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Climate Change and Food Insecurity:

Outline

A- Introduction

1- Attention grabber: According to a 2021 Food and Agriculture organization report, a 2°C rise in global temperature could put an additional 189 million people at risk of hunger by 2050.

2- Background Statement: Climate change threatens agriculture-based economies, especially in developing nations.

3- Thesis Statement: Climate change is undermining food security by disrupting agriculture, water, and health systems. South Asia, with its dense population and fragile economies, stands at the epicenter.

B- Climate Change is causing food insecurity because of:

1- Unpredictable rainfall patterns

- Disrupts sowing and harvesting cycles,

lowering Crop yields.

2- Flooding of agricultural land

- destroys standing crops and erodes fertile soil.

3- Droughts and desertification

- reduce aerable lands, especially in South Asia's dry regions (Thar, Rajasthan, Balochistan)

4- Melting glaciers and water scarcity

- reduce irrigation supply in major river systems (Indus, Ganges, Brahmaputra)

5- Rising temperatures

- Shorten crop cycles, reduce productivity of staples like wheat, rice, maize.

6- Heat stress on livestocks

- reduces milk and meat production

7- Pest outbreaks

- Locust Swarms in Pakistan and India
- worsened by erratic weather, devestate crops.

8- Soil degradation and salinity

- Caused by sea-level rise and over-irrigation in coastal/flood-prone areas.

9- Declining fisheries

- Warming oceans and acidification disrupt marine food chains, affecting fish-dependent communities

10- Economic disruptions

- farmers face higher costs of adaptation

(irrigation, fertilizers, seeds), making food unaffordable.

C- Pakistan's 2022 floods destroying 45% of crops.

D- Bangladesh's rice production decline under cyclones.

E- Way Forward

1- Climate-smart agriculture (drought-resistant seeds, drip irrigation)

2- Regional cooperation on food and water management

3- Reducing post-harvest losses and storage improvements

4- Investing in renewable energy for agriculture.

F- Conclusion

ESSAY

According to a 2021 FAO report, a 2°C rise in global temperatures could put an additional 189 million people at risk of hunger by 2050. Climate change is no longer confinded to the realm of environmental debate, it has transformed into the most pressing food insecurity threat of our era. Unlike conventional threats such as war and terrorism, climate change strikes silently yet pervasively, destablizing societies from within by eroding food supplies, shorten crop cycles, and exhausting water

resources. What makes this threat unparalled is its universality, no state, rich or power, is immune to its impacts. Climate change threatens agriculture based economies, especially in developing countries. It has proven itself as a threat to human life at every level. It does not merely threaten crops, it destabilizes entire systems that sustain human life. Unpredictable weather patterns hinder sowing and harvesting cycles, water scarcity reduces irrigation capacity, and soil degradation diminishes land productivity. Livestock and fisheries, vital for nutrition and income, are also endangered by rising temperatures and ecosystem collapse. Thus, climate change is undermining food security by disrupting agriculture, water, and health system. South Asia, with its dense population and fragile economies, stands at the epicenter of this looming crisis.

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(6) How climate change threatens human security in Pakistan (same outline as (2))

(5) Water Wars : Is Climate Change a Trigger for Future Geopolitical Conflicts.

Outline

A- Introduction

1- Attention grabber : The wars of the future may not be fought over ideology, but over food and water - Ismail Serageldin, World Bank

2- Background Statements : From the Himalayan glaciers feeding South Asia's rivers to the Nile and Euphrates shaping Middle Eastern geopolitics, climate change is redefining water from a lifeline into a contested resource.

3- Thesis Statement : Water, once seen as a resource for cooperation, may increasingly become a driver of geopolitical rivalries, regional instability, and even wars in the 21st century under the pressures of climate change.

B- Water as a Source of Future Conflicts :

1- Transboundary River Disputes

- Indus Waters Treaty (Ind-Pak) under stress
- Nile River conflict (Egypt - Ethopia - Sudan)
- Mekong River Tensions (China - Southeast Asia)

2- Glaciel Melt and River Flow Reduction

- Himalayan Melt → Indus, Ganges, Brahamaputra Stress
- Andean glaciers shrinking → affecting Peru, Chile and Bolivia.

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3- Collapse of Water-Sharing Agreements

- Risk of treaties becoming obsolete under climate stress
- Militarization of river basins

4- Water as a Political Weapon

- States using dams and diversions as leverage
- Turkey controlling Euphrates flows to Syria | Iraq.

5- Climate Refugee and Cross-Border Tensions

- Bangladesh to India migration
- Sahel region displacement due to drought.

6- Food and Energy Insecurity Spillover

- Irrigation collapse → food shortage → unrest
- Hydropower decline → energy crisis

7- Militant exploitation of Scarcity

- Armed groups weaponizing dams / water routes
- ISIS controlling Euphrates dams in Iraq | Syria

C- Case Study : South Asia as a Flashpoint

1- Indus Basin : Lifeline for Pakistan, tensions with India.

2- Bangladesh : water and climate refugees pressing India

3- Afghanistan : conflicts over Helmand River with Iran.

4- Himalayan melt threatening long-term stability of regional rivers.

D- Way Forward

1- Strengthening and updating water treaties.

2- Promoting regional water-sharing frameworks.

3- Investing in water-efficient irrigation and desalination

4- Climate-smart diplomacy : linking water governance to climate aggrements (Paris Accord, COPs)

5- Building early warnings and joint disaster management systems.

E- Conclusion

ESSAY

"The wars of the future may not be fought over ideology, but over food and water", warned Ismail Serageldin of the World Bank. In 21st century, climate change is no longer just an environmental issue but a geopolitical one- From the Himalayan glaciers feeding South Asia's rivers to the Nile and Euphrates shaping Middle Eastern geopolitics, climate change is

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transforming water from a lifeline into a contested resource. Rising global temperatures, unpredictable rainfall, and accelerated glacial melt are intensifying floods, droughts, and water scarcity, pushing already fragile regions towards instability. Water scarcity, once considered a domestic challenge, is increasingly becoming an international fault line. Shared river basins such as the Indus, Nile, and Meakong are under immense strain as upstream and downstream states compete for dwindling resources. The collapse of water-sharing agreements, the use of dams as political leverage, and the rise of climate-induced migration underscores how water can fuel rivalries, insecurity, and even armed conflicts. Thus, water, once seen as a resource for cooperation, may increasingly become a driver of geopolitical rivalries, regional instability, and even wars in 21st century under the pressures of climate change. Those who fail to cooperate over water today may fight wars over it tomorrow.

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(6) Climate Justice and Inequality: Why developing nations suffer the most.

Outline

A- Introduction

1- Attention grabber: Those who have contributed the least to climate change are suffering the most from its consequences – UN secretary-General Antonio Guterres.

2- Background Statement: Climate change is a global problem, but its impacts are unevenly distributed. Wealthy nations, historically responsible for the majority of greenhouse gas emissions, have resources to adapt, while developing nations face disproportionate losses.

3- Thesis Statement: Climate change has exposed deep inequalities, where developing nations bear the greatest human, economic, and environmental costs despite contributing minimally to the crisis, making climate justice a moral and political imperative.

B- Global North responsible for 70%+ of cumulative CO_2 since the Industrial Revolution.

C- Why developing nations suffer the most?

1- Geographical vulnerability

- Many developing nations are located in climate hotspots (South Asia, Sub-Saharan Africa, Small Island States)

2. Dependence on climate-sensitive sectors:

Heavy reliance on agriculture, fisheries, and

forestry makes economic fragile.

3- Low adaptive capacity:

• Limited financial resources, weak infrastructure, and lack of technology reduce resilience.

4- High population density and poverty:

• More people exposed to disasters, with fewer means to recover.

5- Weak governance and institutions

• Corruption, poor planning and lack of disaster management worsen impacts.

6- Debt burden:

• Most resources go to spend, debt servicing instead of climate adaptation.

7- Health vulnerabilities:

• Malnutrition, disease outbreaks, and poor healthcare systems amplify suffering.

8- Climate injustice

• They contribute the least to global emissions but face the harshest consequences.

9- Risk of displacement:

• Sea-level rise threatens coastal region and island nations (e.g Maldives, Bangladesh)

10. Economic setbacks

• Repeated disasters push millions back into poverty and slow development progress.

D- Way Forward:

- Wealthy nations to fulfill climate finance commitments.
- Building climate-resilient infrastructure in vulnerable states.
- Linking climate actions with sustainable development goals (SDGs)

E- Conclusion

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(7) Reforestation as a Sustainable Solution to Climate Change.

Outline:

A- Introduction:

1. Attention grabber: According to a 2020 World Bank report, 'The cost of reforestation is far less than the economic losses from climate-induced disasters such as floods, droughts, and heatwaves.'

2- Background Statement: Deforestation is a major driver of rising greenhouse gas emissions. Reforestation offers a cost-effective, long-term, and sustainable solution.

3- Thesis Statement: Reforestation, by restoring ecosystems, absorbing carbons, conserving water, and supporting livelihoods, emerges as one of the most sustainable solutions

to climate change, especially for vulnerable regions like South Asia.

B- Role of forests :

1- Forests as a global carbon sinks (absorb ~30% of Co_2 emissions)

2- Deforestation as a driver of global warming (15-20% of CHG emissions)

3- Link between forest loss, biodiversity decline, and extreme weather.

C- Why reforestation is a Sustainable Solution:

1- Carbon sequestration

- Absorbs atmospheric Co_2, mitigates greenhouse effect.

2- Water cycle regulation

- Prevents floods, sustains rivers, reduce droughts

3- Soil conservation

- Combats desertification, prevents erosion

4- Biodiversity Protection

- Habitats for millions of species

5- Economic Benefits

- Eco-tourism, timber, non-timber forest products

6- Community Livelihoods

- Jobs for rural poor, indigenous participation

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D- Billion Tree Tsunami Project (KPK):

- Ten Billion Tree Tsunami Program (2019 onwards)
- Challenge: Poor maintenance, Corruption, lack of community involvement.

E- Conclusion

ESSAY

According to a 2020 World Bank report, "The cost of reforestation is far less than the economic losses from climate-induced disasters such as floods, droughts, and heatwaves." Forests act as natural carbon sinks, regulate rainfall, and prevent soil erosion, yet rampant deforestation has accelerated climate change and intensified natural disasters. Over the past few decades, human-driven activities such as urban expansion, illegal logging, and agricultural encroachments have destroyed millions of hectares of forest cover worldwide. This large-scale forest loss not only contributes 15-20% of global greenhouse gas emissions but also weakens the planet's ability to recover from climate shocks. Moreover, the disappearance of forests accelerates biodiversity decline, disrupts hydrological cycles, and

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increases the frequency of floods and droughts. For vulnerable regions like South Asia, where populations heavily rely on agriculture and natural resources, the absence of resilient ecosystems has made communities increasingly susceptible to poverty, displacement, and climate-induced disasters. Thus, reforestation is no longer a matter of ecological concern alone, but a pressing human security and developmental challenge that requires global attention. Moreover, reforestation emerges as a sustainable, cost-effective, and long-term solution to climate change by mitigating greenhouses gases, preserving biodiversity, and strengthening climate resilience globally.