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## **The reason for global environmental & climate changes**

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### **Abstract**

Desertification, fuelwood depletion, the destruction of tropical rainforests and rapid declines in forest cover, the modification of coastal ecosystems, the reduced availability and quality of drinking water, soil resource depletion and degradation, food shortages, species extinction and loss of biodiversity, stratospheric ozone depletion, rapidly rising sea levels are just a few examples of environmental changes that have been identified as issues of international concern. It is easy to become overwhelmed by the sheer quantity, magnitude, and complexity of these challenges, and some critics have suggested that they represent a cumulative, ongoing human impact on the environment that has fundamentally altered the surface of the Earth.

Many of the world's natural environmental systems, including the climate system, are altering as a result of human activity. They are basic to life processes and fundamental to human health, therefore their disturbance and depletion make it more difficult to address health inequities in a timely manner. Indeed, if environmental damage continues, we will not be able to accomplish the United Nations Millennium Development Health Goals. Occupational and environmental health experts play an important role in avoiding and mitigating the negative health effects of global environmental change.

Humans are having an increasingly negative impact on the climate and the temperature of the world by using fossil fuels, cutting down forests, and raising animals.

This contributes massive volumes of greenhouse gases to the already existing natural greenhouse gas concentrations in the atmosphere, hence increasing the greenhouse effect and global warming.

**Keywords:** change, climate, earth, environment, forest, global, greenhouse, health, human, warming

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### **Introduction**

Many of the world's natural environmental systems, including the climate system, are altering as a result of human activity. They are basic to life processes and fundamental to human health, therefore their disturbance and depletion make it more difficult to address health inequities in a timely manner. Indeed, if environmental damage continues, the United Nations Millennium Development Goals for health will not be achieved. Occupational and environmental health experts play an important role in avoiding and mitigating the negative health effects of global environmental change.

In An Introduction to Global Environmental Concerns, we provide a thorough and thought-provoking introduction to the major environmental issues that are currently affecting our planet's ecosystem. This article is a must-read for anybody studying or concerned with global environmental concerns since it provides an authoritative introduction to the important topics, a source of the most up-to-date environmental knowledge, and a stimulating stimulus for inventive debate. The importance of major global environmental challenges is thrown into sharp relief. Environmental challenges require a fundamental understanding of the scientific principles, processes, and historical context that underpin the evolution of the earth's natural systems (hydrosphere, biosphere, geosphere, and ecosphere). The course examines contemporary socio-economic, cultural, and political problems, as well as major philosophical approaches such as Gaian theories and Chaos Theory, among others. The importance of human effect and management of the natural environment, as well as the preservation of biodiversity, are highlighted throughout the book. Because of the uncontrolled spread of urbanization and industrialization, the expansion and huge intensification of agriculture, and the destruction of forests, India's quickly rising population, and economic development are resulting in a number of environmental challenges. Forest and agricultural degradation of land, resource depletion (water, minerals, forest, sand, rocks, and so on), environmental degradation, public health, loss of biodiversity, loss of ecosystem resilience, and livelihood security for the poor are all major environmental challenges. As a result, it is necessary to implement environmental management measures in order to prevent this type of situation from occurring.

### **What Is Climate Change and How Does It Affect Us??**

Generally speaking, climate change is described as a major variation in average weather conditions over time (for example, conditions becoming warmer, wetter, or drier) that has occurred over several decades or more. In order to distinguish climate change from natural weather fluctuation, one must look at the longer-term trend.

Flooding on an unprecedented scale. Storms that are raging. The heat is unbearable. Climate change presents itself in a variety of ways and affects every living thing, albeit not in the same way for all of them. Throughout the world, the economically disadvantaged and people of color—those who have made the smallest contribution to the core causes of climate change—are the most likely to experience the most severe consequences of its worst effects.

Global climate change caused by humans is now widely accepted as a fact of life. It has taken a long time for us to notice the health concerns that have resulted, both current and in the future, as well as their unequal consequences around the globe, but the problem is now receiving a great deal of attention. Health risks will occur through both direct and indirect channels, and they will be a result of changes in both average climate conditions and climatic variability across time. The most significant dangers are as follows:

- Heatwaves and other extreme events have a number of consequences. (cyclones, floods, storms, wildfires)
- Changes in infectious disease patterns.
- Effects on food production.
- Effects on the availability of freshwater.
- Ecosystems that are not functioning properly. (for example, wetlands as water filters)
- Vulnerable populations are displaced. (for example, low lying island and coastal populations)
- Loss of employment or Livelihoods.

Those living in poverty and vulnerable communities will be the most affected by extreme weather occurrences, infection, and starvation, among others. Over 110 million people currently reside in malaria-prone areas in Sub-Saharan Africa, which accounts for over a quarter of the world's population. By the 2080s, climate change is expected to raise this number by 20-70 million (assuming no population increase, and including forecast malaria reductions in West Africa from drying). This could worsen poverty and make it more difficult to achieve and maintain health improvements.

**The Following figures shows in brief Causes of Climate changes.**



[Source: [https://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmocms/s3fs-public/styles/featured\\_media\\_detail/public/news/featured\\_media/Climate\\_Action\\_is\\_a\\_priority.png?g8LwvrOn3MNEISGd.KnBR42axXG6VOkX&i tok=paygRhjs](https://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmocms/s3fs-public/styles/featured_media_detail/public/news/featured_media/Climate_Action_is_a_priority.png?g8LwvrOn3MNEISGd.KnBR42axXG6VOkX&i tok=paygRhjs)]

**Fig 1**

### **How Is Climate Change Measured?**

The climate of a location is defined as the average meteorological conditions of a location over a long period of time. In the United States, for example, the winter climate in Maine is cold and snowy, whereas the summer climate in South Florida is tropical all year.

Satellites, remote weather stations, and ocean buoys are all used to monitor current weather and climate, but it is paleoclimatology data from natural sources such as ice that is most useful for long-term climate prediction and analysis.

Climate records derived from cores of trees or other organic materials, corals, and ocean and lake sediments have allowed scientists to extend the earth's climate histories back millions of years. These data provide a thorough look at the long-term changes in the earth's atmosphere, seas, land surfaces, and cryosphere, as well as the changes in the earth's climate over time (frozen water systems). Afterward, scientists enter this information into sophisticated climate models, which are capable of forecasting future climate patterns with remarkable accuracy. Despite the fact that the terms climate change and global warming are sometimes used interchangeably, global warming—the recent increase in the global average temperature near the earth's surface—is only one element of climate change.

### **What Causes Climate Change?**

There are no complicated mechanisms at work in the earth's climate system. It is possible for the earth to cool down when energy from the sun is reflected off the surface of the globe and back into space (mostly by clouds and ice), or when the earth's atmosphere releases energy. Because of the absorption of solar energy by the globe, as well as the greenhouse effect, which prevents heat emitted by the earth from dispersing into space (the greenhouse effect), the world heats. Climate change is caused by a multitude of variables, both natural and human-made, that affect the earth's climate system.

#### **Climate change is being caused by natural phenomena.**

The globe has gone through periods of warming and cooling in the past, long before humans were on the scene to see it. Some of the factors that can contribute to climate change include the intensity of the sun, volcanic eruptions, and variations in the amounts of naturally existing greenhouse gases. However, historical records show that today's climate warming—particularly that which has occurred since the mid-20th century—is occurring at a considerably quicker rate than ever before, and it cannot be explained solely by natural processes. These natural processes are still in play today, NASA says, but their influence is too tiny, or they occur too slowly, for them to be a contributing factor to the fast warming that has occurred in recent decades.

#### **Climate change is being caused by human activity.**

Humans, or more specifically, the greenhouse gas (GHG) emissions that result from human activities, are the primary cause of the earth's rapidly changing climate today. Greenhouse gases play a critical function in maintaining a climate that is suitable for human habitation. However, the concentration of these gases in our atmosphere has increased dramatically in recent decades. According to the United States Environmental Protection Agency, our current carbon dioxide, methane, and nitrous oxide concentrations "are unprecedented when compared to the previous 800,000 years of history." Indeed, the proportion of carbon dioxide in the atmosphere—the primary contributor to climate change on the planet—has increased by 46 percent since the beginning of the industrial revolution.

### **Causes of climate change**

These are some of the causes of climate change

#### **1. CO<sub>2</sub> emissions greenhouse gas.**

The greenhouse effect is the most important contributor to climate change. Some gases in the Earth's atmosphere behave in a similar way to the glass of a greenhouse, absorbing the sun's heat and preventing it from escaping back into space, which would otherwise contribute to global warming.

A large number of these greenhouse gases occur naturally; nevertheless, human activity is increasing the amounts in the atmosphere of several of them, in particular: carbon dioxide and methane.

Carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, and fluorinated gases are all examples of greenhouse gases.

The CO<sub>2</sub> emitted by human activity is the most significant contributor to global climate change. By 2020, its content in the atmosphere would have increased by 48 percent compared to its pre-industrial level (before 1750).

Human activity also contributes to the emission of other greenhouse gases but in smaller proportions. Methane is a more powerful greenhouse gas than carbon dioxide, although it has a shorter lifetime in the atmosphere. Carbon dioxide and nitrogen oxide are both long-lived greenhouse gases that accumulate in the atmosphere over a period of decades to centuries.

Natural sources, such as variations in solar radiation or volcanic activity, are believed to have contributed less than plus or minus 0.1°C to global warming between 1890 and 2010 according to current estimates.

#### **2. Factors to increased emissions**

- Carbon dioxide and nitrous oxide are produced by the combustion of coal, oil, and natural gas.

- Forests are being cut down (deforestation). By absorbing CO<sub>2</sub> from the atmosphere, trees contribute to the regulation of the climate. This beneficial effect is lost when trees are cut down, and the carbon contained in the trees is released into the atmosphere, contributing to the greenhouse effect.
- Increasing the amount of livestock farming. When cows and sheep digest their meal, they release significant amounts of methane into the atmosphere.
- Nitrogen fertilizers emit nitrous oxide, which is harmful to the environment.
- Fluorinated gases are emitted by equipment and products that utilize fluorinated gases as an ingredient. It is estimated that such emissions have a warming effect up to 23 000 times larger than carbon dioxide.

### 3. The effects of global warming

Between 2011 and 2020, the world had its warmest decade on record, with the global average temperature hitting 1.1 degrees Celsius over pre-industrial levels in 2019. Global warming caused by humans is currently increasing at a rate of 0.2 degrees Celsius every decade.

An increase in temperature of 2° Cover pre-industrial levels is associated with major negative consequences for the natural ecosystem as well as human health and well-being, including a significantly increased risk of harmful and potentially catastrophic changes in the global environment.

As a result, the international community has recognized the need to keep global warming far below 2 degrees Celsius and to pursue efforts to keep it below 1.5 degrees Celsius.

### Solutions for Climate Change

The following are some of the most often encountered environmental problems and their solutions:

- Disposable products should be replaced with reusable ones.
- The use of paper should be avoided whenever possible.
- Conserve water and electricity if possible.
- Encourage the use of ecologically beneficial techniques.
- Waste should be recycled in order to conserve natural resources.

Environmental issues serve as a foreboding indicator of impending tragedy. If these challenges are not addressed, there will be no life on Earth within a short period of time.

### Conclusion

A lot of different things can happen because of climate change. Every living thing is affected, but not all of them in the same way. The economically disadvantaged and racial minorities people are most likely to experience the most severe consequences of its worst effects. Over 110 million people live in malaria-risk areas in Sub-Saharan Africa, which is more than a quarter of the world's population. The climate of a place is what the weather is like on average over a long period of time. Researchers have been able to look back on Earth's climate history for millions of years thanks to records from tree cores, corals, ocean and lake sediments, and more.

Historical records show that today's climate warming is taking place at a much faster rate than in the past. Greenhouse gases play an important role in keeping the climate safe for humans to live in. Human activity is increasing the amounts in the atmosphere of several of them, in particular: carbon dioxide and methane. Methane is a more powerful greenhouse gas than carbon dioxide, even though it has a shorter time in the air than carbon dioxide. Carbon dioxide and nitrous oxide are both made when coal, oil, and natural gas are burned, which makes them. Forests are being cut down (deforestation) to lose the good thing they do by regulating the climate. An increase in temperature of 2°Cover pre-industrial levels can have a big impact on the natural world and on people's lives. Everyone in the world agrees that it's important to keep global warming below 2 degrees Celsius. If these problems aren't solved, there will be no life on Earth within after a short period of time.

### Acknowledgment

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