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Climate Change is not a distant threat but a present reality: Challenges and policy options for Pakistan.

Outline

(1) Introduction

Hook

Thesis Statement: Climate change is a present reality mainly evident in glacial melt, natural disasters, rising sea level, crop failure, water scarcity, health crisis, heatwaves, mass displacement, and loss of biodiversity. These all Pakistan faces many challenges like economic damage, health issues, damage to infrastructure, agricultural vulnerability, urbanization, environmental degradation, and weak institutional and policy response.

write short sentences
such sentences
do not carry any meanings

In order to tackle these issues Pakistan take serious steps like: Build early warning systems, plant more trees, switch to renewable energy, reduce pollution, urban planning improve, water management, and public awareness.

(2) Deciphering The term Climate Change

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Facts represent climate change is a present reality

(A) Glacial melting: A current threat
Case in point → in 2025 Glacial melt leading to (GLOFs)

(B) Natural disasters like floods
Case in point → 2022 and 2025 floods

(C) Rising sea level a recurrent threat

(d) Crop failure and food shortage
Case in point → in 2025 1 million hectares of cotton and rice destroyed

(e) Water scarcity: a present reality
Case in point → Tarbela dam lost 33% storage and 70% wells in Punjab over used

(f) Health crisis after floods

Case in point → After ²⁰²⁵ floods 6.6 million malaria cases

(g) Heat waves Rise harms health

Case in point → 50°C in Sindh caused worker deaths

(h) Mass displacement

Case in point → 2025 floods displaced 10 million people.

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(4) Climate Change Challenges in Pakistan:

(A) Economic Loss

Case in point → Pakistan's needs \$65\$ but trapped in debt

(B) Health issues

(C) Damage to infrastructure:

(D) Burning fossil fuel became a serious issue.

Case in point → In ²⁰¹⁵ Punjab more coal is used leads to emission of Carbon

(E) Agricultural vulnerability.

(F) Environmental degradation due to forest cutting

Case in point → In Pakistan 38 million acres land are affected by soil erosion reducing agricultural productivity.

(G) Urbanization became a severe challenge

Case in point → more people but poor urban planning affect millions of residents.

(H) Weak Institutional and policy response

Case in point → Weakness of National Climate Change policy (2012) and Climate change act (2017)

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(5) Policy options to tackle the Climate Change challenges in Pakistan

- (A) Build Early warning systems
- (b) Plant more trees
- (C) Switch to renewable energy
- (d) Reduce pollution
- (e) Urban planning
- (f) Improve water management
- (g) Public awareness through arranging campaigns.

(6) Conclusion:

ESSAY

Once Greta Thunberg said:
I want you to act as if your house is on fire, because it is, now her words feels more real than ever as our planet Earth, the only planet where life exists, is burning. From deadly heatwaves in South Asia to wild life in North America the planet is burning and it's all because of humans who constantly trying to destroy the beauty of planet through their actions. Due to human's activity

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from ~~few~~ years ✓ Climate ✓ of Earth
is changing. Climate Change means
in long term ✓ Changes ✓ in the Earth's
weather patterns and temperature.

~~Now the Climate Change became a
reality mainly evident in Glacial
melting and Glaciers, natural disasters,
Rising sea level, Crop failure, water
scarcity, health crisis, rising
heatwaves mass displacement, and
loss of biodiversity.~~ such sentences do not carry any
meanings

Pakistan faces severe challenges like
Economic loss, health issues, damage to
infrastructure, Agricultural vulnerability
urbanization and poor urban planning,
Environmental degradation and weak
institutional and policy response.

Pakistan should have to take
serious steps ✓ to ✓ tackle these
challenges for instance; build early warning
systems, Plant more trees, switch
to renewable energy, reduce pollution,
manage urban planning, improve
water management and public
awareness through arranging campaigns
in different areas in
Pakistan! ✓

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To begin with, one of the most immediate threat posed by climate change is Glacial melting. ~~Due to~~ human's action Earth temperature raises day by day and ~~as~~ warmer temperature melts glaciers faster. Pakistan hosts thousands of glaciers estimated around 7000 plus in the Himalays, Karakoram and Hindukash ranges, but from few ~~the~~ past years, many of them melting. For example, in ~~2025~~ very high temperature 48.5°C in mountain regions like Gilgit Baltistan triggered accelerated melting create GLOFs risks and unstable conditions of these melting glaciers leading to floods.

The second reality of climate change is evident in natural disasters in the shape of floods. ~~Due to~~ changing climate result in heavier rains that causes floods and destroying everything. For example in 2022, due to harmful floods 33 millions people affected among them 1700 faced death. In 2024 the climate ~~change~~ again change and resultantly 1.5 million people displaced.

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In 2025, due to raise in temperature and change in climate cause heavy rains and in consequence 1000 plus died and 2.7 millions displaced.

So, natural disaster in the shape of floods increasing every year and remains no longer a threat but a recurring reality.

Besides natural disaster, rising sea level also become a clear reality of climate change. In Pakistan ice from glaciers and poles is melting, and warm water takes up more space, and also hotter oceans change weather pattern, making monsoon more stronger.

For instance, Sea level has gone up by 8 inches since 1900 due to this. Countries like Maldives, Bangladesh and Pakistan are already suffering from floods and losing land.

In 2025 in Pakistan Arabian sea warming intensified rains in Sindh, etc.

To conclude rising sea level is no longer a future risk, rather a present reality.

Moreover, the crop losses and food shortage become a recurring

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reality of Climate change. Changing weather, floods and draughts damage the crops severely. In Pakistan Crops or agriculture employs 37% of workforce and contributes 23.5% to total GDP, but from few past year due to Climate Change Crops loss increased and leads to food shortage. For example in Pakistan 2025 monsoon and floods hit the agriculture severely, damage 1 million plus hectares of cotton and rice. This damage or loss leads to food shortage in shape of increased prices up to 50%. So the crop losses and food shortage is present reality.

Furthermore, Water scarcity is also a serious reality in Pakistan. Rising temperature and draughts reduce river flow. Glaciers that supply water melting very fast, rivers run dry after floods and underground water is used up too quickly. Cities like Karachi and Quetta get only half the water, the needs and farmers lose crops.

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because ~~there are~~ not enough to grow food. Dams are full of mud and rainwater flows into the sea. For example; Tarbela dam, the biggest water storage in Pakistan, has lost 33% of its capacity due to mud and silt buildup from floods. ~~It was built up to hold 11.6 million acre feet of water, but now can only store 7.7 million. Hence~~ This means less water for drinking, farming and electricity during dry months. Hence water scarcity is also a present reality.

In addition to that, health issues became a recurring reality of climate change. Changing weather spreads multiple diseases like malaria and dengue. For instance in Pakistan after 2025 floods, so water became unsafe to drink. ~~but~~ people face severe diseases like 6.6 million people after floods experienced malaria. ~~Therefore~~ Due to climate change health issues increased and no longer remain a threat but became a reality.

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Another important reality of climate change is rising heat waves and its impact on health. Higher global temperatures cause longer and more intense periods of extreme heat, leading to heat strokes, deaths and dehydration. For example: In Pakistan Sind 50°C caused the deaths of many workers especially in laborers and farmers.

Last, the climate change effects like floods, rising sea level and droughts force the millions of people to leave their homes. For instance, in 2025 floods destroyed the villages crops, homes roads and displaced 10 million people. Hence the mass displacement is also become a reality.

After discussing the harsh realities of climate change, it became clear that Pakistan is facing serious consequences. Now the next major concern is to address the challenges that Pakistan is facing due to climate change.

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The first and foremost Challenge of climate change that Pakistan is facing is Economic loss. Floods, droughts and storms in Pakistan severely hit the infrastructure, crops and industries. Every year climate change and affecting Pakistan 15 to 20 billion dollars every year. Every year floods, droughts hit the infrastructure, crops health etc and government spends a huge amount to fix these issues. For example: Pakistan needs \$565 billion by 2030 to fight climate change, build dams, resilient farms, green energy and flood defenses as outlined in its 2025 climate plan but the country is trapped in debt owing over 130 billion to foreign lenders like China, Saudi Arabia and IMF. This debt trap means 40 to 50% of Pakistan's yearly budget goes just to paying interest and old loans, leaving little money for urgent climate fixes.

Secondly, the next Challenge is health issue. Extreme weather directly triggers disease.

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outbreaks. Every year Climate Change brings a lot of diseases like heat strokes, dehydration, malaria, respiratory disease etc. In 2025 after floods 6.6 millions faces malaria in Sindh and Punjab. Also many people faced dengue, stomach illness. These all leads to putting pressure on the health system.

Similarly, Climate Change is destroying Pakistan's infrastructure that became a major challenge. Breaking roads, bridges, homes, dams, school and power line with floods costing 4 to 6 \$ billion every year to fix. For instance, in 2022 floods, over 1300 km of roads and 400 bridges were washed away, cutting off villages for months but it increased in 2025. The 2025 monsoon damaged 2000 schools, 600 health centers and 80,000 homes, leaving children without education and patients without care. Hence infrastructure damage became a major challenge for Pakistan right now.

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Along with infrastructure damage, burning of fossil fuel became a serious issue in Pakistan. The constant emission of Green house gases trapping heat. In Pakistan power plants and vehicles add to this. This Carbon emission effect in ozone layer and put a big role in climate change. For example: In 2025 in Punjab more coal is used resultantly tons of Carbon emission that traps the heat in troposphere.

Moreover, in agricultural vulnerability became a major challenge for Pakistan. As Pakistan's agriculture feeds 240 million people employs 37% of the workforce, and makes up 23.5% of GDP, but floods, heat and droughts are destroys it severely. For example, In 2025 alone 1 million hectares of cotton and rice were wiped out by monsoon floods. Along with this the soil is turning salty from sea rise and bad irrigation, these all pushing millions into hunger.

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and poverty. ✓ So this became
a immediate challenge for
Pakistan. ✓

Another challenge for Pakistan
is environmental degradation. The
major cause of this degradation
is forest cutting. Forest plays
a crucial role in climate maintenance
as it absorbs CO₂ and produces O₂
and supporting biodiversity. However
the cutting of forests leads to

Climate Change Challenges. For
example; In Pakistan 38 million
acre land are affected by soil
erosion reducing agricultural
productivity. Hence, it has become
a major challenge for Pakistan.

Additionally; the urbanization
and poor urban planning is a
challenge for Pakistan. As due
to floods people lose their homes
crops, so they move towards
cities but facing difficulties as
they don't have space to live. They
build houses on green areas
block natural water flow. Also
the urbanization affect the natural

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habitats, and agriculture. For example, poorly planned urban areas face issues like traffic congestion, air and water pollution and unregulated waste disposal. Consequently, the urbanization without proper planning not only accelerate environmental degradation but also threatens ~~the~~ public health and overall quality of life.

Lastly, the weak institutional and policy response is a big challenge for Pakistan in fighting climate change. Pakistan, lack

strong planning coordination and enforcement to manage climate risks. Poor implementation of climate policies and slow disaster response make it harder to protect people ~~from~~ and ^{recover} from damage. For instance:

• Pakistan made two laws like

The Pakistan's national climate change policy (2012) and climate change act (2017). These were made to fight with climate change but they ~~are~~ ^{have} not been effectively applied.

Hence, So far ~~we~~ discussed the reality of ~~climate change~~ and challenges that Pakistan is facing, due to ~~climate change~~, now we ~~are~~ discuss the solutions or measurements Pakistan should take to tackle these issues.

Firstly; Pakistan should have to build early warning system. This is an important solution to reduce the damage caused by the climate change. These systems ~~helps~~ predict floods, heat waves and storms, before they happen giving time to people to prepare and safe.

Secondly, Pakistan should have to plant more trees. ~~as~~ due to huge ~~amount~~ of carbon emission increased in threats of climate change. So ~~if~~ planting more trees help to absorb CO₂ and make soil fertile. Along with this, planting more trees means reducing floods. as they help to absorb water and reduce the flood damages.

Third; Switch to renewable energy. In Pakistan people are

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~~over~~ highly dependent on nonrenewable energy like coal. So ~~instead of~~ this, people should have to use renewable energy like solar and wind energy that help to reduce emissions.

Fourth; in order to tackle the climate change issues, Pakistan should have to work on reduce pollution. Pollution from factories, vehicles and waste increased greenhouse gases that warm the planet. To reduce this, Pakistan should promote clean energy like renewable energy, improve public transport and enforce strict laws.

Fifth; Pakistan should need to take serious plans about urban settling. Proper planning ensure safer, greener and more resilient urban areas. In Pakistan cities like Karachi and Lahore face more flooding as compare to other and it is because of poor planning. Government should make proper drainage systems, create green parks and spaces and develop public transport.

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networks to ~~lower~~ traffic pollution.
These all helps to make a proper
Urban area.

Another solution is improving
water solutions systems. In Pakistan
Balochistan, Sindh faces severe water
shortage. So by building dams,
repairing canals, and promoting efficient
irrigation techniques, the country can
able to save water and support
agriculture.

Lastly, Public awareness
Campaigns, which are essential to
help people understand and
respond to Climate Change. In
Pakistan, these campaigns can teach
people to save water, reduce pollution, plant
trees and follow early warning
during floods and heat waves.

These campaigns make climate
action a shared responsibility, ensuring
everyone contributes to a safer
and sustainable future.

In conclusion; Climate change
in Pakistan now no longer a
threat but became a reality
as it severely led to glacial
melting, natural disasters, and

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Rising sea level, heatwaves, water shortage and mass displacement.

These all are facts that shows that climate change is a now a reality. Pakistan is facing

severe challenges due to climate change like rising pollution, economic loss, infrastructure damage, agricultural vulnerability and environmental degradation. These are severe issues of climate change.

Pakistan should take serious steps in order to cover up these issues and for this Pakistan's needs to improve water management

build early warning systems, afforestation, proper urban settlement plans and switch to renewable energy.

If Pakistan successfully tackle these issue, it must lead to a prosperous country.

