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# Climate Change, Migration, and Conflict

Addressing complex crisis scenarios in the 21st Century

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# Introduction and summary

The costs and consequences of climate change on our world will define the 21st century. Even if nations across our planet were to take immediate steps to rein in carbon emissions—an unlikely prospect—a warmer climate is inevitable. As the U.N. Intergovernmental Panel on Climate Change, or IPCC, noted in 2007, human-created “warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level.”<sup>1</sup>

As these ill effects progress they will have serious implications for U.S. national security interests as well as global stability—extending from the sustainability of coastal military installations to the stability of nations that lack the resources, good governance, and resiliency needed to respond to the many adverse consequences of climate change. And as these effects accelerate, the stress will impact human migration and conflict around the world.

It is difficult to fully understand the detailed causes of migration and economic and political instability, but the growing evidence of links between climate change, migration, and conflict raise plenty of reasons for concern. This is why it’s time to start thinking about new and comprehensive answers to multifaceted crisis scenarios brought on or worsened by global climate change. As Achim Steiner, executive director of the U.N. Environment Program, argues, “The question we must continuously ask ourselves in the face of scientific complexity and uncertainty, but also growing evidence of climate change, is at what point precaution, common sense or prudent risk management demands action.”<sup>2</sup>

In the coming decades climate change will increasingly threaten humanity’s shared interests and collective security in many parts of the world, disproportionately affecting the globe’s least developed countries. Climate change will pose challenging social, political, and strategic questions for the many different multinational, regional, national, and nonprofit organizations dedicated to improving the human

condition worldwide. Organizations as different as Amnesty International, the U.S. Agency for International Development, the World Bank, the International Rescue Committee, and the World Health Organization will all have to tackle directly the myriad effects of climate change.

Climate change also poses distinct challenges to U.S. national security. Recent intelligence reports and war games, including some conducted by the U.S. Department of Defense, conclude that over the next two or three decades, vulnerable regions (particularly sub-Saharan Africa, the Middle East, South and Southeast Asia) will face the prospect of food shortages, water crises, and catastrophic flooding driven by climate change. These developments could demand U.S., European, and international humanitarian relief or military responses, often the delivery vehicle for aid in crisis situations.

This report provides the foundation and overview for a series of papers focusing on the particular challenges posed by the cumulative effects of climate change, migration, and conflict in some of our world's most complex environments. In the papers following this report, we plan to outline the effects of this nexus in north-west Africa, in India and Bangladesh, in the Andean region of South America, and in China. In this paper we detail that nexus across our planet and offer wide-ranging recommendations about how the United States, its allies in the global community, and the community at large can deal with the coming climate-driven crises with comprehensive sustainable security solutions encompassing national security, diplomacy, and economic, social, and environmental development.

Here, we briefly summarize our arguments and our conclusions.

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## The nexus

The Arab Spring can be at least partly credited to climate change. Rising food prices and efforts by authoritarian regimes to crush political protests were linked first to food and then to political repression—two important motivators in the Arab makeover this past year.

To be sure, longstanding economic and social distress and lack of opportunity for so many Arab youth in the Middle East and across North Africa only needed a spark to ignite revolutions across the region. But environmental degradation and the movement of people from rural areas to already overcrowded cities alongside

rising food prices enabled the cumulative effects of long-term economic and political failures to sweep across borders with remarkable agility.

It does not require much foresight to acknowledge that other effects of climate change will add to the pressure in the decades to come. In particular the cumulative overlays of climate change with human migration driven by environmental crises, political conflict caused by this migration, and competition for more scarce resources will add new dimensions of complexity to existing and future crisis scenarios. It is thus critical to understand how governments plan to answer and prioritize these new threats from climate change, migration, and conflict.

## Climate change

Climate change alone poses a daunting challenge. No matter what steps the global community takes to mitigate carbon emissions, a warmer climate is inevitable. The effects are already being felt today and will intensify as climate change worsens. All of the world's regions and nations will experience some of the effects of this transformational challenge.

Here's just one case in point: African states are likely to be the most vulnerable to multiple stresses, with up to 250 million people projected to suffer from water and food insecurity and, in low-lying areas, a rising sea level.<sup>3</sup> As little as 1 percent of Africa's land is located in low-lying coastal zones but this land supports 12 percent of its urban population.<sup>4</sup>

Furthermore, a majority of people in Africa live in lower altitudes—including the Sahel, the area just south of the Sahara—where the worst effects of water scarcity, hotter temperatures, and longer dry seasons are expected to occur.<sup>5</sup> These developments may well be exacerbated by the lack of state and regional capacity to manage the effects of climate change. These same dynamics haunt many nations in Asia and the Americas, too, and the implications for developed countries such as the United States and much of Europe will be profound.

## Migration

Migration adds another layer of complexity to the scenario. In the 21st century the world could see substantial numbers of climate migrants—people displaced

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by either the slow or sudden onset of the effects of climate change. The United Nations' recent Human Development Report stated that, worldwide, there are already an estimated 700 million internal migrants—those leaving their homes within their own countries—a number that includes people whose migration is related to climate change and environmental factors. Overall migration across national borders is already at approximately 214 million people worldwide,<sup>6</sup> with estimates of up to 20 million displaced in 2008 alone because of a rising sea level, desertification, and flooding.<sup>7</sup>

One expert, Oli Brown of the International Institute for Sustainable Development, predicts a tenfold increase in the current number of internally displaced persons and international refugees by 2050.<sup>8</sup> It is important to acknowledge that there is no consensus on this estimate. In fact there is major disagreement among experts about how to identify climate as a causal factor in internal and international migration.

But even though the root causes of human mobility are not always easy to decipher, the policy challenges posed by that movement are real. A 2009 report by the International Organization for Migration produced in cooperation with the United Nations University and the Climate Change, Environment and Migration Alliance cites numbers that range from “200 million to 1 billion migrants from climate change alone, by 2050,”<sup>9</sup> arguing that “environmental drivers of migration are often coupled with economic, social and developmental factors that can accelerate and to a certain extent mask the impact of climate change.”

The report also notes that “migration can result from different environmental factors, among them gradual environmental degradation (including desertification, soil and coastal erosion) and natural disasters (such as earthquakes, floods or tropical storms).”<sup>10</sup> (See box on page 15 for a more detailed definition of climate migrants.) Clearly, then, climate change is expected to aggravate many existing migratory pressures around the world. Indeed associated extreme weather events resulting in drought, floods, and disease are projected to increase the number of sudden humanitarian crises and disasters in areas least able to cope, such as those already mired in poverty or prone to conflict.<sup>11</sup>

### Conflict

This final layer is the most unpredictable, both within nations and transnationally, and will force the United States and the international community to confront

climate and migration challenges within an increasingly unstructured local or regional security environment. In contrast to the great power conflicts and the associated proxy wars that marked most of the 20th century, the immediate post-Cold War decades witnessed a diffusion of national security interests and threats. U.S. national security policy is increasingly integrating thinking about nonstate actors and nontraditional sources of conflict and instability, for example in the fight against Al Qaeda and its affiliated groups.

Climate change is among these newly visible issues sparking conflict. But because the direct link between conflict and climate change is unclear, awareness of the indirect links has yet to lead to substantial and sustained action to address its security implications. Still the potential for the changing climate to induce conflict or exacerbate existing instability in some of the world's most vulnerable regions is now recognized in national security circles in the United States, although research gaps still exists in many places.

The climate-conflict nexus was highlighted with particular effect by the current U.S. administration's security-planning reviews over the past two years, as well as the Center for Naval Analysis, which termed climate change a "threat multiplier," indicating that it can exacerbate existing stresses and insecurity.<sup>12</sup> The Pentagon's latest Quadrennial Defense Review also recognized climate change as an "accelerant of instability or conflict," highlighting the operational challenges that will confront U.S. and partner militaries amid a rising sea level, growing extreme weather events, and other anticipated effects of climate change.<sup>13</sup> The U.S. Department of Defense has even voiced concern for American military installations that may be threatened by a rising sea level.<sup>14</sup>

There is also well-developed international analysis on these points. The United Kingdom's 2010 Defense Review, for example, referenced the security aspects of climate change as an evolving challenge for militaries and policymakers. Additionally, in 2010, the Nigerian government referred to climate change as the "greatest environmental and humanitarian challenge facing the country this century," demonstrating that climate change is no longer seen as solely scientific or environmental, but increasingly as a social and political issue cutting across all aspects of human development.<sup>15</sup>

As these three threads—climate change, migration, and conflict—interact more intensely, the consequences will be far-reaching and occasionally counterintuitive. It is impossible to predict the outcome of the Arab Spring movement, for example,

but the blossoming of democracy in some countries and the demand for it in others is partly an unexpected result of the consequences of climate change on global food prices. On the other hand, the interplay of these factors will drive complex crisis situations in which domestic policy, international policy, humanitarian assistance, and security converge in new ways.

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## Areas of concern

Several regional hotspots frequently come up in the international debate on climate change, migration, and conflict. Climate migrants in northwest Africa, for example, are causing communities across the region to respond in different ways, often to the detriment of regional and international security concerns. Political and social instability in the region plays into the hands of organizations such as Al Qaeda in the Islamic Maghreb. And recent developments in Libya, especially the large number of weapons looted from depots after strongman Moammar Qaddafi's regime fell—which still remain unaccounted for—are a threat to stability across North Africa.

Effective solutions need not address all of these issues simultaneously but must recognize the layers of relationships among them. And these solutions must also recognize that these variables will not always intersect in predictable ways. While some migrants may flee floodplains, for example, others may migrate to them in search of greater opportunities in coastal urban areas.<sup>16</sup>

Bangladesh, already well known for its disastrous floods, faces rising waters in the future due to climate-driven glacial meltdowns in neighboring India. The effects can hardly be over. In December 2008 the National Defense University in Washington, D.C., ran an exercise that explored the impact of a flood that sent hundreds of thousands of refugees into neighboring India. The result: the exercise predicted a new wave of migration would touch off religious conflicts, encourage the spread of contagious diseases, and cause vast damage to infrastructure.

India itself is not in a position to absorb climate-induced pressures—never mind foreign climate migrants. The country will contribute 22 percent of global population growth and have close to 1.6 billion inhabitants by 2050, causing demographic developments that are sure to spark waves of internal migration across the country.

Then there's the Andean region of South America, where melting glaciers and snowcaps will drive climate, migration, and security concerns. The average rate of

glacial melting has doubled over the past few years, according to the World Glacier Monitoring Service.<sup>17</sup> Besides Peru, which faces the gravest consequences in Latin America, a number of other Andean countries will be massively affected, including Bolivia, Ecuador, and Colombia. This development will put water security, agricultural production, and power generation at risk—all factors that could prompt people to leave their homes and migrate. The IPCC report argues that the region is especially vulnerable because of its fragile ecosystem.<sup>18</sup>

Finally, China is now in its fourth decade of ever-growing internal migration, some of it driven in recent years by environmental change. Today, across its vast territory, China continues to experience the full spectrum of climate change-related consequences that have the potential to continue to encourage such migration. The Center for a New American Security recently found that the consequences of climate change and continued internal migration in China include “water stress; increased droughts, flooding, or other severe events; increased coastal erosion and saltwater inundation; glacial melt in the Himalayas that could affect hundreds of millions; and shifting agricultural zones”—all of which will affect food supplies.<sup>19</sup>

These four regions of the world—northwest Africa, India and Bangladesh, the Andean region, and China—will require global, regional, and local policies to deal with the consequences of climate change, migration, and conflict. Alas, such policies that might be effective in these complex crisis environments cannot be designed within the existing global institutional framework. There are many reasons for this.

In the United States, as in many other developed nations, the defense, diplomacy, and economic and social development silos are not adept at analyzing the input of a broad range of policy fields in combination with direct dialogue with the people of the affected regions. From Europe’s perspective, the fragmented nature of the continent’s reaction to rising climate migrants from Africa stands out. From the perspective of regional powers such as India, China, Brazil, and South Africa, there are yet again different sets of policy priorities that block action. And from the perspective of multilateral organizations, there is another set of policy disconnects.

Yet action is critical. Environmentally induced migration, resource conflicts, and unstable states will not only have an impact upon the nations where they occur, but also on the United States and the broader international community.

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## Moving forward

The interplay of migration, climate change, and conflict is complex and will be with us for the long term. Nevertheless, the uncertainty surrounding the exact causality should not be a reason for ignoring this key nexus. And while the causal relationship may not always be clear, the lines of inquiry moving forward are becoming apparent. To understand this nexus, we will need to ask, for example, what role mediating factors such as economic opportunity, levels of development, health indicators, and legal status will play in the relationship between climate change and migration. It will be equally critical to determine whether there is a threshold at which the effects of climate change could be significant enough to cause migration directly, or at what level of climate change it will become the most important of several migration “push” factors.

Additionally, we should ask whether climate change will alter the composition of migrant communities. Migrants, after all, are not necessarily the most desperate or destitute of their countrymen and women. Migrations, particularly across international borders, often require means.<sup>20</sup> Could a significant increase in extreme weather events or long-term shifts in climate norms alter this dynamic, and what would be the implications of that shift?

Some instances of the complete climate, migration, and conflict nexus exist to guide the examination of these questions. Consider, for example, the Second Tuareg Rebellion in Mali in 1990. British economist Nicholas Stern argues that drought in Mali in the decades preceding the conflict contributed to local and international migration. Those who later tried to return found a “lack of social support networks for returning migrants, continuing drought, and competition for resources between nomadic and settled people,” all of which were among the factors that sparked the rebellion.<sup>21</sup>

Jeffrey Mazo at the International Institute of Strategic Studies adds that the forced migration ultimately pushed some young men into Algeria and Libya, “where many were radicalized”—a dangerous development in an already unstable region.<sup>22</sup> In past months refugees from Qaddafi’s former regime in Libya have been taking refuge with the Tuareg along the borders of Libya, Algeria, and Mali.

Imagine similar migration-fueled conflicts in India and Bangladesh, the Andean region, and in China. We can’t know how they might develop but we do know the three ingredients—climate change, migration, and conflict. From the perspective

of a forward-looking policymaker, situations like this suggest that the uncertainty that still surrounds the climate, migration, and conflict nexus requires greater attention when it comes to security solutions, not less.<sup>23</sup>

In this paper and the reports to follow, we will discuss regional case studies in which the cumulative effects of climate change, migration, and conflict interact within a broad framework of political, economic, and environmental security challenges. Our objective is to develop a robust contemporary notion of sustainable security that effectively integrates defense, diplomacy, and development into a comprehensive policy designed to deal with today's global threats while preventing future threats from occurring.

We delve into these recommendations in detail at the end of this paper but in this section we briefly explain how we believe the international community, the United States, its allies, and key regional players can together create a sustainable security situation to deal with climate change, migration, and conflict. Specifically they must:

- Conduct federal government institutional reform in the United States that addresses the development-security relationship and that prioritizes planning for long-term humanitarian consequences of climate change and migration as a core national security issue
- Develop strategies to strengthen intergovernmental cooperation on trans-boundary risks in different regions of the world
- Increase funding for the Global Climate Change Initiative
- Ensure better information flows and more effective disaster response for early-warning systems
- Support the best science to expand our understanding of specific circumstances such as desertification, rainfall variability, disaster occurrence, and coastal erosion, and their relation to human migration and conflict
- Identify regions most vulnerable to climate-induced migration, both forced and voluntary, in order to target aid, information, and contingency-planning capabilities

- View migration as a proactive adaptation strategy for local populations under pressure due to increased environmental change

A truly sustainable approach to security, then, requires us not only to look at the traditional security threats posed by the interaction between states, but also to understand that the security of the United States is advanced by promoting the individual well-being of people across the developing world, and by embracing collective responses to shared threats posed by climate change. We turn first to understanding the dynamics of those threats.

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