

Causes And Effects Of The Global Warming

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Introduction

Before we study the notion of global warming, it's important to understand the definitions of weather and climate. Weather can be defined as the condition of the atmosphere at a particular time and a particular place. On the other hand, climate refers to the long-term patterns of the weather describing the region (ccir.ciesin.columbia.edu). The term 'global warming' refers to the increasing average temperature at the fastest speed in noted history. And the experts and the environmentalists note that the trend is accelerating. Some deny the notion of climate change, but several studies admit that there has been an increase in climate change over the past fifty years.

Since the twentieth century, scientists studied and observed climate changes and weather-related phenomena such as precipitation, storms, and temperatures, and their impact on climate, like the chemical composition of the atmosphere and the ocean currents. These observations and the data collected indicate the fact that the climate of Earth has undergone a drastic change over a nearly reasonable time period from the start of geologic time and that the impact of human actions from the initiation of the Industrial Revolution has been the major aspect of climate change. Close observation of what global warming is, leads us to the comprehension of its effects and causes. If the effects, as stated by many studies, are harmful enough for all the living beings on Earth, why can't we minimize the causes of climate change? Does this minimization lead to less development and productivity of the states? The argument lies in the fact that industrial progression and development are proportional to the changes in [climatic conditions](#), which in turn are responsible for the negative and harmful impacts the living beings are going through.

Causes Of The Global Warming

- The Greenhouse Effect

There are different forms of terrestrial and solar radiation that have to be kept in balance in order to maintain the Earth's average surface temperature. Solar emissions are also known as the shortwave due to their comparatively high frequencies and shorter wavelengths. On the other hand, terrestrial radiations are known as the longwave because of their longer wavelengths and low frequencies. The imbalance of these radiations warms the surface of the planet above the average temperature. The emission of air pollutants like carbon dioxide and greenhouse gases leads to their accumulation in the atmosphere. This then results in the absorption of the solar radiation and sunlight that have bounced off the surface of the Earth. Under normal conditions, these radiations would have gone into space, but these gases and the pollutants have the tendency to stay in the atmosphere for years and even

centuries. The absorption of heat makes the planet hotter. This process through which the radiation becomes the cause of high temperature is known as the greenhouse effect.

- Human Activities And Its Impacts

Humans and their actions play a significant role in causing the climate change. The burning of fossil fuels like oil and coal emits carbon dioxide and other pollutant gases. Fossil fuels are burnt for the provision of power to machinery and vehicles and for the production of electricity. The creation of methane takes place during the production and usage of fossil fuels, landfilling, rice farming and livestock. Man-made fertilizers used for agriculture, combustion of fossil fuels, and manure management of livestock are the causes of nitrous oxide emissions. Fluorinated gases are emitted when used in refrigeration, manufacturing applications, and cooling. Most of the problem is caused by the deforestation. Humans have undertaken the lands and have changed forests into farms. This transformation has created significant impacts in relation to the emission of greenhouse gases.

Clearance of ground by means of burning and cutting down of trees has always been occurring for agricultural purposes. Trees are the only natural source of carbon dioxide from the atmosphere, which, if removed, will cause the accumulation of carbon dioxide in the atmosphere. Clearance of the land also causes a disturbance in the soil, and decomposition increases, which also becomes the reason for carbon dioxide emissions (whatsyourimpact.org). Consequently, soil erosion takes place along with nutrient leaching, which results in the inability of the area to absorb or remove carbon. The question arises here: if carbon dioxide is a natural component of the atmosphere, why are human activities thought to be disturbing in relation to the emission of carbon dioxide? The National Academy of Sciences answered this question as "...because the natural processes that could restore the balance are too slow compared to the rates at which human activities are adding CO₂ to the atmosphere" (nas.edu).

The scientists argue that naturally, carbon dioxide present in the atmosphere is continually exchanged among the atmosphere and living beings like plants and animals by means of natural processes such as respiration, decomposition, and photosynthesis. Gases are also exchanged between the oceans and the atmosphere. These natural mechanisms keep the content of carbon dioxide in the atmosphere in balance. A small amount is also given out during volcanic eruptions. National Academy of Sciences gives the estimate of the amount of carbon dioxide in the atmosphere, "The CO₂ level in 2012 was about 40% higher than it was in the nineteenth century. Most of this CO₂ increase had taken place since 1970, about the time when global energy consumption accelerated" (nas.edu).

Effects Of The Global Warming

Extremely high temperatures brought about by global warming have effects on all kinds of lives, whether it be terrestrial, marine or aquatic. It affects everyone equally in a harmful way. United

Nations Framework Convention on Climate Change (UNFCCC) says, “Developing countries are the most vulnerable to climate change impacts because they have fewer resources to adapt: socially, technologically and financially” (unfccc.int). Major influences and risks that global warming brings along are widespread. When the temperature of the ocean increases, thermal expansion of the oceans takes place. Meltwater from the land-based ice, along with the thermal expansion, results in the rise of the sea level. An increasing amount of melted sea ice and its mixture with freshwater impacts the global patterns of the circulation of oceans.

Consequences of [global warming](#) include extreme weather conditions such as floods, hurricanes, droughts, and events of heavy precipitation. Floods and water shortages are caused by the changing patterns of rainfall. This tells us that crop growing seasons also get affected which in turn impacts the security of the food and results in the causation of different allergies and diseases like dengue, malaria, etc. Apart from the illnesses, the whole agricultural system gets disturbed. The extinction of many species and habitats has also been observed at an increasing rate (Nations, 2007, p. 8). Global warming causes the flow of extreme heat waves which has resulted in numerous deaths worldwide in the latest years (nrdc.org). Desertification is one of the effects of global warming, making the dry regions even drier. This happens due to the decreased moisture of the soil and increased rates of evaporation. Apart from the ecological impacts, global warming also leads to socioeconomic disasters. The developing countries are highly at risk of being greatly impacted by the changing environment. Thus, there is an urgent need for increased adaptation capacity and plans to be implemented (unfccc.int).

Discussion

After looking closely at the causes of global warming, one becomes convinced that industrial development is proportional to global warming and its effects. “Economic growth seems to be the main driver of environmental degradation” (Kinda, 2013, pp.15). The developed countries are resourceful enough to fight the environmental crisis, but the developing countries are at great risk since they need to perform such activities, which lead to pollution and environmental degradation for the development of the industrial sector.

A large number of industries and factories are in need of natural resources to produce the desired products. This leads to a shortage of natural resources and an abundance of waste materials, which are a major cause of pollution in the environment. “It is a bitter fact that many industries around the world are still dependent on fossil fuels for electricity generation” (Shahzad, 2012). Grossman and Kreuger (1995) suggest that the development in the industrial sector and economy of the country impacts the quality of the environment in a disastrous way. The higher the degree of economic activities, the higher the extent of degradation and disruption of the natural environment. Such operations are performed in order to provide facilities and growth but lead to pollution and global warming, which in turn destroys the whole atmosphere.

Where industrialization helps people gain a number of social objectives like education, labor standards, healthcare, eradication of poverty, employment and gender equality, it has also brought negative influences along. These negative impacts have caused the change in climatic conditions, shortage of natural resources, water and air pollution, and extinction of habitats and species. These factors put the whole global environment at risk, and socio-economic welfare too (ec.europa.eu). All kinds of technological advancements have come into being due to the degradation of the environment. Thus, we can say that the industrial development is proportional to the global warming and pollution.

What Can Be The Solutions?

The disasters that industrial development and global warming have caused worldwide can't be reversed. We are so used to these technological advancements and developments that we cannot think of getting rid of them. Moreover, cutting off with the industrial developments will mean going back to the Stone Age where we were all unaware of making use of the natural resources for our benefits and advantages. And now we have come so far in progressing and destroying our natural environment that we cannot step back. The main solution to the problem lies in the reduction of the emission of greenhouse gases and pollutants. This requires an examination of our daily life choices and priorities. The least we can do to solve the issue is the reduction those things and substances that we know we can avoid and that won't affect our lives much, such as the use of perfumes, sprays, different cosmetics, etc.

All these materials first damage the environment by their production and then their usage. Our vehicles emit dangerous pollutant gases that become the cause of many diseases and allergies. The government should bring about policies that help in the reduction of the pollutants in the environment. These pollutants in the atmosphere cause the depletion of the ozone layer, which naturally protects us from ultraviolet (UV) rays. These ultraviolet rays cause illnesses that we don't even know about. People are now aware of the present conditions of the environment, but they are not conscious of their role in accelerating it. Only a drastic decrease in the emission of gases can help reduce the global warming effects incredibly. However, it is difficult to come up with policies or solutions that can carefully examine what can be done to minimize the use of such things and processes that are majorly responsible for the problem.

"It is impossible to get in perpetual harmony with yourself and with your environment if you do not limit your negative footprint to an acceptable level" (timeforchange.org). Nature provides us with resources so that we can use them for our benefit and well-being, but we must not forget that once we lose nature and its resources, we won't have anything except machines. These machines, industries and progressions can never give us what nature can. In fact, we can now feel the loss of the natural environment due to the effects of global warming. Global warming is indeed the loss of nature and its resources. When the natural resources are not kept in balance, they disrupt the whole environment, causing great damage to each and every living being on Earth.

The nrdc.org gives some solutions to the problem, “When you shop for new appliances like refrigerators, washers, and dryers, look for products with the government’s Energy Star label; they meet a higher standard for energy efficiency than the minimum federal requirements. When you buy a car, look for one with the highest gas mileage and lowest emissions. You can also reduce your emissions by taking public transportation or carpooling when possible” (nrdc.org). Thus, some things have to be done both on the individual and communal level for the eradication of pollution and global warming effects. People have to alter the patterns of energy usage and consumption to limit the emissions of pollutants and greenhouse gases and ultimately reduce the magnitude of climatic conditions.

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