

## 6.1.1 Causes of Climate Change

Climate change occurs because of different natural and human activities that increase greenhouse gases in the atmosphere. These gases trap heat and raise the Earth's temperature. Human activities are currently the main causes of climate change.

### Definition of Climate Change Causes

Causes of climate change are factors that alter weather conditions and temperature patterns over a long period of time.

### Human Causes of Climate Change

Human activities contribute greatly to global warming and climate change.

#### **1. Burning Fossil Fuels**

Coal, oil, and natural gas are fossil fuels used for transportation, industries, and electricity. Burning these fuels releases carbon dioxide into the atmosphere.

Factories release smoke and gases. Vehicles emit carbon dioxide. Power plants increase air pollution.

#### **2. Deforestation**

Deforestation means cutting down trees and forests. Trees absorb carbon dioxide, so removing forests increases greenhouse gases.

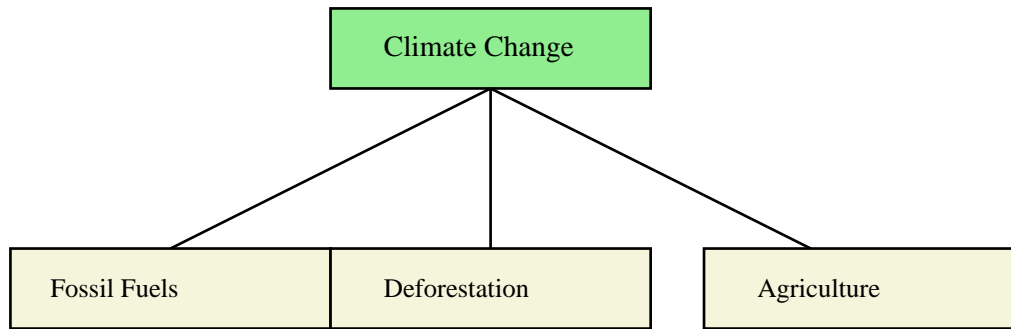
Reduces oxygen production. Increases atmospheric carbon dioxide. Destroys habitats of organisms.

#### **3. Agricultural Activities**

Agricultural activities also contribute to climate change. Livestock release methane gas and fertilizers release nitrous oxide.

Livestock farming releases methane. Fertilizers release nitrous oxide. Burning grassland increases pollution.

### **Diagram of Human Causes**



## Natural Causes of Climate Change

Natural processes can also influence climate change over long periods.

### 1. Volcanic Eruptions

Volcanoes release ash and gases into the atmosphere. These materials may affect climate conditions.

### 2. Changes in Solar Radiation

Changes in the amount of energy from the sun may increase or decrease Earth's temperature.

### 3. Natural Climate Cycles

The Earth naturally experiences periods of warming and cooling.

## Greenhouse Gases

Greenhouse gases trap heat in the atmosphere and increase global warming.

Gas	Main Source	Effect
Carbon dioxide	Fossil fuels	Global warming
Methane	Livestock	Traps heat
Nitrous oxide	Fertilizers	Atmospheric warming
Water vapor	Evaporation	Enhances greenhouse effect

## Methods of Reducing Climate Change

Climate change can be reduced through proper environmental management.

Use renewable energy. Reduce pollution. Plant more trees. Protect forests. Promote sustainable farming.

## Important Notes

- Fossil fuels are major causes of climate change.
- Deforestation increases carbon dioxide.
- Methane is released by livestock.
- Greenhouse gases trap heat.
- Renewable energy helps reduce pollution.

## Summary

Climate change is caused by both human and natural factors. Human activities such as burning fossil fuels, deforestation, and agricultural activities are the major causes. Natural causes include volcanic eruptions and solar changes. Greenhouse gases trap heat and increase Earth's temperature.

## Review Questions and Answers

### 1. What are greenhouse gases?

They are gases that trap heat in the atmosphere.

### 2. Mention one human cause of climate change.

Burning fossil fuels.

### 3. What is deforestation?

Cutting down trees and forests.

### 4. Which gas is released by livestock?

Methane gas.

### 5. Mention one natural cause of climate change.

Volcanic eruptions.

### 6. How can climate change be reduced?

By planting trees and reducing pollution.

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