



2.4 THE IMPACT OF CLIMATE CHANGE ON NATIONAL SECURITY

Major General Richard Engel

It is a pleasure to be here and talk to you about our assessment of climate change and national security. I will also provide some insights from the research that was done following our assessment.

Our effort began in November 2006 as part of a periodic review that the intelligence community does to look at all of the topics that are within the National Intelligence Priority Framework. At that time, we had a topic that was called environment and natural resources. During one of our periodic reviews, it was decided that the intelligence community needed to start looking at climate change as a national security issue.

We made a decision to do what we would call a second-tier level of report on this. But as we got into it, we discovered that CNA had done their report at the same time that Congress became very interested in the topic. As a result, we decided to elevate our assessment and develop a National Intelligence Assessment or what we call an NIA. In our hierarchy, an NIA is equivalent to a National Intelligence Estimate (NIE), which is the highest level of document that the intelligence community produces.

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One of the first questions that we had to deal with was to determine why would climate change be a national security issue. To do this, we put together a set of criteria, based upon the elements of U.S. national power, which we could use to make those judgments. Our criteria went something like this. We said that if climate change could cause a noticeable, even if temporary, degradation in one of the elements of national power—be it military, economic, geopolitical, or the social cohesion of the United States itself—it would degrade our national security.

We felt that this could occur if climate change directly impacted the U.S. homeland or if it impacted a major economic or military partner in such a way that their ability to contribute or to partner with the United States was degraded, and therefore our security was degraded. We also thought it possible that a combination of significant climate events that occurred globally might consume U.S. resources to the extent that our security was degraded. So those were the criteria we used.

In conducting the study, we used a three-step process. The first step was to really understand the climate science. The intelligence community does not have expertise in climate science. We count on other experts like Dr. Gullett to tell us what is really going to happen in the future. So we asked a group of experts from the Department of Energy's Pacific Northwest National Laboratory in partnership with the University of Maryland through the Joint Global Change Research Institute to develop a series of scene setters that explain how the climate was going to change.

Our second step was to look at how climate change could affect human beings. To do that, we provided the picture of the future climate to a group of cultural anthropologists, sociologists, economists, and political scientists with expertise in the Earth's major regions and asked them, if your part of the world saw this kind of a climate, how would the people react? So they took us to the next level, which was the human impact.

Our third and final step was to look at how those impacts would affect U.S. national security interests. For this particular assessment, we only looked out to 2030. One of the most important factors

behind that decision was the fact that, as Dr. Gullett mentioned, as you go farther out in time, some of those distributions get wider. So, we picked a nearer in period where we would not really have to look at the broader set of possible outcomes.

What did we draw in the way of conclusions from our effort? Overall, we judged that climate change would have wide-ranging implications for the United States over the next 20 years. Climate change is likely to aggravate existing problems such as poverty tensions, environmental degradation, ineffectual leadership, and weak political institutions that threaten state stability.

We did not see how climate change alone could cause or trigger state failure in any state before 2030. But it could potentially contribute to intrastate conflict and perhaps, in some cases, to interstate conflict. We judged that such disputes would most likely occur over water resources.

Our assessment of the United States to 2030 was that the United States was better equipped to deal with climate change than many parts of the world. We might even enjoy a slight near-term benefit owing to increases in agricultural productivity. However, the United States has a great deal of very valuable infrastructure that is at considerable risk of extreme weather events. Damage or loss of that infrastructure could have significant economic impact. Protecting that infrastructure and making it resilient will be expensive.

We also thought that water would become a more important issue in several regions of the world, which turned out to be a mixed story. It provides an opportunity for states to assess their future water needs relative to the supply provided by their water basins and then take aggressive steps to mitigate any challenges. This also provides an opportunity for the United States because we have a lot of technology that could be of value if we engaged early and helped them manage their water challenges.

Along these lines, we observed that low-emission nuclear power would probably be attractive as an alternative to fossil fuel energy in mitigating the impacts of CO₂ and other greenhouse gases. What that would mean is more nuclear power stations, more nuclear scientists, and more nuclear material. The result of which

would probably be an increase in the complexity for the security community in terms of counterproliferation and counterterrorism issues.

We did observe, and this was probably one of the most significant takeaways for this audience, that the extreme weather events associated with climate change would cause more of what we designated “911 calls” where the Department of Defense would be called upon to provide relief assistance around the world. The U.S. Navy and Marine Corps could expect to be asked to answer to lot of those calls. Providing such capability could, however, impose a strain on the readiness posture of those forces and decrease the strategic depth for combat operations.

Overall, as we looked at the NIA, we saw several paths by which climate change could manifest itself as a security issue. One was it would change water availability in some parts of the world, which would force people to move.

Second, it could affect agricultural productivity by changing water supplies, rain patterns, and temperature. Such changes could also cause people to move. Human migrations in and of themselves are not inherently destabilizing. Stability will depend on where the people attempt to move to and the willingness of the receiving population to accept them.

Third, extreme weather events could damage valuable infrastructure. If you look at those three paths, the first two more typically would occur in the developing world. The third would be more likely to occur in the developed world like the United States.

Since we completed the NIA, we have come to the conclusion that there really is a fourth consideration that should be added to our list. Changes in disease patterns could occur globally because the climate changes. The changes of disease patterns could affect human beings, they could affect the livestock that human beings count on for food, or they could affect plants. So those are the four ways that climate change could impact our national security.

When we finished the NIA, we decided to look at six countries in greater detail: Russia, China, India, Southeast Asia, North

Africa, and Mexico and the Caribbean. We also elected to look at the Arctic. We made that choice because the Arctic is going to be one of the first areas that will be significantly affected by climate change.

We put together what we called a geopolitical Arctic game and invited participants from 10 different nations to come together in London. We asked them, if the Arctic does open up, what will that mean to your individual Arctic states? How might you work together to mitigate adverse effects? What we observed from that was that the Arctic states are certainly aware that the Arctic may open up. They will all have their own national interests that they will pursue.

They prefer, as a general rule, the Arctic Council or the International Maritime Organization as the preferred venue to discuss Arctic issues. Implicit in that is that they were not excited about using other institutions to do that. As a group, they collectively recognized that before the Arctic really becomes open for commercial activity, there needs to be better Arctic situational awareness, including understanding of ice sheets and ice-sheet movements, weather, shipping, and traffic.

Finally, the group also concluded one of the principle challenges to opening the Arctic is the absence of infrastructure among the Arctic coastal states. That manifests itself as a limitation in terms of search-and-rescue capability. There will have to be investments in search-and-rescue capability to make it credible for shipping to occur. The overall takeaway from the Arctic game probably was that the Arctic is unlikely to open to commercial shipping as fast as some have predicted. Commercial and economic interests are likely to slow it up a little bit.

A concise overview of our study is provided in Dr. Fingar's testimony before the House Permanent Select Committee on Intelligence and the House Select Committee on Energy Independence and Global Warming. [1] Additional details regarding of our follow-on research can be found by Googling "National Intelligence Council Climate Change to 2030," and further information is available on the National Intelligence Council website. [2]

REFERENCES

1. *National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030*, Statement for the Record of Dr. Thomas Fingar, Deputy Director of National Intelligence for Analysis and Chairman of the National Intelligence Council before the House Permanent Select Committee on Intelligence, House Select Committee on Energy Independence and Global Warming, 25 June 2008.
2. National Intelligence Council, "The Impact of Climate Change to 2030," http://www.dni.gov/nic/special_climate2030.html (accessed 26 Aug 2010).