



**Is Bangladesh becoming
more vulnerable to
climate change?**

Mohammad Mahfuz
Mahdi Shabab

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1 Introduction

Bangladesh, a low-lying delta, is acutely vulnerable to climate change and natural disasters. Its geography and dense population mean constant exposure to environmental threats. A key question is whether this vulnerability is increasing. I have picked this location as I am ethnically derived from this country, and have personally been there for a good few years. The place brings many memories with my family there.

For me, someone who finds learning amazing [Harris Westminster Sixth Form \(2025\)](#), Bangladesh is a crucial case study for understanding the rapid impact of climate change on developing nations, despite their minimal historical emissions. Its evolving environmental challenges, human resilience, and innovative adaptation strategies offer vital lessons for global climate cooperation and policy.

2 Research Review

To assess Bangladesh's increasing vulnerability, this project uses sources that offer a framework based on: Vulnerability, Resilience, and Adaptation.

This research investigates how Bangladesh's vulnerability to climate change and hazards (defined by exposure, sensitivity, and adaptive capacity) evolves over time. It also assesses if the country's resilience to these hazards is being outpaced by climate impacts, and evaluates the effectiveness of adaptation strategies as climate threats intensify. Sources

will draw on information regarding past, present, and projected climate impacts, along with analyses of disaster preparedness and adaptation efforts by governmental, non governmental, and local entities.

3 Discussion

Bangladesh faces a complex and increasingly concerning climate change outlook. While the nation has shown remarkable resilience, escalating climate impacts threaten to outpace current efforts.

3.1 Escalating Vulnerability

Evidence strongly suggests Bangladesh's geographical vulnerability is worsening. Exposure to hazards is increasing. Rising sea levels lead to greater saltwater intrusion, affecting food and fresh water in coastal regions. More frequent, intense cyclones, like Sidr in 2007 [The World Bank et al. \(2008\)](#) and Amphan in 2020 [Roy and Safi \(2020\)](#), devastate infrastructure and displace communities. Erratic rainfall also brings severe floods and prolonged droughts, complicating agricultural cycles.

Furthermore, Bangladesh's society and economy are increasingly sensitive to climate impacts. Many rely on climate-vulnerable sectors like agriculture and fisheries, directly threatening livelihoods. Urban growth concentrates populations in vulnerable areas, such as informal settlements in low-lying,

flood-prone cities like Dhaka. This creates new risks, especially when multiple disasters hit. Local efforts alone won't be enough for some communities to adapt effectively.

3.2 Resilience Under Strain

Bangladesh has a long history of coping with natural disasters, fostering strong community-level resilience. Early warning systems and cyclone shelters have saved countless lives. Government initiatives, supported by NGOs, have strengthened disaster preparedness [Akon and Mia \(2024\)](#), significantly reducing cyclone mortality.

However, accelerating climate impacts mean that while immediate loss of life can be mitigated, long-term socio-economic recovery faces significant challenges. Repeated displacements, loss of assets, and disruptions to education and healthcare force households to restart from poverty. The mental health burden of recurring disasters is a major social problem. The increasing frequency and intensity of new climate events push existing infrastructure beyond its limits. For example, coastal embankments are increasingly vulnerable to overtopping due to higher tidal surges and sea-level rise: "Projections indicate an increase of 0.25 m by 2050 in the Ganges tidal floodplain on the southwest coast, 0.16 m by 2050 along Cox's Bazar (Chittagong Division), and a more rapid increase of 0.44 m by 2050 along the central Bangladeshi coast (Khepupara, Barisal Division)" [Ali et al. \(2025\)](#), suggesting current infrastructure is lagging behind

the magnitude of threats.

3.3 Innovations and Implementation Gaps

Bangladesh has emerged as a global leader in climate change adaptation, developing innovative strategies. The government's Climate Change Strategy and Action Plan - BCCSAP of the People's Republic of Bangladesh (2009) demonstrates a proactive approach, including projects from saline-tolerant crop varieties to resilient housing designs. NGOs and local communities are actively engaged in implementing localised solutions.

Even with great efforts, major obstacles remain. The country needs more money and resources than it has to properly adapt. Many good initiatives remain small-scale, not expanding nationwide. Often, excellent national plans don't work well locally due to bureaucracy or lack of coordination. Additionally, predicting future climate impacts is difficult, meaning today's protective measures might not be enough tomorrow. Bangladesh struggles with climate adaptation due to insufficient funding, limited project reach, and unpredictable future impacts (\$2880 GNI/Capita).

In summary, climate change is hitting Bangladesh harder and faster than they can keep up. Despite their resilience and plans, the growing problems from climate change pose a significant danger to the country's future and its people.

4 Conclusion

Bangladesh is a country that's feeling the harsh effects of climate change more than most, despite having contributed very little to the world's greenhouse gas emissions, it's now on the front lines, dealing with growing environmental threats that put its very future at risk. Research clearly shows that Bangladesh is becoming more vulnerable to climate change. This is because it's facing more intense and frequent climate disasters, and its communities and economy struggle to recover before the next one hits.

The nation has shown incredible resilience and has been a leader in developing ways to adapt to these changes. However, these efforts are increasingly in a race against time. The speed and scale of climate impacts, like rising sea levels, saltwater invading farmland, stronger cyclones, and unpredictable monsoons, are threatening to overwhelm current capabilities and undo the progress Bangladesh has made. The gap between these severe threats and the ability to adapt is getting wider. This highlights the urgent need for more help, sustained support, and global action.

Bangladesh's situation is a call for international cooperation and climate justice. The future of Bangladesh, and many other vulnerable nations, depends on a global action to drastically cut down on emissions. It also needs strong financial and technological support for adaptation and battling harsher climates, and also fair ways to deal with unavoidable loss and damage.

Another point that hasn't been explored (perhaps one may see into this for further research) is if the country's economy is at risk due to such climate issues - personally I would think so, the increased occurrence of disasters does seem to point towards more future calamities, which will inevitably hurt the economy, and much severely with the nation being an LIC.

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