

day/date

The Essay

Climate Change: Causes & Consequences
in Pakistan

Outline

1. Introduction
 - 1.1. Hook / Grabber
 - 1.2. General statement
 - 1.3. Thesis statement: Pakistan contributes less than 1% of the world's greenhouse gases & yet it remains the fifth most vulnerable country to climate change and faces the brunt of its effects.
2. Causes of climate change in Pakistan
 - 2.1. Rise in human-led global warming
 - 2.1.1. Burning fossil fuels such as oil & gas cause a large chunk of global emissions.
 - 2.1.2. Fast-paced manufacturing industries and mining activities add to the woes.
 - 2.2. Expanding transportation sector
 - 2.2.1. Growing traffic accounts for one-fifth of global carbon dioxide emissions.
 - 2.2.2. Automobiles such as trucks and cars degrade the air quality index.
 - 2.2.3. Emissions from planes & ships continue to grow.
 - 2.3. Rapid deforestation
 - 2.3.1. Cutting down trees for the sake of fuel.
 - 2.3.2. Clearing out vast areas of vegetation for agriculture & infrastructural development.
 - 2.3.3. Production of food also emits greenhouse gases.
 - 2.4. Emergence of El Niño phenomenon across the globe
 - 2.4.1. El Niño episodes every 5-7 years, trigger extreme climate events across the globe.

Do not write in abbreviations

Write relevant and short

day/date

2.4.2 Result in ^{unusual} monsoon, lower rainfall & water scarcity in the South Asian region.

3. Consequences of climate change in Pakistan

3.1. Rise in extreme weather events

It is in detail outline good

3.1.1 Rising temperatures with intense heatwaves in summer

3.1.2 Heavy rainfall, catastrophic floods & severe droughts are becoming common

3.1.3 Melting glaciers are rising sea levels & disturbing ecosystem

3.2.4 Economic consequences of climate change

3.2.1 Pakistan's GDP to reduce by 13 to 20% in 2050 due to climate-related events (WRI).

3.2.2 Heavy reconstruction cost of damaged property and road network after destructive floods.

3.2.3 Loss of household income, assets & disease outbreaks impacted the most vulnerable groups.

3.2.4 The damage to the agriculture & livestock has been irreparable.

3.3. Health implications associated with severe climate events

3.3.1 Water & vector-borne diseases spread more widely in floods.

3.3.2 More than 33 million people were impacted with over 6.6 million needing emergency ^{medical} assistance in 2022 floods.

3.3.3 Already overwhelmed healthcare system of Pakistan struggled to meet the needs.

3.4. Severe damage to transport and Urban sector

3.4.1 Increased stress on urban drainage system as a result of flash floods.

3.4.2 Heavy rainfall induced landslides rupture road network & harm facilities

- 3.4.3. Damage to sensitive government installations, residential and commercial properties.
- 3.4.4. Climatic changes such as extreme heatwaves pose safety risks to transportation workers.
- 4. Conclusion

We are the ~~first~~ generation to feel the ~~sting~~ of climate change and the last generation who can do something about it (Jay Inslee, 23rd Governor of Washington). In August 2022, melting of glaciers & torrential rains triggered the most devastating floods in Pakistan's history with over 33 million people affected by the floodwaters. World Bank reported 1,700 deaths, 12,000 injuries with hundreds of people displaced & economic losses & reconstruction to cost around \$40 billion. Being part of the South Asian region, Pakistan is already vulnerable to the severe impact of climate. Moreover, its geography of mostly arid & semi-arid land coupled with already higher temperatures make it more vulnerable. Pakistan contributes less than 1% of the world's greenhouse gases and yet it remains ~~the~~ the 5th most vulnerable country to climate change & faces the brunt of it with each passing year.

One of the major reasons of ~~climate change~~ **Human irrational activities are** driving the global warming. In a race to compete with each other, developing countries like China, India & Saudi Arabia are burning fossil fuels such as oil, coal & gas to run their industries and associated

Services/businesses such as transportation. These emissions release large amounts of carbon dioxide and green house gases into the air which get trap in our atmosphere & cause global warming. These fossil fuels are by far the largest contributor to climate change accounting for over 75 percent of global green house emissions and nearly 90 percent of all carbon dioxide emissions (United Nations). Similarly, mining activities is a significant contributor as it provides these fossil fuels to countries. On the other hand, mining is not an easy task & require large chunks of earth to be removed by explosives or heavy machinery. These machines also run on fossil fuels such as oil and release carbon dioxide and other pollutants, while explosives produce carbon monoxide, which also contributes to the global warming.

With evergrowing transportation sector, millions of cars, buses & trucks are on the road along with ships in the sea & airplanes in the sky. Traffic on roads account for one fifth of global carbon dioxide emissions which not only degrade the air quality index of the areas but also contributes to global warming. In this case, developed world is majorly to be blamed. In 2023, the united states became the biggest producer of transportation emissions worldwide by releasing/emitting

the equivalent of 1.7 billion metric tons of carbon dioxide. Similarly, road transport accounts for about a fifth of European Union emissions too. Carbon dioxide emissions from planes & ships have grown rapidly over the past three decades. Currently, aviation i.e. air transport ~~costs~~ & accounts for about 12% of total transport emissions while shipping contributes about 3%. However, these emissions from these ~~two~~ sectors since 2010, have increased faster than any other end-use sectors and is likely to grow further with increase in incomes. (United Nations).

Well researched Data
good

Despite being the cause of major CO₂ emissions in the atmosphere, humans continue to act in ways that are even more ~~start~~ detrimental to the environment. One such act is rapid deforestation. Humans cut down trees and burn them to use as fuel for cooking & ~~other~~ household uses especially in winter. Similarly, ~~companies~~ ^{energy} ~~use~~ trees to make electricity that result in CO₂ emissions, devastated ecosystem and displaced wildlife. Forests are one of the best tools for fighting climate change & act as the best defense against impacts such as intense temperatures, landsliding etc. However, cutting them down is the worst possible thing humans can do to ~~themselves~~ & ~~the planet~~. Likewise, humans also clear vegetation for agriculture & ~~infrastructural development~~ ^{but do not make up} for the lost land due to which the green ~~meat~~ ^{meat} ~~reduce~~. Meanwhile, production of food ~~reduces~~ ^{reduces} ~~the~~ ^{planet} ~~planet~~. ^{Finally} ~~Bingo!~~ ^{Bingo!}

Such lengthy sentences do not convey any meanings

is responsible for over a quarter (26 percent) of global greenhouse emissions. This includes emissions from land-use change, on-farm production, processing, transport, packaging & retail.

Apart from the human input, natural phenomenon such as El Niño also has a direct impact & biggest extreme weather events across the globe. El Niño is a recurring global phenomenon which triggers extreme weather events such as intense heatwaves, wildfires, droughts etc. El Niño which began in 2023 is still going on and has contributed to unusual monsoon, rainfall & heatwaves in Pakistan. This has not only intensified the weather patterns but is also driving food insecurity for millions of residents as it has a direct impact on crops.

Human-led actions along with the El Niño phenomenon had devastating impacts across the globe, especially in underdeveloped countries like Pakistan. It has led to unprecedented changes in the geography, infrastructure, health, economy & transport sector of Pakistan such that it will take Pakistan years & billions of dollars to recover from its consequences & to prepare for the future years of even severe climate.

One very obvious consequences of climate change

Change in the visible difference in climatic events in recent years in this decade. From rising temperatures to intense heatwaves, torrential rain, flash floods, melting glaciers, rising sea level, disturbed monsoon & unexpected drought, this decade has seen it all. Recent rainfall in Naran - Kaghan & Swat valley caused a catastrophic wreck havoc. The heavy rainfall triggered flash floods which caused widespread devastation in these areas. Such that the rising floodwater of Murawan Nullah swept away the bridge connecting the Kaghan valley to the central region. Similarly, flood waters entered cities & residential areas causing significant damage. Moreover fish farms in the valley were damaged & agricultural lands were badly affected. Several areas suffered from landsliding which led to the closure of Kaghan Highway. This is just one example of how severely climatic events impact the entire country region. Recently, intense heatwaves & ever-rising temperatures in Pakistan broke all records. This year, 26 districts of the country sweltered in the intense heat. This heatwave not only accelerated the melting of glaciers but also increased the risk of forest fires. Dawn reported the world experienced 26⁰ more days of extreme heat in 2023 - 2024 (mid).

All of this also has insurane economic consequences which are hard to see for a country like ours. World Bank has reported that Pakistan's GDP

is likely to reduce by 18 to 20% in 2050 as a result of climate-related events. Climatic events such as severe rainfall, floods, landsliding etc. hurt the most vulnerable first. These are people who are displaced as a result & cannot afford to get back on their feet, on their own. As a result of damage in the effect of these climatic events, these

Such events damage their households, impact their income & their connectivity & communication with the other areas & regions. In majority of the cases, the land wastes are also severely damaged. The cost of rebuilding is so hefty for a country like Pakistan, that these people can never go back to their old life. Similarly, the damage to their agriculture & loss of their livestock is irreparable.

Events like flash floods give way to the spread of water & vector-borne diseases such as diarrhoea, cholera, e-coli, dengue, malaria etc. Back in 2022 floods, more than 33 million people were impacted, out of which 6.6 million needed emergency medical assistance, which the already overwhelmed health sector of Pakistan couldn't provide as per requirement. As a result, 700 people died. Moreover, thousands of pregnant women were unable to access maternal services & had no access to menstrual hygiene products in flood-stricken areas.

Land routes, transportation & urban sector also face the brunt of extreme climate events. Heavy rainfalls strain urban drainage to the point that water gets accumulated on roads & enters commercial & residential areas in extreme cases. Last month, heavy rainfall in Faisalabad inundated the low-lying areas & created problems for the pedestrians & residents. Similarly, heavy rainfall in Lahore disrupted the flow of traffic and long queues of vehicles even on main roads.

So, despite being a negligible contributor, Pakistan is extremely vulnerable to climate change. Therefore, it is important for the ^(govt) administration & people of the country ^{to understand} that climate is real, it's going to stay & is going to wreak havoc in the upcoming years. For this reason, it's significant to prepare beforehand so that such events can be controlled & damages could be minimized.

