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Climate Change in India from 2018 to 2021 and the Consequences of Global Warming on Human Health: A Review

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Abstract: Global warming has had a significant impact in the escalation of weather and climate extremes. Since the beginning of the industrial revolution, the average global temperature has risen by around one degree Celsius. This is due to the fact that industrial-era human activities dramatically altered the composition of the atmosphere. Humans are thus principally responsible for the present state of climate change, which includes a shift in the worldwide monsoon systems, warming and acidity of the global seas, melting sea ice and glaciers, increasing sea levels, and changes in marine and terrestrial ecosystems. This page attempts to comprehend global warming concerns that lead to global warming, as well as its detrimental effects on humanity. Particular emphasis is placed on the ways in which global warming has contributed to the loss of species, the spread of illness, and a rise in pollution, all of which represent a substantial danger to the continuing survival of human cultures around the planet. In addition, the research examines how global warming influences climate change in various regions of the globe.

Keywords: Global warming, temperature, carbon trading, human health.

Introduction

The average temperature in India has risen by approximately 0.7 degrees Celsius between the years 1901 and 2018, and it is estimated that by the end of the twenty-first century, the average temperature across India will have risen by approximately 4.4 degrees Celsius to 5.5 degrees Celsius. This increase in temperature has been attributed to a number of factors, including a rise in global temperatures overall. As a consequence of this, it is anticipated that the frequency of occurrence of warm days and warm nights would rise by 55 percent and 70 percent, respectively, and as a consequence of this, it is also anticipated that the occurrence of heat waves will also increase throughout the summer seasons across India [1-2]. India has risen to the tenth position on the global Climate Change Performance Index 2021, which was just just released in Germany. This news comes as a result of recent research conducted in Germany [3]. The release of greenhouse gases into the atmosphere, such as those caused by the burning of fossil fuels and the destruction of forests, has contributed to the melting of glaciers and sea ice. The fact that the level of the ocean is steadily increasing is a big cause for worry among people all around the globe [4-6]. This undoubtedly contributes to the phenomenon of global warming. via an increase in the amounts of CO2 In recent years, there has been a rise in greenhouse gases, which has resulted in an increase in atmospheric thickness owing to the fact that more rays are reflected in the atmosphere when the atmosphere is thicker [7-9].

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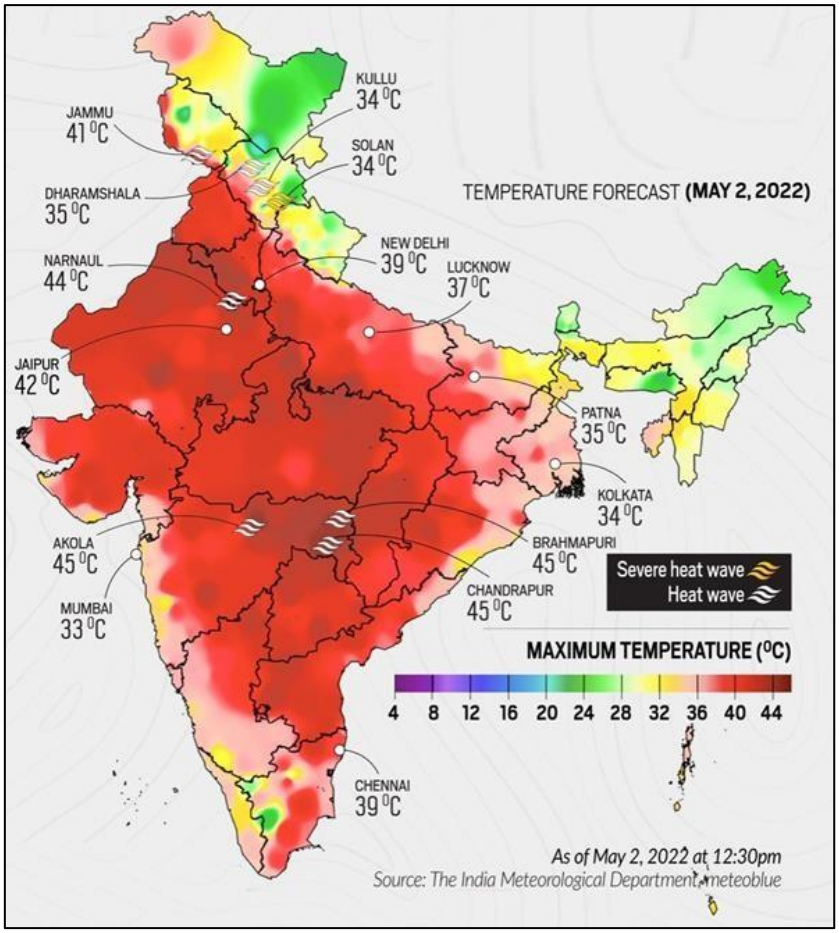

Figure 1: Temperature forecast.

Causes of Global Warming

Burning fossil fuels is the major source of global warming that is caused by humans; when we do this, we release energy that has been stored for hundreds of millions of years in the form of coal, gas, and oil [10]. The most important factor in the acceleration of climate change is the production of carbon dioxide throughout the process [11]. The generation of electricity is responsible for 40 percent of the emissions of carbon dioxide [12]. The burning of coal was majourly responsible the harmful emissions produced by the power industry, while medical waste were responsible for two-thirds of mercury emissions and one third of all emissions can be attributed to the transportation of both people and goods [13-15]. Agriculture is responsible for a significant proportion of the world's total emissions of both methane and carbon dioxide; specifically, agriculture is responsible for producing forty percent of the world's methane and twenty percent of its carbon dioxide [16]. Due to reduction in area of forest land, materials made of wood are increasingly used in the construction industry. Paper and fuel both contribute to global warming because of the emission of carbon dioxide that occurs during the cutting down of trees and degradation of forest cover [17]. The amount of heat that is generated on agricultural land that has been fertilized with nitrogen-rich fertilizers is increased. Nitrous oxide can absorb up to three hundred times the amount of heat that carbon dioxide can. When oil is burned in the drilling industry, a significant amount of carbon dioxide is released into the atmosphere. The extraction of natural gas often involves using hydraulic fracturing, which contributes to air pollution. The process of extracting natural gas from shale deposits is harmful to groundwater supplies because it pollutes these supplies. Toxic gases such as methane and nitrous oxide are released when garbage is burned [18]. When a volcano erupts, it releases carbon dioxide into the atmosphere, which contributes to global warming [19]. The air becomes cooler as a result of the ash in the air reflecting more solar energy.

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Effects of Global Warming on human health

Those living in impoverished circumstances and those who already have health problems are the demographics that are most susceptible to the detrimental impacts that climate change may have on one's health [20]. According to the National Institute of Environmental Health Sciences in the United States, climate change is a contributing factor in the introduction of new diseases and pests into areas that were not previously infested, as well as the worsening of a large number of conditions that were already present [21]. Additionally, climate change poses a number of challenges to the integrity of the food supply. These challenges include a decrease in the nutrient density of staple crops like wheat and rice, an increase in the accumulation of mercury and other toxins in seafood, and a higher likelihood that pathogens that cause food-borne illnesses will find their way into the food supply [22-24]. This might lead to excessive rainfall in particular regions, as it did in Mumbai in July of the year 2000, when water from the ocean and moisture from the soil are absorbed at a much quicker pace [25]. The rise in emissions of greenhouse gases has a direct impact on the earth's temperature, which in turn has a significant impact not only on the health of people but also on the environment. The general population has to be educated about the serious problem of global warming and the ways in which the burning of fossil fuels has led to an increase in the concentration of carbon dioxide in the atmosphere. As a direct result of rising temperatures, the population of countries that have contributed the least to global warming is also the population that is most vulnerable to illness and death as a result of these changes. It is increasingly probable that the coasts of the Pacific and Indian seas, as well as sub-Saharan Africa, would be severely impacted by the harmful consequences of climate change on human health. It is possible for one's health to suffer irreparable damage if they are subjected to very high temperatures for an extended period of time [26]. Hyperthermia, more often referred to as heatstroke, is the most common medical concern, and it may be deadly if the proper therapy is not followed. The Intergovernmental Panel on Climate Change (IPCC) forecasts that as a result of global warming, sweltering days will be followed by warm nights [27]. This phenomenon is expected to become more common. Scientists continue to investigate Earth's weather in spite of the fact that it is becoming more challenging to do so in light of the ongoing climate change. It is possible, with the use of scientific data, to prove statistically that global warming will increase the likelihood of occurrences of severe weather. People who already have heart problems, especially those who live in places that are already warm, are more likely to get sick when the temperature goes up, and this is because their hearts have to work harder to keep them cool. This is especially true for those who live in regions that are already warm. This is especially relevant for those people who live in areas that are already quite warm [28]. When temperatures increase, so do levels of ozone, which may cause damage to lung tissue and make the symptoms of asthma and other respiratory ailments worse in those who already have such conditions. The ability of a person to maintain a healthy internal temperature is directly related to the overall state of their health, and extreme temperatures have been shown to have a negative influence on this ability. A loss of control over one's internal temperature under conditions of great heat may result in a range of heat-related illnesses, such as heat cramps, heat exhaustion, heatstroke, and hyperthermia. The high temperatures that are produced by the heat have the potential to aggravate a wide number of persistent illnesses, including those that affect the heart, lungs, brain, and diabetes [29]. There is a possibility that climate change may influence the occurrence of very cold weather. Warm air has the potential to disrupt the stability of the polar vortex, which is responsible for the circulation of cold air near the Earth's poles. Because of this, there is a possibility that cold air will be pushed toward the equator. The pressure that is imposed on the circulatory system by the body's efforts to regulate body temperature, as well as disorders such as hypothermia, are just a few of the significant health implications that are caused by exposure to very low temperatures. There is a significant relationship between susceptibility to occurrences of cold weather and factors that are unrelated to climate [30]. The acceleration of global warming poses a potential threat to food security, which in turn may have an effect on national security and lead to a range of other unfavorable events [31].

Thus as a direct result of climate change, the highest temperature that can be reached anywhere on the planet is climbing, the lowest temperature that can be reached anywhere on the planet is growing, the temperature of the ocean is climbing, the frequency of intense rainstorms is growing, and glaciers are melting. A rise in the risk of heat waves, an increase in the number of people who go hungry, and an impact on the economy as a result of the cost of repairing secondary damage brought on by climate change are some

of the human and environmental consequences of climate change. In particular, developing nations are more likely to be affected by these consequences.

Conclusion and recommendations

In order for nations to achieve economic progress, natural resources of our planet are neglected and harmed, such as deforestation, which increases emissions of greenhouse gases. Both developed and developing countries have a responsibility to raise awareness and work toward a compromise in order to reduce emissions of greenhouse gases. For the objective of maintaining a healthy equilibrium in the ecosystem on a global scale. Climate shifts will occur if we are unable to effectively control global warming, which will put many species in jeopardy. We have a responsibility to protect endangered species, find cures for incurable diseases, limit pollution, and control population growth, among other things. It is necessary to do study as well as put that research into practice in order to understand the consequences of climate change on human health. In addition, research on early warning systems and strategies for responding to heat waves might be beneficial in preparing both people and communities for the next heat wave. For example, data from weather stations are used to compile temperature information, but a person's real risk is determined by the environment in which they live. It is our duty to ensure that future generations have access to the natural resources and ecological balance that we have protected. Even if we start new economic endeavors, begin industrialization, and use innovative agricultural technologies, we still have a responsibility to ensure that the environment remains in a state of balance for the benefit of future generations.

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