

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

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Executive Summary

This report provides a multidimensional analysis of how natural hazards act as risk multipliers to conflict incidence across the Indo-Pacific, with a focus on operational priorities for the U.S. Indo-Pacific Command (USINDOPACOM) and the Department of Defense (DoD). Commissioned by the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM), the study employs a mixed-methods analytical framework that integrates a cross-sectional literature review, 2024 Climate Conflict Vulnerability Index (CCVI) data, field-validated qualitative indicators, and operational insights from military and humanitarian stakeholders.

Through this approach, the report identifies five top priority countries— Myanmar, Bangladesh, the Philippines, Papua New Guinea, and Sri Lanka— as high-risk environments warranting ongoing strategic monitoring and contingency planning. Each country profile details a unique combination of qualitative and quantitative risk factors, including acute natural hazard exposure, entrenched economic and political vulnerabilities, and active or latent conflict dynamics. The analysis demonstrates that environmental shocks such as typhoons, droughts, flooding, sea level rise, or salinization act as risk multiplying pathways for instability and conflict— significantly increasing cross-border implications.

To address these risks, the report concludes with three strategic recommendations: **Integrate** environmental exposure with fragility metrics to capture compounded risk; **Establish** research collaboration with Quad partners on natural hazards monitoring and risk analysis; **Develop** an early warning system and flashpoint protocol for natural hazards in order to support rapid risk assessment. These recommendations aim to support USINDOPACOM and CFE-DM in strengthening crisis response capacity among U.S., Allied, and Partner militaries throughout the region, with the overarching aim of saving lives before, during, and after emergencies.

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Introduction: Natural Hazards as Multipliers of Conflict Potential

Natural 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.¹ The U.S. strategic presence in the region, led by USINDOPACOM with over 375,000 deployed military and civilian personnel, is tasked with maintaining regional peace, deterring coercion, and responding to emergent crises.² However, as adverse weather events become more frequent and intense, the conditions necessary to achieve strategic military objectives are degrading.

From the Andersen Air Force Base, experiencing recurrent flooding and erosion, to potential disruptions in U.S. radar infrastructure in the Marshall Islands and Kiribati, these environmental risks will increasingly challenge U.S. force posture, infrastructure resilience, and operational readiness across the region.³ The U.S. Department of Defense first identified adverse environmental events as a “threat multiplier” in the 2014 Quadrennial Defense Review, and the designation has gained increasing strategic relevance in the years since.⁴ Furthermore, the 2021 DoD Climate Risk Analysis and 2023 Indo-Pacific Climate Security Framework explicitly identify natural hazards as operational threats to bases, readiness, and strategic access.

¹ United States Indo-Pacific Command. “About USINDOPACOM.” U.S. Indo-Pacific Command, https://www.pacom.mil/About-USINDOPACOM/utm_/.

² “United States Pacific Command (USPACOM).” GlobalSecurity.org, <https://www.globalsecurity.org/military/agency/dod/pacom.htm?>.

³ 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/>.

⁴ 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.

Scope & Purpose

Given that disaster-induced state weakness can create opportunities for adversarial actors, both state and non-state, to expand influence, threaten critical sea lanes, and destabilize neighboring allies, it is crucial to recognize that natural hazards indirectly, but tangibly, foster numerous near-term threats to U.S. strategic interests. Therefore, the scope and purpose of this report are twofold and urgent:

1. To provide a precise, risk-informed analysis of where and how Indo-Pacific natural hazards intersect with socio-political and economic fragility to increase conflict potential
2. To support U.S. strategic foresight, military and humanitarian readiness, operational agility, and contingency planning in a rapidly changing Indo-Pacific security environment

In pursuing these objectives, this report moves beyond generalized accounts of isolated disasters. It offers a rigorous, evidence-based lens on how natural events escalate country-specific conflict trajectories by developing and deploying a robust mixed-methods assessment framework that combines CCVI-based regression modeling with a field-validated qualitative approach. Building on this framework, the report identifies and analyzes the risk profiles of five high-priority countries—Myanmar, Bangladesh, the Philippines, Papua New Guinea, and Sri Lanka—based on a combination of factors, including exposure to natural hazards, persistent political, institutional, and socio-economic vulnerabilities, and limited governance capacity. Highlighting these high-risk countries as environments where unmanaged natural hazards could rapidly escalate into operational crises also underscores future risks to U.S. forward basing, force protection, humanitarian access, strategic mobility, and alliance cohesion.

Methodology and Framework

Overview

A mixed-methods approach underpins the assessment of environmental-conflict dynamics in the Indo-Pacific, combining quantitative modeling with qualitative interpretation to capture both structural trends and localized complexity. The methodological approach, which begins with an Ordinary Least Squares (OLS) regression, is adaptable and can be applied to different contexts. This robust tool identifies countries falling within the top quartile for combined natural hazard risk, structural vulnerability, and conflict risk. However, it's important to note that the model is not designed for pure statistical inference and cannot function as a standalone predictive tool. Instead, it serves as a decision-support mechanism, guiding strategic assessments and resource allocation. Therefore, the report incorporates qualitative insights alongside the quantitative analysis to address broader data availability and consistency limitations, variability in reporting standards, and the multifaceted nature of conflict.

By integrating qualitative insights from region-specific expert interviews, case-based reasoning, and academic literature, the qualitative assessment incorporates and considers 13 evidence-supported variables such as political unrest, economic instability, and population displacement, which present 1) a statistically positive relationship with extreme natural events, and 2) a statistically positive relationship to conflict escalation. While these qualitative variables are imperfect, they avoid overly reductionist causal assumptions and avoid imposing a quasi-experimental design that misrepresents the layered nature of social and environmental systems.

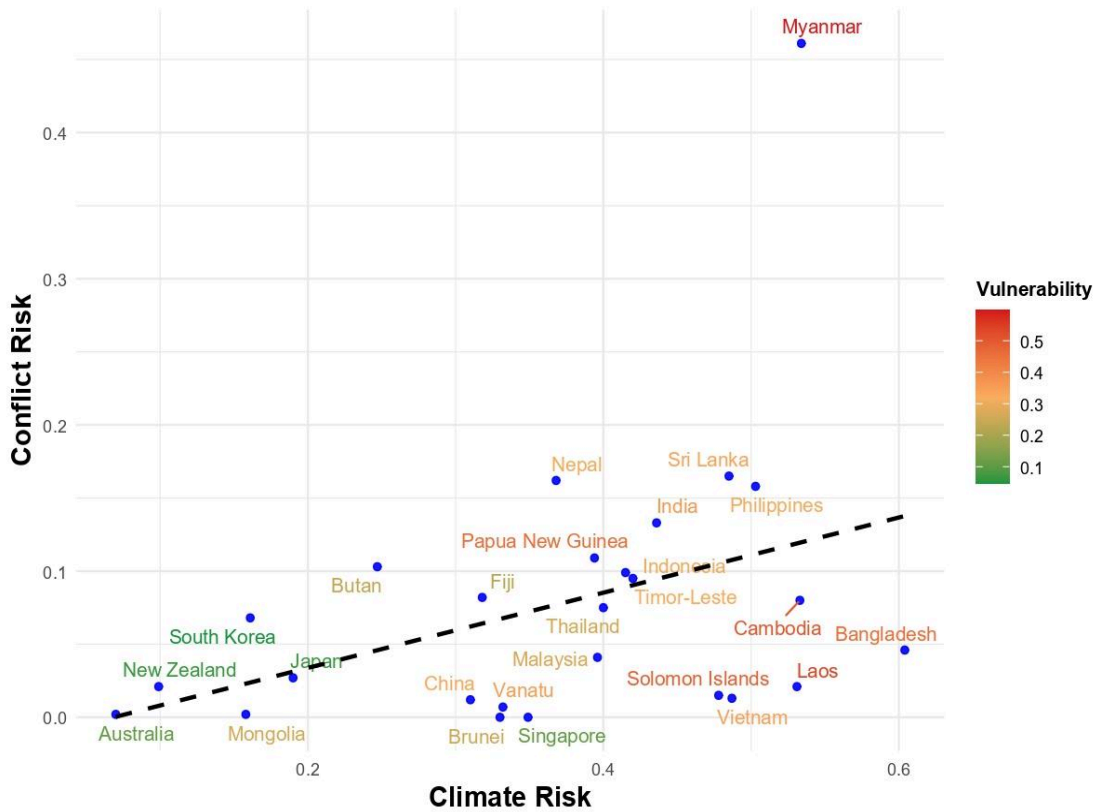
Quantitative Model: Statistical Modeling Using the CCVI Index

Data Source and Variable Construction

The quantitative analysis is based on the CCVI Index, a comprehensive global dataset released in October 2024. This significant project was made possible through 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. 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. Each index is normalized on a 0 to 1 scale, enabling comprehensive, cross-national analysis at the country level.

The Climate Risk Index captures a country's exposure to environmental hazards such as floods, droughts, 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 natural hazard events. These include indicators of poverty, inequality, governance capacity, infrastructure gaps, and institutional fragility. The Conflict Risk Index, which serves as the dependent variable in our 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. Below is a visual aid representing the relative levels of both Risk Indices, with Vulnerability represented on a color scale from green to red.

Conflict Risk vs. Climate Risk



5

Source: 2024 Climate Conflict Vulnerability Index (CCVI)

Model Specification and Structure

The quantitative relationship between these indices is estimated through the following OLS regression equation:

$$Conflict Risk_i = \beta_0 + \beta_1(Climate Risk_i) + \beta_2(Vulnerability_i) + \varepsilon_i$$

In this model, each variable represents a country-level index sourced from the CCVI. *Climate Risk* captures the intensity and frequency of natural hazards, while *Vulnerability* reflects a country's socio-political and economic susceptibility to shocks. The dependent variable, *Conflict Risk*, is conceptualized as the potential for conflict arising from the interaction of

⁵ Visual aid representing the relative levels of both Risk Indices, with Vulnerability represented on a color scale from green to red.

conflict hazard, fragility, and relative exposure. Two model 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 us to determine how much of the variation in conflict risk can be attributed directly to exposure and how much is indirectly shaped by pre-existing vulnerabilities.

Results and Statistical Interpretation

The regression analysis results are presented in detail in **Appendix 1**; However, several key findings warrant emphasis. 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. This suggests that the relationship between extreme weather events 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 natural hazard-driven risks. All

coefficients, excluding the constant, are statistically significant at the 99% level, giving us a high degree of confidence in the robustness of the observed relationships. The standard errors are stable, and residual diagnostics show no evidence of heteroskedasticity or specification error that would undermine the reliability of the results.

<i>Dependent variable:</i>		
Conflict Risk		
	(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 ²	0.340	0.399
Adjusted R ²	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)
<i>Note:</i>	* p<0.1; ** p<0.05; *** p<0.01	

Limitations and Methodological Considerations

While the regression results are compelling, it is important to acknowledge several limitations. First, the model is based entirely on observational data, meaning it cannot establish causality. The relationships identified are correlational and should not be interpreted as definitive evidence that natural 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**).

Third, while the CCVI represents a significant step forward in global natural hazard-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, the dataset systematically excludes small island developing states (SIDS) due to minimum land area thresholds despite their acute vulnerability to environmental disruptions. This omission is particularly consequential in the Indo-Pacific region, where several highly high-exposure island nations are excluded from the model. 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. 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.

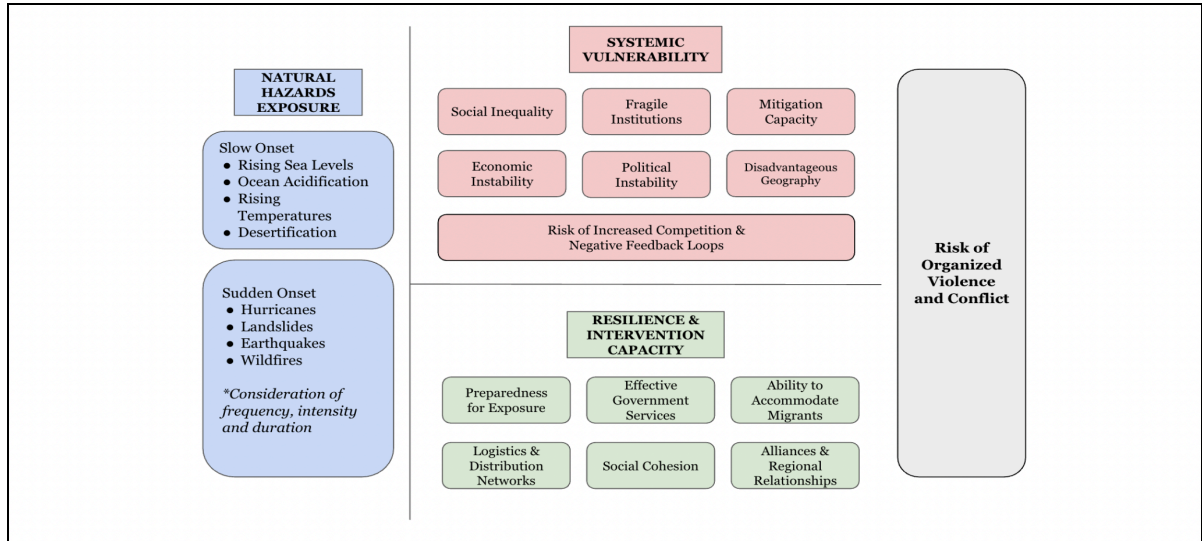
Qualitative Framework: Assessing Pathways from Natural Hazards to Conflict

As previously indicated, while the quantitative model identifies statistical associations, it cannot fully capture the ways in which natural hazards contribute to increasing the risks of conflict dynamics across diverse geopolitical and institutional settings. To address this, the report incorporates a qualitative framework that draws on expert insights, field engagement, and

case-based reasoning to identify localized nuances and feedback loops. The qualitative framework advances the report toward three core goals:

1. Translating the statistical model into actionable insights for real-world application
2. Identifying mediating variables that influence how extreme weather events shocks indirectly escalate into conflict events
3. Addressing regional and thematic data gaps overlooked by global indices like the CCVI

As seen below, the framework structure is constructed around three intersecting analytical domains: Natural Hazard Exposure, Systemic Vulnerabilities, and Resilience and Response Capacity. These domains and their assessment criteria enable a more granular, field-informed understanding of the dynamic and context-specific pathways, aiming to capture the operational realities that causal pathways from natural hazard events and conflict are non-linear. Numerous unquantifiable matrices, including social cohesion, historical grievances, political atmosphere, and state and institutional legitimacy, influence these pathways. With this complexity in mind, the following section details the components of the qualitative framework, each designed to capture the underlying risks that are intensified by natural hazards and contribute to the escalation of instability and conflict. These components reveal evidence-based conditions and relationships that are exacerbated by natural hazards, thereby increasing the likelihood of conflict.



Natural Hazard Exposure: Distinguishing Typologies

The framework begins by classifying natural hazards into slow-onset and sudden-onset categories, each with distinct implications for conflict risk. Refer to **Appendix 3** for more detail regarding the placement of the variables.

- *Slow-Onset Events*, 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 events can trigger discontent, displacement, and social fragmentation.
- *Sudden-Onset Events*, such as typhoons, flash floods, tsunamis, and cyclones, 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 onset patterns interact with vulnerabilities in different ways. For example, sudden-onset disasters are more likely to catalyze political backlash in centralized, hierarchical

states with rigid bureaucracies, while slow-onset stressors are particularly dangerous in contexts of protracted inequality and weak rural governance.

Systemic Vulnerabilities: Structural Fault Lines that Shape Risk

The second layer of the framework incorporates **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 natural hazard events:

- *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 natural 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 by corruption, politicized security forces, and underfunded local agencies often fail to manage relief or reconstruction, creating space for warlords, gangs, and insurgents to exploit governance vacuums.
- *Mitigation Capacity*, such as the lack of early warning systems, unregulated land use, 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.

Each of these variables served both as theoretical constructs and practical controls in assessing real-world conflict risks across Indo-Pacific countries. States with overlapping vulnerabilities face a higher likelihood that natural shocks will multiply latent instability and conflict.

Resilience and Response Capacity: Adaptive Strengths and Strategic Weaknesses

The third component of the framework measures a state's ability to mitigate, absorb, and respond to extreme weather shocks in ways that maintain social order and political legitimacy. These variables represent buffers that can prevent, mitigate or respond to hazard 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, thereby increasing unrest potential.
- *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 lack thereof can fuel anger, protest, inconsistency, or exclusionary services.
- *Ability to Accommodate Migrants* becomes vital when mass displacement occurs. Poorly managed population influxes—especially into urban slums—can trigger competition over housing, jobs, and services, heightening intercommunal tensions or ethnic conflict.

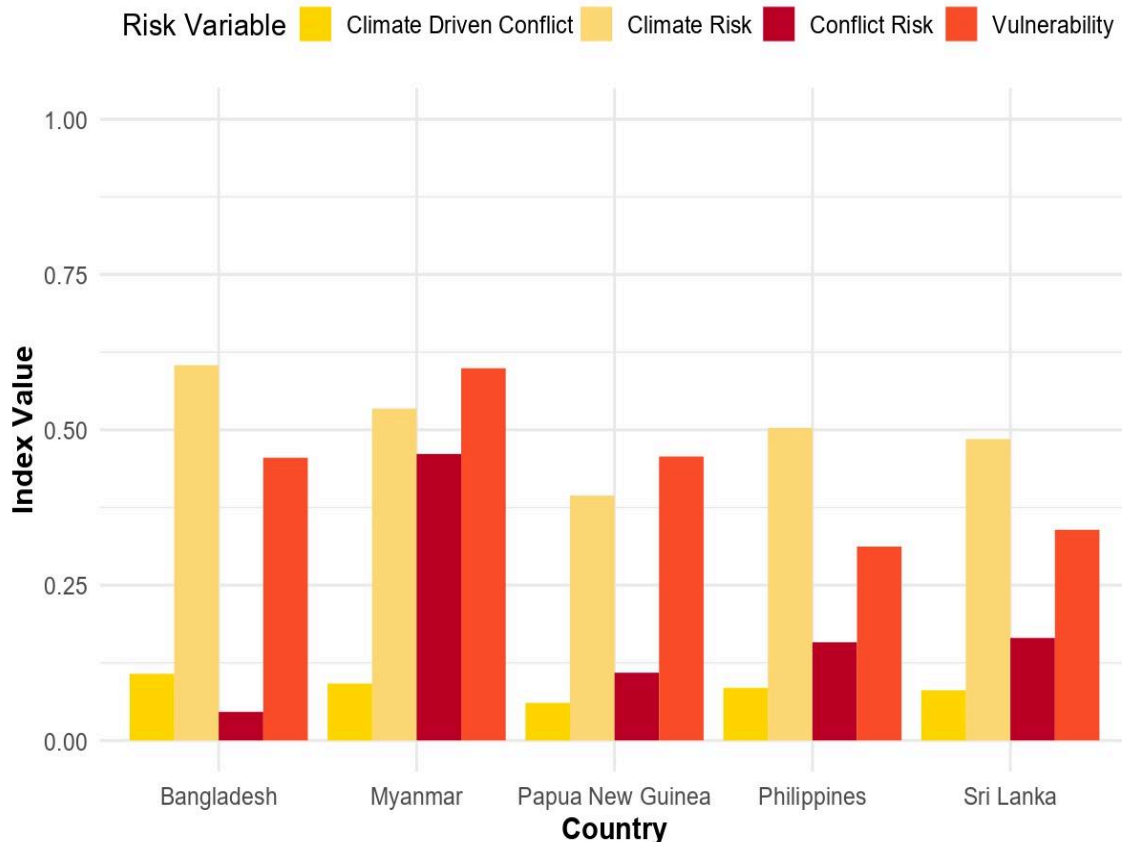
- *Logistics and Distribution Networks*—including roads, ports, inventory management, and agency coordination—directly influence recovery time. Delayed or politicized delivery of aid can erode social cohesion and enable armed or criminal groups to fill service gaps.
- *Social Cohesion* is perhaps the 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 or strained borders may find themselves isolated during crises, and regional rivalries over water or refugees may lead to inter-state friction.

Conflict Pathways: Integrated Causal Chains

When reviewing and using this framework, it is essential to remember that natural hazards serve as risk multipliers to pre-existing conditions, which contribute to domestic turmoil and conflict. For instance, while a seasonal drought in a stable country may prompt operational responses and responsive policy, the same event in an unstable state can trigger unrest or displacement. As a result, the power of the mixed-methodology framework lies in its ability to integrate hazard, vulnerability, and response factors into clear causal chains that explain the emergence of instability. Overall, each Indo-Pacific country in the study was assessed along these multi-step pathways to determine the presence of cascading risks that increase the likelihood of natural-hazards-exacerbated conflict.

Top Five Priority Watchlist: High-Risk States

Strategic Risk Factors in the Indo-Pacific



Soure: 2024 Climate Conflict Vulnerability Index (CCVI)

The countries featured in this section were identified through a mixed-methods selection process. Initial candidates were shortlisted based on our previously outlined quantitative analysis, which assessed co-occurring natural hazards and conflict data across the Indo-Pacific. The final selection was determined through an evidence-based qualitative framework, which incorporated expert interviews, case-specific research, and regional contextualization. The profiles below represent the highest-priority states where natural hazards intersect with acute

structural vulnerabilities, creating elevated risk for conflict escalation. Each country profile is organized around the following analytical dimensions:

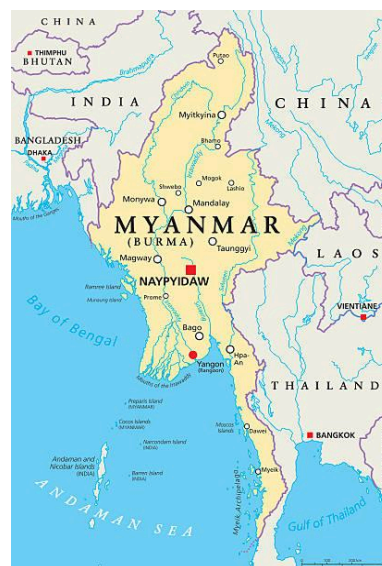
1. **Background** sections provide an overview of each country’s baseline fragility, including key governance challenges, historical grievances, and economic dependencies, particularly in environmentally sensitive sectors.
2. **Current Risks and Challenges** examine how environmental shocks intersect with political violence, displacement, and resource competition, while also highlighting how state collapse and militarized resource control deepen instability.

This integrated approach allows the profiles to reflect not only environmental exposure, but also the complex systems through which hazards escalate into broader social, economic, and political crises. Thematic analysis and strategic recommendations follow in the next section. Additionally, a more detailed Adaptation and Resilience Strategies profile and a Statement on Implications for United States Engagement for these countries is included in the Appendix to enhance the depth and operational relevance of each country's profile.⁶

Country Profile: Myanmar

Situational Overview

Myanmar is one of the most vulnerable countries in the Indo-Pacific, where natural 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



Source: PeterHermesFurian

⁶ Refer to Appendices 4 & 5.

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. As of 2025, the country ranks third on the International Rescue Committee’s Emergency Watchlist and is one of the most environmentally-exposed nations.⁷

This complex risk environment is compounded by the country’s economic fragility. Myanmar’s economy is heavily reliant on environmentally-sensitive sectors: agriculture contributes roughly 50% of GDP and employs two-thirds of the population. Yet unsustainable land practices—particularly shifting agriculture and deforestation—have degraded over 5 million hectares, accelerating desertification in the Dry Zone and reducing food production.⁸ Recurrent droughts and groundwater depletion have left 15.2 million people acutely food insecure.⁹ At the same time, external sanctions and domestic inflation have intensified household vulnerability, particularly in Rakhine State where families now spend up to 75% of income on food.¹⁰ These economic pressures are routinely exacerbated by environmental shocks. Typhoon Yagi’s floods in September 2024 damaged over 2.3 million hectares of cropland across Myanmar, significantly disrupting the main rice harvest and leading to a below-average national paddy output.¹¹ While Myanmar’s rice stocks remain sufficient for now, the disaster has heightened food security concerns and is expected to reduce yields in the worst-hit regions.¹² In addition, widespread

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

⁸ Ibid.

⁹ 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/>.

¹⁰ 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>.

¹¹ 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>.

¹² 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-id-post-disaster-0>.

flooding and storm damage from Cyclone Mocha in 2023 had already weakened agricultural resilience, compounding the impacts of Yagi and further threatening food security in vulnerable communities.^{13 14}

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.¹⁵ As a result, Myanmar receives only 0.25% of global adaptation funding, most of which bypasses conflict-affected zones.¹⁶ The military routinely blocks aid convoys, imposes taxes on humanitarian shipments, and targets civilian infrastructure, including water treatment plants and health facilities.¹⁷

Current Risks and Challenges

Myanmar's civil war continues to expand, entrenching instability across the country. Non-state armed groups (NSAGs) now operate in 96% of townships, clashing with the State Administration Council (SAC) in a multi-front civil war.¹⁸ The 2023 "Operation 1027" offensive by the Three Brotherhood Alliance displaced 3.5 million people by 2024.¹⁹ The military's retaliatory tactics—including forced conscription, destruction of farmland, and restrictions on humanitarian aid—have devastated agricultural production, forcing rural communities to flee not only violence but also collapsing food systems and landmine contamination.²⁰

¹³ 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>.

¹⁴ 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>.

¹⁵ 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>.

¹⁶ 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>.

¹⁷ International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

At the same time, environmental stressors are intensifying. The Dry Zone, one of the most densely populated areas in Myanmar, faces prolonged droughts and floods, severely undermining both food security and export revenue.²¹ According to a 2016 National Action Plan for Agriculture report, soil degradation affects 1 million hectares of land (5.3% of cultivable land). Meanwhile, sudden-onset disasters such as cyclones and floods continue to displace millions each year.^{22 23} In September 2024, Typhoon Yagi's remnants wiped out crop reserves and drove significant spikes in food prices. These slow- and fast-onset disasters together erode household resilience and deepen economic instability.

As conflict spreads, natural resources have become central to the war economy.^{24 25} The military's grip on irrigation systems in the Dry Zone has sparked direct confrontations with NSAGs seeking to control water access.^{26 27 28} Both state and non-state actors finance their operations through illegal logging, accelerating deforestation and compounding environmental degradation.^{29 30} 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.

²¹ 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.

²² Kyaw, Kaung Htet. "Myanmar's Absent Soil Stewards." Earth Journalism Network, 2 Dec. 2022, <https://earthjournalism.net/stories/myanmars-absent-soil-stewards>.

²³ The Mekong Eye, "The Soil Problem: Myanmar's Farmlands Are Losing Fertility." 11 Nov. 2024, <https://www.mekongeye.com/2024/11/11/myanmar-soil>.

²⁴ The Mekong Eye, "Myanmar's war on nature." 2025, <https://www.mekongeye.com/2025/02/03/war-on-nature>

²⁵ 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>

²⁶ "Conflict Exacerbates Dry Zone Drought." *Frontier Myanmar*, 25 Apr. 2023, <https://www.frontiermyanmar.net/en/conflict-exacerbates-dry-zone-drought/>.

²⁷ IISS, "Junta tactics shift in Myanmar's war-torn Dry Zone" July 2023, <https://myanmar.iiss.org/updates/2023-07>

²⁸ 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/>.

²⁹ The Mekong Eye, "Myanmar's war on nature." 2025, <https://www.mekongeye.com/2025/02/03/war-on-nature>

³⁰ 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>

Horizontal inequalities among Myanmar’s 135 recognized ethnic groups further intensify the potential for conflict³¹. In the Dry Zone and Rakhine State, marginalized communities face systemic exclusion from land and water access, worsened by militarized resource extraction and deforestation.³² These groups often live in ecologically vulnerable areas yet remain disconnected from state adaptation programs. In Chin State, disaster-related stress has devastated traditional livelihoods, pushing communities toward illicit poppy cultivation to survive—an economy that sustains armed group financing and prolongs cycles of conflict.³³

Displacement, both internal and cross-border, is a central feature of Myanmar’s landscape. The 2024 monsoon floods displaced 230,000 people, overwhelming urban centers already strained by inflation and infrastructure decay.³⁴ Cross-border migration into Thailand and Bangladesh continues to rise, exposing refugees to trafficking and exploitation.³⁵ Internally, the displacement of over 3.5 million people has pushed cities like Yangon and Mandalay beyond capacity.³⁶ In these overcrowded informal settlements, waste and water systems have collapsed, leading to repeated cholera outbreaks and growing tensions between host communities and the displaced.³⁷ As of early 2025, Myanmar hosts an estimated 3.5 million internally displaced

³¹ 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>.

³² International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.

³³ 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/>.

³⁴ 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>.

³⁵ 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/>.

³⁶ International Rescue Committee. 2025 Emergency Watchlist. Dec. 2024, <https://www.rescue.org/sites/default/files/2024-12/CS2405-Watchlist-25-Report%20Final%20DIGI.pdf>.

³⁷ Ibid.

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.^{38 39 40 41}

Geography amplifies Myanmar's vulnerability. The country's 1,900-mile coastline exposes it to severe 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.⁴² A magnitude 7.7 earthquake in March 2025 killed over 3730 people and disrupted already fragile supply chains.⁴³ The continued loss of mangroves, illegal mining, and widespread deforestation have weakened ecological buffers, leaving communities more exposed to new disasters. Myanmar represents a worst-case scenario where disaster-related stress can deepen an already catastrophic collapse 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.

³⁸ 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>.

³⁹ Global Humanitarian Overview. Myanmar. Humanitarian Action, 2025,

<https://humanitarianaction.info/document/global-humanitarian-overview-2025/article/myanmar-2>.

⁴⁰ 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>.

⁴¹ United Nations High Commissioner for Refugees. Myanmar Situation. UNHCR Operational Data Portal, <https://reporting.unhcr.org/operational/situations/myanmar-situation>.

⁴² 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/>.

⁴³ "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/>.

Today, 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. The magnitude 7.7 earthquake in March 2025, followed by another significant seismic event in April 2025, has further exposed the country’s vulnerability to natural disasters, potentially exacerbating ongoing conflicts and humanitarian crises in real time. These compounding factors—the dismantling of natural hazard governance, 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. Targeted support for natural hazard resilience strategies that are conflict-sensitive must be prioritized, focusing on localized efforts that strengthen community resilience, promote accountability, and address urgent humanitarian needs. Failure to do so will intensify Myanmar’s fragmentation, straining regional resources and potentially requiring increased U.S. engagement to mitigate spillover effects. A proactive and coordinated approach is essential to prevent a catastrophic collapse of political order and address the growing threats emanating from this increasingly unstable region.

Country Profile: Bangladesh

Situational Overview

With a population of over 170 million people, Bangladesh is one of the most densely populated and disaster-exposed countries in the world, standing at the intersection of extreme weather exposure, high



Source: Pavalena

population density, and structural fragility.⁴⁴ The country's low-lying geography and vulnerability to recurrent disasters intersect with deep-rooted inequality, political polarization, and rising social tensions. This 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, making it acutely vulnerable to environmental disasters, like flooding, storm surges, and sea-level rise.⁴⁵ Coastal erosion, saltwater intrusion, and groundwater depletion are already diminishing access to safe water and fertile land—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 from coastal districts alone.⁴⁶

Although agriculture now accounts for just over 11% of GDP, it remains a vital source of employment—particularly in regions most exposed to natural hazards.⁴⁷ Nearly 35% of the labor⁴⁸ force depends on agriculture, and much of the country's food security still hinges on smallholder farming. Yet this system is increasingly unsustainable. Sea-level rise and salinity are degrading farmland, while droughts and erratic monsoons are reducing yields. Disaster-related stress is projected to reduce rice yields by 7.4% annually through 2050,⁴⁹ placing additional

⁴⁴ “Bangladesh Country Profile.” *BBC News*, 4 Mar. 2011, <https://www.bbc.com/news/world-south-asia-12650940>.

⁴⁵ United States Institute of Peace. *How Climate Change Deepens Bangladesh's Fragility*. 13 Sept. 2021.

⁴⁶ Researching Internal Displacement. *Policy Architecture to Address Disaster and Climate Change Induced Displacement in Bangladesh*. Mar. 2023.

⁴⁷ World Bank. “World Development Indicators: Structure of Value Added.” *World Bank Data*, <https://wdi.worldbank.org/table/4.2>.

⁴⁸ World Bank. “Agriculture, Forestry, and Fishing, Value Added (% of GDP).” *World Bank Open Data*, <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>.

⁴⁹ 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>.

pressure on food systems that are already fragile. These agricultural and water-related stresses are compounded by a growing sanitation crisis. More than 4.3 million people lack access to safe drinking water, and over 85 million are without adequate sanitation.⁵⁰ Rural populations are disproportionately affected, with communities dependent on shallow wells or contaminated surface water.⁵¹ The spread of waterborne disease and the failure to deliver basic services erode 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.⁵² This makes them highly vulnerable to price fluctuations triggered by irregular crop failures or global supply chain disruptions. Nutritional deficiencies, child stunting, and undernutrition remain widespread, reflecting deeper structural challenges that natural hazards continue to exacerbate. Bangladesh's governance architecture struggles to respond to these overlapping crises. Corruption, overcentralization, and political interference undermine the delivery of services and the implementation of adaptation strategies. Furthermore, the judiciary lacks independence and capacity, creating weak accountability.⁵³ These governance failures not only impede crisis response but also fuel public grievances and increase the risk of unrest.

Current Risks and Challenges

⁵⁰ Water.org. "Bangladesh's Water and Sanitation Crisis." Water.org, <https://water.org/our-impact/where-we-work/bangladesh/>.

⁵¹ Ibid.

⁵² 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>

⁵³ 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>.

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

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.⁵⁴ Since 2017, Bangladesh has experienced at least three or four concurrent natural disasters every year.⁵⁵ Major events such as Cyclones Bulbul and Mocha and monsoon flooding have devastated infrastructure and livelihoods, leaving little time for recovery between crises.⁵⁶ This cycle of recurring shocks increases the risk of chronic displacement, urban overcrowding, and social unrest.

An estimated 56% of Bangladesh's population lives in regions highly exposed to environmental hazards.⁵⁷ Coastal communities are disproportionately affected by groundwater depletion, storm surges, and salinity intrusion leading to declining fish stocks.⁵⁸ These impacts have disrupted traditional livelihoods and driven rural-to-urban migration. Major cities like Dhaka are absorbing large numbers of displaced families, placing significant strain on urban infrastructure, especially in informal settlements with limited sanitation and access to clean water.⁵⁹ Bangladesh's social and political landscape is also marked by tension. Political rivalry between the Awami League and the Bangladesh Nationalist Party frequently escalates into

⁵⁴ Internal Displacement Monitoring Centre (IDMC). "Bangladesh." *Internal Displacement Monitoring Centre*, <https://www.internal-displacement.org/countries/bangladesh/>.

⁵⁵ Ibid.

⁵⁶ Ibid.

⁵⁷ 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.

⁵⁸ Ibid.

⁵⁹ Schwartzstein, Peter. "Going Under: A Rural Bangladeshi Dilemma." *Wilson Center*, 14 Mar. 2022, <https://www.wilsoncenter.org/article/going-under-rural-bangladeshi-dilemma>.

unrest, particularly during election periods.⁶⁰ Student and youth organizations wings associated with both parties engage in campus and street-level violence, reflecting a broader pattern of politicized grievance. At the same time, rising inequality and systemic exclusion of religious minorities—particularly Hindus—are contributing to social fragmentation.⁶¹ According to ACLED, most protests in Bangladesh center on education reform, wage demands, or opposition to government action.⁶²

Income inequality continues to rise, especially in rural areas. The richest 5% of earners claim nearly a third of national income, while the poorest 5% receive less than 1%.⁶³ Marginalized populations face declining access to public services and employment opportunities, driving frustration and weakening community resilience. These dynamics are further strained by Bangladesh's hosting of over one million Rohingya refugees in Cox's Bazar—the world's largest refugee camp.⁶⁴ As competition for land, water, and jobs grows, tensions between refugee and host communities continue to intensify.⁶⁵ Bangladesh is a frontline case of how extreme weather events intersect with displacement, political volatility, and structural exclusion in a densely populated state. As environmental shocks drive permanent migration and strain 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.

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, 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>.

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

⁶³ 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_e9c039b02371debf6954334d0832d6d9fcdcf189_10010.pdf.

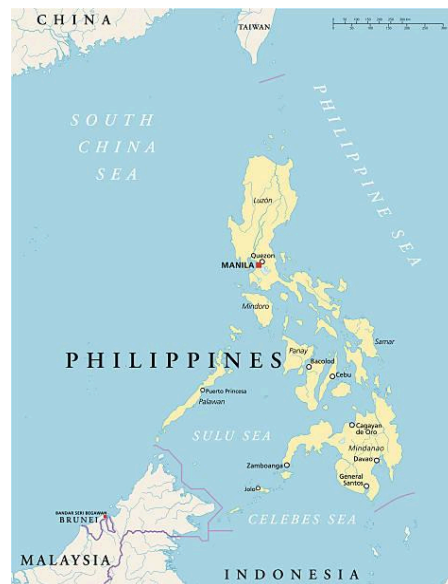
⁶⁴ Bangladesh Ministry of Disaster Management and Relief. *National Strategy on Internal Displacement Management*. Jan. 2021.

⁶⁵ Ibid.

Country Profile: Philippines

Situational Overview

Where Bangladesh’s challenges emerge primarily from structural vulnerability and disaster-induced displacement, the Philippines provides a clear example of how natural hazard risks interact with active insurgency dynamics. With over 7,640 islands, the country is regularly exposed to tropical cyclones, floods, droughts, and accelerating sea-level rise.⁶⁶ In conflict-affected regions such as Mindanao and the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), these hazards



Source: PeterHermesFurian

amplify pre-existing poverty, marginalization, and weak governance—exacerbating cycles of violence and undermining state legitimacy. According to the World Bank, the Philippines is ranked among the world’s most environmentally vulnerable nations.⁶⁷ Over 60% of its land area and 74% of its population are exposed to multiple natural hazards, placing millions at persistent risk of both displacement and livelihood disruption.⁶⁸

In 2021 alone, the country recorded 5.7 million new internal displacements caused by weather-related disasters—over ten times the number displaced by conflict.⁶⁹ These

⁶⁶ “Know before you go: the Philippines.” National Geographic, <https://www.nationalgeographic.com/travel/article/partner-content-know-before-you-go-the-philippines>.

⁶⁷ 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>.

⁶⁸ World Bank. “Philippines – Vulnerability.” Climate Change Knowledge Portal, <https://climateknowledgeportal.worldbank.org/country/philippines/vulnerability>.

⁶⁹ 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.

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, home to some of the lowest human development indicators in the country and the highest poverty incidence (37.4% in 2021), is also among the most exposed to flooding and drought.⁷⁰ A history of armed conflict, poor infrastructure, and institutional underdevelopment leaves the region highly vulnerable to extreme weather events. In these conditions, environmental stress acts as a threat multiplier—amplifying long-standing grievances, fueling recruitment into armed groups, and overwhelming local institutions.

Current Risks and Challenges

Recent studies have confirmed statistical correlations between natural hazard stressors and conflict risk in the Philippines. One 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, particularly in agrarian regions.⁷¹ 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 Luzon and Visayas.⁷² These findings support a growing body of evidence that natural hazards result in a loss of livelihoods, in turn reducing the opportunity cost of violence and increasing militant recruitment, especially for unemployed rural youth. A 2021 study by CGIAR found that in Mindanao, drought-induced water scarcity has triggered localized conflict. Most notably, conflict arose between the Talaandig indigenous group

⁷⁰ Lacson, Nonoy. “BARMM poverty level plummets.” Daily Tribune, 17 Oct. 2022, <https://tribune.net.ph/2022/10/17/barmm-poverty-level-plummets>.

⁷¹ 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>.

⁷² Ibid.

and agribusinesses in Bukidnon Province, where retaliatory acts such as irrigation sabotage were documented.⁷³

Environmental degradation and poor disaster response can also erode state legitimacy. Following Typhoon Haiyan in 2013, widespread anger erupted over slow and unequal aid distribution in affected areas like Eastern Visayas. Simultaneously, security resources were diverted away from other conflict zones, creating operational gaps.⁷⁴ A more direct case occurred during the 2016 Kidapawan protests, where drought-stricken farmers demanding rice assistance were violently dispersed by police. The deaths and injuries following the “Kidapawan massacre,” fueled local resentment and increased insurgent recruitment in the area.⁷⁵ These incidents reflect how perceived injustice and inadequate response to natural shocks can catalyze latent conflict.

Disaster-related displacement compounds these dynamics. In Mindanao, mass relocations following Typhoons Sendong and Bopha triggered land disputes and overwhelmed services in host cities like Iligan and Davao. Without equitable resettlement and support, such movements risk deepening existing social divisions. The Asian Development Bank estimates that unmanaged disaster displacement and economic disruption, caused by rising sea levels and flooding, could reduce GDP by up to 6% annually by 2100.⁷⁶ Conversely, disasters occasionally prompt short-lived cooperation or ceasefires. For instance, during Typhoon Pablo, 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.⁷⁷ The Philippines emphasizes how environmental shocks can reignite or prolong insurgency in regions marked by poverty and

⁷³ 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>.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Ibid.

marginalization. With natural hazards risks statistically linked to conflict resurgence, especially in BARMM, failure 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.

Country Profile: Papua New Guinea

Situational Overview

Compared to the Philippines, Papua New Guinea reveals how environmental stress in the absence of functioning state institutions can trigger cascading breakdowns. With a population of roughly 12.8 million⁷⁸ and more than 848 distinct



Source: PeterHermesFurian

languages spoken,⁷⁹ PNG is a country of immense ecological and cultural diversity, but weak governance, tribal conflict, and infrastructure gaps have left it highly vulnerable to disaster and displacement. The state's limited ability to absorb shocks or mediate conflict makes it uniquely brittle. Despite being rich in natural resources, including gold, copper, LNG, timber, and fisheries,^{80 81} PNG's development has been marred by volatility. Nearly 40% of the population⁸²

⁷⁸ "Papua New Guinea." International Monetary Fund, 2025, <https://www.imf.org/en/Countries/PNG>

⁷⁹ "Papua New Guinea." World Population Review, 2025, <https://worldpopulationreview.com/countries/papua-new-guinea>

⁸⁰ 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>

⁸¹ 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>

⁸² 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>

lives in poverty, and access to electricity (about 21%)⁸³ and safe drinking water (about 40%)⁸⁴ remains among the lowest in the Pacific. Agriculture sustains the rural majority and contributes 26% of GDP, yet infrastructure gaps, recurrent natural disasters, and lack of state support leave farmers, many operating in the informal sector, highly exposed to environmental shocks.⁸⁵ Food insecurity is widespread, with PNG ranking 110th out of 127 in the 2024 Global Hunger Index,⁸⁶ particularly in rural districts where child stunting and malnutrition are prevalent.⁸⁷ This is not due to a lack of food production, but rather systemic issues of accessibility and inequality.

Inequality in PNG is deeply geographic and ethnic. 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.⁸⁸ 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 conflicts have displaced more than 100,000 people and shut down schools and clinics, underscoring how land disputes, extractive industry grievances, and weak state authority reinforce cycles of violence and exclusion.⁸⁹

⁸³ Ibid.

⁸⁴ 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>.

⁸⁵ "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>

⁸⁶ "Papua New Guinea." *Global Hunger Index*, <https://www.globalhungerindex.org/papua-new-guinea.html>

⁸⁷ 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>

⁸⁸ 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>

⁸⁹ 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>

The state's ability to respond to these intersecting crises remains limited. Governance institutions in PNG are extremely under-resourced, 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.⁹⁰ Judicial and anti-corruption mechanisms face similar constraints: limited budgets, politicized appointments, and executive interference have undermined their capacity to function independently.⁹¹ These systemic failures have eroded public trust and weakened state legitimacy, fueling 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 2025.⁹² These pressures triggered nationwide riots in early 2024,⁹³ revealing how economic hardship, weak accountability, and institutional failure can ignite widespread instability.

Current Risks and Challenges

PNG's geographic location and topography make it acutely vulnerable to natural hazards. In 2024, floods, landslides, and earthquakes displaced thousands, with flooding alone accounting for 38% of displacement.⁹⁴ A deadly landslide in Enga Province buried hundreds of villagers and highlighted the challenges of disaster response in insecure, poorly connected terrain.⁹⁵ A UNDP

⁹⁰ 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>

⁹¹ 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/>

⁹² 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/>

⁹³ Ibid.

⁹⁴ International Organization for Migration. *Papua New Guinea 2024 Displacement Overview*. IOM, Jan. 2025, https://dtm.iom.int/sites/g/files/tmzbd11461/files/reports/PNG_2024_DISPLACEMENT_OVERVIEW_ANNUAL.pdf?iframe=true

⁹⁵ 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/>

assessment confirms that the Highlands are experiencing intensifying rainfall, rising temperatures, and increasing landslides, directly threatening agriculture and food security and exacerbating resource competition.⁹⁶

Armed tribal violence remains a major driver of displacement and insecurity. In Enga Province, for instance, a tribal clash in February 2024 left at least 49 dead.⁹⁷ Despite a formal state of emergency, the violence continues, fueled by long-standing rivalries and fights over control of land and access to resource wealth near sites like the Porgera Gold Mine.⁹⁸ The Porgera Valley itself saw 20–50 killed in September 2024 in violent mining-related disputes⁹⁹. These clashes have grown more lethal with the proliferation of illegal firearms,¹⁰⁰ and are often worsened by the near-total absence of law enforcement in remote regions. Organized criminal networks, including the Raskols, have capitalized on the state's limited reach, trafficking drugs and exploiting territorial instability for profit.¹⁰¹

Environmental degradation and exclusion from resource governance further fuel unrest. Many communities around mining sites receive little compensation and are excluded from decision-making, heightening resentment and feeding localized violence. These patterns are

⁹⁶ 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>

⁹⁷ 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/>

⁹⁸ Ibid.

⁹⁹ "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-uh>

¹⁰⁰ 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>

¹⁰¹ Global Initiative Against Transnational Organized Crime. "Papua New Guinea." Organized Crime Index, 2021, https://ocindex.net/2021/country/papua_new_guinea

visible in Bougainville, where environmental destruction and lack of compensation around the Panguna mine fueled a secessionist movement.¹⁰²

Displacement in PNG is both widespread and recurring and is overwhelmingly intra-state. Between 2020 and 2024, an estimated 1.6 million people were displaced or at risk, including over 555,000 confirmed as internally displaced.¹⁰³ More than 30,000 people were displaced in 2024 alone, with 71% due to natural hazards and 29% due to conflict.¹⁰⁴ 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, the expiration of the constitutional grace period led to multiple no-confidence motions against Prime Minister James Marape, exposing elite fragmentation and persistent governance volatility.¹⁰⁵ Meanwhile, Bougainville's unresolved independence bid, following a 2019 referendum in which 97% of voters opted for secession, has reawakened tensions rooted in environmental injustice and unaddressed grievances surrounding the Panguna mine.¹⁰⁶

PNG faces heightened instability where environmental disasters, extractive 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

¹⁰² 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>

¹⁰³ "Refugee Numbers Rising in Papua New Guinea." Islands Business, 23 Aug. 2024,

<https://islandsbusiness.com/news-break/png-refugees-3/>

¹⁰⁴ 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

¹⁰⁵ 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/>

¹⁰⁶ 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>

supporting culturally sensitive adaptation mechanisms that align with PNG’s social and geographic complexity.

Country Profile: Sri Lanka

Situational Overview

Unlike PNG, Sri Lanka has a more centralized state and sophisticated disaster planning architecture. Yet it remains highly fragile due to its unresolved ethnic tensions, economic instability, and high exposure to natural hazard risks. 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.



Source: PeterHermesFurian

Much of this fragility stems from Sri Lanka’s 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.¹⁰⁷ Post-independence policies favoring the Sinhala majority fueled decades of marginalization and culminated in a brutal 26-year civil war with the separatist Tamil Tigers. Though the war ended in 2009, its legacy of discrimination and unresolved grievances continues to destabilize affected regions.

¹⁰⁷ Willett, Colin. *Sri Lanka: Background and Issues for Congress*. Congressional Research Service, 2 Dec. 2024, <https://www.congress.gov/crs-product/IF10213>.

The 2022 economic crisis marked a breaking point in Sri Lanka’s recent history. Following a sovereign default, inflation soared to 60%, the economy contracted by nearly 8%, and half a million people lost their jobs.¹⁰⁸ Mass protests led to the resignation of President Rajapaksa and ushered in a new administration. Although the economy is now recovering—with 5% growth projected in 2024¹⁰⁹—critics argue that IMF-backed reforms have disproportionately impacted the working class through tax hikes and subsidy cuts.¹¹⁰ The risk of renewed debt distress remains high, and with it, the potential for new waves of social unrest and political instability.¹¹¹

Food insecurity remains high: one-third of children under five are malnourished,¹¹² and agricultural livelihoods—critical for over 30% of the workforce¹¹³—remain vulnerable to drought, floods, and policy missteps, such as the 2022 fertilizer ban.¹¹⁴ Compounding these issues are stark wealth disparities: the top 1% of Sri Lankans control nearly a third of the nation’s wealth, while the bottom 50% hold less than 4%.¹¹⁵ 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. Governance challenges persist.

¹⁰⁸ Ibid.

¹⁰⁹ 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/>.

¹¹⁰ 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>.

¹¹¹ 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>.

¹¹² World Food Program USA. “Sri Lanka.” *World Food Program USA*, n.d.,

<https://www.wfpusa.org/countries/sri-lanka/>.

¹¹³ 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>.

¹¹⁴ Ibid.

¹¹⁵ 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#>.

Sri Lanka's newly elected president, Anura Kumara Dissanayake, campaigned on anti-corruption and economic justice but has not addressed long-standing ethnic grievances or post-war accountability.¹¹⁶ Civil liberties remain restricted through controversial legislation like the Prevention of Terrorism Act (PTA), which continues to be used to suppress dissent.¹¹⁷ Minority communities, particularly Tamils and Muslims, face systemic discrimination, undermining social cohesion and trust in government institutions.¹¹⁸

Current Risks and Challenges

Sri Lanka's vulnerability to natural hazards is rising rapidly. Between 2011 and 2020, an estimated 750,000 people were affected by natural disasters annually. Over 80% of the population lacks adaptive capacity to respond. These stressors are expected to intensify: by 2050, nearly 19 million Sri Lankans are projected to live in hotspots.¹¹⁹ While floods, storms, and landslides account for the most immediate and visible damage, slower-onset impacts such as droughts, saline intrusion, and soil degradation quietly erode livelihoods over time, particularly in rural and agricultural regions.¹²⁰ In the north and northwest, salinization has rendered 43% of paddy land unusable in the Jaffna Peninsula. Projections show that 35% of land and over half of the region's paddy fields could be lost by 2100.¹²¹ Meanwhile, droughts have affected 8 million

¹¹⁶ 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>

¹¹⁷ 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>.

¹¹⁸ Ibid.

¹¹⁹ *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

¹²⁰ SLYCAN Trust. "CASE STUDY Climate Displacement and Internal Migration in Sri Lanka." IOM, 2019, <https://environmentalmigration.iom.int/sites/g/files/tmzbdl1411/files/documents/2023-11/case-study-climate-migration.pdf>.

¹²¹ 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>.

people since 2008, with water shortages and crop failures worsening food insecurity.¹²² In 2023, drought conditions across ten districts disrupted drinking water access and exacerbated livelihood loss in rural areas.¹²³

Flooding has affected more than 10 million people over the past three decades and is the leading source of disaster-related economic loss—currently averaging \$140 million annually and projected to rise to \$338 million by the 2030s.¹²⁴ Floods also increase the risk of landslides; roughly 20% of Sri Lanka’s surface area is considered landslide-prone, as seen in the 2016 Aranayake landslide and the 2017 monsoon season that triggered over 35 major landslides, marking the country’s highest annual disaster death toll.¹²⁵ Sri Lanka has experienced multiple waves of displacement driven by both conflict and environmental factors. Over one million people were displaced during the civil war, and tens of thousands remain in camps due to landmines and unresolved land claims.¹²⁶ Disaster-related events such as floods and landslides have displaced hundreds of thousands more. A 2015 report identified Sri Lanka as the country in South Asia with the highest relative risk of displacement due to disasters.¹²⁷ Rural-to-urban migration—often driven by environmental stress—has increased pressure on limited urban infrastructure and contributed to rising inequality and unrest.

¹²² 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.

¹²³ 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>.

¹²⁴ Ibid.

¹²⁵ 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.

¹²⁶ 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/>.

¹²⁷ SLYCAN Trust. “CASE STUDY Climate Displacement and Internal Migration in Sri Lanka.” *IOM*, 2019, <https://environmentalmigration.iom.int/sites/g/files/tmzbdl1411/files/documents/2023-11/case-study-climate-migration.pdf>.

Conflict-related risks have not abated. A 2024 UN report documents continued violations against Tamil victims, civil society, and journalists, including arbitrary detention and sexual violence.¹²⁸ The post-war period has seen state-sponsored demographic shifts and Sinhala-Buddhist territorial expansion in minority Tamil and Muslim areas, sparking land disputes and ethno-religious tensions.¹²⁹ In Kilinochchi and other districts, land grabs for mineral exploration and the conversion of religious sites have intensified local grievances and risk reigniting unrest.¹³⁰ Political marginalization, combined with a lack of transitional justice, has hindered reconciliation and institutional trust-building.

The island's geography amplifies these threats. Nearly half the population lives in coastal areas vulnerable to sea-level rise, storm surges, and erosion.¹³¹ 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. These converging pressures—economic, social, environmental—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 relapse under increasing environmental pressure.

¹²⁸ 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>

¹²⁹ 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/>.

¹³⁰ 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/>.

¹³¹ *Ibid.*

Natural Hazards As a Risk Multiplier: Thematic Analysis & Regional Implication

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

Thematic Trends: Overlapping Natural 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 impacts. 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, extreme weather shocks disproportionately impact sectors essential to livelihoods—agriculture, fisheries, and informal labor—creating downward economic spirals. In Myanmar, the collapse of rice production has reduced food exports and foreign reserves. In Bangladesh and Sri Lanka, natural hazards impact on agriculture are driving food insecurity and rural impoverishment. PNG's smallholder farmers face repeated environmental disruptions without institutional support, and in the Philippines, fishermen 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 displacement is a prominent and growing challenge in all five countries. In Bangladesh, 19.9 million people are projected to be displaced by 2050, many migrating to overcrowded urban centers such as

Dhaka and Chittagong. In Myanmar, monsoon floods and cyclones have overwhelmed cities already strained by conflict displacement. In the Philippines and PNG, disaster-induced migration creates competition over land and services, often in regions already marked by ethnic tension or insurgent presence. 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 natural hazards disproportionately affect already marginalized communities—ethnic minorities, religious groups, Indigenous peoples, and the rural poor. 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, natural-hazard-induced 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 exploit state failure during disaster response to build legitimacy. In PNG, tribal militias and criminal networks capitalize on disorder created by displacement and economic collapse. In Bangladesh, extremist groups like Jamaatul Mujahideen Bangladesh (JMB) have exploited

post-disaster grievances to recruit youth in marginalized communities. In all cases, environmental stress accelerates political instability and weakens state control.

Diverging Contexts: Key Differences Across Cases

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 implementation is uneven. 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, with 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 disaster events is reshaping ethnic demographics, especially in the north and east.
4. **International Engagement:** All five countries engage with international donors and partners, but to varying degrees. The U.S. has strategic defense cooperation with Sri Lanka and PNG and supports disaster relief in Bangladesh and the Philippines. 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, making them potential partners for integrated security initiatives.

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 natural 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-onset and sudden-onset hazards into baseline country profiles - particularly for the five priority Watch List countries. This integrated model will enable earlier identification of compounded risks, support more precise contingency planning, and reinforce CFE-DM's role in advancing disaster preparedness and conflict prevention across the Indo-Pacific.

2. Establish Research Collaboration with Quad Partners on Natural Hazards

Monitoring and Risk Analysis: Building on initiatives like the Applied Research and Information Sharing (ARIS) program and CFE-DM's engagement in the Indo-Pacific Environmental Security Forum, CFE-DM should establish formal research collaboration with Quad partner institutions. Designating working-level points of contact to coordinate information sharing, align methodologies, and connect early-warning efforts with Quad

initiatives would 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.

3. **Develop an Early Warning System and Flashpoint Protocol** for natural hazards in order to support rapid risk assessment. CFE-DM should establish a dedicated early warning system and standardized protocol to rapidly identify and assess natural hazard flashpoints in the Indo-Pacific, distinct from DisasterAWARE. This protocol would ensure timely response and operational relevance by synthesizing sudden-onset hazard forecasts (e.g., cyclone seasons, drought likelihoods, 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. The resulting insights would equip Indo-Pacific governments, humanitarian actors, and U.S. military planners with actionable information for early warning, resilience-building, and coordinated crisis response. The product could initially be piloted quarterly, with flexibility for ad-hoc updates during periods of heightened risk.

Concluding Remarks

This report affirms a critical reality: the link between climate-driven hazards and conflict risk in the Indo-Pacific is both tangible and consequential. Natural hazards and extreme weather events 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. Drawing on a robust mixed-methods framework and evidence grounded in country-specifics, the report demonstrates that climate change, while not deterministic, is in fact a risk multiplier and pathway for and to conflict.

Importantly, these findings are a starting point, not a conclusion. The complexity and evolving nature of climate-conflict dynamics defy reduction to a single model or methodology. The scope, complexity, and interdependence of climate-conflict dynamics make it impossible to reduce to a single model or methodology. 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.

APPENDICES

APPENDIX 1 (Regression analysis results)

This table provides a country level comparison of climate driven conflict risk of Indo-Pacific nations. Please note, certain countries are not included due to limitations of spatial data collection.¹³² Results from the regression analysis are in the column labeled “Climate Driven Conflict Risk” while the corresponding rank is in “Climate Conflict Rank.” For reference, the three indices averaged by country are in the columns “Conflict Risk,” “Climate Risk,” and “Vulnerability.”¹³³

Country ¹³⁴	Climate Conflict Rank (Indopacific)	Climate Driven Conflict Risk	Conflict Risk	Climate Risk	Vulnerability
Bangladesh	1	0.1071	0.046	0.604	0.455
Myanmar	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
Philippines	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 Islands	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

¹³² Excluded countries are: Kiribati, Maldives, Marshall Islands, Federated States of Micronesia, Nauru, Palau, Tonga, Tuvalu. The research team excluded North Korea separately due to lack of diplomatic relations with the USA.

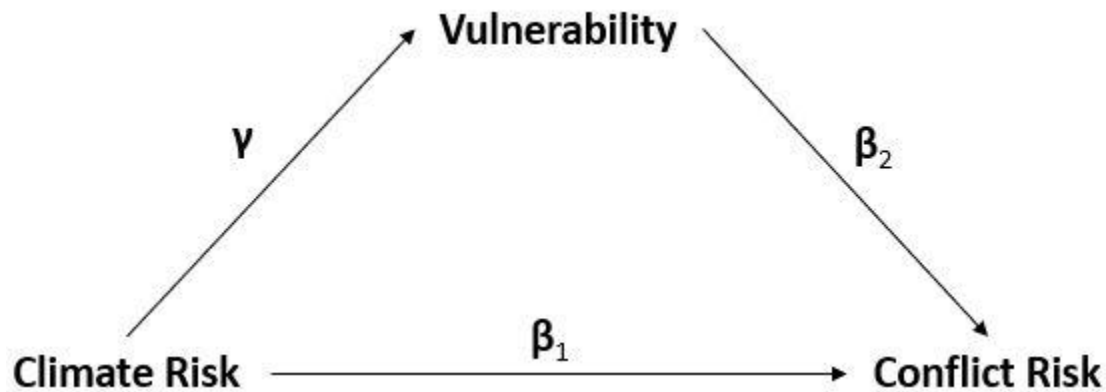
¹³³ Conditional formatting has been applied to these three columns. Values that are green are lower than the 25th percentile, yellow are between the 25th and 75th percentiles, and red are above the 75th percentile.

¹³⁴ The five at-risk countries identified by this report are bolded for visibility. Each has high Conflict Risk as well as Climate Risk or Vulnerability (or all three for Myanmar)

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
Papua New Guinea	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
Vanatu	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
Butan	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

APPENDIX 2 (Directional Acyclic Graph)

Directional Acyclic Graphs (DAGs) 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.



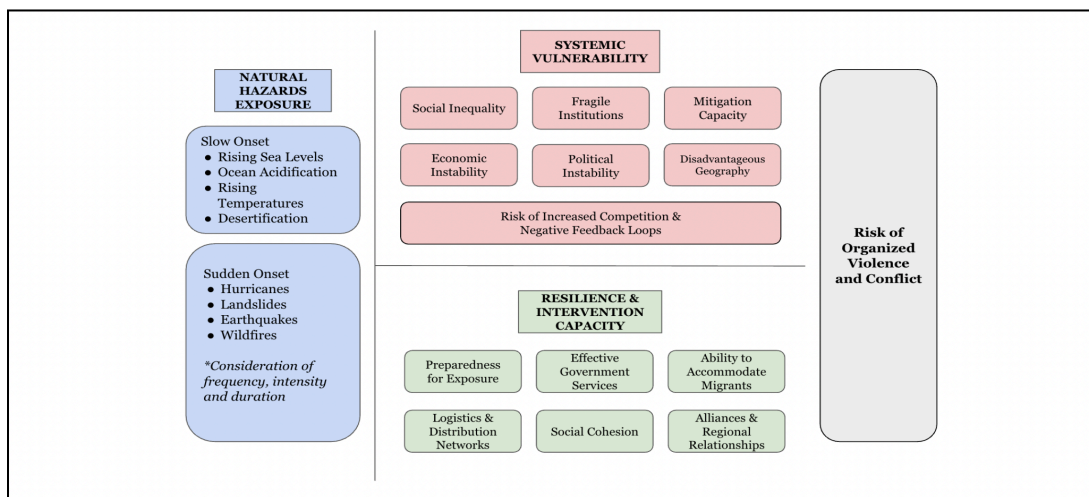
This DAG shows the proposed relationship from our regression model. There is only one direction between Climate Risk which terminates in conflict risk, either directly or mediated by vulnerability. Furthermore, the relationship between Climate Risk and Vulnerability is unobserved. However, since the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



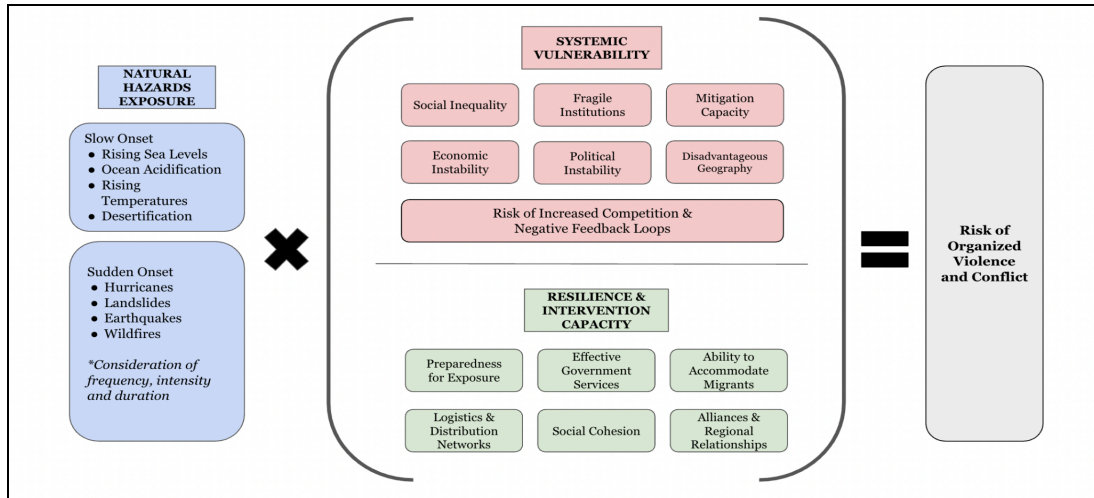
Consideration must be given to vulnerability as a confounding variable, shown in the following DAG. This would open a backdoor path, that raises the concern that the change in Conflict Risk we assume is caused by Climate Risk is spuriously associated, and in reality is caused by vulnerability or other unobserved confounding variables. Therefore, further investigation and careful adjustment for these confounding influences is essential to strengthen the validity of our model's conclusions.

APPENDIX 3: Framework

The framework illustrates an expanded version of the relationship between climate-related hazards and the risk of conflict: *Natural Hazards Exposure* × (*Systemic Vulnerability* ÷ *Resilience and Intervention Capacity*) = *Conflict Risk*. Each element of the framework is placed to reflect its role in determining how environmental stressors interact with certain conditions to produce or mitigate conflict.



This is the framework as seen in the report.



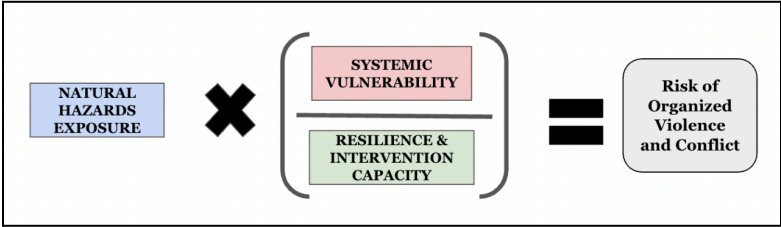
Natural Hazards Exposure (in blue) is the independent variable. These are external stressors that trigger instability. Encompassing both slow and sudden onset hazards, this component is amplified or mitigated by the multiplier (*Systemic Vulnerability / Resilience & Intervention Capacity*).

Systemic Vulnerability (in red) includes weaknesses that make communities more susceptible to adverse effects from Natural Hazards. Its place in the numerator is due to its amplifying role: as it increases there is greater Risk of Organized Violence and Conflict.

Resilience and Intervention Capacity (in green) is the mechanisms that allow communities to absorb, respond to, and recover from Natural Hazards. Since it is in the denominator, this component has an inverse relationship with Systemic Vulnerability. As it increases, it reduces the negative effects of Natural Hazard exposure and reduces Risk of Organized Violence and Conflict.

Risk of Organized Violence and Conflict (in grey) is the product of these interacting factors. It is the product which results from instability reaching a threshold where institutional

capacity can no longer absorb or diffuse underlying tensions, manifesting as insurgency, communal violence, state repression, or cross-border spillover.



This framework fits neatly into our quantitative equation, which replaces each term with their corresponding CCVI index: Climate Risk, Vulnerability, and Conflict Risk. From this framework, the specific country-level drivers of instability can be mapped to the components of the model, allowing qualitative insights to provide context to statistical relationships identified in the linear regression below.

$$Conflict Risk_i = \beta_0 + \beta_1(Climate Risk_i) + \beta_2(Vulnerability_i) + \varepsilon_i$$

APPENDIX 4: Country-Specific Adaptation and Resilience Strategies

While each country has developed resilience frameworks, the ability to implement these strategies is hindered by political, financial, and security barriers. These gaps not only limit effective disaster response but also weaken long-term climate adaptation, particularly in fragile or conflict-affected areas.

Myanmar: Localized adaptation efforts—such as UNDP’s watershed rehabilitation (4,200 hectares restored) and drought-resistant crop trials reaching 12,600 households—demonstrate promise.¹³⁵ However, the legitimacy crisis of the State Administration Council (SAC), combined with active conflict and aid obstruction by both SAC and non-state armed groups (NSAGs), severely hampers scale-up. Pre-coup national strategies remain defunct, while only 20% of the 2025 Humanitarian Response Plan is funded, making long-term climate resilience increasingly elusive.¹³⁶

Bangladesh: The country has strong policy frameworks like the National Adaptation Plan, but implementation is hindered by bureaucratic inefficiency, political polarization, and limited funding.¹³⁷ 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, the disabled, and marginalized minorities.

¹³⁵ 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.

¹³⁶ 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/>

¹³⁷ 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.

Philippines: The Philippines has established a comprehensive legal and institutional framework to address climate change adaptation and disaster risk reduction. Key legislations include the Climate Change Act of 2009 (Republic Act No. 9729),¹³⁸ which mandates local government units (LGUs) to develop Local Climate Change Action Plans (LCCAPs),¹³⁹ and the Disaster Risk Reduction and Management Act of 2010 (Republic Act No. 10121).¹⁴⁰ 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. Efforts are underway to integrate disaster risk reduction into regional planning, including the development of the Bangsamoro Spatial Development Framework (BSDF) 2024–2050, which aims to enhance resiliency and disaster preparedness.¹⁴¹

To support these initiatives, the Strengthening Institutions and Empowering Localities Against Disasters and Climate Change (SHIELD) Programme has been launched.¹⁴² Funded by the Australian Government and implemented by the United Nations Development Programme (UNDP) Philippines, SHIELD aims to build institutional and community resilience to climate change and various hazards.¹⁴³ The program focuses on improving risk-informed planning,

¹³⁸ 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\(Rpublic%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(Rpublic%20Act%20No.,Commission%2C%20and%20for%20other%20purposes.)

¹³⁹ 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>

¹⁴⁰ 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.>

¹⁴¹ 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/>

¹⁴² UN-Habitat Philippines. “Strengthening Institutions and Empowering Localities Against Disasters and Climate Change in the Philippines (SHIELD).” <https://unhabitat.org.ph/shield/>

¹⁴³ Ibid.

improving access to climate finance, and fostering inclusive resilience actions across 10 provinces and two regions in the Philippines, including BARMM.¹⁴⁴

Papua New Guinea: 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.

Sri Lanka: As one of the few countries in the region with a national disaster act and specialized agencies like the Disaster Management Centre (DMC), Sri Lanka 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. The Adaptation for Resilience project (2024), jointly led with India, signals regional collaboration but remains early-stage.

Taken together, these country snapshots show that effective adaptation depends not just on technical solutions, but on inclusive governance, sustained funding, and cross-sector coordination. Climate resilience, particularly in fragile or conflict-affected settings, must be embedded within broader efforts to strengthen institutions, protect vulnerable communities, and integrate climate planning with peacebuilding and development goals.

¹⁴⁴ 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>

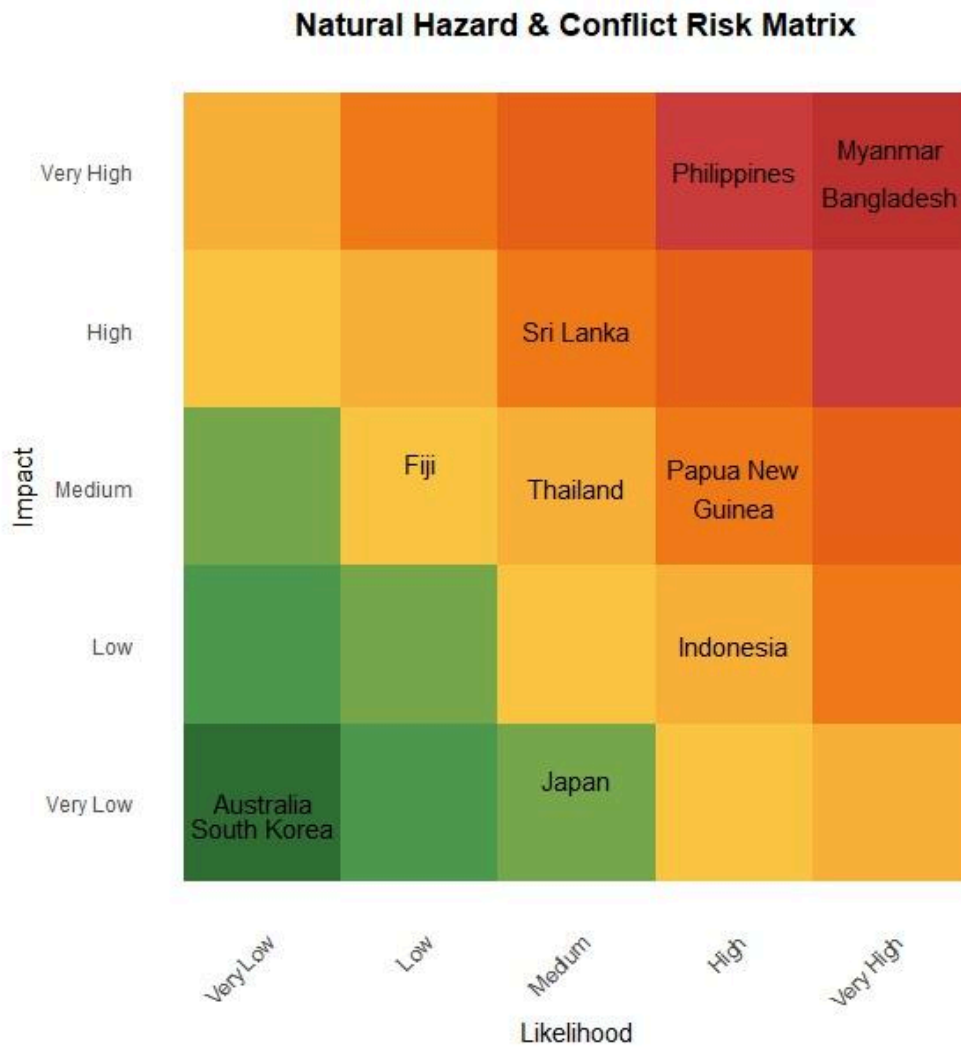
APPENDIX 5: Strategic Implications for U.S. Engagement

Climate-driven instability across these countries intersects directly with U.S. security, development, and diplomatic interests in the Indo-Pacific. In Myanmar, escalating violence, mass displacement, and governance collapse continue to destabilize South and Southeast Asia—complicating 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, a key treaty ally, 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 U.S.-China competition. And in Sri Lanka, climate risks intersect with unresolved ethnic tensions in a strategic Indian Ocean corridor critical to trade and naval access.

These cases underscore the urgent need for integrated U.S. strategies that treat climate adaptation, conflict prevention, and resilience-building as central to Indo-Pacific engagement. In regions where environmental stress coincides with displacement, inequality, and weak governance, climate change will continue to act as a multiplier of violence and instability. U.S. engagement should prioritize support for locally led adaptation, conflict-sensitive climate planning, and inclusive governance reforms—particularly in frontline states like Myanmar, Bangladesh, and PNG, where state collapse or unrest could reverberate across the Indo-Pacific. Addressing these risks now is not only a humanitarian imperative but a strategic one—essential to maintaining regional stability, countering malign influence, and advancing a rules-based order in the Indo-Pacific.

APPENDIX 6: Natural Hazard & Conflict Risk Matrix

The risk matrix created below offers a visual interpretation of the Top 5 Country Risk profiles in comparison to other Indo-Pacific countries that were under consideration during the research process. This indicates that each of the chosen 5 countries are either at or higher than the 75th percentile, for two or more of the following variables: conflict risk, natural hazard risk, and vulnerability. U.S. diplomatic relations with each potential country was simultaneously analyzed alongside natural hazard driven conflict risk, resulting in the selected Top 5 Countries.



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