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UPDATE: Climate and Security 101: Why the U.S. National Security Establishment Takes Climate Change Seriously

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In a 2007 report by the CNA Military Advisory Board, General Gordon R. Sullivan stated:

"People are saying they want to be perfectly convinced about climate science projections…But speaking as a soldier, we never have 100 percent certainty. If you wait until you have 100 percent certainty, something bad is going to happen on the battlefield."

The national security establishment in the United States, including the U.S. military and the U.S. intelligence community, understand that climate change is a national security threat, and that we cannot wait for 100% certainty before acting to mitigate and adapt to its effects. But not only do they understand it, they plan for it – considering it's implications in strategic documents like the Quadrennial Defense Review, the Arctic Strategy are the commissioning of the U.S. National Intelligence Council's "Global Trends 2030: Alternative Worlds."

But why? Why do those organs of government that the public normally associates with fighting the nation's wars, devote time and effort to a problem that is popularly perceived as a primarily "environmental" issue? The simple answer: climate change is, actually, a national security threat. It's not just about polar bears, rainforests, or "bugs and bunnies." It's actually a problem worthy of attention by those whose primary job it is to protect the United States, and its allies, from physical harm. The following is a brief outline of how and why the U.S. national security community treats climate change the way it does, starting with:

- The common definition of a national security threat, and how climate change fits into that definition;
- The actual national security implications of climate change;
- Why climate change is a national security threat at least as significant as other traditional threats, such as the proliferation of nuclear weapons and materials.

The definition of a national security threat, and how climate change fits into that definition

Unfortunately there is no one, accepted definition of a national security threat. So, we won't end that debate here. However, simply put, the national security community generally categorizes threats as either: *direct*, physical threats to the U.S. homeland, or vital U.S. assets and personnel abroad; or

indirect threats from regions of the world that are either of strategic interest to the United States, or whose instability could ultimately lead to direct threats to the United States. In this context, the national security community considers climate change a "threat multiplier" (a term first coined by CNA's Military Advisory Board) or an "accelerant of instability" as its characterized in the FY2010 Quadrennial Defense Review report conducted by the U.S. Department of Defense (DoD). This means that climate change exacerbates, or heightens, other threats to the United States.

The actual national security implications of climate change

Climate change as a "threat multiplier" manifests itself through both direct and indirect threats to the United States.

Multiplying direct threats to the U.S. homeland. Numerous climate projections highlight a future of increased extreme weather events, such as droughts, floods, storms, and sea level rise in North America, which could devastate coastal communities, energy facilities and areas of the United States that rely on predictable patterns of rainfall. U.S. domestic military installations are also at risk. For example, the DoD has assessed how drought, dust storms, forest fires, and rising temperatures, due to climate change, could physically affect military bases across the American Southwest. DoD is also examining the impact of sea level rise on its numerous coastal military installations.

Multiplying direct threats to U.S. soldiers and U.S. military installations abroad. Heightened droughts, or unpredictable rainfall patterns due primarily or in part to climate change in areas of the world where the U.S. military operates, can leave armed forces vulnerable to being disconnected from potable water supplies. Protecting convoys to transport available water is also one of the more dangerous and deadly missions soldiers engage in (along with protecting fuel convoys, which accounted for "one-third of U.S. Army casualties in Afghanistan in 2007"). That's why the DoD works to equip its soldiers with portable water filtration, and water desalination devices to deal with the problem, along with mobile hybrid and renewable energy systems (see for example, the U.S. Army's Energy to the Edge program). U.S. military installations abroad are also at serious risk. The U.S. Navy's Task Force Climate Change (TFCC), for example, is conducts assessments of the future impacts of sea level rise on its numerous coastal naval installations across the globe.

Multiplying indirect threats in regions of the world that are either of strategic interest to the United States, or whose instability could ultimately lead to direct threats to the United States. Just as much of the national security community's concern about climate change revolves around its capacity to multiply *indirect* threats to the United States or its interests, particularly in regions of the world that the U.S. either sees as key, strategic environments or those whose instability could constitute a threat to the U.S.

For example, climate change threatens to indirectly upset the balance of competing interests in the South China Sea, an area of critical geostrategic importance to the United States, where according to a report from the Center for a New American Security (CNAS), ships carry $1.2 billion in U.S. trade annually. On top of this, sovereignty over parts of the Sea is bitterly contested by adjacent countries, and the U.S. and China have perennially competed over its control (with the U.S. viewing Chinese expansionism in the sea as a threat to national security, and the security of key allies).

Four-star Navy Admiral Samuel J. Locklear III, head of U.S. Pacific Command (PACOM), identified climate change as the biggest security threat facing the Asia-Pacific region. In the Asia-Pacific, U.S. Pacific Command is working with China and India to align military capabilities for "when the effects of climate change start to impact these massive populations." As Admiral Locklear also stated, in reference to the climate threat to these growing coastal populations: "If it goes bad, you could have hundreds of thousands or millions of people displaced and then security will start to crumble pretty quickly." A security breakdown in such a strategically-significant part of the world could have a significant impact on U.S. national security interests.

In Egypt - a mercurial but longstanding ally of the United States - a combination of factors over time, including sea level rise, the over-extraction of wa-

ter from coastal aquifers, and the sharing of Nile waters with neighboring states, are leaving the Nile Delta in a precarious situation. The Delta is, by nature, low lying. The problem for Egypt is that the Delta is also heavily populated (the vast majority of its population lives there), playing host to many of its major cities. The Nile Delta and Mediterranean coast is responsible for at least 30-40% of the country's total agricultural production, which could be devastated by increases in saltwater intrusion. Furthermore, 30% of Egypt's labor force works in the agriculture sector, mostly in the Nile Delta. A lack of progress on addressing the problem of sea level rise, and the Nile Delta's health, could contribute to the erosion of the legitimacy and resiliency of current and future Egyptian governments, possibly contributing to further security and foreign policy crises for the United States.

In the Arctic, dramatic changes to sea ice cover, driven in large part by climate change, may have a significant impact on resource disputes, particularly given a petroleum-rich sea bed and hazy territorial boundaries. The expected increase in commercial activities in the Arctic may also lead to security complications – as nations attempt to manage large stretches of open ocean that were previously inaccessible.

Climate change may also place stresses on food security by increasing the severity, frequency and variability of crop-damaging events like droughts and floods. Because of the nature of the global food market, this can sometimes result in spikes in world food prices, increasing the likelihood of instability in places that depend on affordable imported food, such as Egypt. This is part of a larger phenomenon Dr. Troy Sternberg calls "the globalization of hazards," where natural hazards in one region can have a significant impact on regions halfway across the globe. In the case of countries such as Egypt, that are of such strategic significance to the U.S., instability can fundamentally change the global security architecture that the U.S. defends.

Lastly, climate change can exacerbate the social, economic and environmental stresses that plague fragile states, thus heightening the probability of massive population displacements, and instability. In Syria, a severe drought from 2006-2011, coupled with severe natural resource mismanagement by the Assad regime, and other stresses, led to the displacement of around 1.5 million farmers and herders. As we noted in our report "The Arab Spring and Climate Change," this drought was part of a pattern of increased drying in the Mediterranean and Middle East beginning in 1973, which was strongly associated with climate change in a 2011 NOAA report. Though it would be folly to argue that climate change caused the Syrian civil war, it is certainly possible that the region's plummeting winter precipitation levels played a role in exacerbating the environmental drivers of massive population displacements in Syria, and that this insecurity contributed to popular dissatisfaction with the Assad regime.

In short, climate change threatens to make fragile states even more fragile, which can lead to the potential for de-stabilizing violence, which can present direct security challenges to the United States and its allies. This concern is so acute that the U.S. DoD, through its Minerva Initiative, is investing resources to comprehensively map the security implications of climate change in Africa – a continent of increasing strategic interest to the U.S.

Why climate change is a national security threat at least as significant as other traditional national security threats

But, you might ask, do these security threats really compare to other such threats, like the proliferation of nuclear weapons and materials? From a security perspective, the answer is yes. Climate change is what risk analysts would call a "high probability, high impact" risk, meaning that it is very likely to occur (between 90 and 97%), and will have a very large and widespread impact on security (for example, the 2014 Global Risks Report ranked climate change highest, next to "fiscal crises," in this regard). On the other hand, a study commissioned in 2005 by Senator Richard Lugar produced a median response of a 10 percent likelihood of "an attack involving a nuclear explosion" in five years and a 20 percent likelihood in 10 years. Of course, in the case of a nuclear detonation, the price of that 10 or 20 percent likelihood materializing is devastating and unacceptable, so it makes all the sense in the world to prevent it, or adequately prepare for it. But the same goes for climate change, especially

given a relatively high degree of certainty about its occurrence, and the scale of its impact over time.

Conclusion

The U.S. national security community doesn't have the luxury of waiting for 100% certainty. There is a high enough degree of certainty that climate change is, and has the capacity to be, a multiplier of direct and indirect threats to the United States. That's why U.S. national security planners put time, personnel and resources into mitigating, and adapting to, its effects. Climate change as a security threat is not just a narrative, or a political talking point. It's a reality. The U.S. military and the U.S. intelligence community get it. Our policy-makers should too. And while a recent U.S. Senate hearing on "Extreme Weather Events: The Costs of Not Being Prepared." is a welcome recognition of this risk, the U.S. will need to go a lot further than that.

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