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CENTER FOR EXCELLENCE IN DISASTER MANAGEMENT & HUMANITARIAN ASSISTANCE  
COLUMBIA UNIVERSITY, SCHOOL OF INTERNATIONAL AND PUBLIC AFFAIRS

# Environmental Hazards as a Risk Multiplier for Conflict in the Indo-Pacific

May 2025

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(CFE-DM)

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## Disclaimer

The findings, interpretations, and conclusions expressed herein are those of the authors alone and do not necessarily reflect the views of Center for Excellence in Disaster Management and Humanitarian Assistance, the Department of Defense, or Columbia University.

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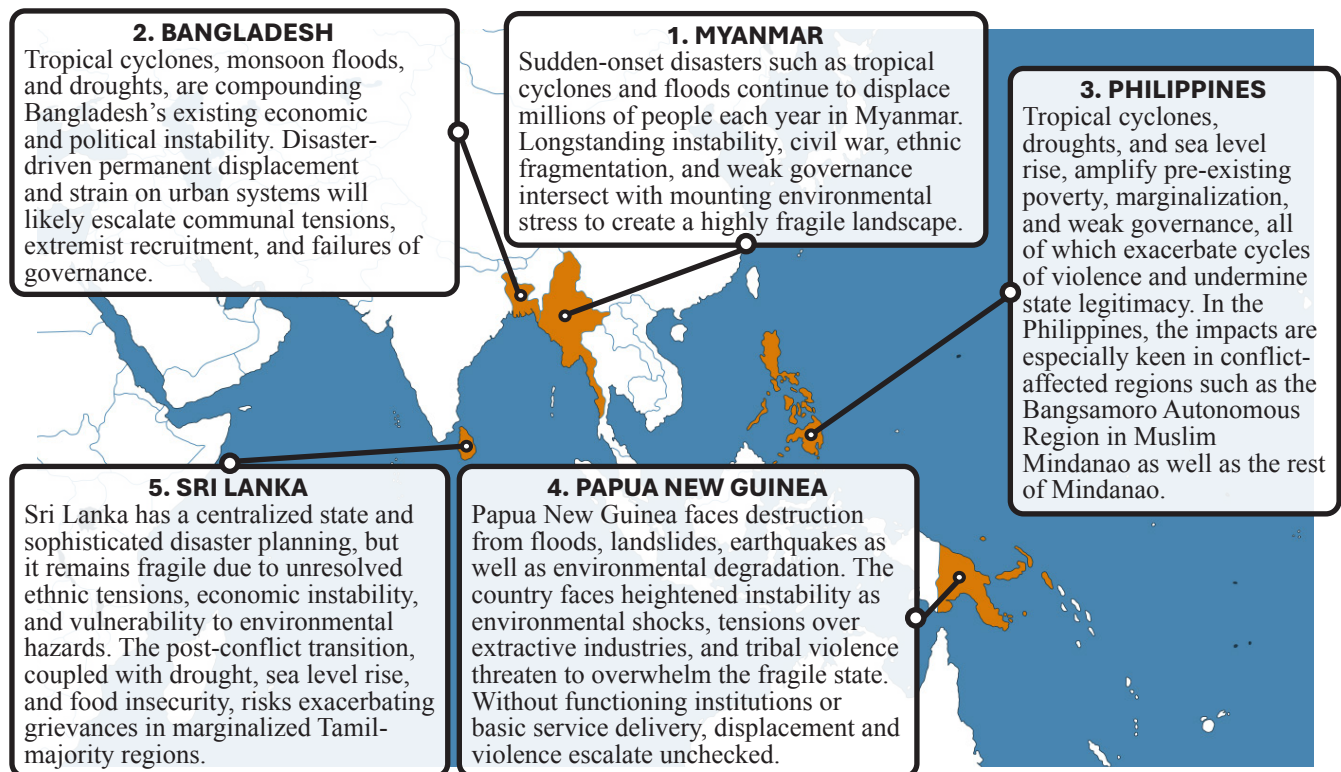
## Summary

Environmental hazards increasingly function as risk multipliers for conflict across the Indo-Pacific region. In fragile states, events such as droughts, typhoons, and sea level rise do not independently cause conflict but heavily exacerbate pre-existing vulnerabilities by intensifying resource competition, accelerating displacement, and undermining state legitimacy. As a result, these dynamics elevate the overall likelihood of unrest and conflict, especially in environments with weak governance, vast inequality, or active non-state armed groups. Using a mixed-methods approach, this report identified Myanmar, Bangladesh, the Philippines, Papua New Guinea, and Sri Lanka as five watchlist countries where environmental stress intersects most dangerously with structural fragility. This report builds on its findings to recommend three actions to inform U.S. government posture in the region and to support operational readiness, alliance cohesion, and regional stability.

**Key Finding 1: Environmental hazards function as a risk multiplier in fragile states.** There is a strong positive correlation between a country’s exposure to environmental hazards and its risk of conflict nationally even when other socio-political and economic factors are taken into account. While not determinative on their own, environmental shocks such as droughts, typhoons, and sea level rise can substantially increase the likelihood of conflict in already fragile states.

**Key Finding 2: Structural vulnerabilities define the conditions under which environmental hazards escalate into conflict.** When exposed to extreme environmental hazards, states with entrenched socio-political and economic fragilities, such as weak governance, poverty, inequality, and fragile institutions, are significantly more susceptible to instability. Environmental shocks act as stressors that exacerbate these pre-existing vulnerabilities because they accelerate existing fault lines, degrade response capacity, and heighten the probability of social unrest, displacement, and violence.

**Key Finding 3: Five Indo-Pacific states are identified as high priority watchpoints.** Five countries represented in the map below and listed in order of environmental-driven conflict escalation risk (1. Myanmar, 2. Bangladesh, 3. the Philippines, 4. Papua New Guinea, and 5. Sri Lanka) exhibit high levels of both environmental hazard exposure and structural fragility, and this combination has significant implications for U.S. strategic posture and regional stability.



**Key Finding 4: Causal pathways explain recurring conflict escalation across contexts.** While specific drivers of instability vary across the five watchlist countries, several patterns explain how environmental stressors intersect with state fragility to escalate into conflict. First, politicized or delayed disaster response undermines government legitimacy. Next, disaster-induced displacement leads to urban overcrowding and intergroup tension. Finally, militarization of resource governance fuels domestic grievances and non-state actor recruitment.

## Recommendations

To strengthen the capacity of the U.S. government to respond to crises in the Indo-Pacific region and to mitigate the security risks posed by environmental hazards, this report offers the following recommendations:

- **Integrate environmental exposure with fragility metrics to capture compound risk.** Rather than treat environmental hazards in isolation, develop a multidimensional risk framework that combines environmental hazard exposure with political, economic, and institutional fragility indicators. This integrated model would feed assessments of how environmental shocks exacerbate instability and enable earlier identification of compound risk, support more precise contingency planning, and advance disaster preparedness across the region.
- **Develop an early warning system and flashpoint protocol for environmental hazard-induced conflict risk.** Design an early warning system to rapidly identify and assess environmental hazard flashpoints that carry conflict escalation risks. This protocol would support U.S. contingency planning and strategic partner engagement.
- **Establish research collaboration with Quad countries and other regional partners to focus on environmental hazards monitoring and risk analysis.** Expand joint initiatives with allies and partners, especially Australia, India, and Japan, to share data, align methodologies, and connect early warning efforts. These partnerships can enhance situational awareness and reduce the risk of miscalculation in disaster response operations.

## Research Design

The study was conducted for the Center for Excellence in Disaster Management & Humanitarian Assistance as part of a capstone research project at Columbia University's School of International Public Affairs. It analyzed how environmental hazards serve as risk multipliers for conflict in the Indo-Pacific region and assessed countries that are most vulnerable to that dynamic. It employed a mixed-methods approach that integrated quantitative modeling with qualitative analysis.<sup>1</sup> The quantitative framework modeled the relationship between climate risk and conflict risk at the national level by using data from the Climate Conflict Vulnerability Index and other datasets. A 13-variable qualitative framework was developed to evaluate pathways through which environmental hazards escalate instability. Countries were selected and prioritized based on their relative rankings for hazard exposure, structural vulnerability, and conflict risk. This integrated methodology supports anticipatory risk mapping, strategic foresight, and early warning system design tailored to the Indo-Pacific security environment.

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<sup>1</sup> The study did not assess Kiribati, Maldives, Republic of the Marshall Islands, Federated States of Micronesia, Nauru, North Korea, Tonga, and Tuvalu.

# Introduction

Environmental hazards have emerged as a defining and disruptive force, altering the landscape of regional stability, military readiness, humanitarian response, and global politics. Its effects are most acutely felt in the Indo-Pacific, a region that spans over 50% of the Earth's surface, hosts over four billion people, and encompasses multiple U.S. treaty allies, major trade corridors, and nuclear-armed powers.<sup>2</sup> The U.S. regional strategic presence, led by the U.S. Indo-Pacific Command (USINDOPACOM) with over 375,000 military and civilian personnel, is tasked with maintaining regional peace, deterring coercion, and responding to emergent crises.<sup>3</sup> Even as natural disasters become more frequent and intense, the conditions necessary to achieve strategic military objectives are degrading. Because disaster-induced state weakness can create opportunities for adversarial state and non-state actors to expand influence, threaten critical sea lanes, and destabilize neighboring allies, it is crucial to recognize that environmental hazards indirectly, but tangibly, foster near-term threats to U.S. strategic interests.

To support U.S. strategic thought, military readiness, operational agility, and contingency planning, this report provides a precise, risk-informed analysis of where and how environmental hazards intersect with socio-political and economic fragility to increase conflict potential in the Indo-Pacific region. Using a robust mixed-methods assessment framework that combines climate, conflict, and vulnerability data regression modeling with a field-validated qualitative approach, the report explains how environmental hazards such as typhoons, droughts, and sea level rise act as risk multiplying pathways for instability and conflict. Secondly, it assesses the risk profiles of five high-priority countries: Myanmar, Bangladesh, the Philippines, Papua New Guinea (PNG), and Sri Lanka. It concludes with recommendations for improving strategic monitoring and analysis.

## Methodology and Framework

A mixed-methods approach was used to assess environmental hazard-driven conflict dynamics in the Indo-Pacific region. This approach combines quantitative modeling with qualitative interpretation to capture both structural trends and localized complexity, thereby moving beyond surface-level correlation to identify where cascading risks are most likely to culminate in conflict. This methodological approach is adaptable and can be applied to other contexts.

## Quantitative Model: Statistical Modeling Using the CCVI Index

### *Data Source and Variable Construction*

The quantitative analysis is based on the Climate Conflict Vulnerability Index (CCVI), a comprehensive global dataset released in October 2024.<sup>4</sup> The CCVI aggregates a wide range of publicly available environmental, political, economic, and demographic data into three standardized indices: Climate Risk, Structural Vulnerability, and Conflict Risk. The Climate Risk Index captures a country's exposure to environmental hazards such as floods, droughts, tropical cyclones, and sea level rise. It also accounts for changes in long-term environmental averages and the frequency of extreme weather events. The Vulnerability Index aggregates structural factors that reduce a population's ability to prepare for or recover from environmental hazard events. These include indicators of poverty, inequality, governance capacity, infrastructure gaps, and institutional fragility. The Conflict Risk Index,

<sup>2</sup> United States Indo-Pacific Command. "About USINDOPACOM." U.S. Indo-Pacific Command, [https://www.pacom.mil/About-USINDOPACOM/utm\\_/](https://www.pacom.mil/About-USINDOPACOM/utm_/).

<sup>3</sup> "United States Pacific Command (USPACOM)." GlobalSecurity.org, <https://www.globalsecurity.org/military/agency/dod/pacom.htm?>

<sup>4</sup> CCVI was a collaborative effort between the FutureLab at the Potsdam Institute for Climate Impact Research, the Center for Crisis Early Warning at the University of the Bundeswehr Munich, and the German Federal Foreign Office. Mittermaier, D; Merschroth, S; Šedová, B; Auer, C; Bohne, T; Ferri, S; Slouma, S; Michelini, S; Gottwick, V. (2025). The Climate Conflict Vulnerability Index (CCVI) - Technical Documentation v1.3. Available online at [climate-conflict.org](https://climate-conflict.org).

which serves as the dependent variable in the model, reflects the likelihood of political violence, civil unrest, and organized conflict. It incorporates factors such as past violence, fragility scores, population exposure to conflict zones, and risk multipliers based on socio-political conditions.

Figure 1 presents a visual comparison of Conflict Risk and Climate Risk for countries in the Indo-Pacific region.<sup>5</sup> Each country is color-coded by its Vulnerability Index, which ranges from low (green) to high (red). Countries shaded in deeper red exhibit more acute underlying fragilities that may be exacerbated by environmental hazards and, therefore, increase the potential for conflict escalation. The dashed trend line represents a linear regression capturing the general relationship between climate risk and conflict risk across the region. While not indicating direct causation, it highlights a tendency for countries with higher climate risk to also exhibit greater conflict risk, particularly when vulnerability is elevated.

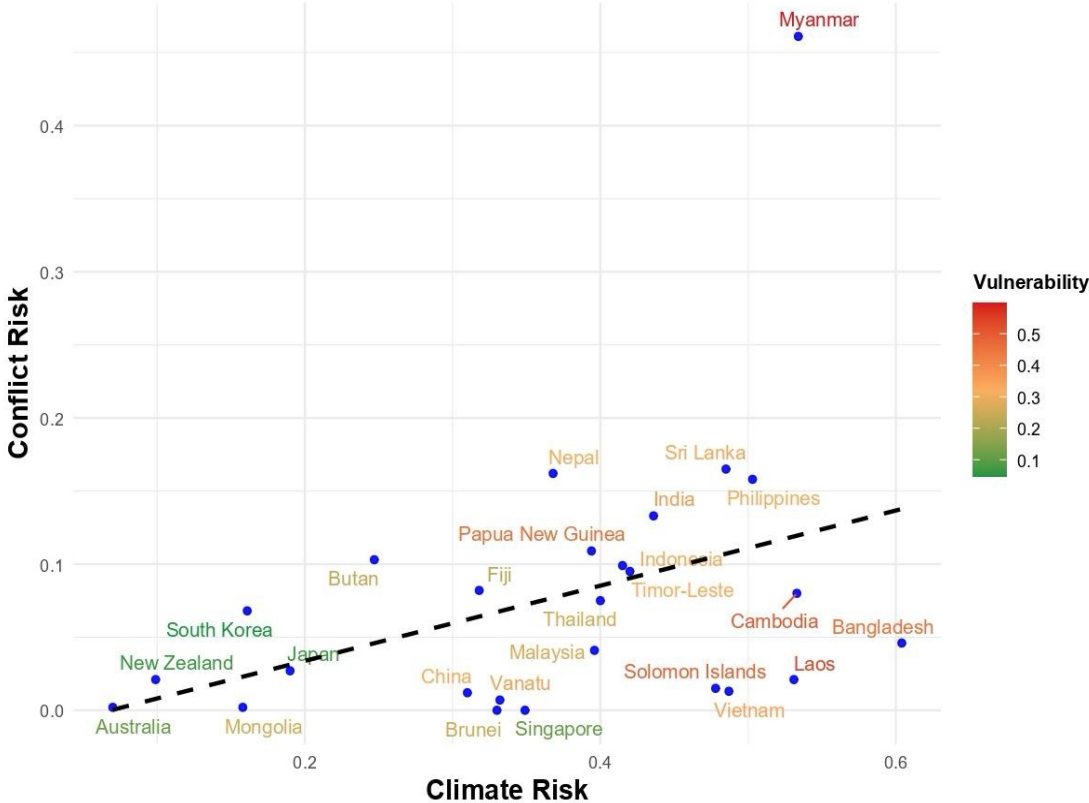


Figure 1: Climate and Conflict Risk in the Indo-Pacific Region (2024)

**Model Specification and Structure**

The quantitative relationship among these three indices is estimated using the following ordinary least squares regression equation:

$$\text{Conflict Risk}_i = \beta_0 + \beta_1(\text{Climate Risk}_i) + \beta_2(\text{Vulnerability}_i) + \epsilon_i$$

In this equation, each variable represents a country-level index from the CCVI dataset. For the model, two specifications were estimated to assess these variables’ individual and combined effects. The first specification included only Climate Risk as an independent variable. The second added Vulnerability as a control to test for mediation effects and to evaluate the additional explanatory power of underlying structural fragility. This comparative structure allows a determination of how much of the variation in Conflict Risk can be attributed directly to exposure and how much is indirectly shaped by pre-existing vulnerabilities.

<sup>5</sup> Countries shown in Figure 1 were selected based on their inclusion in the CCVI dataset and availability of regional conflict data. Countries that were excluded were primarily small island states or territories with insufficient or incomplete data coverage.

### Assessment and Key Findings

In the first model specification, which includes only Climate Risk, we find that a 0.1 increase in the Climate Risk Index is associated with a 0.0223 increase in the Conflict Risk index. This relationship is statistically significant at the 99% confidence level. *The strength of this association confirms a positive correlation between environmental hazard exposure and national-level conflict vulnerability, even when not accounting for additional structural variables.* When Vulnerability is added to the model in the second specification, the relationship between Climate Risk and Conflict Risk remains statistically significant and of similar magnitude. Importantly, the inclusion of Vulnerability substantially improves the model’s explanatory power. In other words, adding Vulnerability to the model helps explain why and where climate risks are likely to lead to conflict and makes the analysis more accurate and complete.

*The addition of the Vulnerability Index to the model further suggests that the relationship between environmental hazards and conflict is, at least in part, mediated through underlying socio-political and economic fragility.* The Vulnerability Index itself is also independently associated with Conflict Risk at a comparable level of statistical significance and effect size. *These findings support the hypothesis that structural fragility functions as an accelerator or amplifier of environmental hazard-driven risks.* All coefficients, excluding the constant, are statistically significant at the 99% level, giving a high degree of confidence in the robustness of the observed relationships. Shown in Figure 2, the standard errors are stable, and residual diagnostics show no evidence of heteroskedasticity or specification error that would undermine the reliability of the results. The results are statistically sound and consistent, meaning there are no indications of errors or instability in the model that would cast doubt on the findings. The regression analysis results are presented in detail in Appendix 1.

	Dependent variable:	
	(1)	(2)
Climate Risk	0.446*** (0.048)	0.223*** (0.071)
Vulnerability		0.213*** (0.052)
Constant	-0.034* (0.019)	-0.028 (0.018)
Observations	173	173
R <sup>2</sup>	0.340	0.399
Adjusted R <sup>2</sup>	0.336	0.392
Residual Std. Error	0.095 (df = 171)	0.091 (df = 170)
F Statistic	87.934*** (df = 1; 171)	56.510*** (df = 2; 170)
Note:	*p<0.1; **p<0.05; ***p<0.01	

Figure 2: Regression Model Specifications

### Limitations and Methodological Considerations

While the regression results are compelling, the model has several limitations. First, the model is based entirely on observational data and cannot establish causality. The relationships identified are correlational and should not be interpreted as definitive evidence that environmental hazards cause conflict. Second, the variables of Vulnerability and Conflict Risk are potentially endogenous, that is, they may influence one another in feedback loops, such as when conflict erodes governance capacity and thereby increases vulnerability to future shocks. This mutual reinforcement complicates efforts to disentangle direct and indirect effects (disambiguation included in Appendix 2). The composite nature of the indices also limits the ability to disaggregate results and attribute specific drivers to conflict risk, potentially obscuring important nuances at the subnational level.

Third, while the CCVI dataset represents a significant step forward in global climate-conflict modeling, its methodology is not fully transparent. Key elements such as the weighting of indicators, standardization procedures (e.g., Winsorization), and spatial aggregation methods are only partially documented. In addition, despite small island developing states’ acute vulnerability to environmental disruptions, the dataset systematically excludes these states due to minimum land area thresholds. Excluded island states are Kiribati, Maldives, Marshall Islands (Republic of), Micronesia (Federated States of), Nauru, Palau, Tonga, and Tuvalu. This omission is particularly

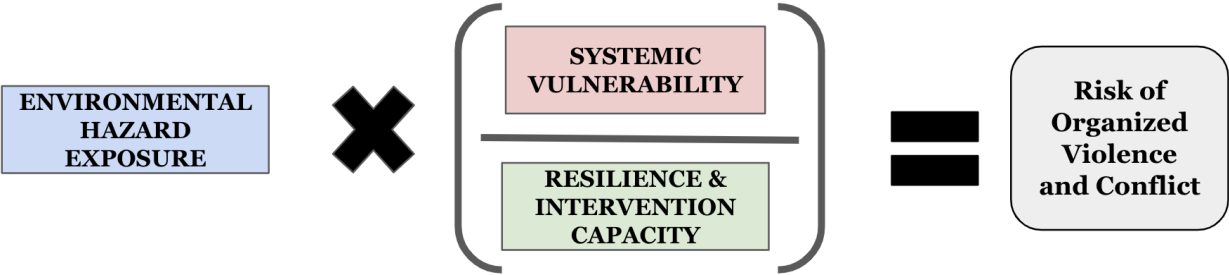
consequential in the Indo-Pacific region where several small island nations already experience regular natural disaster events and are threatened by other environmental hazards, such as rising sea levels. Lastly, the model does not include variables capturing positive resilience factors, such as adaptive governance, informal support systems, or civil society mobilization. As a result, it provides a risk-oriented picture of vulnerability without accounting for local coping capacity or institutional adaptability. Future iterations of the model may benefit from incorporating resilience metrics to more accurately capture the balance between risk and recovery in fragile settings.

## Qualitative Framework: Assessing Pathways from Environmental Hazards to Conflict

While the quantitative model offers a statistically grounded understanding of how environmental hazards and structural vulnerabilities correlate with conflict risk, it does not fully capture the complex, real-world dynamics through which these risks metastasize. Therefore, the study applied a 13-variable qualitative framework in parallel with the quantitative model. The 13 variables present a statistically significant relationship with both environmental hazards and conflict escalation. While these qualitative variables are imperfect, they avoid overly simplistic causal assumptions and the imposition of a quasi-experimental design that misrepresents the layered nature of the complex systems at play.

The qualitative framework was developed from regional subject matter expert interviews, case-based reasoning, and academic literature, which were critical for understanding where and how the risks in the model are likely to play out in practice. It complements the quantitative model by identifying specific mechanisms, feedback loops, and localized conditions through which environmental hazards may escalate into instability and violence, particularly in fragile settings. It conceptualizes how risk emerges not only from exposure or fragility in isolation but also from their interactions with other variables, including a country’s resilience and response capacity.

As shown in Figure 3, the qualitative model is comprised of four categorical domains that translate directly to the components of the CCVI-based quantitative model. Environmental Hazard Exposure connects to Climate Risk, and Systemic Vulnerability reflects the Vulnerability Index. Resilience & Intervention Capacity captures key mitigating factors that are partially overlooked in the quantitative model.



**Figure 3: Environmental Hazards and Conflict Pathways Framework**

As shown in Figure 4, each categorical domain was divided into subcategories that reflect the complex, multi-layered pathways commonly observed in practice. This more detailed view of the framework provides an operationalized and context-sensitive understanding of risk. Rather than relying on correlation alone, like the quantitative model does, the qualitative model captures how tensions are diffused or exacerbated when environmental stress interacts with systemic vulnerabilities and resilience interventions. In doing so, it functions not only as a diagnostic framework but also as a forward-looking tool to anticipate when and where environmental hazards are most likely to fuel instability and organized violence.

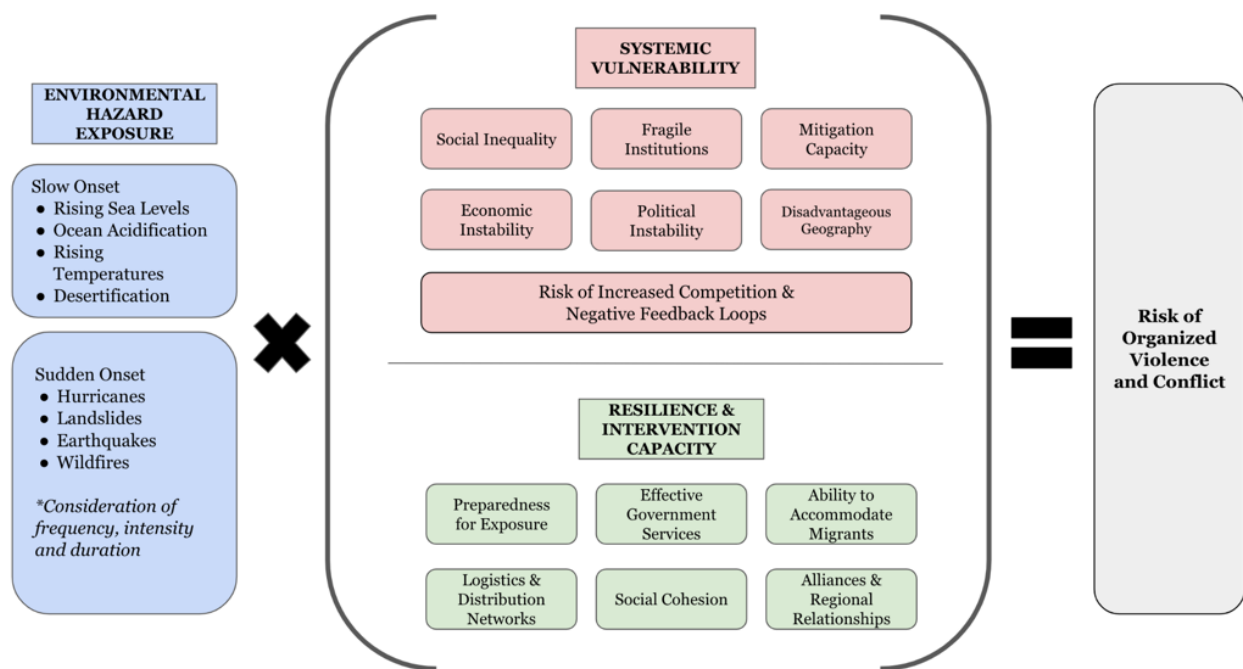


Figure 4: Environmental Hazards and Conflict Pathways Framework

### *Environmental Hazard Exposure: Typologies and Triggers*

Environmental Hazard Exposure, shown in the blue-colored cells, represents how external stressors can trigger instability from underlying vulnerabilities. This component of the framework is amplified or mitigated by the multiplier (Systemic Vulnerability / Resilience & Intervention Capacity). It classifies environmental hazards as either slow-onset or sudden-onset, each of which has distinct implications for conflict risk.

- **Slow-onset hazards**, such as drought, sea level rise, salinization, and desertification unfold gradually over months or years. These hazards erode livelihoods, drive migration, and strain institutions through cumulative degradation. In fragile states, these shocks can trigger discontent, displacement, and social fragmentation.
- **Sudden-onset hazards**, such as tropical cyclones, flash floods, and tsunamis, strike quickly and with little warning. Their unexpected and immediate destruction typically strains emergency systems and exposes institutional weaknesses. Moreover, delayed or biased relief can erode political legitimacy and trigger unrest or elite exploitation.

These two disaster patterns interact with Systemic Vulnerabilities in different ways. For example, sudden-onset disasters are more likely to catalyze political backlashes in centralized, hierarchical states with rigid bureaucracies, while slow-onset stressors are particularly dangerous in contexts of protracted inequality and weak rural governance.

### *Systemic Vulnerability: Foundational Catalysts of Instability*

Systemic Vulnerability, pictured in the red-colored cells, includes weaknesses that make communities more susceptible to adverse effects from environmental hazards. Its place in the numerator is due to its amplifying role – as vulnerabilities increase, so does the Risk of Organized Violence and Conflict. Systemic Vulnerability is broken down into pre-existing fragility factors that mediate the impact of hazards on societies. These variables function as accelerants or suppressants in the pathways to conflict from environmental hazard events. States with overlapping vulnerabilities face a higher likelihood that environmental shocks will multiply latent instability and conflict.

- **Political Instability** undermines coordination, planning, and legitimacy. Governments with high turnover, contested authority, or low public trust are less capable of managing emergencies, and responses can become inflection points for unrest or regime destabilization.
- **Economic Instability**, whether inflation, unemployment, or fiscal fragility, shapes a state's ability to absorb shocks. When environmental hazards hit fragile economies, they deepen hardship and drive illicit markets, migration, or insurgency.
- **Social Inequality** amplifies post-disaster grievances within and between communities. When marginalized groups receive little aid or face disproportionate risk, disaster response can be seen as structural discrimination, deepening identity-based divides.
- **Fragile Institutions**, including corruption, politicized security forces, and underfunded local agencies, often fail to manage relief or reconstruction, and these failures create space for warlords, gangs, and insurgents to exploit governance vacuums.
- **Mitigation Capacity**, such as the lack of early warning systems, unregulated land use, and weak adaptation planning, can increase both the frequency of disasters and the long-term severity they have on nations.
- **Disadvantageous Geography**, such as island states, remote mountainous zones, or low-lying deltas, isolates populations from central services, increases chronic hazard exposure, and often results in limited government investment, leaving the areas vulnerable to conflict risks.

### ***Resilience and Intervention Capacity: Mitigating Factors and Institutional Buffers***

Resilience and Intervention Capacity, depicted in the green-colored cells, are the mechanisms that help communities mitigate, absorb, respond to, and recover from natural hazard events in ways that maintain social order and political legitimacy. Since it is in the denominator, this component has an inverse relationship with the Systemic Vulnerability variable. As it increases, it reduces the negative effects of Environmental Hazard Exposure and reduces the Risk of Organized Violence and Conflict. These variables represent buffers that can prevent, mitigate, or respond to hazards before they escalate.

- **Preparedness for Exposure** refers to institutional readiness, such as functioning early warning systems, public education, and rehearsed emergency protocols. States with poor preparedness tend to experience higher human and economic losses that increase the potential for unrest.
- **Effective Government Services** are critical during post-disaster periods. Access to healthcare, shelter, food distribution, and law enforcement determines public perceptions of state capacity, and a lack thereof can fuel anger, protest, inconsistency, or exclusionary services.
- **Ability to Accommodate Displaced Populations** becomes vital when mass displacement occurs. Poorly managed population influxes, especially into informal settlements, can trigger competition over housing, jobs, and services, and this competition heightens intercommunal tensions or ethnic conflict.
- **Logistics and Distribution Networks**, including roads, ports, inventory management, and agency coordination, directly influence recovery time. Delayed or politicized delivery of aid can erode social cohesion and enable armed or criminal groups to fill service gaps.
- **Social Cohesion** is perhaps the most intangible but critical element. Communities with high levels of trust, shared identity, and cooperative norms are better able to self-organize, distribute aid fairly, and resolve disputes nonviolently. Polarized societies, by contrast, are more prone to group-based violence post-disaster.
- **Alliances and Regional Relationships** determine access to international aid, diplomatic support, and military assistance. States with poor diplomatic relations, disputed borders, or strained relations with neighbors may find themselves isolated during crises, and regional rivalries over water or refugees may lead to inter-state friction.

### ***Conflict Emergence: When Systems Fail to Absorb Shock***

Risk of Organized Violence and Conflict, represented in the gray-colored cell, is the outcome of compounded interactions between environmental hazards, systemic vulnerabilities, and insufficient resilience or response capacity. Conflict does not emerge from environmental stressors alone, but from the failure of institutions to absorb, adapt to, or diffuse the pressures those hazards generate. When instability surpasses a critical threshold, it manifests as insurgency, communal violence, state repression, or cross-border spillover.

Understanding this outcome requires tracing the pathways that lead to it. Environmental hazards function as risk multipliers, accelerating pre-existing fragilities rather than acting as independent triggers. A seasonal drought in a stable country may prompt policy adjustments and coordinated relief, while the same event in a fragile setting can provoke unrest, elite capture, or migration. The escalation depends not just on the severity of the hazard, but also on the state's ability to respond and the underlying conditions already in place.

## **Top Five Priority Watchlist: High-Risk States**

To identify the highest-priority states where environmental hazards intersect with acute structural vulnerabilities, thereby creating an elevated risk for conflict escalation, the study used the quantitative model, qualitative framework, and geopolitical and operational relevance to U.S. strategic interests. Initial candidates were shortlisted based on the quantitative analysis and validated through the qualitative framework.<sup>6</sup> Final selection was based on geopolitical and operational relevance to U.S. strategic interests. Specifically, countries were assessed in relation to their existing diplomatic, defense, and humanitarian relationships with the United States, including treaty alliances, ongoing military cooperation, historical disaster responses, and regional flashpoints that may impact force protection, strategic mobility, or alliance cohesion. Integrating these selection criteria ensured the five selected watchlist countries reflected not only theoretical risk but also operational priority. This list highlights contexts where environmentally driven instability is both probable and consequential to U.S. interests in the Indo-Pacific region.

## **Myanmar**

### ***Situational Overview***

Myanmar remains one of the most vulnerable countries in the Indo-Pacific region, where environmental hazard shocks are likely to intensify the pathways to conflict. Long-standing political instability, ethnic fragmentation, and weak governance intersect with mounting environmental stress to create a highly fragile landscape. Once a fragile democracy, the country has descended into a polycrisis defined by violent conflict, economic collapse, and institutional disintegration. The 2021 military coup triggered a civil war that dismantled Myanmar's governance architecture and paralyzed national resilience. In 2025, the country ranks third on the International Rescue Committee's Emergency Watchlist and is one of the most environmentally exposed nations.<sup>7</sup> Failure to address the lack of environmental resilience will only increase Myanmar's fragmentation, straining regional resources and potentially requiring increased U.S. engagement to mitigate spillover effects.

<sup>6</sup> Mittermaier, D; Merschroth, S; Šedová, B; Auer, C; Bohne, T; Ferri, S; Slouma, S; Michelini, S; Gottwick, V. (2025). The Climate Conflict Vulnerability Index (CCVI) - Technical Documentation v1.3. Available online at [climate-conflict.org](https://climate-conflict.org).

<sup>7</sup> International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.

## ***Environmental Hazards Exposure***

Myanmar's economy is heavily reliant on environmentally sensitive sectors such as the agriculture sector, which contributes roughly 50% of gross domestic product (GDP) and employs two-thirds of the population. Yet unsustainable land practices, particularly shifting agriculture and deforestation, have degraded over five million hectares of land accelerated desertification in the Dry Zone, and reduced food production.<sup>8</sup> The Dry Zone, one of the most densely populated areas in Myanmar, faces prolonged droughts as well as floods, and these events severely undermine both food security and export revenue.<sup>9</sup> According to a 2016 National Action Plan for Agriculture report, soil degradation affects 1 million hectares of land, of which 5.3% is cultivable. In addition, an estimated 15.2 million people are experiencing food insecurity due to the effects of groundwater depletion on croplands.<sup>10</sup>

Meanwhile, sudden-onset disasters such as tropical cyclones and floods continue to threaten livelihoods and food security even as they displace millions of people each year.<sup>11, 12</sup> In September 2024, Typhoon Yagi's remnants wiped out crop reserves and drove significant spikes in food prices. Floods associated with this storm damaged over 2.3 million hectares of cropland across the country. This disruption to the main rice harvest led to a below-average national paddy output<sup>13</sup> and compounded effects from widespread flooding and storm damage from Cyclone Mocha, which had struck in 2023 and weakened agricultural resilience. The compound impacts further threatened food security in vulnerable communities.<sup>14, 15</sup> Taken as a whole, these disasters erode household resilience and deepen economic instability. Concurrently, external sanctions and domestic inflation have intensified household vulnerability, particularly in Rakhine State, where families now spend up to 75% of their income on food.<sup>16</sup> Environmental hazards routinely exacerbate these economic pressures.

## ***Systemic Vulnerabilities***

Geography defines Myanmar's vulnerability. The country's 1,900-kilometer coastline exposes it to severe tropical cyclones and sea level rise, while inland areas suffer from droughts, landslides, and seismic hazards. The Irrawaddy Delta, critical for rice exports, faces salinization from rising sea levels, and the Dry Zone's groundwater depletion threatens future irrigation.<sup>17</sup> The continued loss of mangroves, illegal mining, and widespread deforestation have weakened ecological buffers and left communities more exposed to new disasters.

Furthermore, horizontal inequalities among Myanmar's 135 recognized ethnic groups intensify the potential for conflict.<sup>18</sup> In the Dry Zone and Rakhine State, marginalized communities face systemic exclusion from land and water access even as militarized resource extraction and deforestation worsen ecological impacts.<sup>19</sup> These marginalized groups often live in ecologically vulnerable areas yet remain disconnected from state adaptation

8 Ibid.

9 Mercy Corps. Dry Zone Study: An Assessment of Climate Change Vulnerability in Myanmar's Dry Zone. 2015, [https://www.mercycorps.org/sites/default/files/2019-12/MercyCorps\\_DryZone\\_Study\\_Myanmar\\_2015.pdf](https://www.mercycorps.org/sites/default/files/2019-12/MercyCorps_DryZone_Study_Myanmar_2015.pdf).

10 Lo, Alex, and Shar Thae Hoy. "Conflicts Intensify Climate Change Risks in Myanmar." East Asia Forum, 9 Nov. 2023, <https://eastasiaforum.org/2023/11/09/conflicts-intensify-climate-change-risks-in-myanmar/>.

11 Kyaw, Kaung Htet. "Myanmar's Absent Soil Stewards." Earth Journalism Network, 2 Dec. 2022, <https://earthjournalism.net/stories/myanmars-absent-soil-stewards>.

12 The Mekong Eye, "The Soil Problem: Myanmar's Farmlands Are Losing Fertility." 11 Nov. 2024, <https://www.mekongeye.com/2024/11/11/myanmar-soil>.

13 ACAPS. Briefing Note: Myanmar – Impact of Typhoon Yagi. 24 Sept. 2024, <https://reliefweb.int/report/myanmar/acaps-briefing-note-myanmar-impact-typhoon-yagi-24-september-2024>.

14 United Nations Myanmar. Myanmar Humanitarian Needs and Response Plan 2025. 20 Dec. 2024, <https://myanmar.un.org/en/286727-myanmar-humanitarian-needs-and-response-plan-2025-december-2024>.

15 UNICEF. Myanmar Country Office Humanitarian Situation Report No. 1, 2025. 28 Feb. 2025, <https://www.unicef.org/media/169221/file/Myanmar-Humanitarian-SitRep-28-February-2025.pdf.pdf>.

16 United Nations Development Programme. Rakhine: A Famine in the Making. 7 Nov. 2024, <https://www.undp.org/asia-pacific/publications/rakhine-a-famine-in-the-making>.

17 Lo, Alex, and Shar Thae Hoy. "Conflicts Intensify Climate Change Risks in Myanmar." East Asia Forum, 9 Nov. 2023, <https://eastasiaforum.org/2023/11/09/conflicts-intensify-climate-change-risks-in-myanmar/>.

18 International Crisis Group. Identity Crisis: Ethnicity and Conflict in Myanmar. Report No. 312, 28 Aug. 2023, <https://www.crisisgroup.org/asia/south-east-asia/myanmar/312-identity-crisis-ethnicity-and-conflict-myanmar>.

19 International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.

programs. In Chin State, disaster-related stress has devastated traditional livelihoods and pushed communities toward illicit poppy cultivation to survive. This subsequent economy sustains armed group financing and prolongs cycles of conflict.<sup>20</sup>

Population displacement, both internal and cross-border, is a central complicating feature of Myanmar's landscape. The 2024 monsoon floods displaced 230,000 people, overwhelming urban centers where people were already contending with inflation and infrastructure decay.<sup>21</sup> Cross-border migration into Thailand and Bangladesh continues to rise, exposing refugees to trafficking and exploitation.<sup>22</sup> Internally, the displacement of over 3.5 million people has pushed cities like Yangon and Mandalay beyond capacity.<sup>23</sup> In overcrowded informal settlements, waste and water systems have collapsed, leading to repeated cholera outbreaks and increasing tensions between host communities and the displaced population.<sup>24</sup> As of early 2025, Myanmar hosts an estimated 3.5 million internally displaced persons, most of whom have been displaced by conflict and remain in affected areas, where the risks of sexual violence, forced labor, and food insecurity are especially severe.<sup>25, 26, 27, 28</sup>

Myanmar exemplifies a dire situation where disaster-related stress can worsen an already catastrophic breakdown of political order. The dismantling of key governance structures, militarization of natural resources, and exclusion of conflict-affected communities from adaptation support have created a multidimensional crisis. Without targeted support for conflict-sensitive adaptation strategies, localized resilience efforts, and accountability mechanisms, Myanmar's fragmentation will intensify with spillover effects for regional displacement, insecurity, and transnational instability.

### ***Resilience and Institutional Capacity***

Myanmar's ability to respond to these overlapping crises is deeply undermined by governance collapse. The 2021 military coup dismantled Myanmar's National Climate Change Strategy and severed access to international finance.<sup>29</sup> As a result, Myanmar receives only 0.25% of global adaptation funding, most of which bypasses conflict-affected zones.<sup>30</sup> The military routinely blocks aid convoys, imposes taxes on humanitarian shipments, and targets civilian infrastructure, including water treatment plants and health facilities.<sup>31</sup> In 2025, Myanmar stands at a critical juncture, where the convergence of internal political collapse, armed conflict, and increasing environmental vulnerability presents a multifaceted challenge to regional stability and U.S. interests in the Indo-Pacific region.

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20 Lo, Alex, and Shar Thae Hoy. "Conflicts Intensify Climate Change Risks in Myanmar." East Asia Forum, 9 Nov. 2023, <https://eastasiaforum.org/2023/11/09/conflicts-intensify-climate-change-risks-in-myanmar/>.

21 ACAPS. Briefing Note: Myanmar – Impact of Typhoon Yagi. 24 Sept. 2024, <https://reliefweb.int/report/myanmar/acaps-briefing-note-myanmar-impact-typhoon-yagi-24-september-2024>.

22 Lo, Alex, and Shar Thae Hoy. "Conflicts Intensify Climate Change Risks in Myanmar." East Asia Forum, 9 Nov. 2023, <https://eastasiaforum.org/2023/11/09/conflicts-intensify-climate-change-risks-in-myanmar/>.

23 International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.

24 Ibid.

25 United Nations Office for the Coordination of Humanitarian Affairs. Myanmar Humanitarian Update No. 44. 19 Feb. 2025, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-44-19-february-2025>.

26 Global Humanitarian Overview. Myanmar. Humanitarian Action, 2025, <https://humanitarianaction.info/document/global-humanitarian-overview-2025/article/myanmar-2>.

27 World Food Programme. "Myanmar on the Brink as Conflict Fuels Hunger." World Food Programme, 22 Jan. 2024, <https://www.wfp.org/news/myanmar-brink-conflict-fuels-hunger>.

28 United Nations High Commissioner for Refugees. Myanmar Situation. UNHCR Operational Data Portal, <https://reporting.unhcr.org/operational/situations/myanmar-situation>.

29 Food Security Information Network. Myanmar – Global Report on Food Crises 2024. Jan. 2024, <https://www.fsinplatform.org/sites/default/files/resources/files/GRFC2024-country-MM.pdf>.

30 UNICEF. Myanmar Country Office Humanitarian Situation Report No. 1, 2025. 28 Feb. 2025, <https://www.unicef.org/media/169221/file/Myanmar-Humanitarian-SitRep-28-February-2025.pdf.pdf>.

31 International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.

The 7.7 magnitude earthquake in March 2025 killed over 3,730 people and disrupted already fragile supply chains.<sup>32</sup> The earthquake and subsequent seismic event in April has further exposed the country's vulnerability to natural disasters, and it has the potential to exacerbate ongoing conflicts and humanitarian crises. These compounding factors—the dismantling of emergency response support systems, the militarization of resources by state and non-state actors, and the exclusion of conflict-affected communities—create a scenario that could lead to increased regional displacement, heightened security risks, and opportunities for transnational criminal organizations.

Localized adaptation efforts, such as the United Nations Development Programme's (UNDP) watershed rehabilitation (4,200 hectares restored) and drought-resistant crop trials reaching 12,600 households, demonstrate promise,<sup>33</sup> but the State Administration Council's (SAC) legitimacy crisis combined with active conflict and aid obstruction by both SAC and non-state armed groups, severely hampers scale-up. Pre-coup national strategies remain defunct, while only 20% of the 2025 Humanitarian Response Plan is funded, and these factors make long-term environmental hazard resilience increasingly elusive.<sup>34</sup>

### ***Conflict Horizon***

Myanmar's civil war continues to expand, entrenching instability across the country. Non-state armed groups now operate in 96% of townships, where they clash with the SAC in a multi-front civil war.<sup>35</sup> The 2023 "Operation 1027" offensive by the Three Brotherhood Alliance displaced 3.5 million people by 2024.<sup>36</sup> The military's retaliatory tactics, including forced conscription, destruction of farmland, and restrictions on humanitarian aid, have devastated food systems by disrupting agricultural production as rural communities flee violence and landmines contaminate croplands.<sup>37</sup>

As conflict spreads, natural resources have become central to the war economy.<sup>38, 39</sup> The military's grip on irrigation systems in the Dry Zone has sparked direct confrontations with non-state armed groups seeking to control water access.<sup>40, 41, 42</sup> Both state and non-state actors finance their operations through illegal logging, accelerating deforestation and compounding environmental degradation.<sup>43, 44</sup> These dynamics reflect a broader militarization of resource governance in which water, forests, and farmland have become tools of territorial control and instruments of war.

32 "Myanmar Earthquake Has Left 3,735 Dead, 5,108 Injured and 120 Missing to Date." Asia News Network, 21 April 2025, <https://asianews.network/myanmar-earthquake-has-left-3735-dead-5108-injured-and-120-missing-to-date/>.

33 United Nations Development Programme (UNDP), Greening the Dry Zone: Conserving land while improving water access and food security in Myanmar (UNDP Climate Change Adaptation, 2015), 2, [https://www.adaptation-undp.org/sites/default/files/resources/myanmar\\_v4\\_final.pdf](https://www.adaptation-undp.org/sites/default/files/resources/myanmar_v4_final.pdf).

34 Lo, Alex, and Shar Thae Hoy. "Conflicts Intensify Climate Change Risks in Myanmar." East Asia Forum, 9 Nov. 2023, <https://eastasiaforum.org/2023/11/09/conflicts-intensify-climate-change-risks-in-myanmar/>

35 Ibid.

36 Ibid.

37 Ibid.

38 The Mekong Eye, "Myanmar's war on nature." 2025, <https://www.mekongeye.com/2025/02/03/war-on-nature>

39 Global Initiative, "Illicit Economies and the Myanmar Civil War", 2025, <https://globalinitiative.net/wp-content/uploads/2025/03/Alastair-MacBeath-Cashing-in-on-conflict-Illicit-economies-and-the-Myanmar-civil-war-GI-TOC-March-2025.pdf>

40 "Conflict Exacerbates Dry Zone Drought." Frontier Myanmar, 25 Apr. 2023, <https://www.frontiermyanmar.net/en/conflict-exacerbates-dry-zone-drought/>.

41 IISS, "Junta tactics shift in Myanmar's war-torn Dry Zone" July 2023, <https://myanmar.iiss.org/updates/2023-07>

42 Callahan, Mary. "Myanmar's Dry Zone: The History of a Tinderbox." Fulcrum, 9 Feb. 2022, <https://fulcrum.sg/myanmars-dry-zone-the-history-of-a-tinderbox/>.

43 The Mekong Eye, "Myanmar's war on nature." 2025, <https://www.mekongeye.com/2025/02/03/war-on-nature>

44 Global Initiative, "Illicit Economies and the Myanmar Civil War", 2025, <https://globalinitiative.net/wp-content/uploads/2025/03/Alastair-MacBeath-Cashing-in-on-conflict-Illicit-economies-and-the-Myanmar-civil-war-GI-TOC-March-2025.pdf>

# Bangladesh

## *Situational Overview*

Bangladesh is a frontline case of how environmental shocks intersect with displacement, political volatility, and structural exclusion in a densely populated state. As environmental shocks drive permanent migration and stress urban systems, the rise in communal tensions, extremist recruitment, and governance strain is likely to escalate. Without inclusive adaptation, accountable governance, and investment in resilience, these intersecting pressures risk escalating into broader instability.

## *Environmental Hazards Exposure*

Based on the qualitative framework, Bangladesh ranks second in the Indo-Pacific region for disaster-driven conflict risk. The country faces both slow-onset hazards, including sea level rise, groundwater salinization, drought, and land erosion, and sudden-onset shocks such as tropical cyclones and flooding. These environmental stressors are occurring with increasing frequency and severity, compounding existing economic and political instability.

An estimated 56% of Bangladesh's population lives in regions highly exposed to environmental hazards.<sup>45</sup> Coastal communities are disproportionately affected by groundwater depletion, storm surges, and saline intrusion, all of which are leading to declining fish stocks.<sup>46</sup> These impacts have disrupted traditional livelihoods and driven rural-to-urban migration. Major cities like Dhaka are absorbing large numbers of displaced families, and this influx places significant strain on urban infrastructure, especially in informal settlements with already limited sanitation and access to clean water.<sup>47</sup>

Although agriculture accounts for just over 11% of GDP, it remains a vital source of employment, particularly in the regions that are the most environmentally exposed.<sup>48</sup> Nearly 35% of the labor force depends on agriculture, and much of the country's food security still hinges on smallholder farming.<sup>49</sup> Yet this system is increasingly unsustainable. Sea level rise and salinity are degrading farmland, while droughts and erratic monsoons are reducing yields. Environmental stress is projected to reduce rice yields by 7.4% annually through 2050, and this decrease will place additional pressure on already fragile food systems.<sup>50</sup>

A growing sanitation crisis compounds these agricultural and water-related stresses. More than 4.3 million people lack access to safe drinking water, and over 85 million people are without adequate sanitation.<sup>51</sup> Rural populations are disproportionately affected, with communities dependent on shallow wells or contaminated surface water.<sup>52</sup> The spread of waterborne diseases and the failure to deliver basic services erode residents' trust in local authorities and deepen household vulnerability to negative environmental shocks.

Economic instability and food insecurity further reduce Bangladesh's capacity to absorb shocks. Many low-income households, particularly in rural areas, spend the majority of their income on food.<sup>53</sup> They are, therefore, highly vulnerable to price fluctuations triggered by irregular crop failures or global supply chain disruptions.

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45 United States Agency for International Development (USAID). *Fragility and Climate Risks in Bangladesh: A Country Case Study for the Supporting Resilient Infrastructures Series*. USAID, 2018. [https://pdf.usaid.gov/pdf\\_docs/PA00TBFH.pdf](https://pdf.usaid.gov/pdf_docs/PA00TBFH.pdf).

46 Ibid.

47 Schwartzstein, Peter. "Going Under: A Rural Bangladeshi Dilemma." Wilson Center, 14 Mar. 2022, <https://www.wilsoncenter.org/article/going-under-rural-bangladeshi-dilemma>.

48 World Bank. "World Development Indicators: Structure of Value Added." World Bank Data, <https://wdi.worldbank.org/table/4.2>.

49 World Bank. "Agriculture, Forestry, and Fishing, Value Added (% of GDP)." World Bank Open Data, <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>.

50 Rahman, Md Shafiqul. "Climate Change Exposes Bangladesh to Greater Risk." Bologna Institute for Policy Research, Johns Hopkins University SAIS Europe, 21 Apr. 2022, <https://bipr.jhu.edu/BlogArticles/31-Climate-Change-Exposes-Bangladesh-to-Greater-Risk.cfm>.

51 Water.org. "Bangladesh's Water and Sanitation Crisis." Water.org, <https://water.org/our-impact/where-we-work/bangladesh/>.

52 Ibid.

53 Mamun, Md Abdullah Al, Md Jayed Bin Fahad, Mohammad Ali, and Md Tanvir Hossain. "Determinants of Household Food Insecurity and Its Association with Child Malnutrition in Bangladesh." *International Journal of Environmental Research and Public Health*, vol. 19, no. 24, 2022, p. 16786. <https://journals.sagepub.com/doi/full/10.1177/27538796241244544>

Nutritional deficiencies, child stunting, and undernutrition remain widespread, a reflection of deeper structural challenges that environmental hazards continue to exacerbate.

### ***Systemic Vulnerabilities***

With a population of over 170 million people, Bangladesh is one of the most densely populated and disaster-exposed countries in the world. It stands at the intersection of extreme weather exposure, high population density, and structural fragility.<sup>54</sup> The country's low-lying geography and vulnerability to recurrent disasters intersect with deep-rooted inequality, political polarization, and rising social tensions. This dynamic makes Bangladesh a critical case of how environmental stress, particularly when it drives displacement, can undermine stability and potentially catalyze unrest, both domestically and across borders.

Geographically, Bangladesh is situated on a low-lying delta along the Bay of Bengal. Most of the country lies less than 35 feet above sea level, and it is acutely vulnerable to environmental hazards, like flooding, storm surges, and sea level rise.<sup>55</sup> Coastal erosion, saltwater intrusion, and groundwater depletion are already diminishing access to safe water and fertile land, and these factors are pushing families to migrate and intensifying competition over resources in both rural and urban areas. These threats are projected to displace nearly 20 million people by 2050, with 13.3 million people leaving coastal districts.<sup>56</sup>

Disaster-induced displacement in Bangladesh has remained high and volatile over the past 15 years. Between 2018 and 2020, over 4 million people were displaced annually.<sup>57</sup> Since 2017, Bangladesh has experienced at least three or four concurrent natural disasters annually.<sup>58</sup> Major events such as Cyclones Bulbul and Mocha and monsoon flooding have devastated infrastructure and livelihoods, and the quick succession of events leaves little time for recovery between crises.<sup>59</sup> This cycle of recurring shocks increases the risk of chronic displacement, urban overcrowding, and social unrest.

Additionally, Bangladesh's social and political landscape is marked by tension. Political rivalry between the Awami League and the Bangladesh Nationalist Party frequently escalates into unrest, particularly during election periods.<sup>60</sup> Student and youth organizations associated with both parties engage in campus and street-level violence, reflecting a broader pattern of politicized grievance. Simultaneously, rising inequality and systemic exclusion of religious minorities, particularly Hindus, are contributing to social fragmentation.<sup>61</sup> According to the Armed Conflict Location and Event Data (ACLED), most protests in Bangladesh center on education reform, wage demands, or opposition to government action.<sup>62</sup>

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54 "Bangladesh Country Profile." BBC News, 4 Mar. 2011, <https://www.bbc.com/news/world-south-asia-12650940>.

55 United States Institute of Peace. *How Climate Change Deepens Bangladesh's Fragility*. 13 Sept. 2021.

56 Researching Internal Displacement. *Policy Architecture to Address Disaster and Climate Change Induced Displacement in Bangladesh*. Mar. 2023.

57 Internal Displacement Monitoring Centre (IDMC). "Bangladesh." Internal Displacement Monitoring Centre, <https://www.internal-displacement.org/countries/bangladesh/>.

58 Ibid

59 Ibid.

60 Armed Conflict Location & Event Data Project (ACLED). *Bangladesh Conflict Brief*. 12 Apr. 2018. <https://acleddata.com/2018/04/12/bangladesh-conflict-brief/>.

61 Mohsin, Amana A. "Religion, Politics and Security: The Case of Bangladesh." *Religious Radicalism and Security in South Asia*, Asia-Pacific Center for Security Studies, 2004, pp. 421–437. <https://dkiapcss.edu/wp-content/uploads/2011/03/PagesfromReligiousRadicalismandSecurityinSouthAsiach20.pdf>.

62 Armed Conflict Location & Event Data Project (ACLED). *Bangladesh Conflict Brief*. 12 Apr. 2018. <https://acleddata.com/2018/04/12/bangladesh-conflict-brief/>.

## ***Resilience and Institutional Capacity***

The country has strong policy frameworks like the National Adaptation Plan, but implementation is hindered by bureaucratic inefficiency, political polarization, and limited funding.<sup>63</sup> These gaps are especially critical in high-risk coastal districts and urban centers strained by chronic displacement. In the face of rising sea levels and migration-driven urban overcrowding, there is an urgent need for comprehensive and inclusive adaptation that targets vulnerable groups, including women and children, people living with disabilities, and marginalized minorities.

## ***Conflict Horizon***

In early 2024, the long-dominant Awami League, whose leadership has effectively controlled Bangladeshi politics since independence, was forcibly ousted in what regional observers have described as a *de facto* coup.<sup>64</sup> The sudden collapse of this entrenched political dynasty has facilitated a power vacuum, triggering institutional uncertainty and heightening the risk of elite fragmentation, unrest, and politically motivated violence.<sup>65</sup> These events compound an already fragile landscape shaped by recurring natural disasters, deep socioeconomic inequalities, and widespread public dissatisfaction with government services. Historical patterns of party-linked street violence, politicized youth movements, and religious tensions are likely to intensify as the central authority weakens.<sup>66</sup> Against the backdrop of increasing disaster displacement, rapid urbanization, and deteriorating food and water systems, this recent political rupture significantly raises the likelihood of cascading instability, particularly if the interim leadership fails to regain public trust or reestablish effective governance mechanisms.

# Philippines

## ***Situational Overview***

The Philippines demonstrates how environmental shocks can reignite or prolong insurgency in regions marked by poverty and marginalization. With environmental hazard risks statistically linked to conflict resurgence, especially in the country's Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), failing to integrate peacebuilding into adaptation could reverse gains made in governance and security. A conflict-aware, locally tailored response is essential to prevent environmental pressures from further fueling recruitment, displacement, and renewed violence.

## ***Environmental Hazards Exposure***

The Philippines provides a clear example of how environmental hazard risks interact with active insurgency dynamics. With over 7,640 islands, the country regularly experiences tropical cyclones, floods, and droughts, and it is already facing accelerating sea level rise.<sup>67</sup> In conflict-affected regions like the BARMM, these hazards amplify pre-existing poverty, marginalization, and weak governance, exacerbating cycles of violence and undermining state legitimacy.

63 Bangladesh Ministry of Environment, Forest and Climate Change. National Adaptation Plan of Bangladesh (2023–2050). 2023, [https://moef.portal.gov.bd/sites/default/files/files/moef.portal.gov.bd/npfblock/903c6d55\\_3fa3\\_4d24\\_a4e1\\_0611eaa3cb69/National%20Adaptation%20Plan%20of%20Bangladesh%20%282023-2050%29%20%281%29.pdf](https://moef.portal.gov.bd/sites/default/files/files/moef.portal.gov.bd/npfblock/903c6d55_3fa3_4d24_a4e1_0611eaa3cb69/National%20Adaptation%20Plan%20of%20Bangladesh%20%282023-2050%29%20%281%29.pdf).

64 Campbell, C. (2024, October 3). Bangladesh: How Hasina could stage an unlikely comeback. Time. <https://time.com/7028162/bangladesh-interim-government-sheikh-hasina-awami-league-sajeeb-wazed-joy>

65 Thakur, H. K. (2024, September 1). The Bangladesh coup: The security dilemma for India and the Indo-Pacific – analysis. Eurasia Review. <https://www.eurasiareview.com/01092024-the-bangladesh-coup-the-security-dilemma-for-india-and-the-indo-pacific-analysis/>

66 Al Jazeera. (2024, August 6). World reacts to Bangladesh PM sheikh Hasina's removal from power. Al Jazeera. [https://www.aljazeera.com/news/2024/8/5/world-reacts-to-bangladesh-pm-sheikh-hasinas-removal-from-power?utm\\_source=chatgpt.com](https://www.aljazeera.com/news/2024/8/5/world-reacts-to-bangladesh-pm-sheikh-hasinas-removal-from-power?utm_source=chatgpt.com)

67 "Know before you go: the Philippines." National Geographic, <https://www.nationalgeographic.com/travel/article/partner-content-know-before-you-go-the-philippines>.

According to the World Bank, the Philippines is ranked among the world's most environmentally vulnerable nations.<sup>68</sup> Over 60% of its land area and 74% of its population are exposed to multiple environmental hazards, placing millions at persistent risk of both displacement and livelihood disruption.<sup>69</sup> In 2021, the country reported that weather-related disasters caused new/initial displacement for 5.7 million people—over ten times the number displaced by conflict.<sup>70</sup> These environmental shocks cause physical destruction and often exacerbate social and political tensions.

Rural, resource-dependent communities, especially those in conflict-affected regions, bear the brunt of this dual burden. BARMM had some of the lowest human development indicators in the country and the highest poverty incidence, 37.4%, in 2021. It is also among the regions most exposed to flooding and drought.<sup>71</sup> With a history of armed conflict, poor infrastructure, and institutional underdevelopment, the region is highly vulnerable to environmental shocks. In these conditions, environmental stress acts as a threat multiplier by amplifying long-standing grievances, fueling recruitment into armed groups, and overwhelming local institutions.

### ***Systemic Vulnerabilities***

Studies have confirmed statistical correlations between environmental stressors and conflict risk in the Philippines. A CGIAR analysis found that low rainfall during wet seasons was associated with a 35% increase in insurgent attacks and a 43% increase in government clashes the following year, and this effect held particularly true in agrarian regions.<sup>72</sup> Similarly, higher-than-average sea surface temperatures, linked to lower fish and crop yields, were associated with spikes in insurgent activity, particularly by the New People's Army in the Luzon and Visayas island groups.<sup>73</sup> These findings support a growing body of evidence that environmental hazards result in a loss of livelihoods that, in turn, reduces the opportunity cost of violence and increases militant recruitment, especially for unemployed rural youth. The CGIAR study found that in Mindanao drought-induced water scarcity triggered localized conflict. Most notably, conflict arose between the Talaandig indigenous group and agribusinesses in Bukidnon Province where retaliatory acts such as irrigation sabotage were documented.<sup>74</sup>

Disaster-related displacement compounds these dynamics. In Mindanao, mass relocations following Tropical Storm Washi in 2011 and Typhoon Bopha in 2012 triggered land disputes and overwhelmed services in host cities like Iligan and Davao. Without equitable resettlement and support, such population movements risk deepening existing social divisions. The Asian Development Bank estimates that unmanaged disaster displacement and economic disruption linked to rising sea levels and flooding could reduce the Philippines' GDP by up to 6% annually by 2100.<sup>75</sup> Conversely, disasters occasionally prompt short-lived cooperation or ceasefires. For instance, during Super Typhoon Bopha, the New People's Army temporarily suspended operations to allow humanitarian access; however, these episodes are typically short-lived and contingent on effective state response.<sup>76</sup>

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68 World Bank. *Getting a Grip on Climate Change in the Philippines*. <https://www.worldbank.org/en/country/philippines/publication/getting-a-grip-on-climate-change-in-the-philippines>.

69 World Bank. "Philippines – Vulnerability." *Climate Change Knowledge Portal*, <https://climateknowledgeportal.worldbank.org/country/philippines/vulnerability>.

70 Red Cross Red Crescent Climate Centre. *Philippines: Climate Country Profile 2024*. 2024, [https://www.climatecentre.org/wp-content/uploads/RCCC-Country-profiles-Philippines\\_2024\\_final.pdf](https://www.climatecentre.org/wp-content/uploads/RCCC-Country-profiles-Philippines_2024_final.pdf).

71 Lacson, Nonoy. "BARMM poverty level plummets." *Daily Tribune*, 17 Oct. 2022, <https://tribune.net.ph/2022/10/17/barmm-poverty-level-plummets>.

72 Ferré Garcia, Tània, et al. *How Does Climate Exacerbate Root Causes of Conflict in the Philippines? Climate Security Pathway Analysis*. CGIAR FOCUS Climate Security, Sept. 2023, <https://cgspace.cgiar.org/server/api/core/bitstreams/32dfa0ce-5f5e-4737-a928-452ee87cb565/content>.

73 Ibid.

74 Ferré Garcia, Tània, et al. *How Does Climate Exacerbate Root Causes of Conflict in the Philippines? Climate Security Pathway Analysis*. CGIAR FOCUS Climate Security, Sept. 2023, <https://cgspace.cgiar.org/server/api/core/bitstreams/32dfa0ce-5f5e-4737-a928-452ee87cb565/content>.

75 Ibid.

76 Ibid.

## ***Resilience and Institutional Capacity***

Environmental degradation and poor disaster response have eroded state legitimacy. Following Typhoon Haiyan in 2013, widespread anger erupted over slow and unequal aid distribution in affected areas like Eastern Visayas. Simultaneously, diversion of security resources away from other conflict zones created operational gaps.<sup>77</sup> A more direct case occurred during the 2016 Kidapawan protests when police violently dispersed drought-stricken farmers demanding rice assistance. The deaths and injuries following the “Kidapawan massacre” fueled local resentment and increased insurgent recruitment in the area.<sup>78</sup> These incidents reflect how perceived injustice and inadequate response to environmental-driven shocks can catalyze latent conflict.

In response, the Philippines has established a comprehensive legal and institutional framework to address climate change adaptation and disaster risk reduction. Key legislation includes the Climate Change Act of 2009 (Republic Act No. 9729),<sup>79</sup> which mandates local climate change action plans,<sup>80</sup> and the Disaster Risk Reduction and Management Act of 2010 (Republic Act No. 10121).<sup>81</sup> However, implementation challenges persist, especially in conflict-affected areas such as the BARMM. As of 2022, BARMM’s government was still in the process of establishing its disaster risk reduction and management policies.

Additional efforts are underway to integrate disaster risk reduction into regional planning. These efforts include the development of the Bangsamoro Spatial Development Framework (2024–2050), which aims to enhance resilience and disaster preparedness.<sup>82</sup> To support these initiatives, the Strengthening Institutions and Empowering Localities Against Disasters and Climate Change (SHIELD) Program has been launched.<sup>83</sup> Funded by the Australian Government and implemented by the national government and UNDP Philippines, SHIELD aims to build institutional and community resilience to various environmental hazards.<sup>84</sup> The program focuses on risk-informed planning, access to climate finance, and inclusive resilience actions across 10 provinces and two regions, including BARMM.<sup>85</sup>

## **Papua New Guinea**

### ***Situational Overview***

PNG faces heightened instability where environmental hazards, extractive industry tensions, and tribal violence overwhelm a fragile state. Without functioning institutions or basic service delivery, displacement and violence escalate unchecked. Long-term stability requires strengthening subnational governance, addressing inequality in resource distribution, and supporting culturally sensitive adaptation mechanisms that align with PNG’s social and geographic complexity.

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77 Ibid.

78 Ibid.

79 Republic of the Philippines. “Climate Change Act of 2009 (Republic Act No. 9729 of 2009).” FAOLEX, Food and Agriculture Organization of the United Nations. 23 Oct. 2009 [https://www.fao.org/faolex/results/details/en/c/LEX-FAOC100134/#:::text=Philippines-,Climate%20Change%20Act%20of%202009%20\(Republic%20Act%20No.,Commission%2C%20and%20for%20other%20purposes](https://www.fao.org/faolex/results/details/en/c/LEX-FAOC100134/#:::text=Philippines-,Climate%20Change%20Act%20of%202009%20(Republic%20Act%20No.,Commission%2C%20and%20for%20other%20purposes).

80 Climate Change Commission. “Local Climate Change Action Plan.” National Integrated Climate Change Database and Information Exchange System. <https://niccdies.climate.gov.ph/action-plans/local-climate-change-action-plan>

81 Republic of the Philippines. “Republic Act No. 10121 of 2010.” FAOLEX, Food and Agriculture Organization of the United Nations. 27 May 2010 <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC136578/#:::text=Republic%20Act%20No.-,10121%20of%202010.,therefore%20and%20for%20other%20purposes>.

82 UN-Habitat Philippines. “UN-Habitat equips BARMM for spatial development framework under SHIELD program.” July 10 2023 <https://unhabitat.org.ph/events/un-habitat-equips-barmm-for-spatial-development-framework-under-shield-program/>

83 UN-Habitat Philippines. “Strengthening Institutions and Empowering Localities Against Disasters and Climate Change in the Philippines (SHIELD).” <https://unhabitat.org.ph/shield/>

84 Ibid.

85 United Nations Development Programme Philippines. “Australia and Philippines unite to accelerate climate action and disaster resilience.” 30 Jan. 2025 <https://www.undp.org/philippines/press-releases/australia-and-philippines-unite-accelerate-climate-action-and-disaster-resilience>

## ***Environmental Hazards Exposure***

PNG's geographic location and topography make it acutely vulnerable to environmental hazards. In 2024, floods, landslides, and earthquakes displaced thousands; flooding alone accounted for 38% of population displacement.<sup>86</sup> A deadly landslide in Enga Province buried hundreds of villagers and highlighted the challenges of disaster response in insecure, poorly connected terrain.<sup>87</sup> A UNDP assessment concluded that the Highlands are experiencing intensifying rainfall, rising temperatures, and increasing landslides, all of which directly threaten agriculture and food security and exacerbate resource competition.<sup>88</sup>

## ***Systemic Vulnerabilities***

The case of PNG reveals how environmental stress in the absence of functioning state institutions can trigger cascading breakdowns of social and political systems. With a population of roughly 12.8 million people and more than 848 distinct languages, PNG is a country of immense ecological and cultural diversity alongside weak governance, tribal conflict, and infrastructure gaps that have left it highly vulnerable to disaster and displacement.<sup>89, 90</sup> The state's limited ability to absorb environmental shocks or mediate conflict makes it uniquely brittle. Despite being rich in natural resources, including gold, copper, natural gas, timber, and fisheries, PNG's development has been marred by volatility.<sup>91, 92</sup> Nearly 40% of the population lives in poverty. Only 21% of the population has access to electricity,<sup>93</sup> and about 40% has access to safe drinking water.<sup>94, 95</sup> These statistics place PNG among the Indo-Pacific region's lowest ranking countries in these categories. Agriculture sustains the rural majority and contributes 26% of GDP, yet infrastructure gaps, recurrent natural disasters, and lack of state support leave farmers, many of whom operate in the informal sector, highly exposed to environmental shocks.<sup>96</sup> Food insecurity is widespread, particularly in rural districts where child stunting and malnutrition are prevalent.<sup>97</sup> PNG ranks 110<sup>th</sup> out of 127 countries listed in the 2024 Global Hunger Index.<sup>98</sup> This level of food insecurity is not due to a lack of food production, but rather to systemic issues of accessibility and inequality.

Inequality in PNG is deeply rooted in geography and ethnicity. Despite recent economic growth, benefits remain unevenly distributed, with 94% of the country's poor living in the rural Highlands where road infrastructure is sparse, markets are inaccessible, and essential services like health and education are often out of reach.<sup>99</sup> Horizontal inequalities, particularly among ethnic groups and regions, compound these disparities, as political and economic power is concentrated among a narrow elite. In provinces like Hela, over 40 active tribal

86 International Organization for Migration. Papua New Guinea 2024 Displacement Overview. IOM, Jan. 2025, [https://dtm.iom.int/sites/g/files/tmzbdl1461/files/reports/PNG\\_2024\\_DISPLACEMENT\\_OVERVIEW\\_ANNUAL.pdf?iframe=true](https://dtm.iom.int/sites/g/files/tmzbdl1461/files/reports/PNG_2024_DISPLACEMENT_OVERVIEW_ANNUAL.pdf?iframe=true)

87 Mako, Andrew Anton. "Riots, Reforms and Resilience in Papua New Guinea." East Asia Forum, 18 Feb. 2025, <https://eastasiaforum.org/2025/02/18/riots-reforms-and-resilience-in-papua-new-guinea/>

88 United Nations Development Programme. "The Challenges of the Papua New Guinea Highlands." UNDP Stories, 24 June 2024, <https://stories.undp.org/the-challenges-of-the-papua-new-guinea-highlands>

89 "Papua New Guinea." International Monetary Fund, 2025, <https://www.imf.org/en/Countries/PNG>

90 "Papua New Guinea." World Population Review, 2025, <https://worldpopulationreview.com/countries/papua-new-guinea>

91 Mukashov, Askar, et al. "Systematic Analysis of Domestic Production and World Market Shocks." CGIAR, Mar. 2025 <https://cgspace.cgiar.org/server/api/core/bitstreams/c833ffd8-9b1f-4d60-9a7c-c96398794883/content>

92 Yayboke, Erol, et al. "Addressing Fragility in Papua New Guinea." Center for Strategic and International Studies, 17 Aug. 2022, <https://www.csis.org/analysis/addressing-fragility-papua-new-guinea>

93 Ibid.

94 World Bank. "Papua New Guinea: Access to Clean Water Improving Opportunities for Women and Girls." World Bank, 21 Mar. 2024, <https://www.worldbank.org/en/news/video/2024/03/21/papua-new-guinea-access-to-clean-water-improving-opportunities-for-women-and-girls>.

95 Human Rights Watch. "World Report 2024: Papua New Guinea." Human Rights Watch, 2024, <https://www.hrw.org/world-report/2024/country-chapters/papua-new-guinea>

96 "Papua New Guinea." Hand-in-Hand Initiative, Food and Agriculture Organization of the United Nations, 2024, <https://www.fao.org/hand-in-hand/hih-IF-2024/papua-new-guinea/en>

97 Koczberski, Gina, et al. "Food Security in Papua New Guinea." Pacific Livelihoods, Technical Note 33, June 2018, <https://pacificlivelihoods.com/wp-content/uploads/2018/09/oprative-word-technical-note-33f.pdf>

98 "Papua New Guinea." Global Hunger Index, <https://www.globalhungerindex.org/papua-new-guinea.html>

99 Asian Development Bank. "ADB Report Recommends More Efforts to Reduce Inequality in Papua New Guinea." Asian Development Bank, 9 May 2012, <https://www.adb.org/news/adb-report-recommends-more-efforts-reduce-inequality-papua-new-guinea>

conflicts have displaced more than 100,000 people and shut down schools and clinics. This example illustrates how land disputes, extractive industry grievances, and weak state authority reinforce cycles of violence and exclusion.<sup>100</sup>

Population displacement, primarily within the country, is widespread and recurring. Between 2020 and 2024, an estimated 1.6 million people were displaced or at risk of displacement.<sup>101</sup> In 2024, of the more than 30,000 people who fled their homes, approximately 71% were displaced by environmental hazard events and 29% were displaced because of conflict.<sup>102</sup> In places like the Highlands, conflict and environmental degradation are increasingly interwoven, with displaced populations caught between cycles of violence and environmental fragility.

Political instability further compounds these challenges. In 2025, multiple no-confidence motions against Prime Minister James Marape exposed elite fragmentation and persistent governance volatility.<sup>103</sup> Meanwhile, an unresolved independence effort lingers in Bougainville, where a 2019 referendum saw 97% of voters opt for secession. Tensions rooted in environmental injustice and unaddressed grievances surrounding the Panguna mine are reawakening.<sup>104</sup>

Environmental degradation and exclusion from resource governance further fuel unrest. Many communities around mining sites receive little compensation and are excluded from decision-making, and these conditions heighten resentment and feed localized violence. These patterns are visible in Bougainville, where environmental destruction and lack of compensation around the Panguna mine fueled a secessionist movement.<sup>105</sup>

### ***Resilience and Institutional Capacity***

PNG has aligned with global frameworks and adopted a National Adaptation Plan focused on mainstreaming climate considerations across sectors; however, institutional capacity gaps and governance fragility remain major impediments. While the creation of a National Environment and Disaster Mitigation Authority signals reform, technical deficits, such as outdated infrastructure, weak hazard forecasting, and limited early warning systems, undermine implementation.

The state's ability to respond to intersecting crises remains limited. Governance institutions in PNG are extremely under-resourced, and they are plagued by corruption and political interference. With only one police officer for every 1,845 people, law enforcement is severely overstretched and often absent from rural areas.<sup>106</sup> Judicial and anti-corruption mechanisms face similar constraints: limited budgets, politicized appointments, and executive interference have undermined their capacity to function independently.<sup>107</sup> Systemic failures have diminished public trust and undermined state legitimacy, perpetuating cycles of unrest.

Economic stressors reinforce this fragility. Inflation rose from 2.3% in 2023 to an estimated 4.5% in 2024, with projections reaching 4.8% in 2025.<sup>108</sup> In early 2024, these pressures triggered nationwide riots that revealed how economic hardship, weak accountability, and institutional failure can ignite widespread instability.<sup>109</sup>

<sup>100</sup> United Nations Development Programme. "The Challenges of the Papua New Guinea Highlands." UNDP Stories, 24 June 2024, <https://stories.undp.org/the-challenges-of-the-papua-new-guinea-highlands>

<sup>101</sup> "Refugee Numbers Rising in Papua New Guinea." Islands Business, 23 Aug. 2024, <https://islandsbusiness.com/news-break/png-refugees-3/>

<sup>102</sup> International Organization for Migration. Papua New Guinea 2024 Displacement Overview. IOM, Jan. 2025, [https://dtm.iom.int/sites/g/files/tmzbd1461/files/reports/PNG\\_2024\\_DISPLACEMENT\\_OVERVIEW\\_ANNUAL.pdf?iframe=true](https://dtm.iom.int/sites/g/files/tmzbd1461/files/reports/PNG_2024_DISPLACEMENT_OVERVIEW_ANNUAL.pdf?iframe=true)

<sup>103</sup> May, Ronald J. "Trying Times for Papua New Guinea." East Asia Forum, 31 Jan. 2025, <https://eastasiaforum.org/2025/01/31/trying-times-for-papua-new-guinea/>

<sup>104</sup> Wilson, Catherine. "Political Deadlock Frustrates Bougainville's Aspirations of Independence." Al Jazeera, 27 June 2024, <https://www.aljazeera.com/news/2024/6/27/political-deadlock-frustrates-bougainvilles-aspirations-of-independence>

<sup>105</sup> Wilson, Catherine. "Political Deadlock Frustrates Bougainville's Aspirations of Independence." Al Jazeera, 27 June 2024, <https://www.aljazeera.com/news/2024/6/27/political-deadlock-frustrates-bougainvilles-aspirations-of-independence>

<sup>106</sup> Human Rights Watch. "World Report 2024: Papua New Guinea." Human Rights Watch, 2024, <https://www.hrw.org/world-report/2024/country-chapters/papua-new-guinea>

<sup>107</sup> Transparency International: Papua New Guinea. "New Civil Society Report on Papua New Guinea Highlights Main Impediments for Implementing UNCAC Chapter II Provisions." UNCAC Coalition, 27 July 2021, <https://uncaccoalition.org/new-civil-society-report-on-papua-new-guinea-highlights-main-impediments-for-implementing-uncac-chapter-ii/>

<sup>108</sup> Mako, Andrew Anton. "Riots, Reforms and Resilience in Papua New Guinea." East Asia Forum, 18 Feb. 2025, <https://eastasiaforum.org/2025/02/18/riots-reforms-and-resilience-in-papua-new-guinea/>

<sup>109</sup> Ibid.

## ***Conflict Horizon***

Armed tribal violence remains a major driver of displacement and insecurity in PNG. In Enga Province, for instance, a tribal clash in February 2024 left at least 49 dead.<sup>110</sup> Despite a formal state of emergency, violence continues to be fueled by long-standing rivalries and disputes over control of land and access to resource wealth near sites like the Porgera Gold Mine.<sup>111</sup> In September 2024, the Porgera Valley itself saw approximately 50 people killed as a result of violent mining-related disputes.<sup>112</sup> These clashes have grown more lethal with the proliferation of illegal firearms and are often worsened by the near-total absence of law enforcement in remote regions.<sup>113</sup> Organized criminal networks, including the Raskols, have capitalized on the state's limited reach by trafficking drugs and exploiting territorial instability for profit.<sup>114</sup>

## **Sri Lanka**

### ***Situational Overview***

Sri Lanka has a more centralized state and a sophisticated disaster planning architecture. Yet it remains highly fragile due to its unresolved ethnic tensions, economic instability, and high exposure to environmental hazards. The country is navigating a difficult post-conflict transition while facing intensifying drought, sea level rise, and food insecurity. These dynamics threaten to reignite grievances in Tamil-majority regions already vulnerable to marginalization.

### ***Environmental Hazards Exposure***

Sri Lanka's vulnerability to environmental hazards is rising rapidly. An estimated 750,000 people were affected by natural disasters each year between 2011 and 2020, and over 80% of the population lacks adaptive capacity to respond to these environmental hazards. These stressors are expected to intensify by 2050, with nearly 19 million Sri Lankans projected to live in areas classified as high risk and potentially uninhabitable.<sup>115</sup> While floods, storms, and landslides account for the most immediate and visible damage, slow-onset hazards such as droughts, saline intrusion, and soil degradation erode livelihoods over time, and their impacts are particularly dire in rural and agricultural regions.<sup>116</sup> In the Jaffna Peninsula of the north/northwest, salinization has rendered 43% of paddy land unusable. Projections show that 35% of land and over half of the region's paddy fields could be lost by the year 2100.<sup>117</sup> Meanwhile, since 2008, droughts have affected 8 million people, with water shortages and crop failures worsening food insecurity.<sup>118</sup> In 2023, drought conditions across ten districts disrupted drinking water access and exacerbated livelihood loss in rural areas.<sup>119</sup>

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110 Mako, Andrew Anton. "Riots, Reforms and Resilience in Papua New Guinea." East Asia Forum, 18 Feb. 2025, <https://eastasiaforum.org/2025/02/18/riots-reforms-and-resilience-in-papua-new-guinea/>

111 Ibid.

112 "Tribal Violence Over Papua New Guinea Mines Kills at Least 20: UN." Al Jazeera, 16 Sept. 2024, <https://www.aljazeera.com/news/2024/9/16/shootouts-near-gold-mine-in-papua-new-guinea-leave-at-least-20-dead-un>

113 Wiseman, Don. "An Open Secret: Papua New Guinea's Gun Problem 'Difficult' to Solve, Journalist Says." RNZ, 30 Oct. 2023, <https://www.rnz.co.nz/international/pacific-news/501292/an-open-secret-papua-new-guinea-s-gun-problem-difficult-to-solve-journalist-says>

114 Global Initiative Against Transnational Organized Crime. "Papua New Guinea." Organized Crime Index, 2021, [https://ocindex.net/2021/country/papua\\_new\\_guinea](https://ocindex.net/2021/country/papua_new_guinea)

115 UN Sri Lanka Climate Change Fact Sheet. United Nations, Dec. 2023, [https://srilanka.un.org/sites/default/files/2023-12/UN%20Sri%20Lanka%20Climate%20Change%20Fact%20Sheet%20%282%29\\_0.pdf](https://srilanka.un.org/sites/default/files/2023-12/UN%20Sri%20Lanka%20Climate%20Change%20Fact%20Sheet%20%282%29_0.pdf)

116 SLYCAN Trust. "CASE STUDY Climate Displacement and Internal Migration in Sri Lanka." IOM, 2019, <https://environmentalmigration.iom.int/sites/g/files/tmzbd1411/files/documents/2023-11/case-study-climate-migration.pdf>

117 Arudpragasam, Amita. "Climate Change Brings a New Emergency to the Tamil Homeland in Sri Lanka." Pulitzer Center, 3 Sept. 2024, <https://pulitzercenter.org/stories/climate-change-brings-new-emergency-tamil-homeland-sri-lanka>

118 Igoor, Medhini. "Sri Lanka Climate Risks and Impacts." Center for a Smart Future, Dec. 2024, [https://www.csf-asia.org/wp-content/uploads/2024/11/20241125\\_NCF\\_CERisks\\_Dataset\\_Final\\_Combined.pdf](https://www.csf-asia.org/wp-content/uploads/2024/11/20241125_NCF_CERisks_Dataset_Final_Combined.pdf)

119 Arudpragasam, Amita. "Climate Change Brings a New Emergency to the Tamil Homeland in Sri Lanka." Pulitzer Center, 3 Sept. 2024, <https://pulitzercenter.org/stories/climate-change-brings-new-emergency-tamil-homeland-sri-lanka>

Flooding has affected more than 10 million people over the past three decades and is the leading source of disaster-related economic loss, which amounts to US\$140 million on average annually and is projected to rise to US\$338 million annually by the 2030s.<sup>120</sup> Floods also increase the risk of landslides. Roughly 20% of Sri Lanka's surface area is considered landslide prone. The 2017 monsoon season triggered over 35 major landslides, and these events resulted in the country's highest annual disaster death toll.<sup>121</sup> Additionally, nearly half of the population lives in coastal areas vulnerable to sea level rise, storm surges, and erosion.<sup>122</sup> The north and east are simultaneously exposed to both drought and flooding. Coral bleaching threatens fisheries, while recurrent flooding and landslides disrupt livelihoods and infrastructure.

Converging economic, social, and environmental pressures are eroding the foundations of national stability. Sri Lanka's layered fragility, marked by ethnic exclusion, disaster vulnerability, and economic hardship, demands an integrated approach to adaptation and justice. With Tamil-majority areas disproportionately affected by environmental stress and little progress on post-war reconciliation, the risk of renewed grievance-based unrest is growing. Addressing historical marginalization while building resilience is critical to prevent conflict relapses under increasing environmental pressure.

### ***Systemic Vulnerabilities***

The 2022 economic crisis marked a breaking point in Sri Lanka's history. Following a sovereign default, inflation soared to 60%, the economy contracted by nearly 8%, and some 500,000 people lost their jobs.<sup>123</sup> Mass protests led to the resignation of President Rajapaksa and ushered in a new administration. Although the economy has been recovering since 2024, critics argue that International Monetary Fund-backed reforms have disproportionately impacted the working class through tax hikes and subsidy cuts.<sup>124, 125</sup> The risk of renewed debt distress remains high and with it the potential for new waves of social unrest and political instability.<sup>126</sup> Food insecurity also remains high. One-third of children under five years of age are malnourished,<sup>127</sup> and agricultural livelihoods which are critical for over 30% of the workforce,<sup>128</sup> remain vulnerable to drought, floods, and policy missteps, such as a 2022 ban on fertilizer.<sup>129</sup>

Compounding these issues are stark wealth disparities. The top 1% of Sri Lankans control nearly one-third of the nation's wealth, while the bottom 50% hold less than 4%.<sup>130</sup> This economic imbalance is especially acute in historically marginalized Tamil and Muslim communities in the north and east, where infrastructure remains underdeveloped and livelihoods fragile.

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120 Ibid.

121 Igoor, Medhini. "Sri Lanka Climate Risks and Impacts." Center for a Smart Future, Dec. 2024, [https://www.csf-asia.org/wp-content/uploads/2024/11/20241125\\_NCF\\_CERisks\\_Dataset\\_Final\\_Combined.pdf](https://www.csf-asia.org/wp-content/uploads/2024/11/20241125_NCF_CERisks_Dataset_Final_Combined.pdf).

122 Ibid.

123 Ibid.

124 Jayasinghe, Uditha. "Sri Lanka's Economy Grew 5% in 2024 in Strong Rebound from Financial Crisis." Reuters, 18 Mar. 2025, <https://www.reuters.com/markets/asia/sri-lankas-economy-grew-5-2024-rebounding-crisis-2025-03-18/>.

125 Human Rights Watch. "World Report 2025: Rights Trends in Sri Lanka." Human Rights Watch, 2024, <https://www.hrw.org/world-report/2025/country-chapters/sri-lanka>.

126 International Crisis Group. Sri Lanka's Bailout Blues: Elections in the Aftermath of Economic Collapse. International Crisis Group, 17 Sept. 2024, <https://www.crisisgroup.org/asia/south-asia/sri-lanka/341-sri-lankas-bailout-blues-elections-aftermath-economic-collapse>.

127 World Food Program USA. "Sri Lanka." World Food Program USA, n.d., <https://www.wfpusa.org/countries/sri-lanka/>.

128 International Trade Administration, "Sri Lanka Country Commercial Guide." [www.trade.gov](http://www.trade.gov), 8 May, 2024, <https://www.trade.gov/country-commercial-guides/sri-lanka-agricultural-sector>.

129 Ibid.

130 Fernando, Nishel. "Sri Lanka Ranks among Top Five Most Unequal Nations in Asia Pacific Region." [Dailymirror.lk](http://www.dailymirror.lk), 13 Dec. 2023 <https://www.dailymirror.lk/breaking-news/Sri-Lanka-ranks-among-top-five-most-unequal-nations-in-Asia-Pacific-region/108-273122#>.

Sri Lanka's newly elected president, Anura Kumara Dissanayake, campaigned on anti-corruption and economic justice but has not so far addressed long-standing ethnic grievances or post-war accountability.<sup>131</sup> Civil liberties remain restricted through controversial legislation like the Prevention of Terrorism Act, which continues to be used to suppress dissent.<sup>132</sup>

Much of Sri Lanka's fragility stems from its history of ethnic division and conflict. The Sinhalese, who are predominantly Buddhist, make up about 75% of the population, while Tamils (predominantly Hindu) and Muslims form significant minority groups, concentrated in the north and east.<sup>133</sup> Post-independence policies that favored the Sinhala majority fueled decades of marginalization, culminating in a brutal 26-year civil war between the government and the separatist Tamil Tigers. Minority communities, particularly Tamils and Muslims, face systemic discrimination, which undermines social cohesion and trust in government institutions.<sup>134</sup> Though the war ended in 2009, its legacy of discrimination and unresolved grievances continues to destabilize affected regions.

### ***Resilience and Institutional Capacity***

The country does have a national disaster act and specialized agencies like the Disaster Management Centre, and it has developed sophisticated hazard maps, regional coordination plans, and resilience programs like the Climate Resilience Improvement Project. However, financial constraints, fragmented implementation, and weak community engagement limit effectiveness. In 2024, Sri Lanka and India jointly led the Adaptation for Resilience project, signaling potential regional collaboration.

### ***Conflict Horizon***

Conflict-related risks have not abated. A 2024 UN report documented continued violations, including arbitrary detention and sexual violence, against Tamil victims, civil society, and journalists.<sup>135</sup> The post-war period has seen state-sponsored demographic shifts and Sinhala-Buddhist territorial expansion into minority Tamil and Muslim areas, and this encroachment has sparked land disputes and ethno-religious tensions.<sup>136</sup> In Kilinochchi and other districts, land grabs for mineral exploration and the conversion of religious sites have intensified local grievances and risk reigniting unrest.<sup>137</sup> Political marginalization, combined with a lack of transitional justice, has hindered reconciliation and institutional trust-building.

Sri Lanka has experienced multiple waves of displacement driven by both conflict and environmental factors. Over 1 million people were displaced during the civil war, and a combination of landmine contamination and unresolved land claims mean that tens of thousands remain in camps for internally displaced persons.<sup>138</sup> Disaster-related events such as floods and landslides have displaced hundreds of thousands more. Additionally, rural-to-urban migration, often driven by environmental stress, has increased pressure on limited urban infrastructure and contributed to rising inequality and unrest.

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131 Keenan, Alan. "Sri Lanka's Third Way." International Crisis Group, 30 Oct. 2024, <https://www.crisisgroup.org/asia/south-asia/sri-lanka/sri-lankas-third-way>

132 Human Rights Watch. "Sri Lanka: False Terrorism Cases Enable Repression." Human Rights Watch, 17 July 2024, <https://www.hrw.org/news/2024/07/17/sri-lanka-false-terrorism-cases-enable-repression>.

133 Willett, Colin. Sri Lanka: Background and Issues for Congress. Congressional Research Service, 2 Dec. 2024, <https://www.congress.gov/crs-product/IF10213>.

134 Ibid.

135 United Nations Human Rights Council. A/HRC/57/19. United Nations, 2024, <https://www.ohchr.org/en/documents/reports/ahrc5719-situation-human-rights-sri-lanka-comprehensive-report-united-nations>

136 Gajaweera, Nalika. "Sri Lanka's Dual Crisis: Ethnic Conflict & the Debt Economy." CRCC, 19 May 2022, <https://crcc.usc.edu/sri-lankas-dual-crisis-ethnic-conflict-the-debt-economy/>.

137 La Via Campesina. "Sri Lanka: Social Movements Decry Large-Scale Land Grab in Kilinochchi for Limestone Excavation." Viacampesina.org, 20 June 2024, <https://viacampesina.org/en/2024/06/sri-lanka-social-movements-decry-large-scale-land-grab-in-kilinochchi-for-limestone-exavation/>.

138 Falkum, Aimee. "Clearing the Path for Displaced Peoples in Sri Lanka, a Decade after Civil War." United States Department of State, 2 Apr. 2020, <https://2017-2021.state.gov/clearing-the-path-for-displaced-peoples-in-sri-lanka-a-decade-after-civil-war/>.

# Environmental Hazards as a Risk Multiplier: Thematic Analysis of Watchlist Countries

While the specific drivers of instability vary, several regional patterns emerge that illustrate how environmental hazard stressors intersect with state fragility and conflict dynamics.

## Overlapping Environmental Hazards and Conflict Risks

- 1. Institutional weakness and governance gaps:** All five countries experience some degree of institutional fragility that limits the state's ability to manage environmental hazards. In Myanmar and PNG, governance breakdown is especially severe, marked by parallel power structures, contested authority, and weak service delivery. In Bangladesh and the Philippines, over-centralization and bureaucratic fragmentation hamper adaptation, while in Sri Lanka, political instability and corruption erode public trust. These governance deficits undermine coordination, delay crisis response, and exacerbate perceptions of state neglect.
- 2. Economic insecurity and exposure of livelihoods:** In every case, environmental shocks disproportionately impact essential livelihoods sectors, such as agriculture, fisheries, and informal labor, and disruptions create downward economic spirals. In Myanmar, the collapse of rice production has reduced food exports and foreign reserves. In Bangladesh and Sri Lanka, the impact of environmental hazards on agriculture is driving food insecurity and rural impoverishment. PNG's smallholder farmers face repeated environmental disruptions without institutional support, and in the Philippines, fishing communities in conflict-affected areas are increasingly unable to rely on marine resources due to rising sea temperatures and storms.
- 3. Displacement, urban fragility, and social strain:** Disaster-driven population displacement is a prominent and growing challenge in all five countries. In Bangladesh, by 2050, 19.9 million people are projected to be displaced, with many expected to migrate to already overcrowded urban centers such as Dhaka and Chittagong. In Myanmar, monsoon floods and tropical cyclones have overwhelmed cities already strained by conflict displacement. In the Philippines and PNG, competition over land and services results from disaster-induced migration, often in regions already marked by ethnic tension or the presence of insurgents. In Sri Lanka, internal migration is deepening divisions in regions already marked by civil war legacies, especially in Tamil-majority areas. In all cases, unplanned migration contributes to urban overcrowding, weakened public services, and mounting intercommunal tensions.
- 4. Marginalization of vulnerable groups:** The impact of environmental hazards disproportionately affects already marginalized communities like ethnic minorities, religious groups, and indigenous and rural communities. In Myanmar and Sri Lanka, historically persecuted minorities are at the frontlines of such exposure with limited access to state support or adaptation resources. In Bangladesh, displaced Hindus from coastal areas face discrimination in Muslim-majority urban centers. In PNG, resettlement challenges are heightened by ancestral land ties and the lack of formal dispute resolution. These dynamics contribute to perceptions of injustice and further erode social cohesion.

- 5. Extremism, armed violence, and militarization of resources:** In contexts of weak governance and economic despair, environmental stress can feed into cycles of radicalization or militarized control. In Myanmar, both the junta and non-state armed groups have weaponized access to water and forests. In the Philippines, insurgents build legitimacy by exploiting state failure during disaster response. In PNG, tribal militias and criminal networks capitalize on disorder created by displacement and economic collapse. In Bangladesh, extremist groups like Jamaatul Mujahideen Bangladesh have exploited post-disaster grievances to recruit youth in marginalized communities. In all of these countries, environmental stress accelerates political instability and weakens state control.

## Key Differences Across Watchlist Countries

- 1. Conflict status and intensity:** Myanmar and PNG are experiencing active, large-scale violence that severely undermines state legitimacy and adaptation capacity. The Philippines faces chronic insurgency in disaster-affected zones. By contrast, Sri Lanka is in a post-conflict phase but has not addressed underlying ethnic grievances, while Bangladesh remains formally peaceful but faces increasing protest volatility and localized unrest.
- 2. State capacity and response architecture:** Sri Lanka and the Philippines have relatively advanced disaster governance systems, even if the implementation processes are different. Bangladesh has strong policy frameworks but suffers from underfunding and bureaucratic gridlock. PNG and Myanmar have the weakest state capacity, with Myanmar's adaptive governance institutions dismantled after the 2021 coup and PNG lacking basic service delivery in most rural areas.
- 3. Demographic pressure and urbanization:** Bangladesh's population of over 170 million makes it the most densely populated and demographically stressed of the five countries, and this stress has major implications for urban fragility and migration dynamics. PNG and Myanmar are less urbanized but struggle with internal displacement that pushes people into informal settlements. In Sri Lanka, displacement from war and disasters is reshaping ethnic demographics, especially in the north and east regions.
- 4. International engagement:** All five countries engage with international donors and partners to varying degrees. The United States has strategic defense cooperation with Sri Lanka and PNG and supports disaster responses in Bangladesh. However, Myanmar's isolation since the coup limits humanitarian access. In contrast, PNG and Sri Lanka are receiving increased attention as regional powers compete for influence, and these two countries are potential partners for integrated security initiatives.

# Recommendations

To address environmental hazard-driven conflict risks, the report issues the following strategic recommendations:

- 1. Integrate environmental exposure with fragility metrics to capture compounded risk.** Strengthen the predictive power and operational relevance of CFE-DM's risk assessments by integrating environmental exposure metrics with existing indicators of structural fragility and resilience capacity. Rather than treating environmental hazards as isolated factors, assess their interaction with social, political, and institutional vulnerabilities to better understand how environmental shocks can exacerbate instability. To support this approach, embed standardized metrics on the frequency, intensity, and projected trends of both slow- and sudden-onset hazards into baseline country profiles, particularly for the five priority countries. This integrated model would enable earlier identification of compounded risks, support more precise contingency planning, and reinforce CFE-DM's role in advancing disaster preparedness across the region.
- 2. Develop an early warning system and flashpoint protocol.** CFE-DM should establish a dedicated early warning system and standardized protocol, distinct from the Pacific Disaster Center's DisasterAWARE, to rapidly identify and assess environmental hazard flashpoints in the Indo-Pacific region. This protocol would ensure timely response and operational relevance by synthesizing sudden-onset hazard forecasts (e.g., tropical cyclone seasons, drought likelihoods, and seismic activity) with structural vulnerability indicators and real-time political developments. Unlike baseline risk integration into country profiles, this system would deliver near-term, event-driven assessments to support both internal contingency planning and strategic partner engagement and could be piloted with flexibility for ad-hoc updates during periods of heightened risk.
- 3. Establish research collaboration with country partners on environmental hazard monitoring and risk analysis.** Building on initiatives like the CFE-DM Applied Research and Information Sharing branch engagement and the Indo-Pacific Environmental Security Forum, CFE-DM should establish formal research collaboration with partner institutions, especially within member countries of the Quadrilateral Security Dialogue (Quad), i.e., Australia, India, and Japan. Designated working-level points of contact may coordinate information sharing, align methodologies, and connect early warning efforts to enhance interoperability and strengthen disaster preparedness. Improved coordination would also help reduce the risk of crisis miscalculation or accidental escalation during regional disaster response operations.

## Conclusion

The link between environmental hazards and conflict risk in the Indo-Pacific region is both tangible and consequential. Natural disasters and environmental hazards act as powerful accelerants of instability, especially when layered onto fragile governance, economic volatility, and social fragmentation. To overlook this nexus is to risk strategic shortfalls and operational vulnerabilities, and it must be treated as a foundational consideration in strategic foresight and operational planning.

Environmental-driven instability across the five countries identified in this report intersects directly with U.S. national security and foreign policy interests in the Indo-Pacific region. In Myanmar, escalating violence, mass displacement, and governance collapse continue to destabilize South and Southeast Asia, and this instability complicates U.S. coordination with regional partners like India and Thailand. In Bangladesh, rising extremism and cross-border migration threaten regional cohesion and risk undermining U.S. investments in disaster preparedness and development. In the Philippines, intensifying climate stress in conflict-affected southern regions risks weakening local governance and disrupting joint security cooperation. In PNG, worsening fragility threatens maritime enforcement and fuels regional disorder amid rising strategic competition in the region. In Sri Lanka, environmental hazard risks intersect with unresolved ethnic tensions in a strategic Indian Ocean corridor critical to trade and naval access. These cases underscore the urgent need to integrate U.S. strategies that treat environmental hazard adaptation, conflict prevention, and resilience-building as central to Indo-Pacific region engagements.

It is impossible to reduce the relationship between environmental hazards and conflict to a single model or methodology because of the scope, complexity, and interdependence of the supporting fields of research. Therefore, addressing these risks demands continuous investment in data collection, monitoring, and scenario-based planning at all levels. Only through sustained vigilance and adaptive learning can emerging threats be anticipated and regional stability preserved. Inaction is not merely an oversight; it is a strategic liability. By formalizing mechanisms for sustained monitoring and adaptive learning, CFE-DM and its partners can proactively address emerging risks and help foster stability in an era of accelerating environmental disruption.

## Appendix 1: Regression Analysis Results

This appendix provides a country-level comparison of environmental hazard-driven conflict risk for countries in the Indo-Pacific region. The Conflict Risk, Climate Risk, and Structural Vulnerabilities indices are normalized on a scale of 0 to 1, where 0 represents the lowest risk and 1 represents the highest risk. This simplification enables comprehensive, cross-national analysis and relative comparison at the country level. Please note, certain countries are not included due to limitations of spatial data collection.<sup>139</sup>

Results from the regression analysis, as shown in Table 1, are in the column labeled “Climate-Driven Conflict Risk” while the corresponding rank is in “Country Rank.” For reference, the three indices averaged by country are in the columns “Conflict Risk,” “Climate Risk,” and “Vulnerability.” Conditional formatting has been applied to these three columns. Values in green indicate the lowest 25<sup>th</sup> percentile of nations at risk, yellow represent those between the 25<sup>th</sup> and 75<sup>th</sup> percentiles, and red signify countries above the 75<sup>th</sup> percentile of risk compared to peer countries.

As outlined throughout this report, the quantitative analysis was not the sole basis for identifying the “top five highest priority countries.” Rather, these metrics served as a foundational baseline that informed deeper investigation through the qualitative framework. This mixed-methods approach was essential given the inherent limitations of the underlying regression data, which cannot fully capture the contextual insights and nuance provided by qualitative analysis. The five at-risk countries identified by this report are displayed in bold font for visibility. Each has high Conflict Risk as well as Climate Risk or Vulnerability (or all three for Myanmar).

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<sup>139</sup> As mentioned previously, several small island nations were excluded and North Korea was excluded due to lack of diplomatic relations with the USA.

Country	Country Rank (Indo-Pacific)	Climate-Driven Conflict Risk	Conflict Risk	Climate Risk	Vulnerability
<b>Bangladesh</b>	1	0.1071	0.046	0.604	0.455
<b>Myanmar</b>	2	0.0915	0.461	0.534	0.599
Cambodia	3	0.0913	0.08	0.533	0.507
Laos	4	0.0909	0.021	0.531	0.542
<b>Philippines</b>	5	0.0846	0.158	0.503	0.312
Vietnam	6	0.0811	0.013	0.487	0.347
Sri Lanka	7	0.0806	0.165	0.485	0.339
Solomon Is-lands	8	0.0791	0.015	0.478	0.487
India	9	0.0697	0.133	0.436	0.362
Timor-Leste	10	0.0661	0.095	0.42	0.321
Indonesia	11	0.0650	0.099	0.415	0.31
Thailand	12	0.0617	0.075	0.4	0.266
Malaysia	13	0.0608	0.041	0.396	0.277
<b>Papua New Guinea</b>	14	0.0603	0.109	0.394	0.457
Nepal	15	0.0545	0.162	0.368	0.313
Singapore	16	0.0503	0	0.349	0.112
Vanuatu	17	0.0465	0.007	0.332	0.356
Brunei	18	0.0461	0	0.33	0.256
Fiji	19	0.0434	0.082	0.318	0.225
China	20	0.0416	0.012	0.31	0.33
Bhutan	21	0.0276	0.103	0.247	0.239
Japan	22	0.0148	0.027	0.19	0.072
South Korea	23	0.0084	0.068	0.161	0.047
Mongolia	24	0.0077	0.002	0.158	0.266
New Zealand	25	-0.0054	0.021	0.099	0.069
Australia	26	-0.0119	0.002	0.07	0.111

**Table 1: Country Ranking of Climate-Driven Conflict Risk in the Indo-Pacific Region**

## Appendix 2: Directional Acyclic Graph

Directional acyclic graphs are useful tools to visualize the relationships between variables. They also help understand how they interact beyond the direct relationship and show how indirect pathways can interact with the result of a relationship of interest.

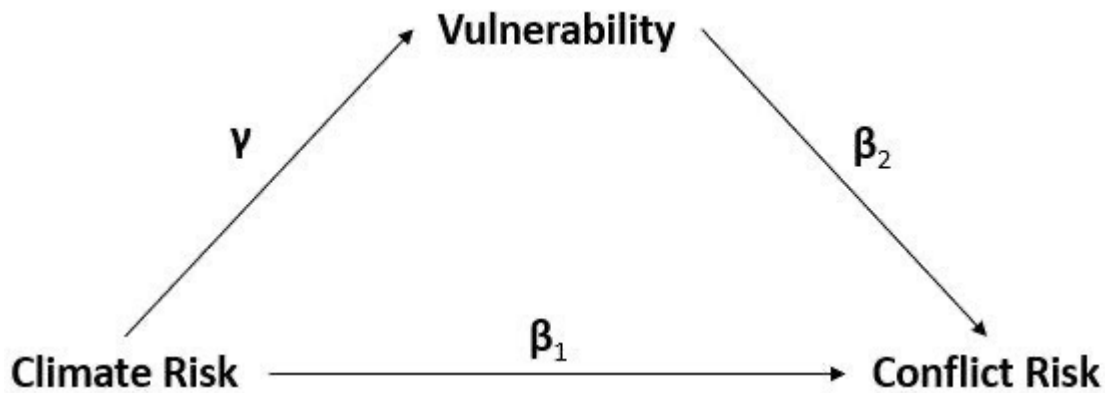


Figure 5: Directional Acyclic Graph

Figure 5 shows a directional acyclic graph of the proposed relationship from the regression model. There is only one direction between Climate Risk which terminates in Conflict Risk, either directly or mediated by Vulnerability. Furthermore, the relationship between Climate Risk and Vulnerability is unobserved. However, since the data we use is observational, we can only assume the relationship works in this manner. This gap underscores the importance of cautious interpretation when inferring causality from non-experimental data.



Figure 6: Directional Acyclic Graph

Consideration must be given to Vulnerability as a confounding variable, shown in Figure 6. In other words, Vulnerability or another unobserved confounding variable may be the pathway to Conflict Risk whereas we have assumed that Climate Risk is the pathway. Therefore, further investigation and careful adjustment for confounding factors is essential to strengthen the validity of our model's conclusions.

## Appendix 3: Acronyms and Abbreviations

ACLED	Armed Conflict Location and Event Data
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
CFE-DM	Center for Excellence in Disaster Management & Humanitarian Assistance
CCVI	Climate Conflict Vulnerability Index
DoD	Department of Defense
GDP	Gross Domestic Product
PNG	Papua New Guinea
SAC	State Administration Council
UNDP	United Nations Development Program
USINDOPACOM	United States Indo-Pacific Command

# Bibliography

- ACAPS. Briefing Note: Myanmar – Impact of Typhoon Yagi. 24 Sept. 2024, <https://reliefweb.int/report/myanmar/acaps-briefing-note-myanmar-impact-typhoon-yagi-24-september-2024>.
- Al Jazeera. (2024, August 6). World reacts to Bangladesh PM sheikh Hasina's removal from power. Al Jazeera. [https://www.aljazeera.com/news/2024/8/5/world-reacts-to-bangladesh-pm-sheikh-hasinas-removal-from-power?utm\\_source=chatgpt.com](https://www.aljazeera.com/news/2024/8/5/world-reacts-to-bangladesh-pm-sheikh-hasinas-removal-from-power?utm_source=chatgpt.com).
- Armed Conflict Location & Event Data Project (ACLED). Bangladesh Conflict Brief. 12 Apr. 2018. <https://acleddata.com/2018/04/12/bangladesh-conflict-brief/>.
- Arudpragasam, Amita. "Climate Change Brings a New Emergency to the Tamil Homeland in Sri Lanka." Pulitzer Center, 3 Sept. 2024, <https://pulitzercenter.org/stories/climate-change-brings-new-emergency-tamil-homeland-sri-lanka>.
- Asian Development Bank. "ADB Report Recommends More Efforts to Reduce Inequality in Papua New Guinea." Asian Development Bank, 9 May 2012, <https://www.adb.org/news/adb-report-recommends-more-efforts-reduce-inequality-papua-new-guinea>.
- "Bangladesh Country Profile." BBC News, 4 Mar. 2011, <https://www.bbc.com/news/world-south-asia-12650940>.
- Bangladesh Ministry of Disaster Management and Relief. National Strategy on Internal Displacement Management. Jan. 2021.
- Callahan, Mary. "Myanmar's Dry Zone: The History of a Tinderbox." Fulcrum, 9 Feb. 2022, <https://fulcrum.sg/myanmars-dry-zone-the-history-of-a-tinderbox/>.
- Campbell, C. (2024, October 3). Bangladesh: How Hasina could stage an unlikely comeback. Time. <https://time.com/7028162/bangladesh-interim-government-sheikh-hasina-awami-league-sajeed-wazed-joy>
- "Climate–Conflict Vulnerability Index." Climate-Conflict.org, 2024, <https://climate-conflict.org/>. Accessed 17 Mar. 2025. "Conflict Exacerbates Dry Zone Drought." Frontier Myanmar, 25 Apr. 2023, <https://www.frontiermyanmar.net/en/conflict-exacerbates-dry-zone-drought/>.
- Department of Defense. 2014 Quadrennial Defense Review. Office of the Secretary of Defense, 2014, [https://www.acq.osd.mil/ncbdp/docs/2014\\_Quadrennial\\_Defense\\_Review.pdf](https://www.acq.osd.mil/ncbdp/docs/2014_Quadrennial_Defense_Review.pdf).
- Falkum, Aimee. "Clearing the Path for Displaced Peoples in Sri Lanka, a Decade after Civil War." United States Department of State, 2 Apr. 2020, <https://2017-2021.state.gov/clearing-the-path-for-displaced-peoples-in-sri-lanka-a-decade-after-civil-war/>.
- Fernando, Nishel. "Sri Lanka Ranks among Top Five Most Unequal Nations in Asia Pacific Region." Dailymirror.lk, 13 Dec. 2023 <https://www.dailymirror.lk/breaking-news/Sri-Lanka-ranks-among-top-five-most-unequal-nations-in-Asia-Pacific-region/108-273122#>.
- Ferré Garcia, Tània, et al. How Does Climate Exacerbate Root Causes of Conflict in the Philippines? Climate Security Pathway Analysis. CGIAR FOCUS Climate Security, Sept. 2023, <https://cgspace.cgiar.org/server/api/core/bitstreams/32dfa0ce-5f5e-4737-a928-452ee87cb565/content>.

- Food Security Information Network. Myanmar – Global Report on Food Crises 2024. Jan. 2024, <https://www.fsinplatform.org/sites/default/files/resources/files/GRFC2024-country-MM.pdf>.
- Gajaweera, Nalika. “Sri Lanka’s Dual Crisis: Ethnic Conflict & the Debt Economy.” CRCC, 19 May 2022, <https://crcc.usc.edu/sri-lankas-dual-crisis-ethnic-conflict-the-debt-economy/>.
- Global Humanitarian Overview. Myanmar. Humanitarian Action, 2025, <https://humanitarianaction.info/document/global-humanitarian-overview-2025/article/myanmar-2>.
- Global Initiative Against Transnational Organized Crime. “Papua New Guinea.” Organized Crime Index, 2021, [https://ocindex.net/2021/country/papua\\_new\\_guinea](https://ocindex.net/2021/country/papua_new_guinea).
- Global Initiative, “Illicit Economies and the Myanmar Civil War”, 2025, <https://globalinitiative.net/wp-content/uploads/2025/03/Alastair-MacBeath-Cashing-in-on-conflict-Illicit-economies-and-the-Myanmar-civil-war-GI-TOC-March-2025.pdf>.
- Hasan, Badrul, Md. Ahsan Habib, and Mahmudul Haque. Good Governance in Bangladesh: Problems and Prospects. University of Information Technology and Sciences, 2019. <https://uits.edu.bd/wp-content/uploads/2019/06/03-Good.pdf>.
- Human Rights Watch. “Sri Lanka: False Terrorism Cases Enable Repression.” Human Rights Watch, 17 July 2024, <https://www.hrw.org/news/2024/07/17/sri-lanka-false-terrorism-cases-enable-repression>.
- Human Rights Watch. “World Report 2024: Papua New Guinea.” Human Rights Watch, 2024, <https://www.hrw.org/world-report/2024/country-chapters/papua-new-guinea>.
- Human Rights Watch. “World Report 2025: Rights Trends in Sri Lanka.” Human Rights Watch, 2024, <https://www.hrw.org/world-report/2025/country-chapters/sri-lanka>.
- Igoor, Medhini. “Sri Lanka Climate Risks and Impacts.” Center for a Smart Future, Dec. 2024, [https://www.csf-asia.org/wp-content/uploads/2024/11/20241125\\_NCF\\_CERisks\\_Dataset\\_Final\\_Combined.pdf](https://www.csf-asia.org/wp-content/uploads/2024/11/20241125_NCF_CERisks_Dataset_Final_Combined.pdf).
- Internal Displacement Monitoring Centre (IDMC). “Bangladesh.” Internal Displacement Monitoring Centre, <https://www.internal-displacement.org/countries/bangladesh/>.
- International Crisis Group. Identity Crisis: Ethnicity and Conflict in Myanmar. Report No. 312, 28 Aug. 2023, <https://www.crisisgroup.org/asia/south-east-asia/myanmar/312-identity-crisis-ethnicity-and-conflict-myanmar>.
- International Crisis Group. Sri Lanka’s Bailout Blues: Elections in the Aftermath of Economic Collapse. International Crisis Group, 17 Sept. 2024, <https://www.crisisgroup.org/asia/south-asia/sri-lanka/341-sri-lankas-bailout-blues-elections-aftermath-economic-collapse>.
- International Organization for Migration. Papua New Guinea 2024 Displacement Overview. IOM, Jan. 2025, [https://dtm.iom.int/sites/g/files/tmzbd1461/files/reports/PNG\\_2024\\_DISPLACEMENT\\_OVERVIEW\\_ANNUAL.pdf?iframe=true](https://dtm.iom.int/sites/g/files/tmzbd1461/files/reports/PNG_2024_DISPLACEMENT_OVERVIEW_ANNUAL.pdf?iframe=true).
- International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.
- International Trade Administration, “Sri Lanka Country Commercial Guide.” www.trade.gov, 8 May, 2024, <https://www.trade.gov/country-commercial-guides/sri-lanka-agricultural-sector>.

- IISS, “Junta tactics shift in Myanmar’s war-torn Dry Zone” July 2023, <https://myanmar.iiss.org/updates/2023-07>.
- Jayasinghe, Uditha. “Sri Lanka’s Economy Grew 5% in 2024 in Strong Rebound from Financial Crisis.” Reuters, 18 Mar. 2025, <https://www.reuters.com/markets/asia/sri-lankas-economy-grew-5-2024-rebounding-crisis-2025-03-18/>.
- Keenan, Alan. “Sri Lanka’s Third Way.” International Crisis Group, 30 Oct. 2024, <https://www.crisisgroup.org/asia/south-asia/sri-lanka/sri-lankas-third-way>.
- “Know before you go: the Philippines.” National Geographic, <https://www.nationalgeographic.com/travel/article/partner-content-know-before-you-go-the-philippines>.
- Koczberski, Gina, et al. “Food Security in Papua New Guinea.” Pacific Livelihoods, Technical Note 33, June 2018, <https://pacificlivelihoods.com/wp-content/uploads/2018/09/oprative-word-technical-note-33f.pdf>.
- Kyaw, Kaung Htet. “Myanmar’s Absent Soil Stewards.” Earth Journalism Network, 2 Dec. 2022, <https://earthjournalism.net/stories/myanmars-absent-soil-stewards>.
- Lacson, Nonoy. “BARMM poverty level plummets.” Daily Tribune, 17 Oct. 2022, <https://tribune.net.ph/2022/10/17/barmm-poverty-level-plummets>.
- La Via Campesina. “Sri Lanka: Social Movements Decry Large-Scale Land Grab in Kilinochchi for Limestone Excavation.” Viacampesina.org, 20 June 2024, <https://viacampesina.org/en/2024/06/sri-lanka-social-movements-decry-large-scale-land-grab-in-kilinochchi-for-limestone-excavation/>.
- Lo, Alex, and Shar Thae Hoy. “Conflicts Intensify Climate Change Risks in Myanmar.” East Asia Forum, 9 Nov. 2023, <https://eastasiaforum.org/2023/11/09/conflicts-intensify-climate-change-risks-in-myanmar/>.
- Mako, Andrew Anton. “Riots, Reforms and Resilience in Papua New Guinea.” East Asia Forum, 18 Feb. 2025, <https://eastasiaforum.org/2025/02/18/riots-reforms-and-resilience-in-papua-new-guinea/>
- Mamun, Md Abdullah Al, Md Jayed Bin Fahad, Mohammad Ali, and Md Tanvir Hossain. “Determinants of Household Food Insecurity and Its Association with Child Malnutrition in Bangladesh.” International Journal of Environmental Research and Public Health, vol. 19, no. 24, 2022, p. 16786. <https://journals.sagepub.com/doi/full/10.1177/27538796241244544>.
- May, Ronald J. “Trying Times for Papua New Guinea.” East Asia Forum, 31 Jan. 2025, <https://eastasiaforum.org/2025/01/31/trying-times-for-papua-new-guinea/>.
- Mazumder, Mita. “State of Poverty and Inequality in Bangladesh: An Outlook at the Beginning of the New Millennium.” Jagannath University Journal of Social Sciences, vol. 8, no. 1, 2019, pp. 21–36. [https://jnu.ac.bd/journal/assets/pdf/10010\\_e9c039b02371debf6954334d0832d6d9fcd9c189\\_10010.pdf](https://jnu.ac.bd/journal/assets/pdf/10010_e9c039b02371debf6954334d0832d6d9fcd9c189_10010.pdf).
- Mittermaier, D; Merschroth, S; Šedová, B; Auer, C; Bohne, T; Ferri, S; Slouma, S; Michelini, S; Gottwick, V. (2025). The Climate Conflict Vulnerability Index (CCVI) - Technical Documentation v1.3. Available online at [climate-conflict.org](http://climate-conflict.org)
- Mohsin, Amena A. “Religion, Politics and Security: The Case of Bangladesh.” Religious Radicalism and Security in South Asia, Asia-Pacific Center for Security Studies, 2004, pp. 421–437. <https://dkiapcss.edu/wp-content/uploads/2011/03/PagesfromReligiousRadicalismAndSecurityinSouthAsiach20.pdf>.

- Mercy Corps. Dry Zone Study: An Assessment of Climate Change Vulnerability in Myanmar's Dry Zone. 2015, [https://www.mercycorps.org/sites/default/files/2019-12/MercyCorps\\_DryZone\\_Study\\_Myanmar\\_2015.pdf](https://www.mercycorps.org/sites/default/files/2019-12/MercyCorps_DryZone_Study_Myanmar_2015.pdf).
- Thakur, H. K. (2024, September 1). The Bangladesh coup: The security dilemma for India and the Indo-Pacific – analysis. *Eurasia Review*. <https://www.eurasiareview.com/01092024-the-bangladesh-coup-the-security-dilemma-for-india-and-the-indo-pacific-analysis/>.
- The Mekong Eye, “Myanmar’s war on nature.” 2025, <https://www.mekongeye.com/2025/02/03/war-on-nature>
- The Mekong Eye, “The Soil Problem: Myanmar’s Farmlands Are Losing Fertility.” 11 Nov. 2024, <https://www.mekongeye.com/2024/11/11/myanmar-soil>.
- Mukashov, Askar, et al. “Systematic Analysis of Domestic Production and World Market Shocks.” CGIAR, Mar. 2025 <https://cgspace.cgiar.org/server/api/core/bitstreams/c833ffd8-9b1f-4d60-9a7c-c96398794883/content>.
- Owens, Staff Sgt. Aubree. “36th CES Gets Down and Dirty Resolving Water Crises.” Andersen Air Force Base, 28 Nov. 2022, <https://www.andersen.af.mil/News/Article-Display/Article/3229807/36th-ces-gets-down-and-dirty-resolving-water-crises/>.
- “Papua New Guinea.” International Monetary Fund, 2025, <https://www.imf.org/en/Countries/PNG>.
- “Papua New Guinea.” Global Hunger Index, <https://www.globalhungerindex.org/papua-new-guinea.html>.
- “Papua New Guinea.” Hand-in-Hand Initiative, Food and Agriculture Organization of the United Nations, 2024, <https://www.fao.org/hand-in-hand/hih-IF-2024/papua-new-guinea/en>.
- “Papua New Guinea.” World Population Review, 2025, <https://worldpopulationreview.com/countries/papua-new-guinea>.
- PreventionWeb. Extremely Severe Cyclonic Storm Mocha, May 2023, Myanmar: Global Rapid Post-Disaster Damage Estimation (GRADE) Report. 22 Jan. 2024, <https://www.preventionweb.net/publication/extremely-severe-cyclonic-storm-mocha-may-2023-myanmar-global-rapid-post-disaster-0>.
- Rahman, Md Shafiqul. “Climate Change Exposes Bangladesh to Greater Risk.” Bologna Institute for Policy Research, Johns Hopkins University SAIS Europe, 21 Apr. 2022, <https://bipr.jhu.edu/BlogArticles/31-Climate-Change-Exposes-Bangladesh-to-Greater-Risk.cfm>.
- Red Cross Red Crescent Climate Centre. Philippines: Climate Country Profile 2024. 2024, [https://www.climatecentre.org/wp-content/uploads/RCCC-Country-profiles-Philippines\\_2024\\_final.pdf](https://www.climatecentre.org/wp-content/uploads/RCCC-Country-profiles-Philippines_2024_final.pdf).
- Researching Internal Displacement. Policy Architecture to Address Disaster and Climate Change Induced Displacement in Bangladesh. Mar. 2023.
- “Refugee Numbers Rising in Papua New Guinea.” Islands Business, 23 Aug. 2024, <https://islandsbusiness.com/news-break/png-refugees-3/>.
- Schwartzstein, Peter. “Going Under: A Rural Bangladeshi Dilemma.” Wilson Center, 14 Mar. 2022, <https://www.wilsoncenter.org/article/going-under-rural-bangladeshi-dilemma>.

SLYCAN Trust. “CASE STUDY Climate Displacement and Internal Migration in Sri Lanka.” IOM, 2019, <https://environmentalmigration.iom.int/sites/g/files/tmzbd11411/files/documents/2023-11/case-study-climate-migration.pdf>.

Transparency International: Papua New Guinea. “New Civil Society Report on Papua New Guinea Highlights Main Impediments for Implementing UNCAC Chapter II Provisions.” UNCAC Coalition, 27 July 2021, <https://uncaccoalition.org/new-civil-society-report-on-papua-new-guinea-highlights-main-impediments-for-implementing-uncac-chapter-ii/>

“Tribal Violence Over Papua New Guinea Mines Kills at Least 20: UN.” Al Jazeera, 16 Sept. 2024, <https://www.aljazeera.com/news/2024/9/16/shootouts-near-gold-mine-in-papua-new-guinea-leave-at-least-20-dead-un>

UNICEF. Myanmar Country Office Humanitarian Situation Report No. 1, 2025. 28 Feb. 2025, <https://www.unicef.org/media/169221/file/Myanmar-Humanitarian-SitRep-28-February-2025.pdf.pdf>.

United Nations Development Programme. Rakhine: A Famine in the Making. 7 Nov. 2024, <https://www.undp.org/asia-pacific/publications/rakhine-a-famine-in-the-making>.

United Nations Development Programme. “The Challenges of the Papua New Guinea Highlands.” UNDP Stories, 24 June 2024, <https://stories.undp.org/the-challenges-of-the-papua-new-guinea-highlands>.

United Nations High Commissioner for Refugees. Myanmar Situation. UNHCR Operational Data Portal, <https://reporting.unhcr.org/operational/situations/myanmar-situation>.

United Nations Human Rights Council. A/HRC/57/19. United Nations, 2024, <https://www.ohchr.org/en/documents/reports/ahrc5719-situation-human-rights-sri-lanka-comprehensive-report-united-nations>

United Nations Myanmar. Myanmar Humanitarian Needs and Response Plan 2025. 20 Dec. 2024, <https://myanmar.un.org/en/286727-myanmar-humanitarian-needs-and-response-plan-2025-december-2024>.

United Nations Office for the Coordination of Humanitarian Affairs. Myanmar Humanitarian Update No. 44. 19 Feb. 2025, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-44-19-february-2025>.

UN Sri Lanka Climate Change Fact Sheet. United Nations, Dec. 2023, [https://srilanka.un.org/sites/default/files/2023-12/UN%20Sri%20Lanka%20Climate%20Change%20Fact%20Sheet%20%282%29\\_0.pdf](https://srilanka.un.org/sites/default/files/2023-12/UN%20Sri%20Lanka%20Climate%20Change%20Fact%20Sheet%20%282%29_0.pdf).

United States Agency for International Development (USAID). Fragility and Climate Risks in Bangladesh: A Country Case Study for the Supporting Resilient Infrastructures Series. USAID, 2018. [https://pdf.usaid.gov/pdf\\_docs/PA00TBFH.pdf](https://pdf.usaid.gov/pdf_docs/PA00TBFH.pdf).

United States Indo-Pacific Command. “About USINDOPACOM.” U.S. Indo-Pacific Command, [https://www.pacom.mil/About-USINDOPACOM/utm\\_/](https://www.pacom.mil/About-USINDOPACOM/utm_/).

United States Institute of Peace. How Climate Change Deepens Bangladesh’s Fragility. 13 Sept. 2021.

“United States Pacific Command (USPACOM).” GlobalSecurity.org, <https://www.globalsecurity.org/military/agency/dod/pacom.htm?>.

Water.org. “Bangladesh’s Water and Sanitation Crisis.” Water.org, <https://water.org/our-impact/where-we-work/bangladesh/>.

- Willett, Colin. Sri Lanka: Background and Issues for Congress. Congressional Research Service, 2 Dec. 2024, <https://www.congress.gov/crs-product/IF10213>.
- Wilson, Catherine. “Political Deadlock Frustrates Bougainville’s Aspirations of Independence.” Al Jazeera, 27 June 2024, <https://www.aljazeera.com/news/2024/6/27/political-deadlock-frustrates-bougainvilles-aspirations-of-independence>
- Wiseman, Don. “An Open Secret: Papua New Guinea’s Gun Problem ‘Difficult’ to Solve, Journalist Says.” RNZ, 30 Oct. 2023, <https://www.rnz.co.nz/international/pacific-news/501292/an-open-secret-papua-new-guinea-s-gun-problem-difficult-to-solve-journalist-says>
- World Bank. “Agriculture, Forestry, and Fishing, Value Added (% of GDP).” World Bank Open Data, <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>.
- World Bank. Getting a Grip on Climate Change in the Philippines. <https://www.worldbank.org/en/country/philippines/publication/getting-a-grip-on-climate-change-in-the-philippines>.
- World Bank. “Papua New Guinea: Access to Clean Water Improving Opportunities for Women and Girls.” World Bank, 21 Mar. 2024, <https://www.worldbank.org/en/news/video/2024/03/21/papua-new-guinea-access-to-clean-water-improving-opportunities-for-women-and-girls>.
- World Bank. “Philippines – Vulnerability.” Climate Change Knowledge Portal, <https://climateknowledgeportal.worldbank.org/country/philippines/vulnerability>.
- World Bank. “World Development Indicators: Structure of Value Added.” World Bank Data, <https://wdi.worldbank.org/table/4.2>.
- World Food Programme. “Myanmar on the Brink as Conflict Fuels Hunger.” World Food Programme, 22 Jan. 2024, <https://www.wfp.org/news/myanmar-brink-conflict-fuels-hunger>.
- World Food Program USA. “Sri Lanka.” World Food Program USA, n.d., <https://www.wfpusa.org/countries/sri-lanka/>.
- Yayboke, Erol, et al. “Addressing Fragility in Papua New Guinea.” Center for Strategic and International Studies, 17 Aug. 2022, <https://www.csis.org/analysis/addressing-fragility-papua-new-guinea>.



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