

Date: 17-1-26 Essay

Day: M T W T F S S

Climate change Causes and Consequences

plz work in proper
quotation placement

I Introduction

A Opening Hook and Context

a Barack Obama quote:

"We are the first generation to feel the impact of climate and the last generation that can do something about it"

b Earth's 4.5 billion year climate history vs current unprecedented change rate.

c Climate change characterized by rising temperatures, shifting weather patterns, extreme events.

B Scope and Significance

a IPCC data: 1.1°C rise above pre-industrial levels,
Projections of 1.5°C - 4°C by 2100

b Threatens environmental stability, economic prosperity, social

equity, global security.

C Thesis statement:

Understanding multifaceted causes and far-reaching consequences essential for effective mitigation and adaptation strategies to safeguard planet for future generations.

II Anthropogenic Causes

Of Climate Change

A Fossil Fuel Combustion and industrial Emissions

1 Enhanced greenhouse effects as primary driver since industrial Revolution.

2 ~~CO₂ concentrations: 280ppm (pre-industrial) → 420+ppm~~
current-highest in 3 million years

3 NASA quote: Carbon dioxide levels today are higher than at any point in point

at least the past 600,000 years

4 Fossil fuel burning accounts for ~ 75% of global emissions over 36 billion tons CO₂ annually

5 Transportation sector contributes 24% of global CO₂ emissions.

6 Power plants, factories, vehicles create heat trapping - atmospheric blanket

B Deforestation and Land Use Changes

1 Wangari Maathai quote: "The environment and the economy are really both two sides of the same coin"

2 Trees as carbon sinks - absorb CO₂ store in biomass

3 FAO data: 10 million hectares forest lost annually (equivalent 27 football fields per minute)

4 Clearing releases stored

Carbon, reduces future absorption capacity.

5 Livestock sector responsible for 14.5% of global emissions (methane from digestion)

6 Agricultural Practices: rice paddies, synthetic fertilizers release methane and nitrous oxide.

7 Cement production alone is 8% of global CO₂ emissions.

C Natural Factors and Feedback Loops

1 Volcanic eruptions provide temporary cooling (2-3 years), solar variations cannot explain current warming.

2 Arctic ice-albedo feedback: melting ice reveals darker ocean (absorbs more radiation) further warming.

3 Peter Wadhvani quote:

The Arctic is the Canary

in the coal mine of "Climate Change".

4 Permafrost 'thawing' releases ancient carbon. 1500 billion tons stored (2x atmospheric amount)

5 Ocean warming reduces CO₂ absorption capacity, disrupts currents like Gulf Stream.

6 Ocean absorbed 90% of excess heat but buffering capacity diminishing.

III Environmental Consequences

A Temperature Rise and Ice Melt.

1 Last decade warmest ever recorded.

Arctic sea ice declining 213% per decade.

Greenland losing 280 billion tons ice/year.

B Sea-level rise

rising ~ 3.3 mm/year and accelerating

Climate central: 300 million

people at risk by 2050.

Coastal cities

including Karachi highly

vulnerable.

C Extreme events

Stronger cyclones, floods, droughts, heatwaves.

Michael Mann: "We are

seeing climate change

impacts in record time"

wildfires creating vicious carbon cycles.

B Ocean and biodiversity

Oceans absorbed 30% CO₂, acidity UP ~ 30%

90% coral reefs at risk by 2050.

Species extinction rates

100-1000x natural.

E.O. Wilson: "We are

pushing the biosphere into

the Anthropocene"

IV Socioeconomic

Consequences

A Food & Agriculture:

Crop yields may fall up to 30% by 2050.

Pakistan floods 2022:

30 million affected, \$30 bn losses.

UN Secretary General:

"I have never seen climate carnage on this scale."

B Water Scarcity:

33 countries facing extreme stress by 2040.

Pakistan per capita water 5650 m³ vs 1000 m³.

C Health:

WHO: 250,000 extra deaths/year (2030-2050)

Karachi 2015 heatwaves

1200+ deaths.

Air pollution causes 7 million deaths/year.

D Economy:

Swiss Re: 11-14% global

GDP loss by 2050.

Climate injustice: least responsible suffer most.

Greta Thunberg: "The climate crisis is both the easiest and the hardest issue!"

V Political & Security

Dimensions

Climate Change as "threat multiplier".

Syria drought (2006-10) worsened instability.

World Bank: 200+ million

Climate migrants by 2050.

Climate justice debate

between Global South & North.

VI Way Forward.

A Mitigation

o African proverb: We do not inherit the Earth from our ancestors, we borrow it from ~~our~~ children?

