



सत्यं विद्मन्

**32nd Annual Conference of the Indian Institute of Geomorphologists (IGI)**  
**Focal Theme: Geomorphology for Human Adaptation to Changing Environment**

Organized by  
**Department of Geography, West Bengal State University**

This is to certify that **Prof./Dr./ Sri/ Smt.** ..... **ANAND RAMESHRAO DHOTE** .....  
of ..... **Sant Gadge Baba Amravati University, Amravati** ..... presented a paper  
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**and GIS Technique** ..... in the 32nd Annual

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**Environmental Pollution and  
Sustainable Development  
Peer-Reviewed Book Chapter**

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विजय टोम्मे, व प्राचार्य डॉ. राजेंद्र. एस. रामटेके सरांचे आणि रामकृष्ण महाविद्यालयाचे प्राचार्य डॉ. यशवंत व्ही. हरणे सरांचे तसेच सर्व सहकारी प्राध्यापक वृंदाचे सातत्याने प्रोत्साहन मिळाले त्याबद्दल संपादकीय आभार व्यक्त करतो तसेच आधार पब्लीकेशन, अमरावतीचे संचालक प्रा. विराग गावडे यांनी अत्यंत परिश्रमपूर्वक सुंदर व सुबक पुस्तकाची रचना करण्यास केलेले सहकार्य अत्यंत बहुमूल्य आहे. तथापि प्रस्तुत पुस्तकाची रचना प्रत्यक्ष व अप्रत्यक्ष सहकार्य लाभलेल्या सर्वांचे मनःपूर्वक आभार !

संपादक

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## Environmental Management And Hazard

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#### ABSTRACT:

In the present research paper the current knowledge of hazards and its management is critically reviewed same terminologies have to be clarified when the nature is in its extreme state but it does not cause any casualties, damage or disruption to people living in the area, we can it a natural event. Hazard is natural of man-induced processes or events that cause potential losses of the community and damage to the environment.

**Keywords:** Environment, Hazard, Management.

#### INTRODUCTION:

Traditional the study of environmental hazards was embedded in various branches of physical science, e.g. meteorology, hydrology, geology, Geology and engineering, and social science, e.g. human geography, sociology, psychology and health and softy, Howare, are for the lost two decades a multidisciplinary and integrated approach has been adopted in studying environmental hazards and its management this was partly due to the change of global landscape with thawing of the cold war between the west and east, through rapid globalization the west and east have been getting closer, catastrophes become global in scale e.g. worming, pandemic influenza and international terrorist attack

**STUDY AREA:** Environmental hazards, Management, and world.

#### OBJECTIVES:

1. To study the environmental hazards and its effects.
2. To study the environmental hazards events and its management.

## Global Warming Causes, Effects and Mitigation

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### What is Global Warming

Global warming is the long-term heating of Earth's climate system observed since the pre-industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth's atmosphere. Since the pre-industrial period, human activities are estimated to have increased Earth's global average temperature by about 1 degree Celsius (1.8 degrees Fahrenheit), a number that is currently increasing by 0.2 degrees Celsius (0.36 degrees Fahrenheit) per decade. It is unequivocal that human influence has warmed the atmosphere, ocean, and land.

### How does global warming work

Human activity affects global surface temperatures by changing Earth's radiative balance—the "give and take" between what comes in during the day and what Earth emits at night. Increases in greenhouse gases—i.e., trace gases such as carbon dioxide and methane that absorb heat energy emitted from Earth's surface and reradiate it back—generated by industry and transportation cause the atmosphere to retain more heat, which increases temperatures and alters precipitation patterns.

### Definition of Global Warming

"Global warming is a gradual increase in the earth's temperature generally due to the greenhouse effect caused by increased levels of carbon dioxide, CFCs, and other pollutants."

### What is greenhouse effect

The greenhouse effect works like a greenhouse. A greenhouse is a building with glass walls and a glass roof. Greenhouses are used to grow plants, such as tomatoes and tropical flowers.

A greenhouse stays warm inside, even during the winter. In the daytime, sunlight shines into the greenhouse and warms the plants and air inside. At nighttime, it's colder outside, but the greenhouse stays pretty warm inside. That's because the glass walls of the greenhouse trap the Sun's heat.

The greenhouse effect works much the same way on Earth. Gases in the atmosphere, such as carbon dioxide, trap heat similar to the glass roof of a greenhouse. These heat-trapping gases are called greenhouse gases.

During the day, the Sun shines through the atmosphere. Earth's surface warms up in the sunlight. At night, Earth's surface cools, releasing heat back into the air. But some of the heat is trapped by the greenhouse gases in the atmosphere. Reradiated to atmosphere so, the temperature of the earth atmosphere is increase.

Modern global warming is the result of an increase in magnitude of the so-called greenhouse effect, a warming of Earth's surface and lower atmosphere caused by the presence of water vapour, carbon dioxide, methane, nitrous oxides, and other greenhouse gases. In 2014 the IPCC reported that concentrations of carbon dioxide, methane, and nitrous oxides in the atmosphere surpassed those found in ice cores dating back 800,000 years.

### Causes of Global Warming

There are several causes of global warming, which have a negative effect on humans, plants and animals. These causes may be natural or might be the outcome of human activities.

### Man-made Causes of Global Warming Deforestation

Plants are the main source of oxygen. They take in carbon dioxide and release oxygen thereby maintaining environmental balance. Forests are being depleted for many domestic and commercial purposes. This has led to an environmental imbalance, thereby giving rise to global warming.



**Use of Vehicles**

The use of vehicles, even for a very short distance results in various gaseous emissions. Vehicles burn fossil fuels which emit a large amount of carbon dioxide and other toxins into the atmosphere resulting in a temperature increase.

**Chlorofluorocarbon**

With the excessive use of air conditioners and refrigerators, humans have been adding CFCs into the environment which affects the atmospheric ozone layer. The ozone layer protects the earth surface from the harmful ultraviolet rays emitted by the sun. The CFCs has led to ozone layer depletion making way for the ultraviolet rays, thereby increasing the temperature of the earth.

**Industrial Development**

With the advent of industrialization, the temperature of the earth has been increasing rapidly. The harmful emissions from the factories add to the increasing temperature of the earth. In 2013, the Intergovernmental Panel for Climate Change reported that the increase in the global temperature between 1880 and 2012 has been 0.9 degrees Celsius. The increase is 1.1 degrees Celsius when compared to the pre-industrial mean temperature.

**Natural Causes of Global Warming****Volcanoes**

Volcanoes are one of the largest natural contributors to global warming. The ash and smoke emitted during volcanic eruptions goes out into the atmosphere and affects the climate.

**Water Vapour**

Water vapour is a kind of greenhouse gas. Due to the increase in the earth's temperature more water gets evaporated from the water bodies and stays in the atmosphere adding to global warming.

**Melting Permafrost**

Permafrost is there where glaciers are present. It is a frozen soil that has environmental gases trapped in it for several years. As the permafrost melts, it releases the gases back into the atmosphere increasing the earth's temperature.

**Forest Blazes**

Forest blazes or forest fires emit a large amount of carbon-containing smoke. These gases are released into the atmosphere and increase the earth's temperature resulting in global warming.

**Effects of Global Warming**

Following are the major effects of global warming:

**Rise in Temperature**

Global warming has led to an incredible increase in earth's temperature. Since 1880, the earth's temperature has increased by 1 degree. This has resulted in an increase in the melting of glaciers, which have led to an increase in the sea level. This could have devastating effects on coastal regions.

**Threats to the Ecosystem**

Global warming has affected the coral reefs that can lead to a loss of plant and animal lives. Increase in global temperatures has made the fragility of coral reefs even worse.

**Climate Change**

Global warming has led to a change in climatic conditions. There are droughts at some places and floods at some. This climatic imbalance is the result of global warming.

**Spread of Diseases**

Global warming leads to a change in the patterns of heat and humidity. This has led to the movement of mosquitoes that carry and spread diseases.

### Loss of Natural Habitat

A global shift in the climate leads to the loss of habitats of several plants and animals. In this case, the animals need to migrate from their natural habitat and many of them even become extinct. This is yet another major impact of global warming on biodiversity.

### Agricultural surfaces

Climate change may increase the amount of arable land in high-latitude region by reduction of the amount of frozen lands. A 2005 study reports that temperature in Siberia has increased three-degree Celsius in average since 1960 (much more than the rest of the world). However, reports about the impact of global warming on Russian agriculture indicate conflicting probable effects: while they expect a northward extension of farmable lands, they also warn of possible productivity losses and increased risk of drought.

Sea levels are expected to get up to one meter higher by 2100, though this projection is disputed. A rise in the sea level would result in an agricultural land loss, in particular in areas such as South East Asia. Erosion, submergence of shorelines, salinity of the water table due to the increased sea levels, could mainly affect agriculture through inundation of low-lying lands.

Low-lying areas such as Bangladesh, India and Vietnam will experience major loss of rice crop if sea levels rise as expected by the end of the century. Vietnam for example relies heavily on its southern tip, where the Mekong Delta lies, for rice planting. Any rise in sea level of no more than a meter will drown several km<sup>2</sup> of rice paddies, rendering Vietnam incapable of producing its main staple and export of rice.

### Glacier retreat and disappearance

The continued retreat of glaciers will have a number of different quantitative impacts. In the areas that are heavily dependent on water runoff from glaciers that melt during the warmer summer

months, a continuation of the current retreat will eventually deplete the glacial ice and substantially reduce or eliminate runoff. A reduction in runoff will affect the ability to irrigate crops and will reduce summer stream flows necessary to keep dams and reservoirs replenished.

Approximately 2.4 billion people live in the drainage basin of the Himalayan rivers. India, China, Pakistan, Afghanistan, Bangladesh, Nepal and Myanmar could experience floods followed by severe droughts in coming decades. In India alone, the Ganges provides water for drinking and farming for more than 500 million people.

### Mitigation and Adaptation

Reducing the flow of heat-trapping greenhouse gases into the atmosphere, either by reducing sources of these gases (for example, the burning of fossil fuels for electricity, heat or transport) or enhancing the "sinks" that accumulate and store these gases (such as the oceans, forests and soil).

Adapting to life in a changing climate – involves adjusting to actual or expected future climate. The goal is to reduce our vulnerability to the harmful effects of climate change (like sea-level encroachment, more intense extreme weather events or food insecurity). It also encompasses making the most of any potential beneficial opportunities associated with climate change (for example, longer growing seasons or increased yields in some regions).