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Warfare and Climate Risk: How Environmental Change Drives Conflict and Security Policy

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Table of Contents

- **Introduction**
- **Chapter 1** Climate Risk and the Security Landscape
- **Chapter 2** Pathways from Stress to Strife: Mechanisms Linking Environment and Conflict
- **Chapter 3** Data, Models, and Maps: Methods for Climate–Conflict Analysis
- **Chapter 4** Drought Dynamics: Hydrology, Crops, and Livelihood Shocks
- **Chapter 5** Water Scarcity and Transboundary Basin Politics
- **Chapter 6** Heat, Labor, and Urban Unrest
- **Chapter 7** Food Systems Under Strain: Markets, Prices, and Stability
- **Chapter 8** Energy Transitions, Petro-Politics, and Vulnerability
- **Chapter 9** The Sahel I: Rainfall Variability, Pastoralism, and Militancy
- **Chapter 10** The Sahel II: Governance, Criminal Economies, and Adaptation Strategies
- **Chapter 11** Middle East I: Water, Agriculture, and Rural Collapse
- **Chapter 12** Middle East II: Cities, Heatwaves, and Infrastructure Fragility
- **Chapter 13** The Pacific I: Sea-Level Rise, Atolls, and Sovereignty
- **Chapter 14** The Pacific II: Fisheries, Storms, and Great-Power Competition
- **Chapter 15** Migration as Adaptation: Mobility, Remittances, and Resilience
- **Chapter 16** Displacement and Security: Camps, Borders, and Humanitarian Access
- **Chapter 17** Early Warning and Risk Anticipation: Indicators, Satellites, and AI
- **Chapter 18** Peacebuilding in a Warming World: Mediation and Natural Resource Pacts
- **Chapter 19** Climate-Resilient Development: Safety Nets, Insurance, and Finance
- **Chapter 20** Designing Climate-Smart Infrastructure for Stability
- **Chapter 21** Public Health, Pandemics, and Compound Risks
- **Chapter 22** Law, Rights, and Climate Security Governance
- **Chapter 23** Defense and National Security Planning for Climate Risk
- **Chapter 24** Scenario Planning and Wargaming for Climate Futures
- **Chapter 25** A Policy Blueprint: Integrating Climate Resilience into Conflict Prevention

Introduction

War and weather have long shaped one another, but in the twenty-first century their coupling is tightening. As droughts deepen, seas advance, and heat extremes strain health and infrastructure, climate stress is colliding with social fractures, fragile governance, and strategic competition. This book examines how environmental change can amplify the risk of armed conflict, fuel instability, and redirect security policy—without assuming that climate alone predestines violence. Instead, it treats climate change as a powerful risk multiplier that interacts with politics, markets, and institutions to alter the incentives and capabilities of actors on the ground.

Our approach combines climate science with conflict mapping to trace credible pathways from stress to strife. We explore four recurring mechanisms: competition over scarce resources such as water and arable land; livelihood shocks that disrupt pastoralism, farming, and fisheries and can make armed recruitment more attractive; disaster governance failures that erode state legitimacy after floods, storms, or heatwaves; and mobility pressures—both voluntary and forced—that reshape demographics, strain services, and inflame identity politics. Along each pathway, we identify the enabling or constraining roles of state capacity, corruption, criminal economies, disinformation, and external intervention.

Methodologically, the book integrates multiple streams of evidence. We draw on observational climate records, satellite imagery, reanalysis data, and model projections to describe evolving hazards and their uncertainty bounds. We pair these with geocoded conflict events, household surveys, market price series, and ethnographic fieldwork to capture how communities perceive and respond to stress. Spatial analyses and scenario exercises allow us to move from correlation toward causal inference, transparency about what we can and cannot claim, and practical tools that policymakers and planners can use in real time.

To make these dynamics concrete, we focus on three regions where climate and conflict pressures are tightly intertwined. In the Sahel, we examine how rainfall variability and the degradation of rangelands reshape pastoral corridors, farmer–herder relations, and the political economy of militancy. In the Middle East, we investigate groundwater depletion, agricultural collapse, urban heat, and infrastructure fragility in cities that anchor national stability. Across the Pacific, we consider sea-level rise and intensifying storms that threaten sovereignty, fisheries, and livelihoods—pressing small states into complex negotiations over assistance, basing rights, and geopolitical alignment. Throughout, we analyze the role of migration as both adaptation and flashpoint.

This book is written for practitioners who must make decisions under uncertainty: national security planners, development agencies, diplomats, humanitarian coordinators, municipal leaders, and civil society organizations. It offers frameworks to integrate climate resilience into conflict prevention and humanitarian planning, from anticipatory action and early warning to targeted investments in water, food, health, and infrastructure systems. The goal is to help institutions move from reactive crisis response to proactive risk management—reducing both human suffering and strategic surprise.

The chapters are organized to move from concepts to application. We begin by mapping the mechanisms that link environmental stress to violence and by reviewing the data and models that can credibly support analysis. We then examine specific hazards—drought, heat, sea-level rise—and their sectoral impacts on food, water, and energy systems. Regional case studies in the Sahel, Middle East, and Pacific provide depth and specificity. Crosscutting chapters address migration governance, peacebuilding, public health, law and rights, and defense planning. We close with tools for early warning, scenario planning, and wargaming, culminating in a policy blueprint for integrating climate resilience into security strategy.

Finally, this book advances a pragmatic but principled stance. Climate risk does not make conflict inevitable; agency, policy, and cooperation matter. Effective prevention recognizes local knowledge, addresses inequality and exclusion, and aligns short-term relief with long-term adaptation. By combining rigorous analysis with actionable guidance, we aim to equip readers to anticipate where climate stress could ignite or intensify conflict—and to design interventions that build resilience, uphold rights, and foster peace.

CHAPTER ONE: Climate Risk and the Security Landscape

The twenty-first century has ushered in an era where the intricate dance between environmental shifts and global stability can no longer be ignored. Climate change, once primarily relegated to scientific discourse and environmental activism, has firmly planted itself on the agenda of national security strategists and defense planners worldwide. It's not merely an ecological problem; it's a powerful "threat multiplier" that exacerbates existing vulnerabilities and tensions, contributing to everything from resource competition to widespread displacement and political instability.

Consider the simple, yet profound, statement from the 2015 U.S. White House National Security Strategy, which declared climate change an "urgent and growing threat to our national security." This wasn't just a fleeting observation; it marked a significant turning point, acknowledging that climatic shifts directly impact a nation's safety and security. This understanding has only deepened since, with various defense and intelligence bodies echoing similar concerns about the far-reaching implications of a warming world.

The mechanisms through which climate change interacts with security are often complex and indirect, yet undeniably potent. It rarely acts in isolation, instead weaving itself into existing political, economic, and social fabrics. For instance, rising temperatures and changes in precipitation patterns can intensify competition over vital resources like water and arable land. This scarcity, in turn, can inflame intergroup tensions, especially in regions already grappling with weak governance or deep-seated social divisions.

Beyond resource scarcity, climate change impacts livelihoods in profound ways. Agricultural yields can plummet due to droughts or floods, fisheries can be decimated by ocean warming and acidification, and pastoral lands can degrade, all of which disrupt traditional economic activities. When people's ability to earn a living is threatened, the appeal of joining armed groups or engaging in illicit economies can increase, providing a fertile ground for conflict.

Another critical pathway involves the failure of governance in the wake of extreme weather events. When a state cannot effectively respond to a devastating flood, a prolonged drought, or a severe heatwave, its legitimacy can erode. This can lead to public unrest, protests, and a breakdown of social order, especially in contexts where trust in institutions is already fragile. Such scenarios create power vacuums that can be exploited by extremist groups or lead to broader instability.

The sheer scale of climate-induced displacement also presents a significant security challenge. Weather-related crises have already triggered more than twice as much displacement as conflict and violence in the last decade. Whether voluntary or forced, large-scale movements of people can strain resources and services in host communities, reshape demographics, and, in some cases, exacerbate identity politics. While the link between climate-induced migration and large-scale armed conflict is still being rigorously studied, it is clear that these movements can amplify existing tensions and contribute to political unrest.

The United Nations has long recognized climate change as a "threat multiplier" that intensifies pressures on peace and security. While the term is sometimes used with more nuance now to reflect the intricate, context-specific ways climate stress contributes to instability, the core message remains: climate change doesn't just add to existing problems; it amplifies them, making them harder to manage and more likely to tip into crisis.

Indeed, the data is quite sobering. In 2024 alone, over 295 million people across 53 countries experienced acute levels of hunger, with climate shocks identified as a key driver in many of these regions. Food insecurity, in turn, frequently fuels unrest, creating a vicious cycle where environmental stress, food shortages, and conflict reinforce one another.

The security implications of climate change extend beyond direct conflict. It also poses direct threats to military infrastructure and operations. The U.S. Department of Defense, for example, has acknowledged that extreme heat, floods, rising sea levels, and more frequent and intense storms are damaging military bases and equipment. This not only costs millions in repairs but can also cripple the military's ability to respond to crises, domestically or abroad. The U.S. National Intelligence Council has warned that numerous U.S. military installations are at risk due to sea-level rise.

Furthermore, the military is increasingly being called upon to respond to climate-related humanitarian crises, stretching resources and sometimes interfering with overall readiness. For instance, U.S. troops have been deployed domestically to battle climate-related wildfires, an activity that has seen a significant increase in personnel days spent over recent years.

The geopolitical landscape itself is being reshaped by climate change. New shipping routes are opening in the Arctic as sea ice melts, creating opportunities but also potential flashpoints for competition over resources and strategic advantage. Shifts in global demand for resources, driven by the energy transition away from fossil fuels, also carry geopolitical risks. Countries heavily reliant on oil exports may face economic instability, while those rich in minerals crucial for green technologies could see increased influence. These changes inevitably affect international cooperation, foreign

policy, and security dynamics.

This growing recognition of climate change as a security issue has led to its inclusion in national security strategies across more than half of the world's states and discussions at the UN Security Council. However, despite this consensus on its potential to undermine national and human security, there isn't always agreement on the exact nature of the climate-security relationship or the most effective ways to address it. Different perspectives exist, some emphasizing the direct links to conflict, others cautioning against oversimplification and highlighting the complex interplay of factors.

What is clear, however, is the undeniable link between environmental change and security, demanding a proactive, integrated approach. The era of sporadic, isolated risks is over. We now operate in a compound threat environment where geopolitical tensions, extreme weather, and other vulnerabilities are interconnected. A disruption in one region, whether climate-induced or otherwise, can trigger cascading effects across global supply chains, digital infrastructure, and even workforce safety.

Therefore, security leaders and risk managers must broaden their perspective, moving beyond immediate geographic boundaries and anticipating global patterns before they escalate into full-blown crises. This means integrating climate resilience into every aspect of security planning, from intelligence gathering and risk assessment to humanitarian aid and military operations. The goal is not just to react to crises but to build a more resilient and peaceful future in the face of escalating environmental challenges.

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