



IMPACT OF GLOBAL WARMING ON ENVIRONMENT.

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ABSTRACT

Warming of the planet as a whole refers to both the current trend and future projections of an increase in the average temperature of the earth's atmosphere and oceans. In the past 140 years, there has been a 0.6 degree Celsius increase in the average temperature of the earth's surface. By reflecting away the incoming solar heat, which causes the surface to cool, and by reflecting the heat that is exiting from the surface, which causes the surface to warm, fine dust and aerosol particles that float high in the atmosphere can affect the thermal balance of the globe. The relative importance of these two effects is determined by the composition of the dust, the season, and the time of day. For instance, a dust layer may have the effect of making summers cooler and winters warmer than they would be otherwise. The interaction of ultraviolet light with ozone and water vapor has a significant impact on the surrounding environment. The most significant contributors to climate change include greenhouse gases, power plants, the rapid growth of populations, the degradation of forested and wetland areas, and the transportation sector. Everyone and everything will be affected by the impacts and consequences of global warming. The effects of global warming may be observed in many different aspects of our environment, including the weather, local temperature, glacier retreat and disappearance, seas, sea level rise, acidification, forest fires, ozone depletion, agriculture, and water shortages. Individuals' health is another aspect that will be affected by global warming. Rice yield might be reduced by approximately 0.75 t/ha if temperatures rise by 2 degrees Celsius, while wheat output could be reduced by 0.45 t/ha if winter temperatures rise by 0.5 degrees Celsius. According to the findings, it is possible to prevent about 7.4, 8.7, and 9.8 percent of the total cumulative emissions of CO₂, SO₂, and NO₂ between the years 1997 and 2015 by utilizing energy-efficient appliances.

Keywords: *global, warming, environment*

INTRODUCTION

The current atmosphere originated from a concoction of gases that were expelled from deeper inside the planet throughout the course of geologic time. The most significant gases produced by volcanic activity are water vapor (64 percent, weight-for-weight), carbon dioxide (24 percent), sulfur dioxide (10 percent), and nitrogen (1.5 percent). On the other hand, this combination has, over the course of billions of years, escaped from volcanoes and been acted upon by living beings, which has resulted in the production of an atmosphere that is mostly composed of nitrogen and oxygen as well as a trace of CO₂ and other gases. In recent years, the environmental crisis has expanded to a size that affects the entire world. The phenomena that are considered to be issues of the global cycle include the loss of the ozone layer, the increase in CO₂ levels, changes in the weather, pollution of the oceans, and acid rain. On the other hand, small dust or aerosol particles that float high in the atmosphere have the potential to change the heat balance of the globe. They do this by reflecting the heat

that is rising away from the surface back down toward it, which causes the surface to become warmer (Mackenzie, 1997). The relative importance of these two impacts is determined by the composition of the dust, the season, and the time of day. For instance, a dust layer may have the effect of making the summer cooler and the winter warmer than they would be otherwise. Greenhouse gases keep our earth warm. They are a natural part of the atmosphere, and their presence there helps to keep it warm by retaining heat that originated from the sun. The term for this kind of action is the natural greenhouse effect. If there were no greenhouse gases, the temperature of the earth's surface would be nearly the same as that of the moon's, which is -18 degrees Celsius. In point of fact, the average temperature of the earth's surface is somewhere about 15 degrees Celsius. Over the course of the past century, the temperature of the atmosphere has increased by more than 0.5 degrees Celsius. In addition, throughout this time period, people have been responsible for the release of additional greenhouse gases, which are the byproduct of the burning of fossil fuels (such as coal, oil, and gas). Exhaust from motor vehicles and the destruction of forest cover are two other major contributors to the emission of greenhouse gases. It is possible that the temperature of the world's surface will be three degrees Celsius higher by the end of the 21st century if the warming trend of the globe continues as anticipated. This sudden shift in temperature would have a number of repercussions, both for the ecosystem and for mankind. Rainfall, the level of the sea, the frequency and severity of extreme weather events such as storms and floods will all be impacted by global warming. There will be an impact on people's health as well as on agriculture and the availability of water. Both the process of climate change and the cultivation of crops are global processes that are intricately connected to one another. Temperature, carbon dioxide levels, glacier runoff, precipitation, and the interplay between these factors are all expected to be significantly altered as a result of global warming, which would likely have a considerable influence on agricultural conditions. These circumstances govern the carrying capacity of the biosphere to generate sufficient food for both the human population and the animals that are kept as pets or for human use. The equilibrium of animal populations will determine the overall impact that climate change will have on agriculture. The relative importance of each of these factors will determine the overall impact that climate change will have on agriculture. An analysis of the impact that changes in the global climate are having on farming might be helpful in correctly anticipating and adapting farming practices in order to optimize agricultural productivity.

Agriculture, at the same time, has been shown to produce significant effects on climate change, primarily through the production and release of greenhouse gases such as carbon dioxide, methane, and nitrous oxide, but also by altering the earth's land cover, which can change its ability to absorb or reflect heat and light, thereby contributing to radioactive forcing. These effects were discovered at the same time. Changes in land use, such as deforestation and desertification, together with the use of fossil fuels, are the primary sources of carbon dioxide that are caused by human activity. Agriculture, on the other hand, is the primary contributor to rising quantities of methane and nitrous oxide in the atmosphere of the planet. Warming of the planet as a whole refers to both the current trend and future projections of an increase in the average temperature of the earth's atmosphere and oceans. Over the course of the past 140 years, there has been an increase of 0.6 degrees Celsius in the average temperature of the earth. The term "global warming" refers to an increase in the average surface temperature throughout the whole planet as a result of either natural or human-caused climate change. Figure 1 makes it abundantly evident that there is a general tendency toward higher temperatures all around the world. This is demonstrated by the global temperature.

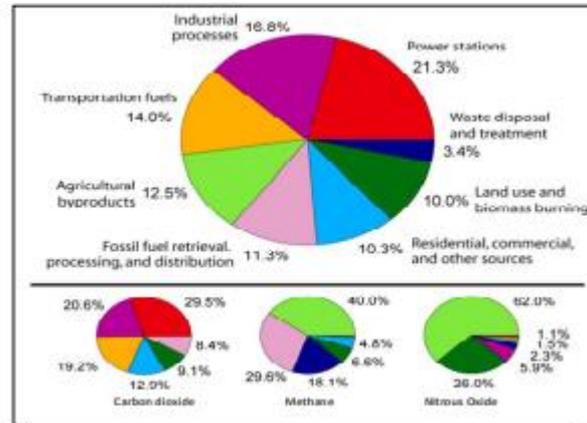


Figure illustrating the emission of greenhouse gases by several industries

fig. 1 Global warming: temperature increase in the last 140 years

Causes of Global Warming

Green House Gases

- Green house gases are the main causes of the global warming.
- Green house gases like carbon dioxide, methane and nitrous oxide are playing hazards in the present time.
- These green house gases trap heat in earth's atmosphere and thus results in increasing earth's temperature. The excessive emission of these gases is the major cause of global warming.

Figure 2 shows that power plants are the primary contributor to greenhouse gas emissions, followed by industrial activities. The sector responsible for the disposal of garbage and the treatment of waste has the lowest level of greenhouse gas emissions. The rise in concentration of greenhouse gases, most notably carbon dioxide, is responsible for the phenomenon known as "global warming," which refers to a significant warming of both the land and the ocean.

Power Plants

Power stations are the primary contributors of carbon dioxide to the atmosphere. Carbon dioxide is released into the atmosphere in significant quantities by power plants since the creation of energy requires the combustion of fossil fuels. These power stations mostly burn coal as their source of fuel to generate electricity. When burned, coal generates approximately 1.7 times the amount of carbon dioxide per unit of energy that is produced by natural gas, and 1.25 times the amount that is produced by oil.

Pollution

Inside of the Ganges basin, there is frequently a concentration of a thick haze and smoke due to the burning of biomass in the northwestern part of India and the air pollution from big industrial centers in the northern part of India. Dust and black carbon that are pushed towards higher elevations by winds at the southern faces of the

Himalayas are able to absorb shortwave radiation and heat the air above the Tibetan plateau. This phenomenon is caused by the winds at the southern faces of the Himalayas. The net heating of the atmosphere caused by the absorption of aerosols leads the air to warm and rise, which increases the amount of moisture in the mid-troposphere and provides a positive feedback loop that encourages the further heating of aerosols (Lau, 2006).

Deforestation

Cutting down and burning around 34 million acres of trees per year is the main source of deforestation, which is responsible for 25% of all carbon dioxide released into the atmosphere. The felling of trees is one of the primary contributors to the rising levels of carbon dioxide in the atmosphere. Greater urbanization, the need for land for industries and buildings, and the need for timber are all causes that contribute to deforestation, which in turn contributes to global warming.

Transport

Emissions from automobiles and other forms of transportation are another significant contributor to the level of carbon dioxide in the atmosphere. The combustion of gasoline in automobile engines is the source of around twenty percent of the carbon dioxide that is released into the atmosphere. When driving on city streets, it is almost always preferable to drive automobiles that were manufactured with city driving in mind. According to Guardian (2007), the top countries producing CO₂ are shown in Table 1.

Effects of Global warming

Effect on the economy

According to a research by the Indira Gandhi Institute of Development Research, climate-related variables might result in a drop of up to 9% of India's Gross Domestic Product (GDP). According to Smith et al.'s (2007) research, if the average temperature of the earth were to rise by only 2 degrees Celsius, about seven million people would be forced to relocate owing to a variety of circumstances, including the flooding of areas of Mumbai and Chennai. The villagers of Meghalaya, which is a state in the north-eastern part of India, are also anxious that the rising sea level may cause the low-lying neighboring country of Bangladesh to be submerged, which will result in an inflow of refugees into Meghalaya. According to Ahmad et al. (2006), if there are significant shifts in the global climate, Bangladesh would see a loss of land along its coastline.

Table 1 Major CO₂ emitting countries

Country	CO ₂ Emissions (in billion tones)
USA	5.9
CHINA	4.7
RUSSIA	1.7
JAPAN	1.3
INDIA	1.1

Effect on environment

Since the commencement of the industrial revolution in the latter part of the 18th century, there has been as much as a 33 percent rise in the amounts of pollution that may be found in the atmosphere. Flooding, coastal

erosion, droughts, salt water intrusion into soils, unusually high levels of tropical storms and cyclones, and enormous amounts of rainfall are some of the consequences that have been observed in various regions of the world over the past several years and have been ascribed to an increase in the global average temperature. Many areas of the world are experiencing floods as a result of the increasing sea levels. According to research done by Anup et al. (2006), global warming is responsible for approximately a meter's worth of sea level rise over the course of the past century.

Extreme weather

Warming of the planet may be to blame for some patterns that have been observed in natural disasters such as severe weather in the past. There will be an increase in the number and intensity of tropical cyclones. According to Stefan et al. (2007), there will be an increase in the number of instances of extremely high sea level.

Local Climate Change

Catarina, the first hurricane ever recorded in the southern Atlantic Ocean, makes landfall in Brazil in March of 2004. Over the past fifty years, there has been a one to three degree Celsius increase in temperature in the southern portion of the Arctic area located in the northern hemisphere. Canada The first stages of permafrost melting are now occurring in Alaska and Russia. According to Vladimir and Romanovsky (2007), this might have a negative impact on ecosystems and lead to an increase in bacterial activity in the soil, which would result in these places becoming carbon sources rather than carbon sinks.

Glacier retreat and disappearance

Since the end of the 19th century, the total surface area of glaciers around the globe has shrunk by half, although this does not account for the ice caps and ice sheets that are found in the Arctic and Antarctic regions. In the Andes, Alps, and Pyrenees, as well as the Himalayas, Rocky ranges, and North Cascades, glacier retreat rates and mass balance losses have been on the rise in recent years. According to Mauri and Pelto (2007), the melting of glaciers not only directly causes landslides, flash floods, and the overflow of glacial lakes, but it also increases the yearly variance in the amount of water that flows through rivers.

Oceans

Oceans act as a sink for carbon dioxide, absorbing a significant portion of the gas that would otherwise stay in the atmosphere; yet, rising concentrations of CO₂ have contributed to the acidification of oceans. As the temperature of the seas continues to rise, their capacity to absorb more CO₂ will decrease. According to Christian et al. 2003, global warming is expected to have a variety of impacts, one of which is an increase in the level of the sea as a result of thermal expansion and the melting of glaciers and ice sheets.

GLOBAL WARMING CAUSE IN THE ENVIRONMENT

In the manufacturing industry, oil-refineries, petrochemical, chemical industries, and heavy industries, etc., the final waste is composed of some form of oil, acid, bases, hydrocarbon cycles, etc., all of which are extremely dangerous and violently impacted when they come into touch with human and biological living bodies. In most cases, we release or burn these remaining leftover gases into the open air, which results in the production of greenhouse gases. When leftover gases are burned off in the open air, not all of the residue gases are entirely (100%) consumed by the flames; some of the residue gases maintain their initial state. These residual residue

gases or those that are skipping off as unburnt condition, i.e. in their original state, mingle with the natural air that is present in the surroundings. These unburnt residue gases or simply the residue gases with the ashes of burnt residue gases with all greenhouse gases, due to its highly poisonous character, spread numerous diseases in animals and botanic life including human one, particularly in the surroundings of these industries plant (say a 34 kilometer radius from the exposure of the residue gases or the burning residue gases), and are responsible for the rapid rise in the temperature of the environment. Again, when the leftover gases are burned in the open air after being released from a high chimney, they require a significant quantity of oxygen from the medium around them in order to complete the burning process. when a consequence, the medium around them may experience a shortage of oxygen. At the same time, the byproducts of the burning process, such as ashes, carbon monoxide (CO), carbon dioxide (CO₂), hydrogen sulfide (H₂S), methane (CH₄), and other toxic compounds of hydrocarbons, are dispersing all over the pickup zone, which is around three to four kilometers in radius from the location where the fire started. This is causing yet another type of toxic pollutants to be released into the environment, as well as a rise in the temperature of the atmosphere, which in turn causes extreme global warming. In most cases, a large number of different kinds of trees are planted around industrial areas in order to absorb the poisonous residue materials and gases that are released either thrown into the air or burned in the residue gases.

However, trees in the area surrounding industrial areas are only able to withstand a certain amount of environmental pollution before they reach their breaking point. After a given amount of time has passed, the trees will be equally impacted by the illnesses and will have reached the saturation level of absorbing the toxic materials and gases, which means that they will no longer be able to absorb any more consequence of the residual materials. Therefore, a permanent remedy to the environmental pollution caused by these companies and complemented by the trees is not a viable option on a long-term basis. In order to achieve a climate that is consistent around the globe, it is necessary to conduct research that is both exhaustive and holistic, as well as the development of various pollution control technologies. Because of this, the author has previously conceived of an instrument [5, 8] that can regulate and eliminate any and all types of leftover materials and gases produced by industrial processes.

Conclusion

It is absolutely necessary for wealthy countries as well as those that are fast growing to work together to devise plans to reduce emissions of greenhouse gases. Countries that are accelerating their economic expansion should also consider the possibility of adopting innovative technologies that save energy. It is very necessary to engage in a sizable amount of reforestation. In addition to this, there is an increased focus on the utilization of renewable energy sources such as the sun and the wind. The amount of fertilizer that is applied need to be cut back.

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