
A REVIEW STUDY ON EFFECT OF GLOBAL WARMING OVER MANKIND

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ABSTRACT

The concentration of many greenhouse gases has risen throughout time. Human activity enhances the greenhouse gases impact mainly via emission of carbon dioxide, but human effects on other greenhouse gases is also significant. The continuous buildup of greenhouse gases promotes rising global warming. The recent IPCC (Intergovernmental Panel on Climate Change) 2007 shows that global average air temperature near Earth's surface rose $0.74 \pm 0.18^\circ\text{C}$ in the last century and report concluded "most of the observed increase in globally averaged temperatures since mid – 20th century is very likely due to the observed increase in the concentration of anthropogenic greenhouse gases. Global warming impacts many different aspects of life on Earth. Global warming impacts will include reductions in agricultural output, the continuing melting of glaciers and animal extinctions. New issues were progressively added to the list, ranging from the destruction of ecosystems to risks to human health. Experts in areas from forestry to finance, even national security experts, joined in to evaluate the spectrum of potential implications. The sad truth is that forecasting the effect of global warming is notoriously hard. It combines a wide variety of scientific disciplines together, including as oceanography, meteorology, and geology, although no one can agree on the precise effects for particular areas of the globe. All experts believe global warming will have many detrimental consequences on our planet and our way of life. The impact of global warming will have detrimental influence on the climatic conditions and water supplies.

KEYWORDS: *Climate Change, Global Warming, Temperature, Ippc, Water Resources.*

1. INTRODUCTION

Global warming is the rise in the average temperature of Earth's near-surface air and seas since the mid-20th century. According to the 2007 Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), global surface temperature has been raised $0.74 \pm 0.18^\circ\text{C}$ ($1.33 \pm 0.32^\circ\text{F}$) over the 20th century. Temperature rise from the middle of the 20th century has been driven by rising concentrations of greenhouse gases, which come from human activities such as the burning of fossil fuel and deforestation[1]–[3]. Projections in the current IPCC report suggest that the global surface temperature is expected to increase a further 1.1 to 6.4°C (2.0 to 11.5°F) over the 21st century. Increase in global temperature will cause sea levels to increase and will alter the quantity and pattern of precipitation[4]–[7].

Warming is anticipated to be greatest in the Arctic and would be linked with ongoing retreat of

glaciers, permafrost and sea ice. The Kyoto Protocol is aimed at stabilizing greenhouse gas levels to avoid a "dangerous anthropogenic interference". As of November 2009, 187 nations have signed and approved the agreement. The average façade temperature of the world has increased more than 1 degree Fahrenheit since 1900 and the pace of warming has been nearly three times the century long average since 1970. This rise in earth's average temperature is termed Global warming. More or less all experts examining the climatic record of the planet share the same view today that human activities, especially the release of greenhouse gases from smokestacks, automobiles and burning forests are possibly the primary force driving the fashion[8]–[10].

1.1. Temperature Variations:

Warming of the climate system includes documented increases in global average air and ocean temperatures, widespread melting of snow and ice, and increasing global average sea level. NASA's Goddard Institute for Space Studies (GISS) and the National Climatic Data Centre indicate that 2005 was the hottest year since accurate, extensive observational data were available in the late 19th century, surpassing the previous record set in 1998 by a few hundredths of a degree³. The impact of changes in solar forcing in recent decades is unclear, but modest, with some research indicating a little cooling effect, while others studies indicate a tiny warming effect⁴. Greenhouse gases and solar forcing influence temperatures in various ways. While both increased solar activity and higher greenhouse gases are anticipated to warm the troposphere, an increase in solar activity should warm the stratosphere while an increase in greenhouse gases should cool the stratosphere. Observations indicate that temperatures in the stratosphere have been dropping since 1979, when satellite data became available. Weather balloon data from the pre-satellite period indicate cooling from 1958, but there is more ambiguity in the early radiosonde record.

The greenhouse effect is the process through which absorption and emission of infrared light by gases in the atmosphere warm a planet's lower atmosphere and surface. It was suggested by Joseph Fourier in 1824 and was first examined quantitatively by Svante Arrhenius in 1896. The issue in terms of global warming is how the intensity of the assumed greenhouse effect varies when human activity raises the quantities of greenhouse gases in the atmosphere. The greenhouse gases like carbon dioxide, methane, and nitrous oxide are playing dangers in the current times. These greenhouse gases trap heat in earth's atmosphere and therefore result in raising the temperature of earth. The excessive release of these gases is one of the main Causes of Global Warming. The main source of carbon dioxide is the power plants.

These power stations release significant quantities of carbon dioxide created by burning of fossil fuels for the purpose of electricity production. The effect of increasing surface temperatures is substantial in itself. But global warming will have further, far-reaching consequences on the globe. Warming affects rainfall patterns, intensifies coastal erosion, lengthens the growing season in certain areas, melts ice caps and glaciers, and alters the distributions of some infectious illnesses. Some of these changes are already happening.

1.2. Climate Change:

For most locations, global warming will result in more frequent hot days and fewer cold days, with the largest warming happening over land. Longer, more severe heat waves will become more frequent. Storms, floods, and droughts will usually be more severe when precipitation patterns shift. Hurricanes may increase in strength owing to rising ocean surface temperatures. Figure-2 illustrates the worldwide change in precipitation (in percentage) (in percentage). Apart from pushing temperatures higher, global warming is expected to produce larger, more destructive storms, resulting to an overall increase in precipitation. With few exceptions, the tropics will likely get less rain (orange) as the globe warms, while the Polar Regions will receive more precipitation (green) (green). White regions show that fewer than two-thirds of the climate models agreed on

how precipitation would change.

1.1.Rising Sea Levels:

The weather isn't the only thing global warming will affect; increasing sea levels will damage coastlines and create more regular coastal floods. Some island countries will vanish. The issue is severe since up to 10 percent of the world's population lives in susceptible regions which are fewer than 10 meters (about 30 feet) above sea level. Between 1870 and 2000, the sea level rose by 1.7 millimeters per year on average, for a total sea level rise of 221 millimeters (0.7 feet or 8.7 inches) (0.7 feet or 8.7 inches). And the pace of sea level increase is increasing. Since 1993, NASA satellites have revealed that sea levels are increasing more rapidly, approximately 3 millimeters per year, for a total sea level increase of 48 millimeters (0.16 feet or 1.89 inches) between 1993 and 2009. It is difficult to blame anyone exceptional weather occurrence on global warming, but growing data indicates that global warming is already affecting the weather. Heat waves, droughts, and severe rain events have risen in frequency over the past 50 years, and human-induced global warming more likely than not contributed to the trend. Sea levels crept up approximately 20 centimeters (7.9 inches) throughout the twentieth century. Sea levels are projected to increase rise between 18 and 59 cm (7.1 and 3 inches) during the next century, but the rise may be higher if ice sheets in Greenland and Antarctica melt more rapidly than anticipated.

1.2.Flooding Bangladesh:

One of the poorest countries in the world is expected to lose 17.5 percent of its land if sea level rises approximately 40 inches (1 m) (1 m). Tens of thousands of people are expected to be relocated, and the country's agricultural sector will be severely impacted. Coastal flooding will endanger animals, vegetation, and fresh water sources. The present threat caused by storm surges when cyclones strike Bangladesh is expected to grow.

1.3.Disappearing Islands:

The Majuro Atoll in the Pacific Marshall Islands is predicted to lose 80 percent of its land with a 20inch (0.5m) increase in sea level. Many of the islands will just vanish beneath the increasing waters. A similar destiny awaits numerous islands across the South Pacific and Indian Oceans, including those in the Maldives and French Polynesia. Coral reefs, which defend many of these islands, will be flooded, exposing the indigenous peoples to heightened storm surges and altered coastal ecosystems. Tourism and local agriculture will be seriously impacted.

1.4.Disappearing Ice Packs:

Wildlife in the northern areas will be severely impacted when rising temperatures disrupt the ocean ice cover. Polar bears depend on sea ice to hunt seals, which utilize the ice for raising their young. The local peoples also depend on the ice to hunt these animals and walrus. Observations of walrus in 1996-99 revealed them to be skinny and in poor health, partially owing to decreasing sea ice.

1.5.Health and Disease:

Cold winter weather inhibits the transmission of infectious illnesses by eliminating infectious organisms and carrier animals, such as mosquitoes. Warmer, wetter weather may boost the spread of malaria, dengue fever, and yellow fever. The potential rise in floods and damage to water and sewage systems may further promote the spread of illness.

1.6.Increased Air Pollution:

Three out of four of the world's greatest dense cities are in fast growing nations, where automobile pollution is high. In Central Europe alone 21,000 fatalities are linked to air pollution each year. The concentration of photochemical pollutants, such as ozone, tends to rise with higher

temperatures. Ozone destroys lung tissue and is particularly hazardous to individuals with asthma and other lung disorders.

1.7.Impacting Ecosystems:

More significantly, though, global warming is already exerting strain on ecosystems, the plants and animals that co-exist in a specific climatic zone, both on land and in the water. Warmer temperatures have already altered the growth season in several areas of the world. The growing season in areas of the Northern Hemisphere grew two weeks longer in the second half of the 20th century. Spring is arriving early in both hemispheres. This shift in the growth season impacts the wider environment. Migrating animals have to start exploring food sources sooner. The change in seasons may already be causing the lifecycles of pollinators, including bees, to be out of rhythm with blooming plants and trees.

This mismatch may restrict the capacity of both pollinators and plants to live and reproduce, which would decrease food availability throughout the food chain. Warmer temperatures can prolong the growth season. This implies that plants require more water to maintain growing throughout the season or they would dry up, increasing the danger of failing harvests and wildfires. Once the growing season concludes, shorter and milder winters fail to kill hibernating insects, increasing the likelihood of significant and destructive infestations in future seasons.

1.8.Impacting People:

The changes to weather and ecosystems will also impact humans more directly. Hardest affected will be individuals living in low-lying coastal regions and inhabitants of impoverished nations who do not have the means to adapt to changes in temperature extremes and water supplies. As tropical temperature zones increase, the reach of certain infectious illnesses, such as malaria, will alter. More violent rains and storms and rising sea levels will lead to more catastrophic floods and possible loss of property and lives.

Effects of Global Warming on Water Resources:

Both the environment and the human life are being negatively impacted by the phenomena of global warming. The consequences of global warming is varied and numerous. Several studies were performed by various organizations and all of them showed that global warming is growing at an alarming pace.

1.9.Water Resources Impact:

Effects of global warming are enormous and touch every aspect of one's existence. Both the environment and the living creatures are suffering from the impacts of global warming. If we do not take notice of the worrisome pace of increasing global warming then our planet may cease to exist eventually. The water resources have been severely impacted by the global warming phenomena. Sea levels have increased, glacial retreats are taking place frequently and the most severe effect is the shortening of the Arctic Circle. This issue has generated worries across all the sectors and geoengineering is believed to be a method of mitigation.

If we put it simply then the water bodies would be impacted during the long and scorching summers because the rate of evaporation would rise with hotter summers. Water cycle is essential for any type of human activity and global warming will negatively impact this cycle in the human activities as well as the climatic changes. Global warming may potentially cause to floods. The water levels in several areas will drop owing to excessive evaporation and this would lead in heavy downpours increasing the risk of flood.

The increase in the phenomena of global warming has led the ice sheets in the West Antarctic Circle and Greenland to decrease. Carbon sediments have been released in the air and owing to the rise of carbon emission the decrease in the ice sheets has taken place. This decrease could trigger a

massive deluge across the globe. By the end of twenty first century the water in the sea is projected to increase by 7.1- 23.2 inches. Due to the amplification of global warming impacts the Thermohaline circulation may as well become disturbed. The fresh water from the Polar Regions would disrupt the Gulf Stream creating considerable discomfort. The consequence of a change in route of the Gulf Stream would have global impact that would significantly exacerbate climate change and extremes.

1.10. Higher Wildlife Extinction Rates:

As humans, we confront a variety of difficulties, but we're definitely not the only ones receiving heat. As land and water experience fast changes, the creatures that inhabit them are destined to perish if they don't adapt soon enough. Some will make it, and some won't. According to the Intergovernmental Panel on Climate Change's 2014 assessment, numerous land, freshwater, and ocean species are moving their geographic ranges to cooler climates or higher elevations, in an effort to avoid warming. They're altering seasonal habits and conventional migratory patterns, too. And yet many still face "greater extinction danger owing to climate change." Indeed, a 2015 research found that vertebrate species animals with backbones, including fish, birds, mammals, amphibians, and reptiles are vanishing 114 times faster than they should be, a phenomena that has been connected to climate change, pollution, and deforestation.

1.11. Effects Of Social And Economic Disturbances:

In certain contexts, the effects of climate change may create significant social upheavals, local economic loss and population relocation that would impair human health (26). (26). Of particular worry is the effect of a rising sea level (estimated, with a broad range of uncertainty, at approximately 0.5m over the next century) on island and coastal communities presently living not far above the coastline. Population relocation due from sea level rise, natural catastrophes or environmental deterioration is likely to lead to significant health issues, both physical and emotional.

1.12. Quantifying Health Impacts:

For certain increases in exposures to health hazards linked to climate change, the future rate of a health effect associated with any current environmental exposure may be calculated by multiplying three values: 1) the baseline rate of the health effect, 2) the anticipated change in exposure, and 3) the exposure–response function. An exposure–response function is an assessment of how the risk of a health effect varies with changes in exposures, and is linked to sensitivity, one of the three components of vulnerability. For example, an exposure–response function for severe heat could be used to quantify the increase in heat-related fatalities in an area (the change in health effect) for every 1°F rise in daily ambient temperature.

1.13. Impacting People

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of the three components of vulnerability. For example, an exposure–response function for severe heat could be used to quantify the increase in heat-related fatalities in an area (the change in health effect) for every 1°F rise in daily ambient temperature.

1.17. Direct Exposure of Extreme Weather Events:

The possible health consequences of severe weather events include both direct effects, such as traumatic fatalities, and indirect ones, such as diseases linked with eco-logic or social disturbance. The implications in the short term include an increased mortality due to injuries, while later there may be an impact on water quality, which could be polluted by diseases or chemicals. Floods have previously been shown to increase the pollution of water bodies by pesticides and are followed by out-breaks of infectious illnesses. The impact of drought is evident in an immediate manner on the people of the poorest nations. The loss of crops or animals has a direct effect on the nutritional condition of the people, producing malnutrition, under-nutrition, and impaired childhood development owing to decreases in local agriculture. Recurrent famine due to drought led to extensive loss of livestock, population relocation, and hunger in the Horn of Africa. In 2000, after three years of drought, hunger has put an estimated 10 million per-sons at danger of starvation. Malnutrition and measles were found to be significant causes of death among individuals aged <14 year.

1. DISCUSSION

Extreme heat and poor air quality exacerbate problems from underlying cardiac and respiratory diseases including asthma, renal failure, and pre-term delivery, and as temperatures rise, there will be more heat-related sickness and fatalities in both urban and rural regions. The worldwide shifts that we are now witnessing have never occurred be-fore. They include climatic change and fluctuation, change in composition of the atmosphere, usage of the earth's surface for expansion of agricultural areas and deforestation. Other changes include an extension of the inhabited rural areas, urbanization, globalization of trade and transports, displacement of populations, diffusion of new plant species, spread of human and animal diseases, and improvements in conditions of life and diffusion of advanced technologies worldwide. In urban setting, the local climatic conditions, where people live and work, generate most of the direct human health risks, such as those related to the urban-heat-island effect. Therefore, a more indirect health impact is frequently linked with global or large-scale regional climate change. Like other impacts of increasing temperature, the repercussions of global warming are also harsher in low-income nations where urbanization have developed quickly and without forethought.

2. CONCLUSION

The effect of global warming is already being observed throughout the globe. Despite efforts on behalf of certain nations to decrease greenhouse gas emissions, such as the Kyoto accord, the globe as a whole is spewing out more and more carbon dioxide every year. Nations like Norway and Holland are achieving their targets to decrease emissions, but this is tiny fry when countries such as China and India are putting out more and more every year. Reducing our carbon and greenhouse gas emissions will make our own living area more sustainable. We humans have the power to harm the world, we can also help preserve and sustain it. 87 Health professionals worldwide have a duty to place health at the center of climate change discussions. Firstly, because climate change already has a significant detrimental effect on the health of human populations. Secondly, since decreasing greenhouse gas emissions offers unmatched potential for enhancing public health.

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