Center for American Progress

HEINRICH BÖLL STIFTUNG

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Climate Change, Migration, and Conflict

Addressing complex crisis scenarios in the 21st Century

Michael Werz and Laura Conley January 2012

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About the climate migration series

The intersection of climate change, human migration, and conflict presents a unique challenge for U.S. foreign policy in the 21st century. These three factors are already beginning to combine in ways that undermine traditional understandings of national security and offer ample reason to revisit traditional divisions of labor between diplomacy, defense, and economic, social, and environmental development policy abroad.

This report is the first in a series of papers from the Center for American Progress that will examine the nexus of climate change, migration, and conflict and its implications. The series will highlight the overlays of these three factors in key regions around the world and examine the ways in which U.S. policy must adapt to meet the challenges they present.

This introductory paper lays the foundation for a series of subsequent regional reports focused on northwest Africa, India and Bangladesh, the Andean region, and China. This series is closely linked to the Center for American Progress's longstanding Sustainable Security project, which argues that our understanding of national security must be broadened to meet the threats of the coming decades. Indeed, national security, human security, environmental security, and collective security all have a part to play in achieving a safer and more equitable international environment.

We are especially grateful to the Heinrich Böll Foundation in Washington, D.C., as well as the ZEIT-Stiftung Gerd and Ebelin Bucerius in Hamburg for their continuing support of our climate, migration, and security work at the Center for American Progress.

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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."[1]

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."[2]

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 northwest 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.

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.[3] 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.[4]

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.[5] 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

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,[6] with estimates of up to 20 million displaced in 2008 alone because of a rising sea level, desertification, and flooding.[7]

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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.[8] 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,"[9] 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)."[10] (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.[11]

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.[12] 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.[13] The U.S. Department of Defense has even voiced concern for American military installations that may be threatened by a rising sea level.[14]

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.[15]

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.

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.[16]

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.[17] 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.[18]

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.[19]

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.

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.

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.

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.[20] 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.[21]

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.[22] 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.[23]

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 transboundary 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.

The climate change, migration, and conflict nexus

The relationship between human migration and climate change is beginning to become an issue worthy of increasing attention in the international realm. The United Nations consistently tries to draw more attention to the issue, and in 2008 the European Union's foreign policy chief issued a dire warning that large numbers of climate migrants from Africa were headed for Europe.[24] If "worst case" climate change scenarios of more than a 10 degree Fahrenheit average increase in global temperatures were to come true, then our planet would become uninhabitable in many parts that are relatively stable right now. But even if temperatures rise within the range that is expected by the global scientific community—somewhere between 4 and 8 degrees Fahrenheit—environmental degradation and extreme weather events will undoubtedly create new migratory pressures in parts of the globe most at risk to climate change.

To date it is difficult to accurately isolate examples where climate change is driving conflict or is the core reason for migration. Yet there are increasing numbers of examples where the impact of local or regional climate change is placing major stress on weak or conflict-prone states with potentially disastrous results. In a major January 2011 report to the European commission, the International Institute for Strategic Studies in London, for example, reaffirmed that, in "areas with weak or brittle states, climate change will increase the risks of resource shortages, mass migrations and civil conflict."[25]

The simple fact is that the need for action far outweighs scientific uncertainties, an idea reflected by the U.N. Security Council's debate earlier this year on climate change and security. (See sidebar on page 12 for the mix of demographic pressures posed by population growth in many of these regions of the world.)

Climate and migration

Existing research and observation establish clear justification for concern about the broader implications of extreme changes in weather patterns. In fact, migration

Looking ahead: The world between now and 2050

Keeping pace with changing global trends is an enormous challenge. Today close to 7 billion people live on earth—a number that will rise to an estimated 9 billion by 2050. Every year the world's population grows by 80 million people, equaling the total population of Germany or Egypt, a total of 220,000 people a day.[26]

Consequently, our way of life, our security, and our prosperity are no longer decided by us alone. Rather the growing and shifting global population will have geopolitical implications. In 1950 the population of today's Russian Federation "was more than double the size of Pakistan's population; now they are roughly the same size. By mid-century, however, Pakistan's population is expected to be more than triple the size of the Russian Federation's."[27] This demographic reality posed against the realities of recent massive floods, internal and cross-border migration, and ethnic and religious conflict in and around Pakistan exemplifies the risk that population pressures will pose to Pakistan and its neighbors.

As the global distribution of population changes, scarcity will affect critical global resources such as the large river basins across Asia that empty into the Indian Ocean, Bay of Bengal, and East China and South China seas. Some of these rivers, including the Yangtze, Yellow, and Huai,[28] are "projected to decrease due to climate change which, along with population growth and increasing demand arising from higher standards of living, could adversely affect more than a billion people by the 2050s,"[29] according to the IPCC 2007 Synthesis Report.

The African continent, because of its rapid increase in population and significant economic growth in recent years, will also be at the forefront of these developments. Within a decade yields from rain-fed agriculture could be reduced by half across the continent, and agricultural production—including access to food—in many African countries is projected to be severely compromised.[30] Over the next decades, experts project an increase of 5 percent to 8 percent of arid and semi-arid land in Africa under a range of climate scenarios.[31]

As these global trends progress, they will contribute to the growth of crisis scenarios driven in some cases by the intersections of climate change, human migration, and conflict. Existing migration routes in northwest Africa, for example, link an arc of tension from Nigeria and Niger to Algeria and Morocco. While many migrants in the region will travel only within their own countries, those who have the means to cross international borders will travel through politically, economically, and environmentally fragile areas. Rising temperatures and sea level, among other projected effects of climate change in the region, will influence their decisions to migrate or remain.

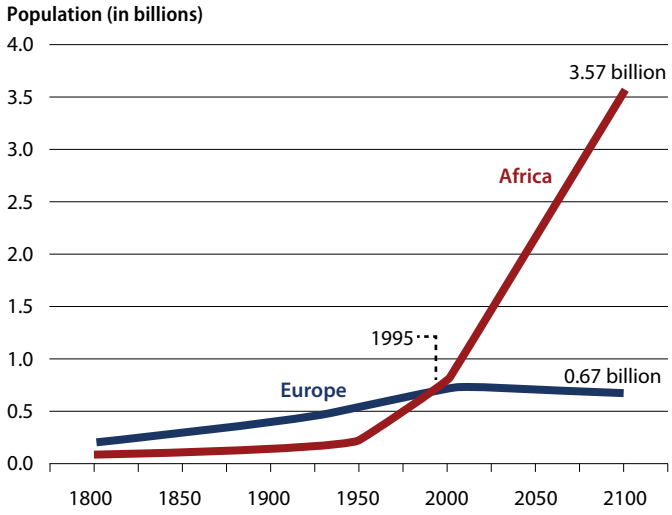
due in part to climate variation is a regular feature of life for some populations. In the Sahel labor migrants have long been known to follow the variations of the seasons. David Rain of The George Washington University notes that in the 1920s members of Niger's Hausa population were known to relocate on a temporary basis to northern Nigeria during the dry season. This climate-driven circulation allowed them to take advantage of Nigeria's booming markets for cattle and crops.[32]

Indeed, past experience gives ample reason to believe that climate and migration are linked. Human mobility, visibly induced by sudden and extreme weather events, serves as a temporary coping strategy or an impetus for permanent relocation. Etienne Piguet, who heads the population geography work at University of Neuchatel's Geography Department in Switzerland, argues that the swift onset of

natural disasters such as hurricanes and floods normally provokes only a temporary relocation. He notes in one of his studies that "a synthesis of results of migration choices of victims of natural disasters displaced in 18 sites confirms—with rare exceptions—the strong propensity to return."[33]

Piguet, drawing on the work of Dominic Kniveton at the Sussex Centre for Migration Research and others for the International Organization for Migration, suggests that migrants may not return, however, in cases where the population depends on the local environment for livelihoods and "human action exacerbates the environmental aspect of the disaster."[34] Kniveton cites the Dust Bowl and consequent mass migration that occurred in the United States in the 1930s as a prime example of this effect.[35]

Population of Africa and Europe (1800-2100)



Source: United Nations Population Division

Despite a wealth of evidence that human mobility has been affected by weather and climate patterns, however, the connections have rarely been straightforward. A confluence of factors drive migration decisions, and it is difficult to discern relative influence. Michigan State University geography Professor Antoinette WinklerPrins, for example, finds that regular patterns of migration in Brazil between lowland areas and upland bluffs during flood season were interrupted by a period of relative stasis in the mid-20th century, when residents learned to grow moisture-loving jute as a cash crop during flood season. As the jute market deflated, however, the traditional pattern of migration was reestablished.[36] Thus, although the flood season was a factor in the mobility of the population, it appears to have been mediated through an economic incentive. But these mostly economic responses to changing weather patterns are only examples of what profound climate change could prompt in regions across the planet.

Climate change and migration

Some studies postulate that climate change already contributes to displacement and migration, although most of this movement remains internal.[37] Throughout

previous droughts during the second half of the 20th century in Africa's Sahel region, for example, migration ranged from local and cross-border movements to international migration depending on the context, with cross-border migration in these states facilitated by relatively porous borders.[38] In the case of natural disasters in particular, migrants tend to keep movements localized, as seen in the case of the tsunami-affected regions of Sri Lanka as well as the southern region of the United States affected by Hurricanes Rita and Katrina. Evacuees of both areas did not cross nearby borders, but instead moved to their families in other parts of the country.[39] Even a disaster as overwhelming as the Asian Tsunami in 2004 showed a majority of affected people who remained displaced within their own countries.[40]

The projections for future displacement driven by climate change are daunting.

The projections for future displacement driven by climate change are daunting. A 2009 report[41] by a coalition of organizations, including CARE International and the United Nations University, examined seven vulnerable regions where the consequences of climate change could ultimately contribute to significant human displacement. Included among these areas is the Mekong Delta in Vietnam, where nearly half of the residents and half of the delta's agricultural lands would be flooded by a six-foot rise in sea level.[42]

Scenarios like this suggest that it is shortsighted not to think comprehensively about key risk multipliers represented by overlays of migration, climate, and conflict. Failure to do so risks undermining long-term stability and security interests.

Climate change, migration, and conflict

Jeffrey Mazo of the International Institute for Strategic Studies argues that the ongoing civil war in Darfur represents the "first modern climate-change conflict," a position supported at least in part by U.N. Secretary General Ban Ki Moon and former U.S. Vice President Al Gore, among others.[43] Secretary General Moon argued in 2007 that the Darfur violence took root in a drought that began in the 1980s. The drying climate disrupted traditional patterns of co-existence between farmers and herders and led to scarcity, which contributed to fighting, and "by 2003, it evolved into the full-fledged tragedy we witness today."[44]

Climate was not the only or primary factor in the conflict, but it did serve as a source of stress on an incapable regime that a more effective government could have managed without it resulting in more than 200,000 dead and millions

Defining climate migrants

No universally accepted concepts, much less legal categories, exist to describe or define climate migrants. There is agreement, however, that factors such as drought, flooding, severe weather, and environmental degradation can cause human mobility in large numbers that are certain to increase in the near future.

Among the labels ascribed to these people are climate migrants, climate refugees, environmental refugees, environmental migrants, environmentally displaced persons, environmentally induced migrants, forced-climate migrants, and anticipatory refugees.

The category of "climate refugees," was first used by the U.N. Environmental Program in 1985 and is often the term of choice in literature and policy debates. Researcher Essam El-Hinnawi at the U.N. Environment Program first defined environmental refugees (a broader class than climate refugees) as:

> *Those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life. By 'environmental disruption' in this definition is meant any physical, chemical, and/or biological changes in the ecosystem (or resource base) that render it, temporarily or permanently, unsuitable to support human life.*[45]

In this paper we chose not to use the terms climate refugees and environmental refugees because of the many legal and political implications that are generally reserved for political refugees defined under the 1951 Refugee Convention. We share the concerns expressed by many working in this field that considering those who have been forced to move due to climate change as refugees would add so many people to that category that the resources intended for political refugees would be quickly depleted.

In addition, climate migrants often have a higher degree of negotiation room than refugees, particularly in the case of slow-onset climate change, where these migrants may have time to plan their relocation. Thus, we believe that the term "climate migrant" better recognizes the complexity of migration decisions in this situation.[46]

While no internationally accepted definition for persons moving for environmental reasons exists to date, the International Organization of Migration, or IOM, an intergovernmental organization with more than 130 member nations, put forward a working definition of "environmental migrants" in its 94th Council Session, a definition that also appears in the World Migration Report 2008 and various other publications. This definition encompasses, but is not limited to climate migrants. It recognizes that:

- Environmental migrants are not only those displaced by extreme environmental events but also those whose migration is triggered by deteriorating environmental conditions
- Environmentally induced movement can take place within as well as across international borders
- It can be both short term and long term
- Population movements triggered by environmental factors can be forced as well as a matter of choice
- All persons moving for environmental reasons are protected by international human-rights law

In addition, persons displaced within their country due to natural or human-made disasters are covered by provisions laid out in the IOM's "Guiding Principles on Internal Displacement." In this document the IOM underscores that governments have primary responsibility to protect and assist their internally displaced populations. Should a government not live up to this responsibility, the international community has a right to become engaged.

The temporal aspect of climate migration further complicates the categorization of climate migrants, resulting in at least three major types of climate migrants:

- Those temporarily dislocated due to disasters, whether natural or manmade

Continued on next page

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- Those permanently displaced due to drastic environmental changes, such as the construction of dams
- Those who migrate based on the gradual deterioration of environmental conditions

We argue in this paper that, for the purposes of strategic and policy planning, using the term "climate migrants" does not require a delineated set of descriptive conditions. Given that all the available parameters—rising temperatures, increasing mobility, global demographic growth, sustained instability, and massive gaps in governance—are creating conditions in which climate change, migration, and conflict will increasingly intersect, there is reason enough to worry and to engage in a policy conversation.

Currently no international standards or definition for data collection exist regarding persons displaced by climate events. Kate Halff, the head of the Internal Displacement Monitoring Center, recently pointed out the need to establish systematic monitoring, including the creation of a global database for estimating displacement from natural disasters and the inclusion of climate migration induced by slow-onset disasters.[47]

displaced. Shifting to a more comprehensive understanding of climate change, migration, and conflict, however, will be a significant challenge.

Yet the complexity of the variables affecting migration has led some organizations to omit migration from their socioeconomic and environmental mapping equations on climate-security entirely, causing them to focus instead on concrete responses to climate change, food insecurity, and livelihoods.[48] This is particularly true in the case of migration driven by slow-onset events, (as compared to sudden, massive displacements due to disaster), which may be indistinguishable from other forms of adaptation.

Professor James Lee of American University—an expert on the environment, conflict, and trade—envisions structural and behavioral pathways from climate change to conflict, none of which provide a direct causal link between the phenomena. Specifically, Lee argues that three structural conditions—sustained climate variability, intervening variables that weaken adaptive capacity, and conflict triggers such as political assassination—are needed in order for climate change to exercise influence over the occurrence of conflict. Intrinsic and behavioral factors such as scarcity, abundance, and perceptions of national sovereignty can also influence this process.[49]

Lee is correct that clear causal arrows between these factors are difficult to draw, but some of the links in the climate, migration, and conflict nexus have long been apparent. The most obvious connection is forced migration sparked by security

challenges in the "sending" areas from which migrants depart, where the effects of climate change are clear. Climate migrants from these areas can be international or internal. It is time to see conflict-driven migration in a more complex context and recognize climate and environmental factors.

A 2010 study by the Internal Displacement Monitoring Centre and the Norwegian Refugee Council estimated that as of December 2010 there were an estimated 27.5 million people worldwide experiencing internal displacement due to violence or conflict. Of this figure 11.1 million were based in Africa, where the majority of displacement was driven by "conflict between the government and armed opposition groups, or by inter-ethnic violence," although additional factors such as post-election unrest, banditry, and forced evictions were also contributory drivers.[50]

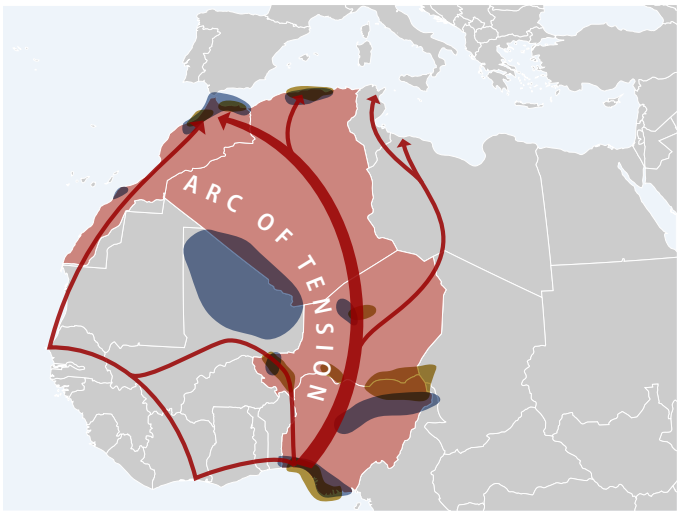
There is also evidence to suggest that migration can contribute to conflict. Political scientists Idean Salehyan of the University of North Texas and Kristian Skrede Gleditsch of the University of Essex examined the occurrence of conflict spillover facilitated by refugee flows in an effort to understand why the likelihood of conflict is higher for states bordering countries at war than for states whose neighbors are at peace. While noting that most refugee-recipient countries do not experience violence, Salehyan and Gleditsch argue that refugees fleeing civil wars into neighboring countries "often maintain ties to their homelands and continue to play an active role in conflicts at home, thereby physically extending rebel networks across space."

Moreover, the two experts found that these migrants may stress the receiving countries economically, demographically, or through the spread of infectious diseases—factors that can also increase the risk of conflict. Based on statistical analysis of refugee flows and conflict since 1951, Salehyan and Gleditsch found that "refugees from neighboring countries have a significant and positive effect on the probability of conflict."[51]

The migration-conflict nexus is not only relevant for populations fleeing violence in their home countries. International relations expert Fiona Adamson of the University of London examines the broader phenomenon of international migration and argues that it can influence state national security in three ways:

- Challenging state autonomy and sovereignty
- Reshaping the balance of power through the economic, military, and diplomatic implications of shifting populations
- Exacerbating the risk of conflict formation

And yet the impact of these changes on state security is not necessarily negative. Adamson argues that receiving countries can gain strategic advantage through the selection of skilled migrants, or by utilizing migrant communities to enhance diplomacy and engagement with their home countries. Thus, the way in which countries choose to approach migration, and their capacity to shape migration flows in accordance with national interests, is critical.[52]



- Water scarcity, desertification, rising sea levels, and other effects of climate change will pose serious adaptation and mitigation challenges for African states.
- Weak governance, internal conflict, and transnational terrorism already put pressure on the capacity of states along the arc of tension.
- Existing internal and international migration routes in NW Africa cross areas of climate and security vulnerability.

But in some instances, the nexus is debilitating. In Nigeria and Niger, for example, increases in flooding, desertification, intensified migration, and ethnic conflict are evident across a common border among communities in both countries reliant on the same water sources. The consequences of climate change on cross-border human migration and ethnic conflict are clearly discernible, but so too is the reality of more internal and intercontinental migration as a result.

Even though Nigeria has experienced economic growth of between 5 percent and 7 percent annually for the past decade, this has not translated into broadly improved conditions for the general population. "We are not seeing economic development so any manifestations of climate variability will force people to migrate," argues Nsikan-George Emana, the Director of Programs, Gender and Development Action in Nigeria. "Though the link between climate change and migration is often seen as coincidental, it's a serious human situation and a threat to the socio-economic and political stability of any country or society."[53]

Although current news reports of environmental migration and political momentum linking climate change and conflict remain ahead of conclusive research, the potential for proactive policy formulation as it pertains to the nexus still exists. In particular, as the global discourse surrounding the nuances of the nexus evolves, the possible repercussions of inaction due to uncertainty may serve as an impetus for adopting a "precautionary principle" approach.

This would entail moving forward immediately on "low-hanging fruit" to reduce the vulnerabilities and risks associated with climate change, migration, and conflict, while raising awareness of this nexus among policymakers. Such a strategy

might help to create a more universal view that unites the ideas of fighting climate change swiftly and effectively, as well as adapting global policies to cope with climate migrants. The next section of our paper identifies where and why.

The fierce urgency of now

The climate, migration, and conflict nexus cannot be understood without thorough consideration of all of its individual elements, but it is climate change that adds particular urgency to this undertaking. Climate change is a daunting problem for citizens and policymakers. Its precise consequences are difficult to predict on the local level, and its impact will not be uniform among, or, in some cases, even within countries.

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Yet the general trajectory of global climate change is clear, as is the imperative to prepare for its progression. As the U.N. Intergovernmental Panel on Climate Change, or IPCC, noted in 2007, human-induced "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."[54]

Global predictions of the development of climate change over the next century reveal a range of possible effects. The IPCC reviews climate change predictions under a variety of scenarios "covering a wide range of demographic, economic, and technological driving forces and resulting [greenhouse gas] emissions."[55] According to the group's 2007 assessment, continued growth in emissions over the scenarios considered by the panel may result in global average surface warming between 1.1 degrees and 6.4 degrees centigrade (up to 10.8 degrees Fahrenheit) and sea level rise of between 0.18 meters and 0.59 meters (between 6 and 22 inches) by the end of the 21st century.[56] The panel also foresees a future climate in which more intense hurricanes and typhoons are likely.[57]

Even seemingly small variations in the climate can have outsized effects on human health and livelihood. Changes in climate and weather patterns, for example, will impact the production of a range of global commodities, including rice. The International Rice Research Institute compared data from rice yields and temperature measurements in the Philippines over an 11-year period and found that a 1 degree Celsius rise in minimum nighttime temperatures corresponded to a 10 percent drop in rice yields.[58] According to the U.N. Food and Agriculture Organization, "rice cultivation is the principal activity and source of income for more than 100 million households in developing countries in Asia, Africa, and Latin America."[59]

And rice will not be the only commodity affected by changes in climate and weather patterns. A study published earlier this year in the journal *Science* found that climate change is already having an effect on global maize yields. Farmers have produced about 3.8 percent less maize over the past three decades than they would have without the influence of climate change.[60] A quantitative examination of maize yields and human migration from Mexico to the United States earlier this year by a team of Princeton University researchers suggests that "a 10 percent reduction in crop yields would lead an additional 2 percent of the population to emigrate." Combining this data with climate change predictions, the Princeton researchers concluded that between 1.4 million and 6.7 million Mexicans could opt to migrate as a result of the effect of climate change on declining agriculture production by 2080. These predictions assume, however, that other factors, such as Mexico's economic health relative to that of the United States and agricultural adaptation practices, are held constant.[61]

Climate change may also pose risks to human health through an increase in warmer days and nights. Extreme hot or cold temperatures can endanger lives, and gradual shifts in climate and their resultant effects on precipitation, pollen production, and disease prevalence can significantly impact human health. According to the World Health Organization, "climatic conditions affect diseases transmitted through water, and via vectors such as mosquitoes. Climate-sensitive diseases are among the largest global killers."[62]

Some diseases, such as malaria, are already beginning to adapt to the changing climate. In Kenya malaria has spread beyond its traditional range into regions that health officials say were previously too cool to support it.[63] Recent research indicates that "moderate increases" in existing methods of combating malaria would be adequate to offset the projected climate-driven impact of the disease, but this suggestion does not address government or donor capacity to provide expanded services.[64]

Even if global climate change is brought under control sooner rather than later, carbon dioxide already in the atmosphere will continue to affect the earth's climate.[65] (see box) This process will increasingly influence the ability of some humans to subsist in their current locations. The people pushed from their homes by the effects of climate change will be faced with the questions of where and how to relocate families and livelihoods, either temporarily or permanently, and their decisions will have unique implications for the resources, people, communities, and countries they encounter as they migrate.

Degrees of risk due to climate change

Although there is uncertainty surrounding the precise effects of climate change over different parts of the globe over time, our lack of predictive power should not be taken as an excuse to delay acting with the information now available. Indeed, from a risk-management perspective, immediate action is the only sensible strategy. As the recent publication "Degrees of Risk" by E3G, a nonprofit organization focused on sustainable development, explains:

> *The prospects for resolving uncertainty vary across different parts of the climate system, but few of the most important questions are likely to be resolved within the next decade. Waiting another 10 years to implement mitigation policies would lock in additional climate security risk through additional greenhouse gas emissions and would eliminate the option of stabilizing the climate at more ambitious levels should it prove necessary or desirable. While learning will play a key role in iterative decision-making over time, the prospect of learning should not imply that waiting to enact policies to reduce greenhouse gas emissions, or to begin adapting to unavoidable changes is economically efficient. Formal analyses designed to test the optimal timing of climate policy under uncertainty never find that when future learning is taken into consideration inaction now is still the best response.*[66]

This is indeed the most sensible way to proceed, as the main pages of this report will demonstrate.

The most vulnerable to climate change

Climate change is likely to pose a disproportionate challenge to the least developed countries and small island nations. These states likely lack the resiliency, experience, and resources needed to respond or adapt to the changing climate and the consequent alterations in weather patterns, agriculture, disease, and human mobility. The citizens of these states played little role in speeding the world along its carbon-consumption path, but their lives and livelihoods may well be the most vulnerable to its scourges. As mentioned above, future reports in this series will highlight some of these hotspots, including northwest Africa, India and Bangladesh, and the Andean region of South America.

According to the IPCC's 2007 report, the ability of countries to adapt to and mitigate the effects of climate change "is dependent on socio-economic and environmental circumstances and the availability of information and technology."[67] Many of the developing countries that will be affected by climate change lack the infrastructure to respond to the range and scale of the possible effects. In Asia, for example, water shortages may impact 1 billion people by the 2050s, and the continent may see more frequent "intense precipitation events," as well as more frequent and more extreme droughts, among other effects. Yet according to a study by the U.N. Framework Convention on Climate Change, or UNFCCC,

some parts of Asia have a suboptimal adaptive capacity because of "poor resource bases, inequalities in income, weak institutions, and limited technology."[68]

Various initiatives exist to assist developing countries in their adaptation and mitigation efforts, such as the Climate Adaptation Fund established by the parties to the Kyoto Protocol, and the UNFCCC to counter global warming, adopted by over 190 countries. Then there is assistance from international organizations such as the World Bank, which supports investments in clean energy in the developing world and developed a "Strategic Framework for Development and Climate Change" in 2008[69], or regional help, such as India's recent offer to establish a climate-adaptation fund for South Asia.[70] These measures, however, will not be nearly enough to fill the need created by the consequences of climate change.

Developing nations and small island states will not only need adequate funding (no funds are allocated for migration so far), but also the expertise to carry out adaptation and mitigation efforts. These tasks could range from education or establishing early-warning systems, to implementing insurance for property and business owners, to altering crop mixtures and substantially modifying traditional land-use patterns. Assistance may also be required to help countries aggregate accurate nationwide data to identify mitigation needs and target relief to the most vulnerable communities.

For the most at-risk nations, money, international assistance, and expertise are only the beginning of the adaptation process. The Maldives, a small island nation in the Indian Ocean, will be completely submerged if there is a rise in the sea level by one meter.[71] The Maldives thus requires not only near-term assistance but also a long-term understanding with the international community on the measures to be taken if its territory disappears—the ultimate definition of climate migration.

There is evidence that the international community is beginning to recognize the scale and diversity of the potential intersections between climate change and migration. Following climate talks in Cancun this past winter, the UNFCCC's Working Group on Long-term Cooperative Action issued a decision that recognized this intersection explicitly. The agreement invited all parties to begin work on a number of adaption priorities, among them: "measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation, where appropriate, at the national, regional and international levels."[72]

Whether states will capitalize on this recommendation to inform their adaptation and mitigation priorities remains to be seen. In the next section of our report, we detail what the United States, Europe, regional powers, and international organizations are set up to do now and why this is inadequate for the challenge at hand.

Capacity development in the 21st century

The United States is today one of the few global powers capable and willing to act in the common interest. In absolute terms the United States has never been more influential. Its defense spending is unequalled by the next 20 countries combined. It spends the largest sum of official foreign-development assistance, exceeding the total spending of the next two nations, France and Germany.[73] And it sustains the world's most robust and ubiquitous diplomatic presence, boasting almost 12,000 Foreign Service officers and over 260 diplomatic missions.

The United States remains the world's dominant economy, too, with the world's largest gross domestic product (the broadest measure of economic growth), of more than $14 trillion—roughly three times that of China, the second largest. The United States also attracts the largest flow of foreign direct investment, at more than $2.5 billion a year compared to half that in France or the United Kingdom. Finally, the United States possesses the most sought-after universities, drawing the best and brightest from around the globe.[74]

Yet the emergence of new and significant regional powers around the world is altering the relative influence of the United States. This so-called "rise of the rest" has prompted the United States to review its current capabilities and the way it interacts with both the developed and developing world. What's more, the global challenges are so many and so complex that a new division of labor is necessary, especially when it comes to long-term economic and social development that is effective and sustainable.

The Obama administration is seeking to transform U.S. global engagement to meet these new challenges in the 21st century. In early 2010 the administration released the congressionally mandated National Security Strategy[75] and the Defense Department's Quadrennial Defense Review.[76] Together, these texts begin to outline the emerging strategic environment that the United States faces—the growing role of emerging countries and the further diffusion of global political, economic, and military power.

The two reports are complemented by the administration's first-ever Quadrennial Diplomacy and Development Review,[77] as well as by the Presidential Policy Directive on Global Development, which look to add cohesion to the proliferation of government agencies that are involved in U.S. foreign and national security policy. All four of these reviews acknowledge climate change as a major factor in planning global development and security strategies.

To meet this challenge the United States needs to provide a new brand of integrated 21st century foreign, development, and security strategy in cooperation with partners around the world. The Presidential Policy Directive is a first step in this direction. President Barack Obama noted in a speech to the United Nations shortly after the directive was completed that this new policy is built on the ideas that "dignity is a human right and global development is in our common interest."[78] While President Bush placed increased emphasis on development, President Obama's speech marked the first time that the importance of global development was framed as a primary interest within the larger security environment by a U.S. president.

The climate, migration, and conflict nexus is one challenge that will create both questions and opportunities for U.S. policymakers learning to navigate this new environment.

The climate, migration, and conflict nexus is one challenge that will create both questions and opportunities for U.S. policymakers learning to navigate this new environment. How they choose to address it will certainly have broader implications for the 21st century strategic environment, and the ongoing institutional debate in Washington will define the tools and resources available to policymakers confronting these issues.

Europe's role in global-capacity development

Europe finds itself in a particularly challenging position. Rising migration from Africa—much of it illegal—is now a contentious domestic policy issue across the European Union and among nations outside the European Union, such as Norway. The European Union has responded to this increasing migration from Africa by partnering with the African Union (an association of 54 African states to strengthen political and socio-economic integration) to enhance safety at sea and formalize migration routes. The focus on better migratory coordination with the African Union is intended to reduce illegal immigration while creating a strong system of integration and remittances. Yet these two very unequal regional organizations have not made any serious efforts to tackle climate change, migration, and conflict challenges on a region-to-region level.

At the bilateral level, however, there is more concrete action. For some time, the European Union has delegated the management of refugee issues to countries such as Morocco, Algeria, Tunisia, and Libya. This policy, however, will not hold in the long run and has already forced difficult compromises with regard to human-rights issues.

Take Spain: Although "irregular" African migrants (those who do not enter the country through legal channels) began arriving in Spain in 1994, public perception and policy debates changed after a larger number of boat refugees arrived in 2007. The Spanish government signed an agreement with a number of nations to deter illegal migration, sent officials of its Interior Ministry to African countries, and began establishing Spanish Consulates in sub-Saharan Africa at the same time. Currently, liaison Officers of the Spanish Guardia Civil are cooperating with local police to discourage migrants from leaving via Senegal, Guinea, Mali, Mauretania, or Cape Verdes.

More progressive policies are now being tried as well. Spain grants temporary working permits in small numbers (3,000 per year in the case of Senegal) for countries that accept repatriation of illegal immigrants in turn. Another pilot project that began in 2007 included the establishment of Spanish-run vocational schools in African countries so that younger potential migrants would stay home.[79] Belgium, Italy, and Spain—under the auspices of the European Union—also partner with the Public Employment Services of Morocco, Tunisia, Benin, Cameroon, Mali, and Senegal to offer vocational training which matches the labor needs of the region's economies and to provide migrants with alternative destinations.[80]

But these steps alone will not resolve the migratory pressures on Europe. Javier Solana, the European Union's former High Representative for the Common Foreign and Security Policy, points out that climate change threatens the entire multilateral system of the international community. He went further to say, "the effects of climate change would promote a policy of resentments between all those who are responsible for climate change and those who are its worst victims."[81] This was a fairly transparent warning that climate migration might convert the Mediterranean into a flashpoint between Europe and Africa.

Despite the difficulties of aligning the diverse interests of its member states into a broader regional approach, the European Union has taken steps toward addressing the nexus of climate, migration, and security in the Mediterranean basin affecting

its planning and implementation of development assistance to northwest Africa. One of the measures is the European Investment Bank's regional focus on the Mediterranean Neighborhood, meant to integrate EIB services to the region. A prime example is the Facility for Euro-Mediterranean Investment and Partnership, or FEMIP, which allocates financing and technical help to projects designed to promote sustainable economic growth in the nations of the basin.

This allocation of financing has been accompanied by a promising change in rhetoric and a process of institutional reform within the European Union, with the establishment of bodies integrating environmental and migration concerns with the process of development assistance and financing. The EIB's 2009 establishment of the Marseille Center for Mediterranean Integration, or MCMI, offers an example of these nascent changes. At the opening, Christian Masset, general director of Globalization, Development and Partnerships for the French Ministry of Foreign and European Affairs outlined the MCMI's mission with an eye towards this process:

> *In the Mediterranean Basin, one of the most populated and arid regions, we need to look together for the means to preserve the common space and public goods we are sharing in order to ensure sustainability for the population of the region. This is indeed what the MCMI aims at, and the meaning we seek to convey concerning 'the Mediterranean integration.'*[82]

The realization of the region's interdependence—and its shared environmental concerns—is an important step which, accompanied by projects to promote sustainable development and increase employment in migrants' countries of origin, represents the opening attempt to tackle the problems posed by the nexus of climate, migration, and security. But there is undoubtedly a long way to go in integrating diverse institutional bodies, fully appreciating the interplay of climate change with migration and security issues, interfacing with other regional institutions, and expanding scope to other regions.

The role of international organizations and regional powers

There is still considerable concern regarding the ability of international organizations in their present forms to address this nexus in an integrated fashion. These doubts have their roots in many of the same organizational problems facing the United States—the proliferation of organizations with overlapping responsibilities

and the diffusion of expertise and funding. While comprehensive reform would be the best solution, there have been some positive examples of cooperation between international organizations like the World Bank and national or multilateral development banks. The World Bank, for example, has had success sponsoring climate change adaptation programs through its Pilot Program for Climate Resilience, or PPCR. Founded in 2008 the PPCR has committed $1 billion to date under the umbrella of the World Bank Climate Investment Fund, implemented via the five large multilateral development banks that offer grants and loans.[83]

Additionally, cooperation between more cohesive, agile national banks and international bodies with regional expertise could provide an example for regions just beginning to reckon with the climate-conflict nexus. The KfW Entwicklungsbank, a German government-funded development bank, offers a promising model for addressing the root causes of climate migration in the short-term through regional bodies. KfW has sponsored studies of responsible cross-border river management in West Africa and Central Asia, as well as runoff management from melting glaciers in the Andean region.

KfW's 2010 accord with the West African Development Bank provides grants from the German federal budget, allowing the development bank to offer favorable loans to the governments of Burkina Faso, Mali, Niger, and Senegal for climate-adaptation projects. The €10.6 million ($13 million) grant has allowed the development bank to finance irrigation and drainage projects projected to total €60 million.[84] KfW's approach incorporates efforts to mitigate the effects of climate change in varied regional settings while preparing local populations to adapt to changing conditions.

On a more international scale, the International Organization on Migration, or IOM, as well as the United Nations are working to ensure humane migration, study migration patterns and development, and establish an international dialogue on the legal norms surrounding migration. The IOM spent more than $1.4 billion in 2010 on more than 2,900 projects. The IOM has also worked in concert with organizations such as the Economic Community of West African States, or ECOWAS, to bring attention to migration and build management capacity. With funding from international donors, IOM and ECOWAS administer migration law training programs and migration-management workshops throughout West Africa and the Sahel, established a West African migration dialogue, and improved migration management mechanisms in the region.[85]

While the IOM remains largely focused on improving migration management and ensuring humane treatment—crucial immediate concerns in many regions—it has not yet fully addressed the nexus of climate change, migration, and conflict. In contrast, the Asian Development Bank, or ADB, has begun a thoughtful planning process to address the threat in the region. ADB's initial 2008 study highlighted the populations likely to be at greatest risk and underscored the "urgency of developing policies, appropriate institutions and mechanisms to cope with the impact of climate change on migration."[86]

The policy proposals and technical assistance emerging from the most recent conference in Manila this year awarded funding for more detailed empirical study of the problem in the most threatened areas, programs to improve understanding among regional governments, and a study of potential financing instruments to fund the appropriate responses.[87] Yet the ADB's studies on climate and migration illustrate both the promise and problems currently facing those trying to confront the nexus; its planning process is sound, but the financing and resources are insufficient.

The role of regional powers

It is difficult to develop financial instruments for uncertain or unpredictable future events, a challenge further complicated by divergent national interests and the uncertain international status of climate migrants. Without serious buy-in from rising regional powers, responses will remain haphazard, locked in the planning stages, unacceptably slow, or tied to the diminishing and varying capabilities of the Western powers. Emerging regional powers such as Brazil, Turkey, India, and South Africa should acknowledge that in this century their security will be inextricably linked to that of their respective regions. Presented with the challenge of climate change, migration, and conflict, these powers must assume greater regional responsibility in making effective preparations.

The regional powers, already asserting their economic and diplomatic strength in their respective regions, have begun to assume the wider responsibilities of regional human security. Turkey under Prime Minister Recep Tayyip Erdoğan has dispatched significant military and civilian humanitarian aid to Pakistan in the wake of the 2005 earthquake and 2010 floods, and done much to assert its regional influence. Domestically Turkey is in the process of implementing a National Climate Change Action Plan and the National Action Plan on Migration and Asylum, aimed at reducing irregular migration.[88] In support of the IOM,

Turkey has funded a project to enhance the capacities of Turkish municipalities to deal with humanitarian and social needs of migrants.[89] Turkey would do well to broaden its climate mitigation plan to address the added complexity of migration, and to broaden its scope to match its growing regional role.

Brazil, too, has taken the first steps to greater regional responsibility with its commitments in Haiti over the last decade. Brazil provides humanitarian aid, has around 1,300 troops stationed on the island, and commands the U.N. peacekeeping force. From 2004–2010, the Brazilian government spent $577 million on its mission in Haiti.[90] But Brazil can do more; for instance by taking a leading role in establishing an effective framework to handle migration in South America, particularly with the at-risk Andean region. The hope is that these powers can bring their growing resources and local understanding to regional problems of climate change, migration, and conflict. Through acceptance of the problem presented by this nexus, early capacity-building and regional mobilization, the transition can be made less painful.

The way forward

The United States today lacks the policy postures necessary to address climate change, migration, and conflict in a systematic and proactive manner. While USAID is the official development agency of the U.S. government, additional foreign-assistance programs looking to promote economic, social, and environmental development are spread out over 20 government agencies, departments, and initiatives. Each program has its own goals, priorities, and procedures. The ad-hoc nature of U.S. development assistance and the past militarization of aid mean that even USAID lacks the authority to coordinate these disparate programs.

The United States today lacks the policy postures necessary to address climate change, migration, and conflict in a systematic and proactive manner.

Moreover, even though the State Department is supposed to serve as the locus of U.S. diplomatic and development expertise, the post-9/11 reality in the United States is a system that depends on the military to carry out "soft power" tasks for which it is well-funded, and sometimes very successful, but for which it is not well-suited over the long term. This organizational disorder severely undercuts our ability to help countries manage and emerge from complex crises.[91]

The ability of the United States to address these issues at the domestic level is further complicated by climate change skeptics, especially in Congress, who reject the overwhelming consensus of the global scientific community. This doubt, in the face of all evidence, has not prevented the State Department and the U.S. Agency

for International Development from moving forward with initiatives to address the effects of climate change (as discussed in the following section), and may not deter limited domestic progress. But the lack of serious buy-in from Congress will affect funding for these priorities and cannot be circumvented indefinitely.

On the international level, myriad political differences between different nations and groups of nations weaken the ability of global organizations such as the World Bank and regional development banks to focus in on the nexus of climate change, migration, and conflict. Consequentially, organizations such as the United Nations and the Group of 20 forum of the top developed and developing nations, designed to help developed and developing nations tackle this kind of issue, struggle to take concerted action.

The United Nations has never been equipped to take collective action outside of a case-by-case basis where consensus among specific members has been achieved. Therefore, expecting the organization to take on the nexus of climate change, migration, and conflict is unrealistic. This is particularly true given the likelihood that future conflicts will not be clearly defined as caused by climate or migration, and thus relatively "blameless," but will more likely incorporate ethnic or political divisions. This would make concerted U.N. action nearly impossible. Concerted action by the Group of 20 is not much more realistic due to its economic and financial focus, compounded by varied interests often preventing the development of effective political measures.

Indeed, one of the most significant consequences of the end of the Cold War is the diffusion of power. The United States, of course, remains the major political player on a global level, but while terrorism provides a common enemy to all responsible nations, nation states and international alliances are not by default the most significant actors anymore, and have proved unweildy in addressing unconventional threats.

Meanwhile, in the developing world, the weakening of some state structures will strain these governments' ability to work with the international community to address the roots and results of complex crises in a comprehensive manner. As challenges like the climate change, migration, and conflict nexus grow and donor-country budgets are strained, it is important that the international community respond with a common global approach and a division of labor based on regional priorities and scenarios.

That may seem like a pie-in-the-sky ambition given the analysis in this chapter of our report. But we hope our recommendations in the next and final chapter point the way toward a way of resolving the serious global-security issues posed by climate change, migration, and conflict.

Conclusion: Policy recommendations

The nexus of climate change, migration, and conflict in the 21st century will test the capabilities of the United States and the world to manage global security in ways never thought of before. The need for new policies and programs that foster global sustainable security amid wrenching human dislocation will require creative development, diplomatic, and military responses that are international in scope yet tailored to unique local and regional situations. None of this will be easy.

But it will be mandatory. As this paper demonstrates, there is no running away from the nexus we've detailed in this opening paper of our series on this subject. And as our following reports on northwest Africa, India and Bangladesh, the Andean region, and China will demonstrate, unified action will require the participation of national governments, regional groups, and international organizations.

Much of that action, though, will be specific to these and other regions. This means that overarching recommendations may not be as useful or as applicable to different regions, depending on the unique circumstances of climate change, migration, and conflict in each area of the globe. Still, there are useful general recommendations to be made—recommendations that we believe will help the United States, Europe, regional groups, and international organizations prepare for this unique 21st century challenge. Let's begin with the United States.

U.S. institutional reform

There are a number of broad steps that the U.S. government can take to build on the four reports addressing U.S. security and development strategies that were recently issued by the Obama administration (see pages 5, 25-26 for details). These recommendations are necessarily bureaucratic in scope since our overarching recommendation for the U.S. government is to overhaul its national security, diplomatic, and development functions to focus squarely on sustainable security.

Sustainable security redefines how we think about national security in today's shifting, globalized world. Our security can no longer be guaranteed by military strength or economic clout alone, but only by our ability to compel collective action.

Particularly given the increasing influence of the nexus between climate change, migration, and conflict, our security is now irrevocably linked to that of others. Water shortage, desertification, and erosion do not respect international boundaries, and desperate climate migrants will strain even the best-prepared government bodies.

This reality calls for a new progressive approach to foreign policy and national security that emphasizes development alongside defense and diplomacy. Sustainable security is a bold rethinking of national security that introduces the notions of collective and human security and rebalances the three tools of foreign policy—defense, diplomacy, and development.[92] With that in mind, here are our broad recommendations for the United States:

Particularly given the increasing influence of the nexus between climate change, migration, and conflict, our security is now irrevocably linked to that of others.

- **Prioritize planning for the long-term humanitarian consequences of climate change and migration as a core national security issue.** This planning should be conducted across agencies and then unified into a comprehensive plan at the White House with input from Congress. Also, for example, ensure that USAID and the Foreign Service Institute educate new and existing staff on the interplay of climate change, migration and security.

- **Create a unified national security budget.** This will require the integration of defense, diplomacy, and development funding into a comprehensive national security budget that recognizes the importance of non-military instruments in achieving security, and that helps to better synchronize funding and priorities across agencies.

- **Address the development-security relationship.** While the climate-security link has reached high-level discourse within the U.S. government, the current emphasis on rebalancing defense, diplomacy, and development has raised the question of exactly how U.S. development and security policy should be integrated to address this linkage more effectively and efficiently. The game-changing innovations envisioned in the State Department's Quadrennial Defense Review are the best place to start, but that review is in the early stages of implementation and needs to be put into practice soon so that the United States can maintain and widen its global leadership role in this field.

- **The Global Development Policy needs to specifically address climate migration.**[93] The directive on climate change and adaptation does not explicitly talk about migration. The implementation of the Policy Directive on Global Development is a good opportunity to go beyond the high-level discourse and expand the

debate about complex crisis scenarios to include the realities of climate migration as a threat to global security.

- **Support USAID's analysis on the intersection of Adaptation, Conflict Management and Mitigation.** The USAID review examines how climate change is threatening food and water security in interrelated ways leading to potential conflict and argues for the need of more comprehensive environmental cooperation and new institutional arrangements. Taking this approach to heart, the U.S. government should establish a coordinating mechanism for these discussions between governments, nongovernment organizations, and policymakers. The review should also consider the importance of migration and human security alongside food and water security.

- **Develop strategies to strengthen intergovernmental cooperation on transboundary risks in different regions of the world.** The U.S. government needs to improve the capacities of the Department of State and USAID to work through and support regional bodies such as Economic Community of West African States, the African Union, the Asian Development Bank, or the West-African Development Bank to deliver security solutions for the nexus of climate change, migration, and conflict. The United States must also work with its allies, regional groups, and international organizations to ensure these bodies engage in meaningful sustainable development which addresses these new priorities.

Immediate U.S. action

There are immediate steps that the United States can take to alleviate some of the threats posed by climate change, migration, and conflict. These steps involve hard choices for the Obama administration and Congress in an era of tight fiscal policy. Yet U.S. national security is also at stake here. Specifically, we recommend:

- **Improving U.S. civilian capacities to respond to mega crises by further enhancing the work of Disaster Assistance Response Teams.** These DART teams need the resources to develop plans to deploy senior humanitarian coordinators in the initial days of a response to a crisis, and facilitate integrated planning among development, diplomatic, and security communities.

- **Increasing funding for the Global Climate Change Initiative.** This program is implemented through USAID, the Department of the Treasury, and the

Department of State.[94] Maintaining sufficient funding for the Global Climate Change Initiative in a time of budget austerity will be a challenge, but the administration should make a strong push to do so over the next few years. Underfunding the initiative now will almost certainly lead to higher costs later.

International institutional reform

- Ensure better information flows and effective disaster response for early-warning systems among international institutions such as the World Bank and World Health Organization.

- Improve coordination of emergency-preparedness activities, including predictable, systematic, and coherent approaches to capacity development for national and local actors, preparation for displacement, and incorporation of disaster preparedness into developmental programming.

- Prioritize international action on the Guiding Principles on Internal Displacement, including integrating the principles into national law as has been done already in some countries.

- Support regional mechanisms to protect Internationally Displaced Persons, which may drive progress more efficiently than international efforts in some cases. One example is the African Union's Convention for the Protection and Assistance of Internally Displaced Persons, known as the Kampala Convention.[95]

Continuing research

The other major conclusion of this paper is the need to better understand the nexus of climate change, migration, and conflict. Individually all three require better understanding, particularly regarding on-the-ground situations. But more importantly, more research is needed on the nexus itself. To do so, we recommend that the regional development banks as well the International Organization of Migration engage in the following sets of research projects:

- Adapt current migration-monitoring tools to better assess people's motivations for moving, and to understand slow and cumulative vulnerabilities created by population displacement and movement before they reach critical thresholds.

- Support the best science to expand the knowledge base on specific interactions— such as desertification, rainfall variability, disaster occurrence, and coastal erosion—in relation to human migration and conflict challenges.

- Identify regions particularly vulnerable to climate-induced migration, including forced and voluntary mobility, in order to target aid, information, and contingency-planning capabilities.

- Analyze migration as a proactive strategy by local populations under pressure due to increasing environmental change.

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