

Climate Change

1) Introduction

2) Thesis Statement: Climate change is a pressing challenge of today, however, multiple factors are contributing to it and must be addressed through effective measures.

3) Factors Contributing to Climate Change

3a) Burning of fossil fuels increases the amount of greenhouse gases

(i) Carbon dioxide, Methane and nitrous oxide increase from approximately 280ppm to 419ppm, 722ppb to 1922ppb and 270ppb to 337ppb in 18th century to 2023.

3b) Deforestation leads to the removal of trees, which serve as natural absorbers of CO_2

(i) Canada's boreal forest

3c) Intensive farming adds up the amount of methane gas & nitrous oxide in atmosphere

(i) Methane is 30 times more powerful than CO_2

3d) Depletion of ozone layer

results in change of climate

(i) Ozone hole in Antarctica

3f) Natural disasters volcanic eruption exacerbates the global temperature

(i) Eruption in Krakatoa & Tambora "the year without a summer"

3g) Explosions of nuclear weapons cause short-term change in climate

(i) Atomic bombs in Hiroshima and Nagasaki

3h) Plastic that we use in daily life generate harmful gases

(i) Just 9% of world's plastic is recycled : World bank

3i) Landfills contribute to climate change at the cost of preservation from pollution

(i) 1119.8 metric tons of methane released from landfills: (EPA)

4) Implications of Climate Change

4a) Global warming is an outcome of increase level of greenhouse gas.

(i) (In 2024: Asia warm twice than the global pace: WMO)

4b) Glaciers are thawing at faster pace leading to rise in sea level.

(i) (Arctic permafrost)

4c) Climate change affects society by exacerbating existing social and economic inequalities.
(GCP Report)

4d) Climate change poses significant threat to human health worldwide.

(i) Study published by Greenpeace Netherlands.

4e) Extensive wildfires due to climate change lead to the loss of biodiversity.

(i) Catastrophic Australian bushfires in 2019/2020

4f) The Economy is suffering as a result of unpredictable changes in climate pattern.

(i) (Swat flood 2022)

4h) World is facing extreme weather events

(i) High rainfalls, hurricanes, cyclones

4i) Climate change poses a threat to food security

(i) Tuna ocean

4j) Climate change poses a threat to water security

(i) Water scarcity in African states

4k) Ancient historical buildings are vulnerable to climate change

(i) Indus Valley Civilization, Taj Mahal

4l)

5) Ways To Combat Climate Change

5a) Integrate climate change into policies and planning

(i) Earth Summit & Kyoto Protocol (1997, IPCC 2014)

5b) Reduction of fossil fuels lead to lessen the amount of CO_2 , methane, nitrous oxide

(i) Masi Petroleum, Masi Engines Limited joined to oil & gas decarbonization criteria

5b) Forests are source of carbon dioxide absorption.

(i) 2001-2021: Amazon forest remove 340 million tonnes of CO_2 from the atmosphere each year, equivalent to UK annual fossil fuel emission.

5c) Shifting from Non-renewable to renewable sources of energy

(i) Solar, wind, energy, hydropower, geothermal

5d) 3R Method should be used for Plastics.

(Reduce, Reuse, Recycle)

5f) Used low-carbon emission vehicles for transportation

(i) electric vehicle

"It is not climate change that needs to be tackled. It is the political power of the fossil fuel industry." Climate change poses serious existential threat across the globe. Nature has played a minor role, it is human activities that ~~pollutes~~ ^{entrap} the atmosphere with harmful gases. Fossil fuels are the main drivers of changing climate patterns in recent decades. The greenhouse gases are released from burning of fossil fuels in industries, vehicles and nuclear power house. The greenhouse gases include carbon dioxide, methane and nitrous oxide etc. Forests are carbon sinks but deforestation exacerbates more carbon dioxide in atmosphere rather than lessens it. All human activities like agriculture, the use of plastics, nuclear weapon explosion and landfills are factors that contribute to increase the amount of harmful gases. These gases trap the heat of sunlight leading to

increase of Earth's temperature. Naturally occurring volcanic eruption alters the Earth's climate in very small amount. Climate change has seriously impacted ~~human~~ ^{all} living things. Global warming is the consequence of greenhouse gases. ~~These gases~~ ^{Owing} to global warming, the glaciers are thawing at greater rate. The melting of ice rises the sea level. This has negative impact on all living things. ~~Due~~ to this, human has been suffer. Wildfires and extreme weather events disturb the seasonal patterns and this also poses threat to food and water security of creatures. However, there are many agents which aid in combat of climate change. The variety of policies have been planned to decrease the amount of greenhouse gases. More trees are planted and traditional energy has been shifting to renewable energy. Recycle method should be used. Hence, there

are many factors which are responsible for changing in climate pattern and it has adversely impacted on all living things. However, there are some solutions to address the climate change.