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Climate Change as a Non-Traditional Security Threat: Economic Implications for Pakistan and Bangladesh (2021-2025)

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ABSTRACT

Climate change has thus become one of the most prominent non-traditional security threats of the twenty first century and has been particularly harsh and devastating on the weak developing countries with its economic impacts. Even though Pakistan and Bangladesh are two countries with highly dense populations and predominantly agrarian economies with very low contribution to greenhouse gas emissions, they are still experiencing severe economic impacts from climate change. Pakistan's contribution to global emissions is less than 1% but it is among the world's 10 most climate-susceptible countries. Bangladesh's share is about 0.47% of the world's emissions but it is facing threats to its existence due to sea level rise, flooding, and more intense cyclones. This article draws on the concept of non-traditional security theory and critically discusses the economic impact of climate change on both countries in the fields of agriculture, infrastructure, energy, health and financial services. The study, based on peer-reviewed scholarship and institutional data from the World Bank, IPCC and Asian Development Bank, shows that unabated climate change will cost Pakistan up to 18–20% of its GDP annually by 2100 while Bangladesh will lose 9% of its GDP annually over the same period, putting at risk decades of development gains.

Keywords: Climate Change, Non-Traditional Security, Economic Implications, Pakistan, Bangladesh, Human Security, Securitization, South Asia, Climate Vulnerability, Adaptation Finance

Introduction

The idea of security has completely changed in the 21st century. The traditional definitions of security, which are based on the military readiness and defence of a territory, failed to keep pace with the challenges of a world under siege from forces that do not respect borders but that exist on a daily basis, such as unpredictable rainfall, rising sea levels and failing harvests. The most extreme manifestation of this change is climate change. It is not a problem in isolation of the environment, but as a threat multiplier, exacerbating economic fragilities, growing inequalities and undermining social contracts that bind states. Of the South Asian countries, Pakistan and Bangladesh are two of most



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notable case studies in this new security landscape. Both states face a climate crisis every year. Pakistan's cumulative contribution to global GHGs is less than 0.9% of the global Greenhouse Gas (GHGs), but is ranked as 7th among the Global Climate Risk Index (Eckstein, Künze, & Schäfe, 2021)

According to the UNDP, the floods in Pakistan in 2022 destroyed approximately one-third of the country, displaced 33 million people, and caused economic losses of nearly 10% of GDP in one disaster season (2022) are equivalent to losses of \$30 billion (UNDP, 2022). Economic impacts of climate change are becoming reality, rather than projections, for both countries. The agriculture sector is water dependent in Pakistan and relies on Indus River system with glacial melt water which is posing a serious challenge to the sector as it is temporarily increasing water availability but increasing the trend towards water shortages in the long-term. Bangladesh's emissions are around 0.47% of the world but it faces climate shocks at a level that is much greater than in nearly any other country of its size. It is set in a low-lying delta where it is vulnerable to cyclones, floods and sea level rise, and whose economic and geographic pillars are steadily eroding. This injustice is already having human consequences (MDMR, 2023). The coastal development process is accelerating in Bangladesh, and the intensity of cyclones is also rising, gradually threatening the livelihood of all coastal communities and also harming the economical backbone of the country (the garment sector). The purpose of this article is to explain these dynamics by discussing the theoretical viewpoints of Copenhagen school securitization theory and UNDP Human Security framework and then comparing them to presenting specific policy implications.

Literature Review

In the past 20 years, an academic body of literature on climate change and non-traditional security has developed, partly as a result of the growing urgency of climate impacts, and partly due to a maturing of theory in security studies. The key reconceptualisation that changed over to a more comprehensive definition of security, adding environmental and human dimensions, has come most prominently from a 1994 Human Development Report by the United Nations Development Programme (UNDP), which defined 'human security' as 'freedom from fear' and 'freedom from want' and translated environmental threats to the strategic level (UNDP, 1994). The concept of securitization was introduced by the influential Copenhagen School authors, Barry Buzan, Ole Wæver, and Jaap de Wilde, who showed how the environment, as a non-military issue, could be transformed into a "life and death" threat that demands emergency measures (Buzan, Wæver, & de Wilde, 1998). This theoretical groundwork has since been widely used in subsequent scholarly research related to climate change.

The concept of 'threat multiplier' has become popular in South Asian climate security literature. The Institute for Defence Studies and Analyses identified the link between climate variability and increase in resource competition and the issue of trans-boundary water management between India, Pakistan and Bangladesh (IDSA, 2011). Saran (2019) furthered this analysis by looking at how diminished glacial flows in the Himalayas may exacerbate pre-existing geopolitical tensions in a nuclearized region. Chowdhary (2020) and Bose (2014) have reported on the political and social security implications of climate-induced migration from Bangladesh to India, and shown how environmental migration cascades downstream to political instability.

After recent climate disasters, the economic aspects of climate change has been focused on in scholarly research. The Global Climate Risk Index of Eckstein, Künzel and Schäfer (2021) systematically ranked Pakistan as one of the top ten most vulnerable countries in



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the world for the period 2000-2019. In particular, with respect to the 2022 floods, a joint effort by World Bank and Government of Pakistan revealed that the damages totaled \$14.9 billion, the economic losses amounted to \$15.2 billion, and rehabilitation requirements reached \$16.3 billion, all of which surpassed the country's annual development budget (World Bank, 2023). The interdependencies between the water-food-energy nexus have been earlier highlighted by Rasul and Sharma (2016), who conducted an earlier but comprehensive analysis of the impacts of climate change on the water-food-energy nexus in Pakistan.

The literature on Bangladesh is huge because it is an exceptionally vulnerable country geographically. Huq and Reid (2004) undertook a pioneering study of the adaptations required in Bangladesh, which found that the most likely routes of economic losses were sea-level rise, cyclone intensification and riverine flooding. Based on the regional projections of the Asian Development Bank (ADB), which were later revised on several occasions, the GDP loss in Bangladesh may reach up to 9.4% per year by 2100 in high-emission scenarios (Asian Development Bank, 2009). They found that a 1.6-degree Celsius temperature rise in Bangladesh would lead to a 8% and 16% decrease in the rice and wheat yield respectively, which are important for food security and rural livelihoods (Alam, Siwar, & Molla, 2017).

Sultana (2014) has analysed the nexus of climate change and gender inequality in the context of women carrying overproportional burdens due to increased domestic workload, limited mobility during floods, and increased risk of gender-based violence in displacement situations in coastal Bangladesh. The European Foundation for South Asian Studies (EFSAS, 2024) corroborates that this phenomenon occurs with the occurrence of climate disasters as threat multipliers of existing gender inequalities in Pakistan during the floods of 2022.

The structural shortcomings of international climate finance have been pointed out in regional climate finance literature. UNEP (2022) estimated the annual adaptation financing needs for South Asia between \$40 billion and \$205 billion for 2021-2030, while adaptation financing flows in the region amounted to \$34 billion in 2021-2022 T (UNEP, 2022). The financing shortfall is especially high in Pakistan and Bangladesh where institutions are not capable of accessing complex climate finance mechanisms and there are structural barriers in international financial markets. The adoption of the National Climate Finance Strategy during COP29 (2024) is a policy milestone in Pakistan, however, its implementation will have major challenges.

Bandara and Cai (2014) used general equilibrium modelling to estimate the impacts of climate change on agriculture in South Asia, and found that all countries are likely to see declines in food production and food price inflation, with Pakistan and Bangladesh being some of the worst hit, given the high share of agriculture employed in these countries (Bandara & Cai, 2014). South Asia rice production is expected to decrease by 3% to 10% by 2050, adding to the current food insecurity, according to the rice forecasts by the Met Office (2024). This body of literature provides a foundation for the empirical and theoretical analysis of which the present analysis draws.

Problem Statement

This is a serious and growing climate security paradox affecting Pakistan and Bangladesh. Both countries have contributed very little to the global climate change and are experiencing some of the worst economic effects of global climate change. However, about 0.9% of global emissions generated in Pakistan and Pakistan is in 7th position in Global Climate Risk Index, whereas Bangladesh contributes only 0.47%, but is on the



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verge of losing its delta territory. For instance, the Pakistan floods in 2022 resulted in losses well over \$30 billion and cyclone and flood damages in Bangladesh were estimated to cost the economy \$3–5 billion each year, which means that it is not a future risk but an economic emergency. Both countries experience increasing agricultural productivity losses, infrastructure damage, public health and labour losses, but are not getting enough adaptation funding from the international community more than \$60 billion a year for South Asia alone. If these economic consequences and their sectoral dimensions are not urgently and appropriately analysed, there will be a lack of evidence base for policymakers to develop effective adaptation strategies. This study is intended to bridge this gap by providing detailed analysis of non-traditional nature of climate change as economic risk to Pakistan and Bangladesh and its economic implications.

Research Questions

This study is guided by the following central research questions:

Question 1: What are the specific climate change's role as a non-traditional security threat in Pakistan and Bangladesh?

Q2: What will be the direct and indirect impacts of climate induced disruptions on the key sectors in Pakistan and Bangladesh?

Q3: What policy frameworks and financing options are needed to minimise the economic losses from climate change in both countries?

Methodology

The method used in this research is a qualitative method and uses literature review and comparative case analysis techniques. It is based on peer-reviewed academic journal articles, reports from international bodies such as the World Bank, Asian Development Bank, IPCC, UNDP and UNEP, and policy documents and government assessments from 2009 to 2025. Three theoretical approaches are combined in the process of theoretical analysis: non-traditional security theory based on Copenhagen School securitization theory, the UNDP Human Security Framework, and the 'threat multiplier' model of linkages between climate and conflict.

Data on country level economic impacts such as GDP losses, sectoral impacts, impacts on agricultural yields, and flow of adaptation financing were accessed from institutional databases and analysed against each other. Pakistan and Bangladesh were chosen as case studies because of their similar emission patterns, different geographical vulnerabilities, identical agricultural economic bases and their position as climate change belt nations. The methodology is inter-disciplinary in nature and draws on insights from the fields of economics, political science, environmental studies, and security studies to give a comprehensive analysis of climate change as an economic and security issue.

Climate Change as Non-Traditional Security Threat: Theoretical Framework

Expanding the Security Paradigm

This classical definition of security, based on the westphalian ideas of state sovereignty and military strength, was found to be insufficient in the new international security context of the post-colder war era, which was characterized by complex, diffuse and transnational threats. The Copenhagen School, which was founded by Barry Buzan, Ole Wæver and Jaap de Wilde, brought in the idea of securitization: the process by which an issue becomes an existential threat to a state that demands emergency action outside of the normal political process (Buzan, Wæver, & de Wilde, 1998). This framework



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enabled the academic and policy communities to extend security analysis to sectors including the environment, economy, society, and politics. Climate change fits naturally within this extended framework: it threatens the survival of ecosystems, livelihoods, and even territories, and its management requires responses that transcend routine governance.

The UNDP's Human Security Framework (1994) complements the Copenhagen School by shifting the referent object of security from the state to the individual. Under this framework, climate change constitutes a security threat not because it endangers state borders but because it undermines the seven dimensions of human security: economic, food, health, environmental, personal, community, and political security. In Pakistan and Bangladesh, climate impacts touch all seven dimensions simultaneously, creating cascading insecurities that the state is frequently unable to absorb or manage.

Climate Change as Threat Multiplier

One of the most analytical concepts in climate security literature is the concept of a 'threat multiplier' the notion that climate change does not generate new types of security problems as such, but rather exacerbates existing vulnerabilities (CNA, 2007). This multiplier is very strong in the South Asian context. Water scarcity, food insecurity, economic fragility, political instability and regional conflict are all exacerbated by climate variability and climate change in Pakistan. However, Bangladesh's chronic vulnerabilities of extreme population density, poverty, geographical exposure and a lack of developed infrastructure are aggravated by sea-level rise, intensifying storms and erratic rainfall.

This threat multiplier logic is the reason why it is not possible to combat climate change in a sectoral way. A severe flood in Pakistan does not only affect crops but it also affects the supply chains, it affects infrastructure, it displaces the labour, it puts a strain on the public finances, it weakens the institutions, it generates refugee flows that put pressure in the region and it has an impact on politics. Given the feedback effects between climate impact and socio-economic vulnerability, the damages can follow non-linear paths as modelled in conventional economic models often underestimated.

Securitization of Climate in Pakistan and Bangladesh

The formal securitization of climate change, its elevation from an environmental policy issue to a national and international security issue has been unfolding at varying paces in both countries, based on their distinctly different political cultures and institutional capabilities. The securitization of the 2010 and 2022 mega-floods in Pakistan has been hastened, and the military has taken an active role in disaster management, while climate change has increasingly become part of the country's foreign policy agenda through presentations in international fora such as COP27 and COP29. The securitization of the mega-floods in 2010 and 2022 has also been accelerated, with the military being prominently involved in disaster management and the dominant focus on climate change narratives now being a central part of Pakistan's diplomatic engagement in international platforms like COP27 and COP29.

The recent United Nations securitization of Pakistan as a climate victim by the former Pakistani Prime Minister Imran Khan, and the high-profile stance taken by the current Prime Minister Shehbaz Sharif after the 2022 floods, highlight climate securitisation in Pakistan's political discourse at the highest levels (UNEP, 2022). At the international level, Bangladesh has been a leading and growing voice in securitization in the context of climate change. Bangladesh has been able to articulate climate change as a security



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threat, with legally binding emissions reduction and improved international compensation, in its leadership of the Climate Vulnerable Forum and its active participation in the UNFCCC negotiations. Sheikh Hasina's repeated appeals to climate justice at global forums demonstrate a sophisticated securitization strategy, which is designed to play on Bangladesh's moral leverage as a front-line climate state and shape international climate governance norms.

Economic Implications for Pakistan: Deep Analysis

Macroeconomic Overview and Climate Exposure

The Pakistan economy (which is valued at about \$376 billion GDP in 2023) is structurally vulnerable to climate shocks because agriculture is a major component of the economy, industries require a lot of water, and the existing infrastructure has been built without paying much attention to adapting to climate change (World Bank Group, 2024). The agricultural industry accounts for around 22.7% of GDP and employs more than 37.4% of the labour force, which is a high dependency ratio and directly results in climate shocks affecting agriculture and leading to macroeconomic instability. The World Bank has estimated that around 2100, climate change could cost Pakistan \$38 billion in GDP, which is equivalent to 18-20% of its current GDP, and rank it as one of the most vulnerable countries to economic loss on Earth (Pakistan Bureau of Statistics, 2023).

Indicator	Data	Source
GDP (2023)	\$376 billion	World Bank, 2024
Agriculture share of GDP	22.7%	PBS, 2023
Agricultural workforce share	37.4%	PBS, 2023
Climate Risk Index Ranking	7th globally	Eckstein et al., 2021
2022 Flood Economic Losses	\$30.1 billion	UNDP, 2022
Projected GDP loss by 2100 (high emissions)	18–20%	World Bank, 2022
Annual adaptation finance needed	\$7–14 billion	UNEP, 2023
GHG Emissions share	<0.9% global	IPCC, 2022

Agriculture: Pakistan's Most Exposed Sector

The Indus River system and its tributaries are the sole source of water for irrigation for agricultural hub of Pakistan, Punjab and Sindh provinces. This is especially problematic for the agriculture sector which is highly vulnerable to fluctuations in water supply, and which climate change is providing in two equal and opposing ways: an increased glacial melt in the short term that causes water flooding, and a glacial reduction over the long term that causes water shortages. The melting of the Himalayan and Karakoram glaciers has been recorded to be at rates higher than IPCC projection of a 20% reduction in the flow of the Indus by 2060, which would cause a major loss to irrigated agriculture in the most fertile agricultural zones of Pakistan.



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The floods of 2022 were a microcosm of the consequences of climate on agriculture. Around 44 million acres of crops were lost, mainly of cotton, rice and sugarcane which are Pakistan's most important cash and food crops. Damage caused by the floods has significantly reduced cotton production, which is essential for the textile industry in Pakistan (which generates about 60% of the export earnings), and led to a severe foreign exchange crisis and restrictions on imports that spread throughout the economy (UNEP, 2022).

Climate changes worsen these losses in agriculture: a 1°C rise is expected to impact wheat yields in Pakistan by around 6–10% and a 10–15°C rise is expected to cause a loss of half a day of labor per farmer. Agriculture heat stress (during critical growth stages) is already impacting quality of crops and marketable surpluses in Pakistan (Hussain et al., 2021). This is a serious situation for Pakistan, which already has high water stress, and per-capita water availability has dropped from 5,000 cubic metres/year at Independence in 1947 to around 1,000 cubic metres per year today, which is close to the threshold of absolute water scarcity (defined at 500 cubic metres/year) (Pakistan Council of Research in Water Resources, 2023). This trend is exacerbated by climate change. Its waters are governed by the Indus Waters Treaty of 1960 which does not include any clauses for climate-induced changes to river flows, and adds to the hydrological uncertainties and legal and diplomatic vulnerabilities.

Infrastructure: The Economic Cost of Climate Damage

Climate costs on infrastructure roads, bridges, irrigation canals, urban drainage, energy installations, and communication networks have grown significantly in Pakistan. More than 1.7 million homes, 13,000 kilometres of roads and 439 bridges were destroyed or damaged during the 2022 floods, and the total estimate of infrastructure damage was valued at \$14.9 billion (World Bank, 2023). It is not a once-in-a-lifetime incident as Pakistan has been hit by devastating floods in 2010, 2011, 2013, 2015, 2019, 2020, 2022 and 2023, making it the largest economy in the world to suffer from flooding in terms of economic losses in each year relative to GDP.

Repeated climate impacts have large economic implications due to the cumulative infrastructure deficit. Clashed roads cut off farmers' market access and diminish the economic involvement of rural populations. Loss of irrigation systems has a negative effect on agriculture for the seasons and years following the disaster. Urban floods in the commercial hub of Karachi disrupt the financial services, port operations, and industrial production with each major event causing an estimated economic loss and disruption of \$1–2 billion to the city (Bandara & Cai, 2014) The lack of investment in building the resilience of these infrastructure has led to re-construction of these weaknesses in every disaster, resulting in a vicious circle of disaster and reconstruction that drains financial and fiscal resources, which otherwise could be used for development.

Energy Security and the Climate Paradox

The energy sector in Pakistan is also unique in terms of its climate paradox. In line with the country's clean energy goals, it has made significant investments in hydropower generation, representing around 30% of the total installed capacity. But that investment is in jeopardy because of climate change. Irregular rainfall, changes in water flow from glacier melting and enhanced sedimentation from climate induced erosion has lowered the productivity of existing dams and also made planning of new dams more complicated.



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The reduction in Indus water flows as projected by IPCC (2022) would be a huge blow to Pakistan's hydropower generation at a time when energy demand is expected to grow further. The energy sector in Pakistan is already facing a chronic structural crisis and the circular debt has already surpassed Rs. A crisis that climate disruptions exacerbate by disrupting energy infrastructure and cutting revenues, 2.3 trillion a.k.a. “just about \$8 billion” as of 2023. Outage of currents from affected transmission lines due to floods cause loss of industrial productivity and water scarcity due to floods make it difficult to use water for cooling thermal power plants. In Pakistan, the economic losses caused by power shortages to manufacturing industry vary from \$4-\$6 billion per year (World Bank, 2023).

Health, Labour, and Human Capital Losses

Human capital exposure to climate in Pakistan is one of the most economically important, least quantified aspects. Heat stress has a direct impact on labour productivity outside the home: a study published in Nature Climate Change found that by 2050, the heat stress effect on labour productivity in Pakistan may be 10–15%, mainly impacting those most productive segments of the economy, such as workers in agriculture and construction (Leave unchecked, 2021). Immediately after the floods in 2022, it was estimated that there were an estimated 1.6 million acute watery diarrhoea cases, 534,000 malaria cases, and more than 78,000 acute respiratory infections.

In Pakistan, food prices volatility and adverse effects on agriculture due to climate change drive up malnutrition rates, which are already alarming, and about 40% of children under the age of five are already stunted. These nutritional deficiencies in early life have long-term adverse consequences on cognitive and physical functioning and thus on human capital accumulation and economic productivity. World Bank estimates that malnutrition is costing Pakistan about 3% of its GDP every year due to lost productivity, which is expected to further rise due to the impact of climate change (World Bank, 2020).

Economic Implications for Bangladesh: Deep Analysis

Macroeconomic Overview and Unique Geographic Exposure

Bangladesh is one of the most vulnerable country which economy is affected by climate in the world. Bangladesh's economy is the 35th largest in the world and the fastest-growing South Asian economy over the last decade, with a GDP of around \$460 billion (2023), through manufacturing-based export growth with a special focus on the Ready-Made Garment industry. But this economic dynamism rests on a geographical underpinning with a fragility that is exceptional. Almost 80 percent of the country's land is flood plains and about a third of Bangladesh is less than a metre above sea level (World Bank Group, 2024). The Bay of Bengal climate change scenario of sea level rise, cyclone intensification and riverine flooding is the existential threat to the territorial integrity, infrastructure and economic base of Bangladesh and warming at the rate of about 0.5°C per decade.

Indicator	Data	Source
GDP (2023)	\$460 billion	World Bank, 2024
RMG share of exports	~84%	BGMEA, 2023
Agricultural workforce share	~38%	BBS, 2023



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Population below 1m elevation	~35 million	CGIAR, 2022
Annual flood damage (average)	\$3–5 billion	ADB, 2022
Projected GDP loss by 2100 (high emissions)	9.4%	ADB, 2009; updated
Projected displacement by 2050	13–26 million	World Bank, 2021
Dhaka territory at risk from 1m sea-level rise	14%	ADB, 2009

Agriculture: Food Security Under Compounding Pressure

About 38% people working in Bangladesh are involved with agriculture, and the agriculture is playing a vital role in food security, rural livelihood and poverty alleviation. This is one of the sectors being hit by climate change from various fronts. Increases in temperature are decreasing the yields of rice, the main staple crop, in Bangladesh, with studies estimating yields to drop by 8% for every 1°C rise in temperature (Mahmudul & Chamhuri, 2011).

The damages caused by Cyclone Amphan, 2020 alone in Bangladesh and India due to increased frequency and intensity damages the standing crops, damages soil through salt water intrusion and disturbs the planting schedule of the following seasons. One of the most hidden and underestimated risks is saltwater intrusion. With rising sea level and storm surges flooding further into the land, coastal Bangladesh experiences more salinisation of agricultural land. Of the total land area of 22,590 km², 40% is already affected by salinity and is losing productivity; this is expected to rise to 50% by 2050 (Hossain , Huq , & Wheeler , 2015). Saline soils yield substantially less and need costly treatments, leading to indebtedness and migration from rural areas to urban.

The economic losses of salinity intrusion to Bangladesh's agriculture are estimated at about \$400 million per year, which will increase with the rising sea level (CGIAR, 2022). Riverine flooding, whether caused by river flow increases due to the monsoons or from storm surge can impact cropping calendars, either by destroying pre-harvest crops or by delaying planting after flooding. Floods are a major cause of damage in Bangladesh every year and at least one major flood every 5 years. In 2017 and 2022, the floods resulted in losses to agriculture of more than \$2 billion each. Climate change is expected to make monsoon rainfall more variable, as well as raise storm surge heights, potentially leading to greater incidence and severity of agriculturally harmful floods in the coming future, well through mid-century (IPCC, 2022).

Sea-Level Rise and Coastal Economic Devastation

The greatest long-term climate threat in Bangladesh is sea-level rise. The IPCC Sixth Assessment Report predicts a global mean sea-level rise ranging from 0.3 to 1.0 metres by 2100 under moderate to high emission scenarios; and regional factors such as subsidence in the delta system of Bangladesh could mean higher sea-level rise locally than the global average. When the rise is 1 metre, about 17% of land area of Bangladesh will be underwater for ever, which will disrupt the lives of around 20-30 million people, destroy some of the most fertile soil used for agriculture. (IPCC, 2022)



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The economic costs are not limited to the impact of land loss. The world's largest mangrove forest (Sundarban) is being severely damaged by sea-level rise, saline intrusion and cyclone impact, both serving as a natural coastal defence and as a fishery and forestry economy for millions of people. The loss of this ecosystem would result in loss of a natural barrier for coastal populations and economies, higher cost of disasters and millions of small-scale fishers and forest product collectors losing their livelihoods. The total economic value of the ecosystem services provided by the Sundarbans is estimated at \$3.5 billion per year (IUCN & Conservation International, 2023). The capital city of Bangladesh, Dhaka, is vulnerable to compound climate risks due to its location in the centre of the country's ready-made economy.

More than 22 million residents live in the metro area, many of whom were already displaced by climate factors, prior to the city's population growth. Based on the ADB projection, a sea-level rise of one metre would flood 14% of the land area of Dhaka (Asian Development Bank, 2009). Most immediately, the current drainage system is not capable of coping with the city's current rainfall extremes, which cause flooding almost every year. According to the World Bank, for every big flood in Dhaka, the economic losses and damages caused by the flood are estimated to be \$1-1.5 billion (World Bank Group, 2022).

Ready-Made Garment Sector: Climate's hidden threat

It is revealed that the readymade garments (RMG) industry is the base of the national economy and it employs more than 4 million people including most of them are women, exports about \$47 billion in the year, and produces export revenue of around 84% of the total export earnings for the country (BGMEA, 2023). This is a less than widely recognized climate-sensitive sector. The factories are mostly concentrated in low-lying urban areas like Dhaka, Chittagong and Gazipur which are flooded every year. When summer comes in the urban heat stress also takes a toll on the productivity of the workers as garment factories in Bangladesh are often found operating outside safe limits of heat, causing the workers to suffer in terms of lower productivity and health related absenteeism.

The garment export competitiveness of Bangladesh is based on its structural advantage related to low production cost including low cost of energy. The impact of loss of energy supply from the disrupted infrastructure, reduced hydropower generation and increased cooling load due to climate change on production cost will impact Bangladesh's competitiveness in global value chains. Environmental certification and standards for a climate-responsible supply chain are also gaining significance among the buyers from abroad and are burdensome, especially for Bangladesh's numerous clothing factories that operate on slim profit margins. The effects of climate change, therefore, pose a double threat to Bangladesh's main economic sector (World Bank, 2021).

Climate Migration and Its Economic Dimensions

Bangladesh could become one of the world's most prolific climate migration stories with internal climate displacement expected to range between 13 and 26 million people by 2050 (World Bank, 2021). Migration is under way: River erosion alone displaces some 500,000 people each year, many more are displaced by cyclones, floods and storm surges. The economic aspects of the displacement are huge.

The migration of people from rural areas to urban ones under the guise of climate change helps to strain the urban housing market, services, and labour markets, which reduce the wages of the urban workforce, especially those with low skill levels, and



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extends municipal budgets. Today, there are an estimated 4-5 million climate migrants in Dhaka's slums, who are already facing high vulnerability to more climate change (CRED, 2024). International climate migration from Bangladesh will increase significantly with rising sea levels and the unviability of livelihoods, which will cause diplomatic and economic issues.

Remittances from Bangladeshis abroad are already a significant economic contribution and a well-managed approach to international migration can be a climate adaptation measure. But the unmanaged climate displacement can still cause geopolitical conflicts with India and Myanmar and the loss of the working-age population required by the economy of Bangladesh to sustain fiscal. However, if not managed, it may lead to geopolitical tensions when Bangladesh loses the working population that is required for the economic growth and fiscal sustainability.

Comparative Economic Analysis: Pakistan and Bangladesh

shows some key similarities and differences that need to guide differentiated policy response. The two countries suffer from the same fundamental injustice of climate costs without climate responsibility. The comparative analysis of the climate-economic vulnerabilities of Pakistan and Bangladesh

Dimension	Pakistan	Bangladesh
Primary climate hazard	Floods, heatwaves, water scarcity	Sea-level rise, cyclones, riverine flooding
Agricultural vulnerability	Indus water scarcity, heat stress	Salinity intrusion, yield decline
Key economic sector at risk	Agriculture, textiles	RMG, fisheries, agriculture
GDP climate loss projection (2100)	18–20% (high emissions)	9.4% (high emissions)
Displaced people (2022)	33 million (2022 floods)	~500,000 annually (river erosion)
Adaptation finance gap	~\$7–14 billion/year	~\$4–8 billion/year
Emissions responsibility	<0.9% global	~0.47% global
Climate Risk Index rank	7 th	7th (2000–2019 avg)

Both have agriculture-based economies highly vulnerable to climate variability. There is a significant gap between the adaptation finance needs and availability for both. And both are limited institutionally and financially in their ability to deal with the magnitude of change they need to implement. But there are significant differences that give each sector its unique economic fragilities. The major challenge in Pakistan is the water scarcity due to the recession of glaciers and catastrophic floods during glacial melting which is a paradox of too much and too little water in alternate stages. The threat to the



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very existence of Bangladesh is territorial loss due to sea-level rise coupled with intensification of cyclones. Agriculture and the textile value chain relying on agriculture are the areas of critical exposure for the economies of Pakistan and agriculture and the urban economic ecosystem around the garment export business in Bangladesh. The differences demand context-specific action plans for each country action plans that are not universally applicable across the region.

Conclusion

It does not seem that climate change is a threat to Pakistan and Bangladesh in the future, rather it is an emergency that is happening right now. Both countries are exposed to extreme climate events and are structurally very vulnerable economically and are taking the brunt of the losses, which were not caused by them, while the international community has been too slow to act on their behalf. The facts are clear. By 2100 the potential GDP losses for Pakistan are estimated at 18–20% with flood years alone wiping billions of development gains away overnight. By the same time, Bangladesh is expected to lose 9.4% of its GDP, and already spends \$3–5 billion annually on climate-related losses, which are rising. The productivity is declining in both countries. The export competitiveness is being undermined. Displacement is accelerating. These are not abstract concepts of models; they are real, cumulative realities that can be measured. Copenhagen School securitisation theory helps understand how climate change serves as a threat multiplier for this period. Copenhagen School securitisation theory provides a framework for understanding how climate change is a threat multiplier for this period. It exacerbates water shortage, food insecurity, and financial hardship in Pakistan. It exacerbates the natural vulnerability of the densely populated delta in Bangladesh and poses not only a threat to the livelihoods but also to territory itself. Both governments have wisely declared climate as a situation of national emergency. The failure has not been one of recognising the threat, it has been one of getting a commensurate international support. The principle of common but differentiated responsibilities should be translated from diplomatic speech to real money. The UNEP estimate of \$40–205 billion per year for adaptation financing for South Asia is small compared with the energy subsidies that rich countries spend on their own energy consumption. Narrowing the gap is no act of generosity, it is a duty. Water governance reform, climate-resilient agriculture, and urban flood management are key investments for Pakistan. Coastal infrastructure, salinity-resistant crops and planned climate migration measures are most critical in Bangladesh. The overarching take-home message is systemic: climate resilience has to be integrated throughout the economic planning process, infrastructure, and foreign policy not as a stand-alone sector. These are two countries with more than 400 million people that deserve commitments, not sympathy at international conferences, and a real partnership.

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