches the earth, some of it passes throw the atmosphere and heats the surface. The surface absorbs most of the radiation and gives off longer-wavelengths infrared radiation. The greenhouse gases absorb the radiation and reflect some of it in all directions, reflecting some of it to the surface, this is the reason behind global warming.

**Nevertheless** comprehended about Humans are the main cause of climate change because they have increased the release of Carbon dioxide and other greenhouse gases into the air. Nowadays, Carbon dioxide is the most released greenhouse gas. It causes 80% of global warming. There are some examples of human activates which cause climate change and global warming:

**Burning fossil fuels** – Fossil fuels are trapped underground for thousands of years and have stored a large quantity of carbon dioxide inside them. There are lots of hazards when we use fossil fuels that are:

When Carbondioxide inside the fossil fuels is released into the air, there are many risks of diseases that include **stroke**, heart disease, lung cancer, and respiratory illness among those exposed.

**Deforestation -** When we cut forest, there are many problems attached to it that include:

There will be no trees to take Carbondioxide from the air, resulting in Carbondioxide levels, increase. And when we burn trees, the stored Carbondioxide inside the trees gets released and causes air pollution.

**Agriculture** – Planting crops and rearing animals releases many different types of greenhouse gases into the air. For example, animals produce methane, which is 30 times more powerful than carbon dioxide as a greenhouse gas. The nitrous oxide used for fertilizers is ten times worse and is nearly 300 times more potent than carbon dioxide!

**Cement** – Producing cement is another contributor to climate change, causing 2% of our entire carbon dioxide emissions.

# What are the effects of climate change?

Climate change can affect human health, crops growth, weather patterns, sea levels and so on. Some people can face death or leave their homes. The future of our plant will depend on how fast we will stop greenhouse gas (coil, gas, oil) emissions. This won't mean that if we stop greenhouse gases emission today, we won't face any problems. But the sooner we stop, the smaller consequences we will face.

Climate change can affect our planet in different ways that include:

* Warmer land and air
* Warming oceans
* Melting ice
* Rising sea levels
* Ocean acidification
* Global greening
* More extreme weather

The temperature of our plant has risen by 1 degree since the 1800s. From 2015-to 2020, these are the hottest years in the history. A hotter planet means the more consicquses it will face. As the planet gets hotter, heat waves become more common. In the past few years, heat waves are the deadliest global weather hazard.

Oceans absorb 90% of the extra heat generated by humans. As oceans get hotter the, more they expand, this is the cause behind the rising sea level. We have also found that extra water comes to the ocean from the melting glaciers. From 1900 and 2019, the global sea-level rise by about 20cm.

Some parts of the world get wormer quickly like North Pole and South Pole compared to other parts of the world. **In the poles, glaciers work as a mirror because they reflect the heat and radiation of the sun to space. So, when there is less ice, less heat and radiation is reflected, this causes the area to heat up, and more ice melts.** The ice is 65% thinner than it was in 1964. If we don't stop emitting greenhouse gases, we can face ice-free summer.

If there is less ice in the poles, the sea levels can rise, and there won't be any freshwater supply to the oceans. And this can result in seawater saltiness, which can slow or change ocean currents. Nonetheless Oceans absorb 25% of CO2 emotions that are caused by humans. And this causes the water to be less alkaline and more acidic. And results in seawater acidification, which can cause many hazards such as decrees pH of seawater can have harmful effects on marine life, and this can affect the food we eat.

LiDAR’s opponents have prevented the technology from advancing to a point where it might be scientifically useful, favoring traditional methods.

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