

DISASTER MANAGEMENT IN PAKISTAN

CHALLENGES AND WAY FORWARD

OUTLINE:

1. INTRODUCTION:

1.1 Hook / Attention grabber

1.2 Background / General information

2.3 Thesis statement

2. DISASTER: A GLOBAL AND NATIONAL CRISIS

2.1 What causes disasters?

2.2 Scientific Consensus:

Example: IPCC's 2014 report says that the earth has warmed by 1.48°C , CO_2 emissions reached 424 ppm (record high)

3 Impacts of Disaster $\rightarrow$ Eg: Economic and Infrastructure

4 Resources Depleted and Migration

Example: Pakistan's mega-flood in 2022 4.4 million acres of crops were damaged (loss of US \$ 12.9 million)
Flood of 2025 caused ^{approximately} 1.3 million acres of destruction to Punjab's agriculture (loss of US \$ 1.4 million)

5. Pakistan's Environmental Policy and Global Trade

5.1 Vulnerability Ranking Eg: Among top 8 nations

5.2 Global Melts

5.3 Transborder water stress

5.4 Urban Disaster management failures

Eg: Karachi's failed sewage system and Punjab's infrastructure submerged.

6 Environmental Changes triggers disasters

6.1 Global Warming and fossil fuels burning on inter-national level. Eg: China 31%, US 14%, India 7%

6.2 Pakistan's coal expansion worsens emission locally

Eg: Thar Project.

7 Consequences And Challenges On National and Global Level:

7.1 Economic Loss

Eg: World Bank estimated a loss of ^{around} \$ 5.6 trillion by 2030

Eg: Pakistan's GDP loss of 0.33% in 2025 floods.

7.2 Humanitarian Crisis.

Eg: Acc to an article 'in Dawn News; around 2.45 million people were displaced due to flood

7.3 Failure of planning and preventative measures taken by government in case of disaster.

Eg: Failed infrastructures

Eg: Aids provided by government.

THE ESSAY

7.4 Agriculture and Food Security

Eg: Major crops such as rice, wheat and cotton yield fell 15-20%

Eg: Massive livestock loss

7.5 Health related issues.

Eg: Malaria, Dengue fever, diarrhoea, mental health crisis post-flood.

8. MAY FORWARD ON GLOBAL LEVEL

8.1 Enforce Paris Agreement

8.2 Release of Loss and Damage Funds for affected nations

8.3 Promotion of use of renewable energy

Eg: Recarbonization of trade and transport.

9 MAY FORWARD NATIONAL LEVEL

9.1 Climate Resilient Infrastructure

Eg: Construction of reservoirs, climate/disaster proof roads, houses.

9.2 Revival of Indus Water Treaty Framework.

9.3 Public awareness and disaster preparedness.

9.4 Promote Afforestation

9.5 Control Industrial carbon emission

Eg: Karachi and Lahore emits 80% of Pakistan's urban carbon, industrial waste disposed off in water.

10. CONCLUSION.

"The Earth is all we have in common."

—Mendell Berry.

Disasters caused due to change in climate have become the recent crisis of the 21st century. In the last decade, the world has suffered more disasters than it ever thought due to natural and man-made changes in the environment. Pakistan is no different. Due to recent disasters such as flood has caused heavy economic, infrastructure and losses to lives of people. This has thus become an urgent situation that needs to be addressed. From the glacial melts of the Arctic to the plains of Pakistan, the planet's ecosystem is unfolding under the weight of human-induced and industrial processes. This essay explores the definition and causes of disaster, how has this become a global and national crisis to Pakistan under scientific evidences, impacts of disaster on infrastructure and economy of Pakistan, how the conflict over resources arise, why is Pakistan exposed to disasters and what triggered it lately, how has global warming affected the environment,

the consequences and challenges of disasters on national and international levels and the ways forward to disaster management.

A disaster can be defined as a serious and sudden event that causes damage to lives, properties, infrastructure and economy. Disaster can be natural or man-made. It is an unexpected activity of nature or exploitation of resources causing harm to the environment by human beings. According to the Intergovernmental Panel on Climate Change, IPCC's 2024 report, the Earth has warmed by 1.18°C . This change has been observed after the excessive emission of carbon hence increasing the levels of concentration in the atmosphere of carbon dioxide that has been recorded to reach 424 ppm, the highest recorded in recent years. This has proved to be an alarming situation considering the clauses of Paris Agreement in 2015.

According to World Bank's report of 2024, the climate related disasters could

cause the world a total of $\$ 5.6$ trillions annually by 2030. Pakistan is a developing country and releases less than 1% of the world emission of carbon. Yet it could face a total of 10% GDP loss annually due to the emission of carbon dioxide in the air by its neighbours. China and India being the countries with big industries have ~~emitted~~ ^{emitted} one of the highest percentages of the world that emits toxins in the air making the environment dirty. Environmental stress caused by the disaster

have become a stress for conflict and displacement among individuals. Millions of the people have displaced in recent flood of 2025, running out of resources and fighting for basic necessities. The recent flood has sabotaged people of their basic needs such as food, shelter and clothing and resulted them settling in unfavourable environments. Disasters have flooded 2022 damaged approximately 4.4 million acres of crops which resulted in the loss of $\text{US } \$ 12.9$ billion. Whereas

The recent flood of 2025 have resulted in damage of approximately 1.3 million acres of agriculture and a loss of US \$ 1.4 million. Pakistan's already fragile economic conditions have made it very difficult for people and government to cover such a hefty loss of resources and economy.

Despite contributing less than 1% of global greenhouse emissions Pakistan ranks amongst the top 8 nations which remain climate vulnerable nations on Global Climate Risk Index 2025. The country's geography makes it prone to droughts, floods and glacial outburst, and heat waves etc. Pakistan holds 13000+ glaciers which are now observed to be melting at an unprecedented rates due to global warming and change and rise in the country's temperature. The Pakistan's Meteorological Department (PMD) has warned over 150 potential Glacial Lake Outburst Floods (GLOFs), threatening Northern areas.

In August 2025, the Indian violation of the Indus Water Treaty Agreement and release of water in extensive amounts in Pakistan's rivers have disabled the functioning of the Province of Punjab and caused heavy agricultural and damage to the infrastructure. Such acts triggers tensions between the borders, depicting how such event can trigger geopolitical tensions. Coming to urban disaster failures of management and how they crippled the infrastructure of the country has called for an urgent disaster management need to the strategists. The rains were observed to be disastrous causing damage to the infrastructure of Karachi city. It has damaged the sewage system and resulted in flooding of the city. People were left stranded over the roads till late hours of the night and failed to resume their jobs. Whereas Punjab's infrastructure submerged under the water from flooding. Heavy losses of livestock and agriculture were observed which destroyed the economy of the country and livelihood of people.

The burning of fossil fuel have further triggered the global warming which causes disastrous conditions of the country. It is believed that unless the burning of fossil fuels is resolved on regional level, the permanent solution to this problem cannot be found. The neighbours of Pakistan including China which emits 31% of carbon and India burning 7% of carbon have been contributing to global warming. However they are developed countries, but the ~~same~~ cost of emission of these resources is said to be paid by developing countries. Whereas to add up to all this Pakistan's coal expansion programme emission has worsened the conditions locally of the Project.

The challenges are however faced by the nations globally and nationally. The burning results in economic losses of a country according to world Bank by 2030 around \$5.6 trillion will be lost annually resulting in economic losses in recent find of 2025 Pakistan has faced an economic loss of 0.33 % of GDP till now in 2025. This

causes humanitarian crisis as well as according to an article in Dawn News around 2015 million people were displaced of their ~~their~~ regions and had to go settle in camps. The government had also failed to carry out ~~rescue~~ rescue operations leaving people short of rescue operations in the flood affected areas. Local government has to carry out rescue operations. Disaster in Punjab had caused heavy loss of agriculture land, and livestock. Health related conditions remained a matter of discussion as well. 1

Ways forward:

Conclusions =