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## climate change

### Introduction

Climate change is a long-term shift in weather patterns and temperatures on Earth, primarily attributed to human activities such as burning fossil fuels and deforestation. This change causes rising temperatures, melting ice, and rising sea levels, along with increased extreme weather events. It has serious impacts on the environment, economy, and public health, making it essential to take urgent action to reduce emissions and adapt to these changes to ensure a sustainable future.

### The causes of climate change

the are both human and natural.

1)Human causes include:

the burning of fossil fuels, deforestation, intensive agriculture, and urban expansion, which increase the emission of greenhouse gases like carbon dioxide and methane.

2)Natural causes include changes:

in solar activity, volcanic activity, and changes in Earth's orbit, but their impact is less significant than human activities.

1)Rising temperatures: Global warming caused by greenhouse gas emissions leads to higher global temperatures, affecting ecosystems and increasing the frequency and intensity of heatwaves.

2)Sea level rise:

Melting polar ice and the expanding volume of water in oceans due to rising temperatures contribute to rising sea levels, threatening coastal areas and human communities .

### Global impacts of climate change

3) Changes in weather patterns:

Climate change causes shifts in rainfall patterns, leading to droughts in some areas and floods in others. This can impact agriculture and food security.

4) Biodiversity loss:

Climate change leads to the extinction of many plant and animal species due to habitat degradation and changing temperatures

5)Public health effects:

Higher temperatures can contribute to the spread of insect-borne diseases like malaria, while heatwaves impact human health and increase respiratory diseases

6)Economic impacts:

Climate change causes significant economic losses due to damage to infrastructure and natural resources, as well as increased costs of adaptation and mitigation.

### Climate change consequences:

1)Rising Global Temperatures:

The Earth's average temperature has increased, leading to more frequent and intense heatwaves, and altering .weather patterns

.2) Melting Ice Caps and Glaciers:

Higher temperatures are causing glaciers and ice sheets to melt, contributing .to rising sea levels

3)Sea-Level Rise: As glaciers an polar ice melt, sea levels rise, threatening coastal communities and ecosystems, causing erosion, and leading to more frequent .flooding

4)Extreme Weather Events:

Increased heat and moisture in the atmosphere are intensifying storms, such as hurricanes, typhoons, and cyclones. Droughts, wildfires, and floods are also becoming more frequent and severe

5)Ocean Acidification: Increased carbon dioxide (CO2) levels are being absorbed by the oceans, making them more acidic. This affects marine life, particularly coral reefs and shellfish, disrupting ecosystems and fisheries.

### Solutions to confront climate change:

1)Transition to Renewable Energy:

Invest in solar, wind, and other renewable sources to reduce reliance on fossil fuels

2)Energy Efficiency: Improve energy use in buildings,

transportation, and industries to cut emissions.

3) Reforestation and Afforestation: Plant trees to absorb CO2 and restore ecosystems.

4)Carbon Pricing:

Implement carbon taxes or cap-and-trade systems to incentivize businesses to reduce emissions.

5)Sustainable Agriculture:

Promote practices that reduce emissions, like agroforestry, organic farming, and reduced .chemical use

6)Waste Reduction: Reduce, reuse, and recycle, along with investing in waste-to-energy technologies



### Conclusion

climate change is real, primarily human-caused, and already impacting our planet. The burning of fossil fuels releases greenhouse gases into the atmosphere, trapping heat and causing global temperatures to rise. This warming leads to a cascade of effects, including more frequent and intense heatwaves, droughts, floods, and storms. Rising sea levels threaten coastal communities, and ocean acidification endangers marine ecosystems. Climate change exacerbates social and economic inequalities, disproportionately affecting vulnerable populations