

Climate Change: Causes and consequences

Outline

Keep practicing on different themes/topics

1 Introduction

1.1 Hook

1.2 General statement

1.3 Thesis statement:

Climate Change, caused by factors like greenhouse gas emissions and land use changes, leads to significant global challenges, including extreme weather events, rising sea levels, and disruption ~~to~~ ⁱⁿ ecosystems and human societies.

2 Causes of Climate Change

2.1 Natural causes of Climate Change

2.1.1 Volcanic eruptions

2.1.2 Fluctuations in solar radiation

2.1.3 Tectonic shifts

(2)

2.2 Human-driven causes of climate change at social level

2.1.1 Cutting down forests (deforestation)

2.1.2 Construction of societies or buildings for living.

2.1.3 Burning of fossil fuels - Greenhouse gases

2.1.4 Electricity generation

2.3 Human-driven causes of climate change in agriculture sector and industrial sector

2.3.1 Methane gas emissions come from livestock, manure, rice cultivation, ~~pasture~~, ~~wastewater~~ and ~~coal mining~~.

2.3.2 Microbial decomposition of fertilizers produce a greenhouse gas - Nitrous oxide

Industrial emissions - greenhouse gases like CO_2 , SO_2 etc.

(3)

2.4 Causes of Climate Change ✓ at state level

2.4.1 Excessive carbon emissions by developing countries

Case study: Pakistan's 2022 floods

2.4.2 Ineffective Natural Disaster Management Authorities

• Pakistan and NDMA

2.4.3 Industrialization causing climate change.

2.5 Causes of Climate Change ✓ at Global level

2.5.1 Fossil fuels driven economies

• BRICS - Case Study

2.5.2 Depending on non-renewable energy sources

• Saudi Arabia - an example

2.5.3 Lack of accountability for breach of international agreements

• Enforcement of Paris Accord

3 Consequences of Climate Change ✓

(4)

Consequences/Effects of Climate Change on Weather

3.1.1 Higher average temperatures

- Case study: Asia; On July 16, ²⁰²³ the Persian Gulf International Airport in Iran reported a heat index of 152°F (66.7°C).

3.1.2 Intense heat waves

- Saudi Arabia (During Hajj 14 to 19 June 2024, at least 1,301 people died due to extreme heat waves - 51.8°C)

3.1.3 Irregular rain pattern

- In August, 2023, ~~severe~~ prolonged monsoon rains overflowed the Sutlej River in Pakistan and India.

- Heavy rains caused floods in UAE in Oman

3.2 Effects of Climate Change on the environment

3.2.1 Melting of glaciers and Ice sheets are shrinking

- The loss of about 267 gigatonnes of ice every year world wide.
- Greenland lost an average of 279 billion tons of Ice per year between 1993 and 2019

- Antarctica lost about 148 billion tons of ice per year.

3.2.2 Sea level ris^os
 • 8-9 inches rise in sea level

3.3.3 Loss of species: The world is losing species at a rate 1000 times greater than at any other time in recorded history.

3.3.4 Increased droughts

3.3.4 Ocean Acidification is increasing

- Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30%.

3.3 ~~Consequences of Climate Change and~~ ^{effects} ~~problems~~
 3.3.1 ~~Rising health~~ ^{problems}

- Air pollution: respiratory diseases, strokes, and heart attacks

3.3.2 Poverty

3.3.3 ^{increasing} the Migration of people. ^{Case study:} • Floods in Pakistan and China

3.3.4 Shrinking economy

3.4 Effects of Climate Change On Aquatic

3.4.1 Reduced Soil health

3.4.2 Food Shortages

4- Conclusion

Suggest remedial measures as well

The President of the United States of America Barack Obama once said, "There's one issue that will define the contours of this century more dramatically than any other, and that is the urgent threat of a changing climate." Climate change, being a global phenomenon, has become a controversial issue. Climate ^{change} is a long-term shift in average temperature and weather at the global level. Since the beginning of the industrial era, the change in climate has been observed primarily driven by human activities, like the excessive burning of fossil fuels. According to Intergovernmental Panel on Climate Change (IPCC) report, the average temperature of the Earth has already risen by more than one degree Celsius. This alarming rise in temperature has become a very serious threat in the twenty-first century. It has undoubtedly, caused devastating problems for the world. No region is safe from its

effects. Some of the most important consequences of climate change are rising Earth's surface temperature, rising sea levels, heavy floods, and shrinking ice sheets. Moreover, changing weather patterns, longer wildfires, and frequent droughts. Climate, caused by factors like greenhouse gas emissions and land use changes, leads to significant global challenges, including extreme weather events, rising sea levels, and disruptions to ecosystems and human societies.