

**G L O B A L
W A R M I N G :
C A U S E S
A N D
I M P A C T S**

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What is Global warming?

- Global warming is the long-term rise in Earth's average surface temperature due to human activities.- This presentation will delve into the major causes of global warming, its far-reaching impacts on the environment and human life, and the strategies we can employ to mitigate and adapt to these changes.

Causes: Greenhouse Gas Emissions

- 1. Fossil Fuels: - The combustion of fossil fuels like coal, oil, and natural gas for electricity, heat, and transportation is the largest single source of global CO₂ emissions. - Power plants, vehicles, and factories are major contributors.
- 2. Deforestation: - Forests act as carbon sinks, absorbing CO₂ from the atmosphere. Deforestation for agriculture, logging, and urban development reduces this capacity. - Forest fires, often set to clear land, also release stored carbon.
- 3. Agriculture - Livestock such as cows and sheep produce methane during digestion (enteric fermentation). - Manure management and rice paddies also release significant amounts of methane and nitrous oxide.
- 4. Industrial Processes - Certain industrial activities, including cement production and chemical manufacturing, release various greenhouse gases. - Refrigerants used in cooling systems can also be potent greenhouse gases.



Causes: Land Use Changes & Other Activities



1. Urbanization - Expanding cities increase the amount of heat-absorbing surfaces (like concrete and asphalt), contributing to the urban heat island effect. - More energy consumption for heating, cooling, and transportation in urban areas leads to higher emissions.



2. Deforestation - Reiterates the point that reducing forest cover decreases the planet's ability to absorb CO₂. - Emphasizes the importance of maintaining and restoring forests.



3. Waste Management: - Decomposing organic waste in landfills generates methane, a potent greenhouse gas. - Inefficient waste management practices contribute significantly to emissions.

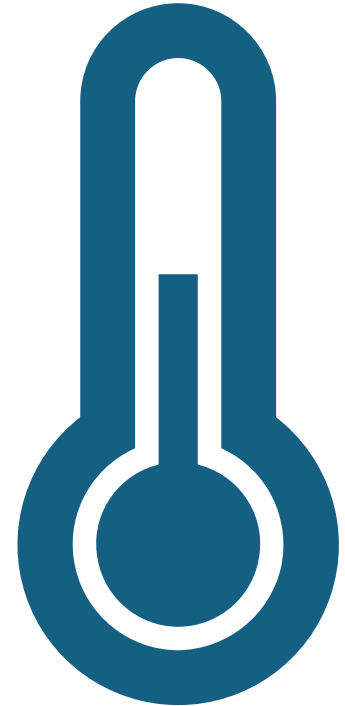


4. Chemical Production: - The production and use of chemicals like fertilizers and industrial products release nitrous oxide and other greenhouse gases. - Highlighting the role of synthetic chemicals in contributing to global warming.

Impacts: Rising Temperatures

Heatwaves: - Increased frequency and severity of heatwaves lead to health problems like heatstroke, dehydration, and respiratory issues. - Vulnerable populations, such as the elderly and those with pre-existing health conditions, are most at risk.

Increased Energy Demand - Higher temperatures lead to increased use of air conditioning, which in turn raises energy demand. - This can strain power grids and lead to higher greenhouse gas emissions from electricity production.



Impacts: Melting Ice & Rising Sea Levels



1. Coastal Erosion - Rising sea levels lead to the erosion of coastlines, threatening homes, infrastructure, and ecosystems. - Small island nations and coastal cities are particularly vulnerable.



2. Habitat Loss - Melting ice caps and glaciers reduce habitats for species such as polar bears, seals, and penguins. - Loss of sea ice affects marine food webs and ecosystems.



Impacts: Extreme Weather Events



1. FLOODS AND STORMS: - INCREASED INTENSITY AND FREQUENCY OF STORMS LEAD TO MORE SEVERE FLOODING, CAUSING DAMAGE TO HOMES, INFRASTRUCTURE, AND AGRICULTURE. - STORM SURGES AND HEAVY RAINFALL EXACERBATE THE RISK OF FLOODING IN COASTAL AND LOW-LYING AREAS.



2. DROUGHTS - LONGER AND MORE SEVERE DROUGHTS AFFECT WATER AVAILABILITY, AGRICULTURE, AND FOOD SECURITY. - REGIONS DEPENDENT ON SEASONAL RAINFALL ARE PARTICULARLY AT RISK.



Impacts: Ecosystems & Biodiversity

- 1. Species Extinction - Rapid changes in climate outpace the ability of many species to adapt, leading to increased risk of extinction.
 - Loss of biodiversity affects ecosystem services such as pollination, water purification, and climate regulation.
- 2. Ocean Acidification - Increased CO₂ levels result in higher ocean acidity, harming marine life, particularly organisms with calcium carbonate shells and skeletons.
 - Coral reefs, which support diverse marine ecosystems, are particularly vulnerable.

Impacts: Human Health



1. Heat-Related Illnesses: - Rising temperatures increase the incidence of heat-related illnesses, such as heat exhaustion and heatstroke. - Urban areas experience more significant heat impacts due to the urban heat island effect.



2. Vector-Borne Diseases - Warmer temperatures expand the range of vectors (e.g., mosquitoes) that carry diseases such as malaria, dengue fever, and Zika virus. - Changes in climate patterns affect the prevalence and distribution of these diseases.

Mitigation Strategies



Reducing Emissions:

- *Renewable Energy*: Transitioning to solar, wind, hydro, and other renewable energy sources reduces reliance on fossil fuels.
- *Energy Efficiency*: Improving energy efficiency in buildings, transportation, and industry can significantly reduce emissions.
- *Reforestation*: Planting trees and restoring forests enhance carbon sequestration.



2. *Policy Measures*:

- *International Agreements*: Participating in agreements like the Paris Agreement to commit to emission reduction targets.
- *Carbon Pricing*: Implementing carbon taxes or cap-and-trade systems to incentivize emission reductions and fund renewable energy projects.



Adaptation Strategies

- Infrastructure - Building resilient infrastructure that can withstand extreme weather events, such as flood defenses and storm-resistant buildings. - Investing in green infrastructure, such as parks and wetlands, to enhance urban resilience.
- Agricultural Practices - Developing and adopting drought-resistant crops and sustainable farming practices to ensure food security. - Implementing efficient water management techniques to conserve water resources.
- 3. *Disaster Preparedness*: - Enhancing early warning systems for extreme weather events to improve preparedness and response. - Developing and implementing emergency response plans to protect vulnerable populations.



Thanks