

NATURAL DISASTERS: WRATH OF NATURE OR MAN-MADE CRISIS?

OUTLINE

1. INTRODUCTION:

1.1 Hook

1.2 Background

1.3 Thesis Statement:

While natural disasters originate from nature's uncontrollable forces, their rising frequency, intensity, and devastation are largely man-made - amplified by climate change, environmental mismanagement, and poor governance, transforming natural hazards into human crises.

2. HOW IS NATURAL DISASTER A MAN-MADE CRISIS?

2.1 Climate change: Humanity's Greatest Multiplier of Natural Disasters

2.1.1 Global warming intensifies hurricanes, droughts, and floods

2.1.2 Case Study: 2022 European Heatwave and Pakistan's record breaking floods due to shifting monsoon patterns

2.1.3 Anthropogenic carbon emissions heighten

YOUSAF PAPER

Climate volatility.

2.2 Deforestation and Land Degradation Expose Humans to Nature's Fury

2.2.1 Forest loss increases floods, landslides and soil erosion

2.2.2 Case Report: Amazon deforestation causing droughts and fires

2.2.3 Case Study of Pakistan: Northern deforestation worsening 2010 and 2022 floods

2.3 Unplanned Urbanization and Encroachment Intensify Disasters

2.3.1 Cities built on flood plains, fault lines, and wetlands lack drainage capacity

2.3.2 Case Report: Karachi's urban flooding (2020) due to encroached nullahs and unregulated expansion

2.3.3 Lack of urban planning converts heavy rain into catastrophe

2.4 Industrialization and Greenhouse Emissions Disturb Natural Cycles

2.4.1 Overdependence on fossil fuel increases atmospheric heat retention

2.4.2 Case Report: China and India's smog crises; global temperature anomalies crossing 1.5°C

2.4.3 Melting glaciers (Pakistan's northern regions) causing glacial like outburst floods (GLOFS)

YOUSAF PAPER

Date: / /

2.5 Poor Governance and Institutional Inefficiency Amplify Damage

- 2.5.1 Inadequate enforcement of building codes, corruption, and disaster unpreparedness
- 2.5.2 Case Study: 2010 Haiti earthquake - weak infrastructure led to catastrophic casualties
- 2.5.3 Pakistan: NIDMA's reactive approach and lack of early warning systems

2.6 Agricultural Mismanagement and water Misuse create Drought Conditions

- 2.6.1 Over-irrigation and groundwater depletion in arid areas causes desertification
- 2.6.2 Case Study: Balochistan's prolonged water drought due to unsustainable water extraction
- 2.6.3 Case Study: African Sahel drought worsened by land misuse

2.7 Population explosion and Human Settlement in Hazard Zones

- 2.7.1 Rapid population growth pushes people into vulnerable coastal and seismic areas
- 2.7.2 Case Study: 2005 Kashmir Earthquake - poorly built mountain settlements
- 2.7.3 Urban density worsens rescue and relief efforts

2.8 Technological and policy negligence in Disaster Preparedness

- 2.8.1 Failure to implement early warning systems and resilient infrastructure

YOUSAF PAPER

2.8.2 Case Study: 2004 Indian Ocean Tsunami - lack of alert system cost thousands of lives

2.8.3 Case Study: Inadequate flood forecasting and data-sharing between provinces

3. Counter Perspective: Some Disasters are purely natural beyond Human Control

3.1 Tectonic plate movements and volcanic eruptions are geophysical processes independent of human actions

Rebuttal:

While origins may be natural, human vulnerability and unpreparedness determine devastation. Strong building codes and preparedness (e.g. Japan) show that human intervention can drastically reduce losses

3.2 Developing countries lack Resources and capacity to prevent disasters: Thus, vulnerability is inevitable

Rebuttal:

Resource limitation is valid, but political will and planning matter more than funding. Low cost local measures, community preparedness, and international climate funding can mitigate risks effectively.

4. Way Forward:

Date: / /

4.1 Climate Mitigation and Adaptation

4.1.1 Reduce carbon emissions and adopt renewable energy resources

4.1.2 Integrate climate risk assessments into national planning

4.2 Ecosystem Restoration

4.2.1 Implement large-scale reforestation and protect wetlands

4.2.2 Strengthen Slope Stability through vegetation and watershed management

4.3 Sustainable Urbanization

4.3.1 Enforce zoning regulations and protect flood plains

4.3.2 Upgrade urban drainage and solid waste management

4.4 Institutional Strengthening

4.4.1 Empower NDMIA and PDMIA with authority, funds, and data integration

4.4.2 Encourage transparency and accountability in infrastructure projects

4.5 Technological preparedness

4.5.1 Expand early warning systems to rural areas

4.5.2 Utilize satellite data and community alert networks

6 Public awareness and education

YOUSAF PAPER

Date: _/ _/ _

- 4.6.1 Introduce disaster education in schools
- 4.6.2 promote local training and volunteer response teams

5. Conclusion

"THE ESSAY"

"When the earth trembles, Skies unleash fury, and seas devour shores, we call it Nature's wrath. Yet, behind much of this devastation lies the human hand - reckless, unheeding, and complicit."

Natural Disasters have been part of Earth's natural rhythm since time immemorial.

Earthquakes, floods, cyclones, droughts, and volcanic eruptions appear to stem from uncontrollable natural processes. However, the increasing frequency, magnitude, and economic impact of these disasters in twenty-first century reveal a disturbing pattern as nature's hazards have merged with human negligence. The contemporary world faces climate-induced disasters at an alarming rate. Pakistan's 2022 floods, Australia's bushfires,

America's hurricanes aren't merely coincidences; they reflect human disturbance of nature's equilibrium. Thus, while natural disasters originate in nature's domain, their devastation

YOUSAF PAPER

Date: / /

is largely man-made, a consequence of climate change, deforestation, weak governance, and unsustainable development, both globally and within Pakistan.

The foremost evidence of human-induced disaster intensification lies in **Climate change**. Rising global temperatures, driven by fossil fuels emissions, alter precipitation cycles, oceans temperatures, and atmospheric stability. The result is more frequent floods, hurricanes, droughts, and heatwaves. According to World Meteorological Organization (2024), global temperatures have already exceeded 1.3°C above pre-industrial levels, leading to stronger cyclones and record-breaking rainfall. The 2022 European heatwave, which caused thousands of deaths, and Hurricane Katrina (2005) in the USA illustrate how a warming climate amplifies disasters. In Pakistan, the 2022 super floods - the most devastating in the country's history - affected 33 million people, destroyed 2 million homes, and caused economic losses exceeding \$30 billion. (Sourced by The Dawn Newspaper). Scientists claimed that climate change intensified monsoon rains by up to 75%. Despite contributing less than 1% to global carbon emissions, Pakistan ranks among the top 10 countries most vulnerable to climate impacts.

Secondly, Deforestation leads directly to landslides, floods, and soil erosion as forests absorb excess rainfall, stabilize soil,

YOUSAF PAPER

and regulate temperature, their destruction removes nature's own defence mechanisms. Globally, the Amazon Rainforest - the "lungs of the Earth" - has been reduced by 17% due to logging and farming. As a result, rainfall patterns have shifted and droughts and wildfires have increased dramatically. In Pakistan, rampant deforestation in Khyber Pakhtunkhwa and Gilgit Baltistan has destabilized mountain slopes and increased landslides frequency. According to WWF - Pakistan, Pakistan is losing 11,000 hectares of forest cover every year thereby worsening natural disaster risks. Similarly, the 2010 and 2022 floods were worsened by erosion and siltation caused by upstream logging. Thus, while rain and erosion are natural, their catastrophic impact stems from human removal of natural barriers - a clear human contribution to disaster creation.

Alongside deforestation, the reckless expansion of cities into wetlands, floodplains, and seismic zones is magnifying the impact of natural hazards. Urban flooding, drainage collapse, and infrastructure failure aren't the fault of rain but of planning failure. Karachi's 2020 urban floods exemplify this. Encroachment on natural drains (nullahs), poor drainage infrastructure and unregulated construction transformed heavy rainfall into an urban nightmare. The same pattern was observed in Lahore's

Date: 1 / 1 / 1

Flash floods (2024) where paved surfaces blocked Natural absorption. worldwide, cities like Jakarta, Bangkok, and Manila face similar crises - victims of their own unplanned growth. According to United Nations, >90% of global urban expansion occurs in developing countries, often in environmentally hazardous zones. Hence, it isn't nature's anger but human arrogance that submerges cities.

Similarly, Industrialization has brought progress but also disrupted Earth's natural systems. Greenhouse gases from industries, vehicles and power plant trap heat, altering global energy balance. The report "The State of Global Climate 2023" has noted that the three greenhouse gases reached record-high concentration levels in the atmosphere. CO_2 responsible for approximately 66% of the current heat imbalance has reached a concentration level of 421 ppm - a 50% increase from the pre-industrial level. Similarly, methane having 16% share in the heat balance has reached the concentration of 1911.9 ppb - more than double the pre-industrial level. The concentration of N_2O has also increased to 334 ppb. All of this results in increasing sea levels and glacial like outbursts. According to NASA, the mean sea-level has increased by 6-8 inches in the last 100 years. In Pakistan, the Himalayan glaciers are retreating rapidly, producing glacial like outburst floods (GLOF).

YOUSAF PAPER

Date: / /

that threaten northern communities. The **Shishper Glacier burst (2022)** displaced hundreds - a direct consequence of temperature rise. Thus, The 2019-2020 Australian bushfires which burned 18 million hectares and killed 3 billion animals were intensified by heatwaves linked to industrial emissions. Similarly, China's smog crises and India's air pollution contribute to atmospheric instability, influencing monsoon cycles thereby threatening the survival.

The factors further amplifying the damage includes weak institutions, corruption, and poor coordination thereby converting manageable events into catastrophes. Globally, the 2010 Haiti earthquake killed over 200,000 people not because of earthquake's magnitude but due to poor construction standards and lack of preparedness. Similarly, the Hurricane Katrina disaster (2005) in the United States exposed bureaucratic paralysis and inequitable response systems. In Pakistan, the **NDMA**, National Disaster Management Authority lacks coordination, resources and enforcement powers. Early warnings often fail to reach local communities and relief operations remains reactive. Disasters, therefore are not just natural occurrences - they are reflections of administrative incapacity and misplaced priorities.

Similarly in developing nations

YOUSAF PAPER

Date: / /

water mismanagement and unsustainable agriculture contribute to drought, salinity and desertification. Over-irrigating, monocropping, and unscientific water extraction deplete natural reserves. In **Balochistan**, persistent droughts have been worsened by unsustainable groundwater pumping and misaligned cropping patterns. Similarly, in Sindh's **Thar** region, water scarcity has led to food insecurity and migration. Globally, the African Sahel faces recurrent droughts linked to over grazing and soil erosion. These human practices magnify climatic stresses, converting dry spells into prolonged humanitarian crises. Hence, the crisis of droughts is as much about policy negligence as it is about rainfall deficiency.

The **population boom** is another factor that has forced millions of people to live in **high-risk areas** - riverbanks, mountain sides, and coasts vulnerable to storms or earthquakes. Overcrowding magnifies exposure, while poverty limits resilience. In Pakistan, unregulated housing near riverbanks and mountain slopes lead to enormous loss during floods and earthquakes. The **2005 Kashmir** earthquake killed over **80,000 people** many of whom lived in unsafe hillside dwellings. Globally, cities like Jakarta, Dhaka and Manila are expanding in hazard zones, putting millions at risk. The **United Nations** reports that half of the world's population now lives within **60km of a coastline**,

YOUSAF PAPER

Date: / /

exposing them to cyclones and tsunamis. Thus, population density transforms natural shocks into humanitarian crises.

In addition to the aforementioned factors, technological lapses and policy inertia remain widespread. Disaster preparedness is no longer optional; it is survival. The 2004 Indian Ocean Tsunami which killed over 2,30,000 people, exposed the absence of a regional warning system. In Pakistan, although the NDMF has introduced early warning mechanisms, most are confined to cities. Rural communities - where disasters hit hardest - receive late or no alerts. For example: In the recent floods of 2025 in Ghizer valley, a Shepherd noticed signs of glacial burst early, used his mobile phone to alert the community and for that his timely action helped evacuate residents before casualties occurred, thus his vigilance saved lives of many. This clearly shows the negligence towards the Rural communities. Moreover, poor data sharing between meteorological and provincial agencies hinders co-ordination. Similarly, maintenance of dams, levees, and embankments is often neglected, leading to structural failures during floods. Such negligence ensures that natural events become deadly.