



GLOBAL WARMING - GS III MAINS

Q. Bring out the impacts of warming Earth and enumerate the measures taken by the global nations to counter it. (15 marks, 250 words)

News: *Europe is world's fastest-warming continent, report says*

What's in the news?

- Europe is the fastest-warming continent and its temperatures are rising at roughly twice the global average, two top climate monitoring organizations reported, warning of the consequences for human health, glacier melt and economic activity.

Key takeaways:

- The U.N.'s World Meteorological Organisation and the European Union's climate agency, Copernicus, said in a joint report the continent has the opportunity to develop targeted strategies to speed up the transition to renewable resources like wind, solar, and hydroelectric power in response to the effects of climate change.

Global Warming:

- Global warming refers to the long-term increase in Earth's average surface temperature due to the buildup of greenhouse gases in the atmosphere. The primary cause of global warming is human activities, particularly the burning of fossil fuels such as coal, oil, and natural gas, which release carbon dioxide (CO₂) and other greenhouse gases into the atmosphere.

Impacts of Global Warming:

1. Rising temperatures:

- Global warming leads to higher average temperatures, affecting weather patterns, causing heat waves, and contributing to the melting of glaciers and polar ice caps.

2. Changes in Precipitation:

- Global warming alters rainfall patterns, leading to more intense rainfall events in some regions and increased risk of droughts in others.
- This can have significant implications for agriculture, water availability, and ecosystems.

3. Sea-level Rise:

- As global temperatures rise, glaciers and ice sheets melt, and the thermal expansion of seawater occurs.
- These factors contribute to rising sea levels, which can result in coastal erosion, increased flooding, and the loss of coastal habitats.

4. Extreme Weather Events:

- Global warming intensifies extreme weather events such as hurricanes, cyclones, and heavy rainfall events.



- These events can cause devastating impacts on human settlements, infrastructure, and ecosystems.

5. Shifts in Ecosystems:

- Changes in temperature and precipitation patterns can lead to shifts in ecosystems, including alterations in plant and animal distribution, disruptions in migration patterns, and the potential loss of biodiversity.

Measures Taken:

To address global warming and reduce the emission of greenhouse gases, the Kyoto Protocol was adopted in 1997 as an international agreement under the United Nations Framework Convention on Climate Change (UNFCCC). The key control measures established by the Kyoto Protocol include:

1. Binding Emission Reduction Targets:

- The Kyoto Protocol sets binding emission reduction targets for developed countries (known as Annex I countries) during the commitment period (2008-2012).
- These targets aimed to collectively reduce greenhouse gas emissions by an average of 5.2% below 1990 levels.

2. Cap-and-trade System:

- The Kyoto Protocol introduced a cap-and-trade system called the Clean Development Mechanism (CDM).
- This mechanism allows developed countries to invest in emission reduction projects in developing countries and earn emission reduction credits, which can be used to meet their own reduction targets.

3. Promotion of Renewable Energy and Energy Efficiency:

- The Kyoto Protocol encourages the adoption of renewable energy sources and energy-efficient technologies to reduce greenhouse gas emissions.
- It promotes sustainable development practices and the transfer of clean technologies to developing countries.

4. Carbon Sinks and Sequestration:

- The Kyoto Protocol recognizes the role of carbon sinks, such as forests and land-use practices, in absorbing carbon dioxide from the atmosphere.
- It provides provisions for countries to account for emissions and removals associated with these sinks.

5. Compliance Mechanisms:

- The Kyoto Protocol establishes compliance mechanisms to ensure that countries meet their emission reduction targets.
- This includes regular reporting, review processes, and financial penalties for non-compliance.



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Hence, these control measures aim to limit global warming, reduce greenhouse gas emissions, and mitigate the adverse effects of climate change on the global climate system. Continued international cooperation, policy implementation, and technological advancements are crucial for achieving the goals outlined in these agreements and ensuring a sustainable and resilient future.



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