

## Global Warming: The Ultimate Challenge for The World

**Dr. Shweta Jain**

*Assitant Professor*

*Dept. of Zoology*

*Meerut College, Meerut*

*Email: sjmrtcol6068@gmail.com*

Reference to this paper  
should be made as follows:

**Dr. Shweta Jain**

*“Global Warming: The  
Ultimate Challenge for  
The World”,*

Voyager: Vol. X, 2019  
pp.89-96

### **Abstract**

*This article will state evidence that global climate change caused by global warming needs immediate action. Uncertainties caused by global warming and sudden climate change are also discussed in this article. Since this problem is growing on a rapid phase there are few solutions stated in the article which can be taken to prevent global warming and to reorient economic development policies in developing countries are examined.*

**Keywords:** *Global warming, glaciers, climate change, greenhouse effect, measures.*

## **Introduction**

Global warming has become a major threat to the world. The major reason for the increase of global warming is the increase on the greenhouse gas produced by human activities. Stating in layman's terms increase in the surface temperature of the earth. Burning of fossil fuel, industrial activities, cutting down of forests are increasing the greenhouse gases in the atmosphere, therefore disturbing the balance of the nature. Another effect of global warming is climate change.

Climate change is a broad term which is used to refer the change in the earth's climate at local and regional level. A global warming of 1°C or 1.5°C is an average throughout the globe; many regions will warm far more quickly and experience significantly bigger temperature rises. The Arctic, for example, is warming 2-3 times faster than any other area on the planet. Rising sea levels, glacier retreat, changes in the timing of seasonal events (plants flowering, migration patterns), and an increase in the frequency and severity of extreme weather events are all repercussions of global warming. People and wildlife are affected directly and indirectly by these types of impacts.

## **Climate Change**

The water cycle is becoming more intense as a result of climate change. In many areas, this means heavier rainfall and flooding, as well as more intense drought.

Rainfall patterns are being influenced by climate change. Precipitation is expected to increase in high latitudes, whereas it is expected to decrease in the subtropics. Monsoon precipitation is likely to change, with regional variations.

Sea level rise will continue in coastal locations throughout the twenty-first century, contributing to more frequent and severe coastal flooding in low-lying areas, as well as coastal erosion. Extreme sea level occurrences that happened once every 100 years in the past could happen every year by the end of the century.

Further warming will hasten permafrost thawing, as well as the loss of seasonal snow cover, glacier melting, and other effects.

Warming, more frequent marine heatwaves, ocean acidification, and lower oxygen levels have all been connected to human influence in the ocean. These changes have an impact on both ocean ecosystems and the people who rely on them, and they are expected to continue for the rest of the century.

Some features of climate change, such as heat (because urban areas are often warmer than their surroundings), flooding from significant precipitation events, and sea level rise in coastal cities, may be accentuated in cities.

Climate change's effects will not be seen equally over the world; the poorest

countries and geographically susceptible regions (such as small island states) will be the earliest and most severely affected. This is due to the fact that poor communities are more likely to be exposed to environmental dangers, are more reliant on natural resource-based livelihoods such as agriculture, and have fewer means to deal with climate change.

Each fractional degree of warming has a significant influence on biodiversity, species extinction, and natural ecosystem disruptions.

Even if carbon emissions in the atmosphere can be absorbed and stabilised over time, many of the effects on wildlife, land, water, and people will be permanent once they have occurred.

### **Glaciers**

Talking about the glaciers, they are melting at a much faster rate. Glaciers are important because ice acts as a protective layer over the earth and oceans in the sense they reflect back the heat waves and keep our planet cooler. Our 90% of land which is covered in ice is in Antarctica and other 10% is in Greenland.

When glaciers melt the water stored in the land, flows down and significantly increases the amount of water in the ocean, contributing to global sea level rise. According to the research about 95% of the oldest and thickest ice in the Arctic is already gone. And every 10 years ice is melting more

than 10%. These rapid melt in Antarctica also influences ocean currents

### **Sea Level**

Since 1880, the sea level has risen 8–9 inches (21–24 centimetres).

Global sea level rose 91.3 mm (3.6 inches) above 1993 levels in 2020, setting a new record high.

The rate of sea level rise is increasing: from 0.06 inches (1.4 millimetres) per year for most of the twentieth century to 0.14 inches (3.6 millimetres) per year between 2006 and 2015.

High-tide flooding is now 300 percent to more than 900 percent more common in various parts of the United States' coastline than it was 50 years ago.

Even if the world stays on a low-carbon path, global sea levels are expected to increase by at least 12 inches (0.3 metres) by 2100.

A worst-case scenario of as much 8.2 feet (2.5 meters) above 2000 levels by 2100 cannot be ruled out.

Talking about the rising sea level and droughts caused due to the rising temperature, Lake Tuz is a perfect example of this condition. Lake Tuz is a saline lake occupying a huge area in the central Anatolia region about 65 miles( 105km) northeast of Konya, also neighbouring the Aksaray and Ankara provinces. Due to global warming a major change has been seen in the Lake Tuz i.e., Flamingo hatchlings were found dead

along with adult birds laying scattered across the cracked, dried-up lake bed. The water level has started to recede to 2000. Reason behind the decrease in the water level is rising temperature, excessive evaporation and insufficient rain. Not only the surface water but also the underground water levels are decreasing around Lake Tuz. Ecosystem is another factor being affected by the global warming and sudden climate change. Taking lake Tuz ecosystem in consideration, it is the home to 279 different plants, 39 of which are aquatic in nature. In the name of the lake there is only sand and mud left.

#### **Amazon forest fire.**

The Amazon Rainforest, the world's largest rain forest, is on the verge of being completely burned out. The rainforest, which produces about 20% of the world's oxygen, has been burning for more than 16 days, resulting in significant tree and biodiversity loss. If it is not extinguished immediately, it will entirely burn out.

The 2019 Amazon rainforest wildfires season saw a year-to-year surge in fires occurring in the Amazon rainforest. The major reason for this huge fire was deforestation. Fire normally occurred around the dry season as slash and burn methods are used to clear the forest to make way for agriculture, livestock, logging and mining. According to the reports, the amazon rainforest has been the worlds largest carbon dioxide sink and estimated

to capture about 25% of global carbon dioxide. Now imagine this huge sink disappearing leading to the increase in the atmospheric carbon dioxide and increase in the global temperature. Also, when the forest was on fire additional carbon dioxide was released, causing a major harm to the atmosphere.

According to the scientist, amazon has reached the "tipping point" where it would irreversibly die out, the land becoming more savanna than forest.

The fire in Brazil's Amazon rainforest is raging at its fastest pace yet. In 2019, there were 72,843 fires in Brazil, with more than half of them occurring in the Amazon rainforest. The number of fires has increased by 80% from the same time last year.

The Amazon rainforest fire, according to scientists, might be a major setback in the worldwide fight against climate change. Not only will the fire destroy trees and wildlife, but it will also release extra CO<sub>2</sub> into the sky. Forest fires also discharge pollutants into the atmosphere, such as particulate matter and hazardous gases including carbon monoxide, nitrogen oxides, and non-methane organic compounds.

The Amazon rainforest is known as the planet's lungs because it contributes around a third of the world's oxygen about 20 percent of the earth's oxygen, is vital to

slow down global warming. The rainforest is currently home to uncountable species of fauna and flora. While the immediate impact of the fire would be changes in the heating of the regional atmosphere, in the long term it is expected to lead to a potential decline in natural carbon.

The impact of the Amazon rainforest fires may already be visible in South America, notably along the Atlantic coast and in Sao Paulo, Brazil's largest city. Around 3 p.m. on Monday, Sao Paulo was plunged into darkness. The city looked to be engulfed in a dark, smoky blanket, and the rain that poured down smelled like smoke. The city of Sao Paulo is thousands of kilometres away from the raging inferno.

#### **Uttarakhand before Climate Tragedy: A Mountaineer Remembers**

The Indian Himalayas were devastated by calamity on February 7th. A block of ice, rock, and soil broke off from the Ronti glacier and plunged into the river below in Uttarakhand's northern state. This resulted in a massive and disastrous flash flood, killing more than 70 people and leaving more than 130 people missing. Scientists and academics later found that climate change played a significant impact in the disaster.

#### **Climate Change is Leading to More Lightning Strikes in India**

The Third Pole, which was launched in September 2021, shed light on an under-

reported aspect of climate change-related disasters: lightning strikes. Lightning is the deadliest natural hazard in India, according to Sanjay Srivastava of the National Panel of Experts on Lightning at India's National Disaster Management Authority. The phenomena kill twice as many people as floods, but it receives far less attention.

"There has been a huge surge in the frequency, intensity, and geographical spread of lightning strikes in India," according to Srivastava, which he attributes to changes in the climatic system. However, because lightning isn't on the official list of disasters, the hazards aren't factored into development and disaster-recovery plans.

#### **Precipitation**

From the 17th to the 21st of July, China's Henan Province experienced extreme rainfall. On July 20, the city of Zhengzhou got 201.9 millimetres of rain in one hour (a Chinese national record), 382 millimetres in six hours, and 720 millimetres for the entire event, which was more than its annual normal. More than 302 people have died as a result of flash floods, with an estimated economic damage of \$17.7 billion.

In mid-July, Western Europe witnessed some of the worst flooding on record.

On the 14th and 15th of July, western Germany and eastern Belgium got 100 to 150 millimetres of rain over a wide area, triggering flooding and landslides, as

well as more than 200 deaths. At Wipperfürth-Gardenau, the greatest daily rainfall was 162.4 mm (Germany).

Persistent above-common rainfall within the first 1/2 of the year in elements of northern South America, specially the northern Amazon basin, caused massive and long-lived flooding within the region. The Rio Negro at Manaus (Brazil) reached its maximum degree on file. Floods additionally hit elements of East Africa, with South Sudan being specially badly affected. Significant drought affected a great deal of subtropical South America for the second one successive yr. Rainfall became properly beneath common over a great deal of southern Brazil, Paraguay, Uruguay and northerly Argentina. The drought caused massive agricultural losses, exacerbated through a chilly outbreak on the give up of July, negative lots of Brazil's coffee-developing regions. Low river degrees additionally decreased hydroelectricity manufacturing and disrupted river transport. The 20 months from January 2020 to August 2021 became the driest on file for the southwestern United States. A malnutrition disaster related to drought gripped elements of the Indian ocean island of Madagascar.

In the ultimate ten years, conflict, intense climate occasions and financial shocks have multiplied in frequency and

intensity. The compounded results of those perils, similarly exacerbated through the COVID-19 pandemic, have caused an upward thrust in starvation and, consequently, undermined a long time of development closer to enhancing meals security. Following a height in undernourishment in 2020 (768 million human beings), projections indicated a decline in worldwide starvation to round 710 million in 2021 (9%). However, as of October 2021, the numbers in many nations had been already better than in 2020. This putting increase (19%) changed into ordinarily felt amongst companies already tormented by meals crises or worse (IPC/CH Phase three or above), growing from one hundred thirty five million human beings in 2020 to 161 million through September 2021. Another dire result of those shocks changed into the developing variety of human beings dealing with hunger and a complete crumble of livelihoods (IPC/CH Phase 5), ordinarily in Ethiopia, South Sudan, Yemen, and Madagascar (584 000 human beings). Extreme climate at some point of the 2020/2021 La Niña altered rainfall seasons contributing to disruptions to livelihoods and agricultural campaigns throughout the world. Extreme climate occasions at some points of the 2021 rainfall season have compounded current shocks. Consecutive droughts throughout massive elements of Africa, Asia,

and Latin America have coincided with extreme storms, cyclones and hurricanes, notably affecting livelihoods and the capacity to get over recurrent climate shocks. Extreme climate occasions and conditions, regularly exacerbated through weather change, have had principal and numerous effects on populace displacement and at the vulnerability of human beings already displaced at some point of the year. From Afghanistan to Central America, droughts, flooding and different in tense climate occasions are hitting the ones least prepared to get better and adapt Ecosystems – inclusive of terrestrial, freshwater, coastal and marine ecosystems – and the offerings they provide, are stricken by the converting weather. In addition, ecosystems are degrading at an extraordinary rate,

that's expected to boost up within the coming a long time. The degradation of ecosystems is restricting their capacity to guide human health and harming their adaptive capability to construct resilience.

### **Implications and Conclusions**

This paper provides a review of the literature on the subject of global warming and climate change and its impact on the various part of the world. The evidence suggest that global warming will affect oceans glaciers atmosphere. A series of practical solutions for all factors is provided. In conclusion humans should understand the importance of global warming and therefore in a responsible manner they must seek their proper and effective role in the adaptation to and the mitigation of global climate change.

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