

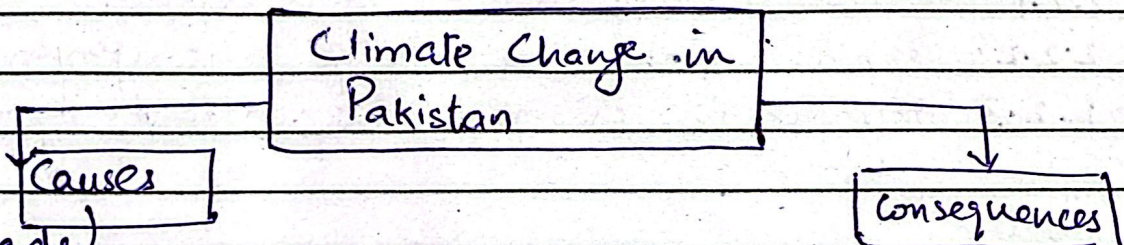
Due date = 16th May, 2025 Date: _____

Climate change in Pakistan: Causes & Consequences.

- ① Brainstorm
- ② Outlines
- ③ Introductory paragraph

Climate Change in Pakistan: Causes & Consequences

Brainstorming



(Man-made)

- (i) Global warming
- (ii) Green house gases-emissions
- (iii) Industrial activities
- (iv) Deforestation
- (v) Rapid urbanization
- (vi) Production of toxic chemicals

(vii) ~~Natural~~

~~Volcanic Eruptions~~

- (viii) Fossil fuels
- (ix) Massive deforestation
- (x) Population Explosion

→ Social Consequences

- (i) Rising poverty due to food crisis
- (ii) Increase in crime rate due to poverty

→ Economic

- (i) Loss of lives and property
- (ii) Unemployment due to rapid urbanization
- (iii) Destruction of structures
- (iv) Destruction of crops
- (v) Environmental
- (i) Threat to marine life
- (ii)

1. Introduction

1.1 Hook

1.2 General statements

1.3 Thesis statement: There are several causes of climate

change in Pakistan like Global warming, Population Explosion & Rapid Urbanization

2. Main Body

Economic, Social, Political and Environmental consequences of these causes are numerous and pose significant threat to human life

A. Causes of Climate Change in Pakistan

(Environmental causes)

2.1 Global Warming

2.1.1 Green House Gases Emissions

2.1.2 Enhanced Green House Effect

2.1.3 Massive Deforestation.

2.1.4 Massive Industrialization

2.2 Population Explosion (Social causes)

2.2.1 Increased demand for resources

2.2.2 Increase demand of energy / Resource Consumption

2.2.3 Increased deforestation for residential projects.

(Technological causes).

2.3 Rapid Urbanization

2.3.1 Increase in industries &

2.3.2 Increase in construction activities

2.3.3 Increased use of Fossil fuels for transportation, power generation.

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B. Consequences of climate change in Pakistan:

2.1 Economic Impacts consequences.

- 2.1.1 Reduction in Agriculture yield due to droughts, floods, heatwaves.
- 2.1.2 Unemployment due to rapid urbanization
- 2.1.3 Loss of lives and property

2.2 Social Impacts consequences.

- 2.2.1 Rising poverty due to food crisis
- 2.2.2 Rapid increase in rate of unemployment
- 2.2.3 Increase in crime rate due to poverty

2.3 Political Impacts consequences

- 2.3.1 Increasing conflicts among states due to water crisis
- 2.3.2 Undermining of National security
- 2.3.3 Extreme weather events and food insecurity can impact political stability and lead to violence.

2.4 Environmental consequences

- 2.4.1 Intense weather events
- 2.4.2 Disruptions of ecosystems.
- 2.4.3 Threats to marine life / Biodiversity loss.
- 2.4.4 Global ice loss.

The Essay

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The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as "A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural ~~recent and ongoing rise in~~ ~~global average temperature near Earth's surface~~ climate variability observed over comparable time periods". Climate change poses serious threats to human life on Earth and has been the most discussed issue since a long time. The world is taking several remedial measures to cope up with this drastic change but the damage is huge and requires consistent collective efforts. As far as Pakistan is concerned, the issue is not unfamiliar. Pakistan has been facing climate changes which are constantly hindering its prosperity. To root out this issue, we need to understand its causes. There are several causes of climate change in Pakistan like global warming, Population Explosion and Rapid Urbanization. These causes lead to various social, political and environmental consequences which are a great threat to human life. Unless the causes of climate change are interpreted and ~~referred~~ understood, its consequences can not be averted.

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The very first cause of climate change in Pakistan is Global warming - According to IPCC, An average and gradual increase in the temperature of the Earth.

Industrial and agricultural revolutions have contributed tremendously towards the social, economic, political, & scientific and cultural development in the world. Owing to these revolutions, the human interferences within the natural setting of environment increased. which aggravated the risk of Global warming. The scenario is not different in Pakistan.

^{Firstly,} The Emission of Green House Gases is one of the main causes of Climate change in Pakistan.

Green House Gases are such gases which have the ability to absorb and scatter heat. GHGs include CO_2 , CH_4 , CFCs, N_2O . As per IPCC, CO_2 contributes 61% in Global warming, CH_4 15%, CFCs = 11% and N_2O 4%. Carbon Dioxide is emitted mainly by Thermal, Fertilizer, Cement, Paper, Textile industry CH_4 by Fertilizer industry, CFCs from Air conditioners etc, N_2O from Fertilizer industry etc. ~~pose threat~~ and are a main cause of reason behind global warming which in turn leads to Climate change.

Along with Green house effect, gas emissions, enhanced green house effect is the reason of global warming leading upto Climate changes. Enhanced green house effect refers to the acceleration of normal green house effect which is necessary to maintain life of earth. As a result more heat gets trapped and results in an overall increase in temperature.

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According to From 2001 to 2024, Pakistan lost 9.53
* Global Forest watch: Kha of tree cover, equivalent to a 1.4%
organization of the 2000 tree cover area, and 2.76
Mt of CO₂ emissions. Date: _____

Next, Massive Deforestation is another cause of Global Warming. In Pakistan Deforestation is the removal of forests by cutting of trees for the purpose of housing, infrastructure development. Land is cleared of greenery to make space for human projects. The same is being done in Pakistan. Every year, the country loses a significant amount of forest cover. *

According to a 2019 Judgement by the Lahore High Court, Pakistan has one of the highest deforestation rates. It loses as estimated 27,000 hectares of natural forest area annually, with some reports indicating even higher figures. Moreover, Massive Industrialization also plays a part in Global Warming. In fact, it is a significant driver of global warming. The burning of fossil fuels (coal, oil and natural gas) for energy in industrial processes releases greenhouse gases, primarily carbon dioxide, into the atmosphere. These gases trap heat and lead to a warming effect on the planet.

The Industrial Revolution, starting around 1750 marked a significant increase in industrial activity and consequently, green house gas emissions. This has led to a substantial rise in atmospheric CO₂ levels, with current levels far exceeding pre-industrial levels.

While Pakistan's individual contribution to global emissions is relatively small, it is among the countries most vulnerable to the impacts of climate change.

The second major cause of climate Date: _____

change in Pakistan is Population Explosion. While Pakistan's contribution to global green-house gas emissions is relatively low, its population density and vulnerability to climate-related disasters exacerbate the effects of climate change. This includes increased strain on resources, increased demand of energy, deforestation and higher risk of climate-induced disasters like flood. Pakistan's rapid population growth has long been a major concern but its implications for climate change are far reaching. With nearly 250 million people and an annual growth rate exceeding 2.1%, Pakistan has one of the fastest-growing populations in the world. Unchecked population growth is causing a strain on resources. Moreover, a growing population also increases the demand for resources which is happening in Pakistan. Ideally, a nation should allocate its funds to education, healthcare, and social welfare to improve the lives of its citizens. However, Pakistan is trapped in a vicious cycle where resources are primarily spent on simply sustaining its expanding population. This expanding population is badly affecting the climate. Already one of the most climate-vulnerable countries, Pakistan is experiencing extreme weather fluctuations. Islamabad, a city historically known for its lush greenery, is seeing rising temperatures and reduced rainfall due to relentless urbanization.

Moreover, Housing societies are being developed on former forests, agricultural land, and water recharge zones. The loss of these natural buffers makes cities more prone to flooding while simultaneously depleting

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their ability to regulate temperatures. Trees that once helped regulate the microclimate have been sacrificed to accommodate the growing population, worsening heatwaves and reducing groundwater replenishment.

In this way, Population explosion is a major driver of climate change in Pakistan.

The third major driving force of Climate Change in Pakistan is Rapid Urbanization. ~~Re~~ It is directly linked to increased construction activity.

Also, the process of industrialization often goes hand-in-hand with urbanization which in turn leads to greater exploitation of energy sources. Industrialization
 damaging the environment consequently.

in Pakistan significantly contributes to climate change through increased greenhouse gas emissions, primarily from fossil fuels consumption in energy production and industrial processes. Smoke ~~being~~ emitted by industries and factories is full of harmful chemicals and gases which are released in the atmosphere polluting it and moreover, damaging the atmosphere as more Greenhouse Gases cause increased Global Warming which in turn leads to drastic climate changes in the country. Further, increase in the construction

activity has been observed in Pakistan mainly fueled by rapid urbanization and a growing house shortage.

* This growth presents challenges ~~to~~ in relation to climate change and its impacts on the built environment.

→ Pak has one of the highest urbanization rates in Asia, with a significant influx of people **MIGHTY PAPER PRODUCT** moving to urban areas.

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Lastly, rapid urbanization has necessitated the use of more fossil fuels be it for transportation or as a source of energy production. Fossil fuels include coal, oil and natural gas. The negative aspects of fossil fuels ~~for~~ climate changes in Pakistan are mainly in causing

due to the combustion of these fossil fuels which generates greenhouse gases. These gases are released into the atmosphere and are detrimental to it.

Having explored the various causes driving climate change in Pakistan, it's now crucial to examine the consequences of these actions. The consequences can be categorized as Economic, Socio-economic and ~~political and~~ Environmental.

At first, the Economic consequences as a result of Climate Change in Pakistan are many. Such as a reduction in the annual Agricultural yield. Pakistan has a significant agricultural yield which is a crucial part of the country's economy. But, ~~recent~~ increasing climatic changes are posing a threat to it. Droughts, Floods, storms & ~~are~~ ^{heatwaves} have increased over the period. These natural disasters wash off the crops or destroy them. As a result, ^{there is} food shortage, reduced GDP, food insecurity, malnutrition. This is forcing the people of rural areas to move towards urban areas in search of jobs, and means of survival because the only means of livelihood they had in villages was agriculture but the

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changing climate patterns have resulted in a decreased yield. The cost which is very less as compared to the expense which the farmer or agriculturist bears in order to generate a specific crop. Therefore, people are preferring to shift towards cities and find other means of earning money to feed their families. This shifting leads to increased problems in cities as more people exploit more resources and cause an increased pressure on city administration. This further leads to unemployment because ^{no doubt} the population is increasing but job avenues are still limited. Also, natural disasters have ~~an~~ increased. These include Droughts, Floods, Earthquakes, etc. leading to loss of lives and property. Damages to important buildings creates economic problems for Pakistan as money is spent on renovation and reconstruction. This takes time and impedes Pakistan's economic growth.

Next come the socio-economic consequences of Climate in ~~change~~ Pakistan. A booming population brings countless problems associated with it. Pakistan has a huge population to support and it is still a developing country. Less resources, less opportunities and more consumers are causing socio-economic problems just like Poverty, and food crises. Poverty, in turn, leads to food insecurity. The Poverty rate in Pakistan was 25.3% in 2024, according to a World Bank report.

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According to the World Bank, 44.7% Pakistanis are living below the poverty line.

More than 39 million are in extreme poverty.

Poverty restricts people's ability to purchase sufficient and nutritious food, further leading to malnutrition.

The Covid-19 pandemic, climate-related disasters (like the 2022 floods), and economic instability have pushed many into poverty, creating a "new poor" class. Another economic consequence of climate change in Pakistan is unemployment across various sectors, particularly agriculture. Extreme weather events such as droughts and floods disrupt agricultural production, damaging crops and livestock, and causing displacement of populations. This leads to job losses in farming and related industries, and also affects supply chains for industries relying on agricultural produce. Increasing population is also a cause of unemployment in Pakistan. Population explosion is a major driver of climate change in Pakistan and is linked with unemployment. Unplanned population growth is a burden which is not being controlled by the government and which is unable to provide job opportunities for such a huge number of masses. Unfortunately, the jobless persons then resort to crimes such as theft, robbery and burglary. Unemployment leads to depression, anxiety and stress among Pakistani adults. As it is said that, "An empty pocket is a devil"

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Pakistan ^{was} ~~has~~ and is observing an increase in the number of crimes ~~rates~~. This is particularly common in big cities like Karachi.

In 2023, Karachi experienced a significant increase in street crimes, with over 90,000 incidents reported, a 11.11% rise compared to the previous year.

Pakistan youth unemployment rate was for 2024, 9.86%.

~~Therefore,~~ Unemployment, especially among educated youth, is a significant factor driving young people towards criminal behaviour as an alternative means of income or due to frustration with the lack of opportunities.

Third major domain of consequences of climate changes in Pakistan is Political. The climate change is affecting the Political situation or relation.

Lastly, the environmental consequences of climate change in Pakistan are numerous. These include extreme weather events such as devastating floods, heatwaves and droughts. ~~Such~~ causing significant loss of life, displacement and economic damage. For example, the 2022 floods affected one-third of the country and displaced millions. Decrease in

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rainfall is linked to increasingly frequent and intense heatwaves. Pakistan is experiencing one of the worst heatwaves (as also seen in recent years).

In Lahore, Faisalabad, Jacobabad, Multan, Hyderabad etc., temperature is recorded touches 50°C . Several incidents of deaths due to heatstrokes have been reported such as in Karachi, more than 1200 deaths have occurred over the past few years due to intense temperatures. Lesser rainfalls are associated to conditions of drought when enough water is not available to sustain normal living conditions.

Moving further, Moreover, Climate change is causing severe disruption to Natural Ecosystems, affecting biodiversity, agriculture and water resources. Rising temperatures and irregular rainfall have led to glacial melting in the North, threatening freshwater supplies and increasing the risk of floods. In the South, rising sea levels and salinity are damaging coastal ecosystems, especially mangrove forests in Sindh. Desertification is expanding in arid areas like Thar parkar, while wetlands and forests are shrinking due to heatwaves and droughts. These environmental shifts are endangering species, altering crop patterns, and impacting food security. Human activities like deforestation, and overgrazing further worsen the crisis.

In addition, Pakistan is facing a significant loss of biodiversity due to climate change; aggravated by deforestation, Pollution and habitat destruction. Changing weather patterns,

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rising temperatures, and frequent floods or droughts are disrupting natural ecosystems, leading to the decline of many plant and animal species. Endangered species like the Indus river dolphin, snow leopard and houbara bustard are at risk of extinction. Coastal and fresh water ecosystems are also degrading rapidly. This loss weakens essential ecosystem services such as pollination, water filtration, and climate regulation.

Another consequence of Climate Change in Pakistan is the Glacial ice loss ^{being} experienced across the Hindu Kush, Karakoram, and Himalaya ranges — home to over 7000 glaciers that make up roughly 26% of the "Third Pole", the largest frozen freshwater reserve outside the poles.

Since the 1960s, glacier mass has declined by around 23% nationwide. Some glaciers such as Passu — are shrinking at roughly 4m per month and others like the Siachen have retreated 50-60 meters per year. This accelerated melt contributes to the formation of thousands of unstable glacial lakes, triggering frequent Glacial Lake outburst Floods that endangers millions downstream especially in Gilgit-Baltistan and Khyber Pakhtunkhwa regions.

In conclusion, climate change has emerged as one of the most pressing challenges for Pakistan, with far-reaching consequences for its environment, economy and society. The crisis is rooted ^{not} only in Global warming; driven by industrial emissions world wide but also in domestic

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issues such as rapid population growth, unplanned urbanization and unsustainable exploitation of natural resources. Pakistan's growing population puts immense pressure on water, land and energy resources, while expanding cities encroach upon forests, wetlands, and agricultural lands, increasing carbon emissions and reducing natural resilience. As a result, the country is facing rising temperatures, glacial melt, desertification, erratic monsoons, biodiversity loss and frequent disasters like floods and droughts.

All these consequences and many others ranging from biodiversity loss and food. Despite being a low emitter, Pakistan is disproportionately affected due to its geographic vulnerability and weak adaptive capacity. Without urgent intervention, the aforementioned changes/issues will intensify, threatening food security, livelihoods, and public health.

A sustainable future demands integrated climate strategies, environmental education, reforestation, green infrastructure and international cooperation to combat the looming climate crisis.