

Climate Change

**Pote Dipesh Shailesh, Pichad Rushikesh Sonu, Mule Vishal Suresh,
Datkhile Rohit Chandrakant, Prof. Kumbhoje. M. R**

Department of Commerce and Research Center BBA(CA)
Shri Shiv Chhatrapati College, Junnar, India

Abstract: *Climate change refers to long-term alterations in temperature and weather patterns, primarily driven by human activities like burning fossil fuels and deforestation. These changes lead to rising global temperatures, melting ice caps, and more frequent extreme weather events. The ultimate consequences threaten ecosystems, human health, and food security, prompting urgent calls for mitigation and adaptation strategies worldwide.*

Keywords: Greenhouse gases, Global warming, Carbon footprint, Renewable energy, Fossil fuels, Climate adaptation, Ecosystem impact, Sea-level rise

I. INTRODUCTION

Climate change represents one of the most urgent crises facing our planet today. It involves long term shifts in temperatures and weather patterns, largely driven by human activities such as the burning of fossil fuels, agriculture, and land use changes. These actions have led to an increase in greenhouse gas concentrations, resulting in global warming and its associated effects, including more frequent and severe storms, droughts, and rising sea levels. Addressing climate change requires a multifaceted approach, involving international cooperation, innovative technologies, and sustainable practices to protect ecosystems and future generations.

II. METHOD

Addressing climate change involves a multifaceted approach that includes both mitigation and adaptation methods. Mitigation efforts focus on reducing greenhouse gas emissions through transitioning to renewable energy sources like solar and wind, improving energy efficiency in buildings and transportation, and implementing carbon capture and storage technologies. Additionally, reforestation, sustainable agriculture, and promoting alternative transportation methods can further lower emissions review. Considering this review a structured comparison framework is developed, Data collection involves gathering empirical evidence from the different kinds of articles blogs etc. The Analysis uses both qualitative and quantitative methods to find clear similarities and differences between AI and HI.

III. RESULTS

- **Rising Temperatures:** Global temperatures are increasing, leading to more frequent and severe heatwaves.
- **Melting Ice and Rising Sea Levels:** Glaciers and polar ice caps are melting, contributing to rising sea levels, which threaten coastal communities.
- **Extreme Weather Events:** Increased frequency and intensity of hurricanes, droughts, floods, and wildfires are linked to climate change.
- **Ocean Acidification:** Higher CO₂ levels lead to more acidic oceans, harming marine life, particularly coral reefs and shellfish.
- **Biodiversity Loss:** Many species face extinction as habitats change or disappear, disrupting ecosystems.
- **Agricultural Impact:** Changing climate conditions affect crop yields, leading to food insecurity in vulnerable regions.
- **Health Risks:** Increased heat and pollution contribute to respiratory problems, heat-related illnesses, and the spread of vector-borne diseases.
- **Water Scarcity:** Altered precipitation patterns can lead to droughts and water shortages, impacting both people and agriculture.

- **Economic Consequences:** Damage from extreme weather events and shifting agricultural patterns can have significant economic costs.
- **Displacement and Migration:** Climate change can force people to leave their homes, leading to climate refugees and increased social tensions.

Here are some key points to overcome climate change:

- **Reduce Emissions:** Transition to renewable energy sources like solar and wind.
- **Enhance Energy Efficiency:** Improve insulation and use energy-efficient appliances.
- **Promote Sustainable Transportation:** Use public transport, cycle, or walk.
- **Support Reforestation:** Plant trees and restore natural habitats.
- **Encourage Circular Economy:** Reduce waste through recycling and reusing.
- **Raise Awareness:** Educate others about climate issues and solutions.

IV. CONCLUSION

climate change represents one of the most pressing challenges of our time, with far-reaching impacts on ecosystems, economies, and communities worldwide. The evidence is clear, and the urgency is palpable; without immediate and sustained action, the consequences will be dire. However, we have the tools and knowledge to combat this crisis. By committing to sustainable practices, embracing renewable energy, and fostering global collaboration, we can mitigate the effects of climate change and build a more resilient future. It is essential that we act decisively, not only for ourselves but for future generations, ensuring a healthy planet for all.

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