

National Security and Global Climate Change

By SEAN C. MAYBEE

The uncertainty, confusion, and speculation about the causes, effects, and implications of global climate change (GCC) often paralyze serious discussion by polarizing decisionmakers and the public into camps of “believers” and “skeptics.” The intention of this article is not to present a case for or against scientific indications of global climate change, but to consider how it would pose challenges to national security, explore options for facing those challenges, and finally consider roles for the United States in general and the U.S. military in particular in the many low-likelihood/high-consequence events that this threat could present.

In April 2007, the Center for Naval Analyses (CNA), in coordination with 11 retired three- and four-star generals and admirals, released a report concluding that projected climate change poses a serious threat to America’s national security.¹ This article develops many of the ideas in that report by offering another way to consider the actual threats from GCC and expanding on what could be done to combat them. Specifically, it adds substance to the CNA report’s third recommendation: “The U.S. should commit to global partnerships that help developed nations build the capacity and resiliency to better manage climate impacts.”

For the purpose of this essay, *national security* is defined as the need to maintain the

safety, prosperity, and survival of the nation-state through the use of the instruments of national power: diplomatic, informational, military, and economic. Of the sources of national power, economic and informational power will be the drivers of GCC responses as they provide the needed resources, ideas, and technology. It will be through invoking military and diplomatic power that resources are used and new ideas are implemented to overcome any GCC challenges. In addition to fighting and winning the Nation’s wars, the U.S. military has a long history of humanitarian assistance and disaster relief, but the potential impacts of GCC should lead national security policymakers to consider how environmental security² will play a role in the future.

An important aspect of GCC is the fact that some of its predicted effects will, on a human time scale, be permanent. The persistence of GCC effects magnifies impact as people will be forced to adapt dramatically or to relocate permanently. For this assessment, some GCC effects identified by the Intergovernmental Panel on Climate Change (IPCC), Fourth Assessment Report, are considered.³ The IPCC represents a consensus on current climate change science, with the last report having over 2,500 reviewers and 1,300 lead and contributing authors. According to the IPCC, climate change is going to affect ecosystems that people depend on for their

existence. That will mean different things in different parts of the world—perhaps drought in some places and declining fish stocks in others. When people no longer have access to what they need for survival, they will take some action to secure their needs or they will die. The CNA report called climate change a “threat multiplier” for instability that will likely compound threats for stable regions as well. Along with ecosystems, other potential casualties from GCC are the political, social, and economic systems that underpin every society and ultimately guarantee the fundamental needs of life. The overall result is that climate instability may lead to many local political, social, and economic instabilities and therefore *global* insecurity.

The Threats

Certainly, each GCC effect could be considered a threat to U.S. national security, especially if severe. If the United States were certain that a specific effect would be felt at a certain time and place, the Nation could adapt to or mitigate that threat directly. But in fact, the threat to national security is the combined assault on societies, economies, and governments by the different GCC effects.

The following figure outlines how GCC effects may mount over time, eventually directly impacting humans and leading to economic disruption, social disorder, and possibly failed states. It is critical to note that

there is a tipping point when climate change effects on ecosystems and the physical environment begin to affect humans and human systems (such as transportation, economics, food, and energy production). Where, when, and how those intersections occur will be different for each region, but as direct effects accumulate, so do indirect (and unanticipated) ones that would likely increase global instability. The most important aspect of the figure is its depiction of how broad climatic changes may affect everyone locally and how those local impacts may cascade into greater overall problems.

It is debatable whether competition for basic resources—water, land, food—will lead to state-on-state conflict. Some studies suggest that universal or shared threats serve to bring groups together by providing a common ground for cooperation. For example, some fear wars over water as a threat, though one recent study indicates that water scarcity has actually led to conflict resolution, *not* confrontation.⁴ It remains to be seen if GCC unifies

countries or whether its deprivations will force states to attempt to seize resources from neighbors before economic and social discord become too severe.

Economic Disruption. It should be relatively easy to envision how a megafire enabled by prolonged drought or how massive hurricane damage could lead to some form of local economic disruption and then social disorder. Hurricane Katrina is the overused but highly evocative example. What cannot be overemphasized is how disruptions of cheap and efficient transportation, just-in-time supply chains, and other aspects of modern economies can lead to unanticipated and far-reaching consequences from localized events. Different GCC effects may be manifest in different regions, and regional capabilities to adapt to and overcome them will also differ greatly.

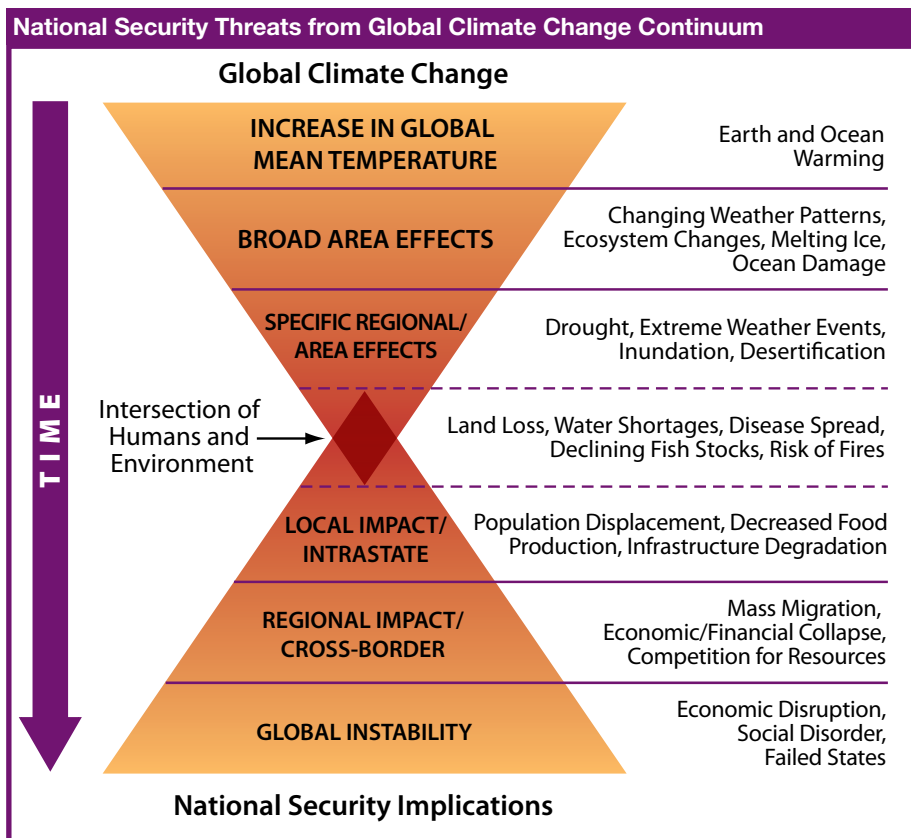
Social Disorder. People are going to take action when impacted by GCC. It is difficult to predict exactly what different groups will do, but surely they will seek

food, water, dry land, jobs, and/or security when some or all of those things are taken away or are in jeopardy. The degree and nature of social disorder will be affected by the success or failure of governments to deal with GCC. Some governments will do well and others will not, but all social and political organizations will be challenged. It is the failure of those combined efforts that may lead to the collapse of central governments, failure of essential systems (for example, food distribution or energy production), or general insecurity with associated chaos.

Failed States. When states can no longer provide legitimate governance, economic opportunity, basic needs, and security, they should be considered failing.⁵ A variety of factors contributes to the failure of states,⁶ but surely the potential economic impacts and social disorder stemming from GCC could overwhelm some states. The vast majority of failing states today are in the developing world, which implies that wealthier, more established states may be better able to cope with GCC. There is a risk that failed states could export their troubles to neighbors in the form of refugees or insurgents, especially when ethnic, cultural, religious, or linguistic similarities create sympathies across (sometimes arbitrary) international boundaries. Sometimes populations in failed states react by embracing radical or authoritarian ideologies that promise to bring order from the chaos (consider Islamicist courts in Somalia and the rise of fascism in post-World War I Europe).

Mass Migrations/Displacement. For many, the greatest national security threat from climate change is the mass migration of populations fleeing from drought, inundation, failed states, or other GCC calamities. Under normal circumstances, cross-border migrations tend to cause instability and conflicts as demographic changes shift political, ethnic, or religious balances.⁷ In some cases, migrations lead to few or only minor security implications, and certainly many nations have experienced migrations from the countryside into cities with little immediate disorder or violence. Rather, large internal rural-urban migrations create longer term challenges for governments to provide the services and jobs needed by large urban populations.

Climate change does not respect political borders. People may be forced to move across those boundaries to access more secure food and water supplies. Predicting precisely



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how populations may respond to changes in the ecosystems that support them is difficult because of multiple outside factors, but when people no longer have access to the water, food, or physical security needed for survival, they move. Consider Iraq, Sudan, Democratic Republic of Congo, Zimbabwe, Chad, and Bangladesh—all on *Foreign Policy*'s list of failed or failing states. What is the current capacity of their neighbors to accommodate large influxes of people for any period of time? Toss in systemic pressures resulting from GCC, and the national security threats from migration-generated instability and conflict become real.

What to Do?

Clearly, both global climate change and its effects are fraught with uncertainty in almost every aspect, but lurking in this fog of speculation is the reality of a whole spectrum of low-probability/high-consequence events that requires consideration. The level of uncertainty is so great that deliberate action to combat any specific consequence is premature, and no mandate exists for immediate commitment of resources (for example, it is too soon to start relocating major facilities out of low-lying areas for fear of rising sea levels). This does not mean that the United States should not be considering how to respond to

GCC's presumed consequences. Developing capacity to respond and establishing resiliency to GCC could have far-reaching benefits—combating instability, for example—even if GCC proves less dramatic than feared.

Current U.S. experiences in Iraq, Afghanistan, and the Horn of Africa highlight the tremendous effort it takes to rebuild and stabilize countries or regions and the need to partner with the international community. The traditional shooting war in Afghanistan and the invasion of Iraq lasted only weeks, but the rebuilding efforts have lasted years with no end in sight. The possible expansion of this type of mission has implications for the type of military forces the United States needs to build for the future. The forces that will most likely respond to humanitarian crises—manmade or resulting from climate change effects—must also be capable of handling the political, social, and economic impacts. Much of the work for establishing effective governance, restoring civil services and other infrastructure, or running food distribution systems is not a military responsibility. Indeed, there are U.S. Government agencies and many nongovernmental organizations

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better suited to carry out these functions while the military assists with security and logistics. That being said, U.S. experience in winning the peace in Iraq has shown that conditions may exist whereby a military force may have to do it all.

By far, it would be better to prevent global climate change than respond to its effects or rely on the resiliency of existing systems as those effects manifest themselves. There are many mitigation strategies running the gamut from planting more trees and carbon sequestration to increasing energy efficiency and expanding the use of alternative energy sources. All of the ideas have merit, but the challenge is to build a global consensus on which strategies are the best and to create avenues to develop, test, and implement them. The United States should lead this effort diplomatically, and the military can set the example by aggressively pursuing energy efficiency and developing/adopting alternative energy solutions.



Village elders help Afghan National Police and coalition forces hand out humanitarian aid

U.S. Army



Crew of Taiwanese fishing boat grounded during tsunami was rescued by Navy Seahawk helicopter

U.S. Navy (Andrew Meyers)

Emerging Threats and GCC Crises

In the absence of clear and specific threats, having the capacity to respond to GCC successfully will take strong political and social institutions. Today, few governments have the ability to combat current environmental problems or humanitarian disasters, prevent or moderate the indirect effects from these problems, or mount humanitarian relief operations. The U.S. military has a long history of providing humanitarian assistance and continues to commit personnel and resources to humanitarian relief.⁸ It is already positioning itself for and has some experience in addressing unstable states (for example, Joint Task Force–Horn of Africa). As part of the war on terror, the military has recognized the potential for unstable and/or failed states to foster or harbor terrorism and is developing a capability to enhance the ability of fragile countries to govern effectively, thereby spoiling otherwise fertile ground for extremism to grow.

Interest in Africa, where the United States has traditionally had only passing military concerns, is growing. A dedicated U.S. Africa Command (USAFRICOM), a first step

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to gaining knowledge and experience on the continent, has been established. Initial indications are that USAFRICOM will not be a traditional combatant command but rather will embrace nongovernmental organizations and promote development and sustainability as a means to combat terrorism and instability. Clearly, environmental security concerns may be a set of unifying issues that USAFRICOM can adopt to gain trust and have a lasting positive impact on the continent.

Strengthening the Systems

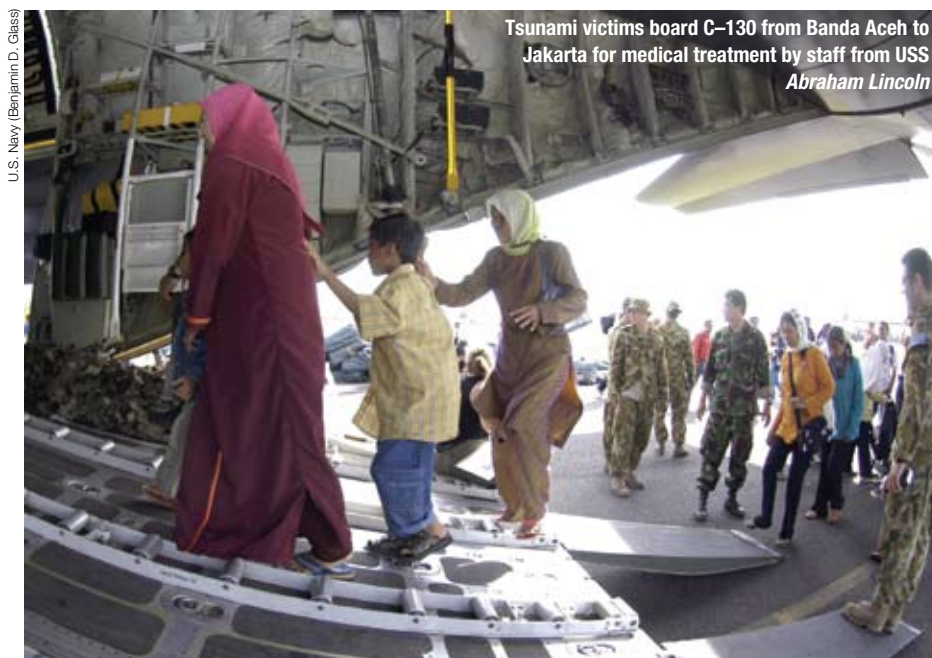
Resiliency is a measure of how quickly societies, governments, and systems can recover from a GCC effect. Resiliency and its counterpart, *redundancy*, are key elements to ensuring essential resources and services are always available. Part of creating resiliency is preparing for existing systems, which have worked well for a long time, to fail. It is speculating on *how* they will fail or will be threatened and then spending money—

sometimes extraordinary amounts—to ensure their continued operation. Clearly, investing in resiliency is important even without GCC considerations, and the benefits can be profound.

Resiliency has always been a national security concern and is embedded in military planning and operations due to the uncertainty of warfare and conflict. That being said, the potentialities of GCC may require a fresh look at the resiliency of the U.S. military. One obvious concern is the vulnerability of military installations to sea level rise or increased storm activity. More subtly, how will equipment and personnel be affected by changed

environmental conditions? Even more intangibly, how will unintended economic and social ripple effects impact the ability to build, maintain, and deploy the military?

As the national debate unfolds, the resiliency of national systems (energy, food, economic, military) should be considered. The interdependency of world systems and ripple effects point toward a greater concern regarding the resiliency of other regions of the world. The instability that may result could become a threat to national security. The resilience of a government and its capacity to respond will depend on the challenges it faces, but some governments will no doubt be more successful



Tsunami victims board C-130 from Banda Aceh to Jakarta for medical treatment by staff from USS Abraham Lincoln



Survivors of Cyclone Sidr gather to receive medical aid in Bangladesh

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than others. The other fundamental question is what happens in nations where the government fails to meet the challenges of climate change. No one knows, but when government X fails, there will be some form of internal strife as competing groups vie for control. The ensuing conflict may further decrease any subsequent government's ability to deal with GCC impacts while amplifying the effects, a cycle that is difficult to break.

The Way Ahead

The world that will face upcoming challenges from GCC will be different from the world that fought the Cold War and muddled through its aftermath. There is greater potential for world prosperity and peace, but there are many significant problems that need attention: demographic imbalances (income, population, age, gender), religious conflicts, drug and human trafficking, nuclear proliferation, and pandemics, to name just a few. Unfolding GCC may greatly exacerbate these problems and if allowed to continue unmitigated may lead to greater problems that transcend these issues.

By recognizing that GCC will affect humans in many direct and indirect ways, the United States can begin to consider how best to prepare for the economic disruption, social disorder, and failed states that may result. Most agree that some climate change impact is already being seen. Regardless, mitigation is clearly preferable to adaptation, but the economic and political realities of today may delay effective efforts in that regard. The result is a need to build resiliency in systems to withstand GCC impacts and develop a capacity to respond when required. The developed world in general and the United States in particular must play a leadership role by developing effective methods for dealing with GCC effects, fostering and distributing technological solutions, and assisting those less able. The CNA report sums it up well: "The U.S. government should use its many instruments of national influence, including its regional commanders, to assist nations at risk build capacity and resiliency to better cope with the effects of climate change."

The national security implications of GCC pose unique challenges for the United States in part because it is best suited to lead counter-GCC efforts. The Nation has the economic and informational power to develop and resource effective methods and the international status to foster global coopera-

tion and implementation. The U.S. military already has a robust capacity to respond and could continue to develop and use it to help other nations to build that capacity. In addition, by addressing environmental security, the United States may foster trust and cooperation while beginning to anticipate some GCC effects.

Mitigating and instilling resiliency while building a capacity to respond will do far more than make the world safer from climate change. Effective mitigation could help clean the environment and eliminate oil dependency. Building resiliency and capacity to respond by promoting good governance, especially in less developed regions, could help alleviate any number of endemic problems. The way ahead for identifying global climate change as a national security threat therefore has the benefit of directly addressing and helping solve other serious national security concerns. **JFQ**

NOTES

¹ Center for Naval Analyses, *National Security and the Threat of Climate Change* (Alexandria, VA: The CNA Corporation, 2007), available at <securityandclimate.cna.org/report/>.

² *Environmental security* is defined as the relationship between security concerns and the natural environment.

³ Available at <www.ipcc.ch/ipccreports/ar4-syr.htm>.

⁴ Marc A. Levy, "Freshwater Availability Anomalies and Outbreak of Internal War: Results from a Global Spatial Time Series Analysis," International Workshop on Human Security and Climate Change, June 2005.

⁵ Comments by Susan Rice, "Too Poor for Peace?" Global Poverty, Conflict, and Security in the 21st Century Symposium, The Brookings Institution, June 5, 2007.

⁶ Foreign Policy and the Fund for Peace, "The Failed States Index," May-June 2007, available at <www.foreignpolicy.com/story/cms.php?story_id=3420>.

⁷ National Intelligence Estimate (NIE), *Growing Global Migration and Its Implications for the United States* (NIE 2001-02D), March 2001, available at <www.fas.org/irp/nic/migration.pdf>.

⁸ The U.S. response to the 2005 tsunami, the deployment of the hospital ship USS *Comfort*, and the humanitarian deployment of the USS *Peleliu* transporting medical staff and nongovernmental organizations are good examples.

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Organizing for National Security: Unification or Coordination?

James M. Keagle and Adrian R. Martin examine early efforts to organize U.S. national security structure, notably the National Security Act of 1947 and the Goldwater-Nichols legislation of 1986. They then review the 9/11 attacks, the conflicts in Iraq and Afghanistan, and Hurricane Katrina as the basis for further amending anachronistic structures and practices. Finally, they explore two options for reorganization—unification and coordination—in the context of Madisonian democratic principles and how each option might contribute to the kinds of strategies and operations needed to wage war and peace in the current global environment.

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Strategic Fragility: Infrastructure Protection and National Security in the Information Age

Robert A. Miller and Irving Lachow argue that the United States faces a new kind of threat to national security: strategic fragility, which is the growing reliance on an array of interlinked, interdependent critical infrastructures that span nations and even continents. Although these infrastructures have helped the Nation achieve greater productivity and prosperity, they are vulnerable to widespread systemic collapse. The authors explore the implications of this trend for national security and suggest various strategies to address the problem.

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