



Climate Impacts National Security

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My Background

- Involvement in environmental issues: Rome, Europe/SOV, OES.
- Involvement in national security issues: Azerbaijan, Kosovo, Egypt.
- Now together.
 - Center for Environment and National Security

Concept Entered US Foreign Policy in the 1990s Secretary of State Christopher said,

- Environment and National Security looks at impact of environment on U.S. because it is
 - Cross border
 - Stability abroad
 - Positive impact of military on environment.



Center for Naval Analysis 2007 Statements

- GCC a serious threat to US national security.
 - Threat multiplier for instability
 - Add to tensions even in stable regions
- DoD should do:
 - Conservation
 - Renewable energy
- DoD should assess:
 - Danger
 - Adaptation



Now, the National Research Council Recommends Action for US Naval Leadership

- Action Area 1: Support ratification of the UNCLOS
 - Findings: ratification means greater flexibility by US naval forces in an area which needs broadened naval partnership and cooperation
- Action Area 2: Prepare for increased strain on capabilities due to greater humanitarian assistance/disaster relief (HA/DR)-related missions, as well as the opening of new international and territorial waters in the Arctic
 - Findings: US naval forces would not only be expected to position themselves in destabilized regions around the globe to assist in HA/DR missions, but demand for those forces should be expected to increase
- Action Area 3: Address naval coastal installation vulnerabilities due to anticipated sea-level rise and increased storm surges
 - extreme events such as storm surges and their dependence on changes in regional sea level and the nature of other extraordinary meteorological forces are what is of greatest importance

Action for US Naval Leadership

- Action Area 4: Address US allied, and/or international maritime partnership demands based on climate change scenarios
 - Findings: Projected climate change will both directly and indirectly affect most US allies including NATO countries and non-NATO countries who may request or require US assistance. Also, while conflict in the Arctic is not guaranteed, it is not a given that even with close allies, competition will not exist.
- Action Area 5: Address the potential impacts on the technical underpinnings that enable, in part, naval force capabilities, especially any impacts due to the necessity to operate in polar regions
 - Findings: Existing communication and navigation systems may not be adequate to deal with the impact climate change will have on safe operations and could reduce performance of military systems in the polar regions
- Action Area 6: Support investments for additional research and development that have implications for future naval force operations and capabilities
 - US naval forces have thus far been able to take advantage of such assets as the MEDEA Program and enabled advances in climate change research. However, it still faces considerable uncertainty about the pace, magnitude and regional manifestations of climate change and needs to create government-based programs in tandem with the existing civilian partnerships it relies on currently.

Climate is a “Whole of Government” Problem

- Defense, Diplomacy and Development (3-D)
 - Climate change may act as an accelerant of instability or conflict
 - Climate change vulnerability is increasingly a political priority for developing countries
 - Integral part of the global climate change negotiations

Direct Impacts on The United States

- Potential submersion of US military bases like Diego Garcia and San Diego



The United States



- Increased drought in California and the West. More heat event related deaths. More illegal immigration from increasingly dry Mexico.
- Mexican migration research (Feng, et al):
 - An estimated 10% reduction in crop yields leads to additional 2% of the population to emigrate.
 - Potential magnitude by 2080, 1.4-6.7 million adult Mexican migrants because of decline of agricultural productivity.

Strong Impact in Sub-Saharan Africa

- Most agree Africa's vulnerability to climate change is quite high and its resilience is quite low
- We can expect climate change national security hot spots in poorer countries who are more dependent on non-irrigated agriculture.
- Research on recent conflicts spanning from 1981-2002 in sub-Saharan Africa resulted in several conclusions:
 - Rainfall variability was significant in determining the risk of civil war conflict (Hendrix and Glaser 2007)
 - Increased temperatures could lead to an increase of civil war up to 54% until 2030 (Burke, et al 2010)
 - Findings using temperature models exclusively could not sufficiently predict the onset of civil war (Buhaug 2010)

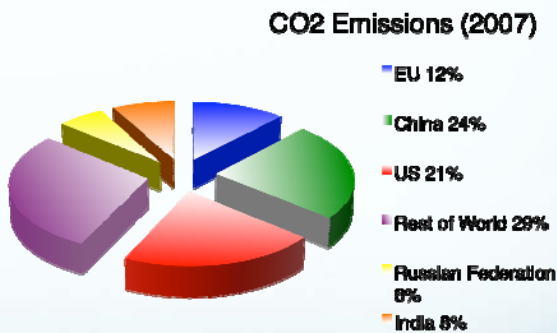
Sub-Saharan Africa



- A recent UNEP study found that:
 - “There is a very strong link between land degradation and desertification and conflict in Darfur.”
- In the case of Sudan: the roles of climate and limited natural resources shouldn’t eclipse the political relationships, power struggles and ethnic grievances contributing to the conflict. Instead, the roles must be integrated into those wider political considerations.

China Reluctant to Commit to ABSOLUTE Emission Reduction

- China is the largest emitter of GHG (with low per capita)
- Like the US and other larger powers, China’s domestic realities inform its international policy choices



*Data includes CO2 emissions from fossil fuels only.
Source: Netherlands Environmental Assessment Agency,
13 June 2008*

Yet, China ALREADY Experiencing Impacts

- The 2007 China National Climate Change Assessment Report observed that the nation-wide temperatures had increased 2°-3°F in the last century alone
 - Chinese scientists have been observing climate change impacts, vulnerability and adaptation strategies since the early 1990s
- Changes are not limited to increasing temperature. Land degradation and desertification are also affecting China's landscape
 - Sea levels have risen along China's coasts since the 1950s, glaciers in China have decreased 21% since the little ice age and now coral bleaching is occurring off of Hainan and Guanxi
 - There is a widening area of drought-stricken land and flooding has worsened, exacerbating the already unstable agricultural production

What could trigger China to act?

Three key security risks: (Lewis, 2009)

1. Tibetan Plateau region
2. Impacts on economic development zones (regional economic and trade impacts)
3. International responses to China's inaction



Suggestions for the Future: Natural and Built Infrastructure

- Executive order 13514 directs Federal agencies to assess their vulnerabilities to climate change and the need for possible adaptation strategies
- One might work with managers and planners of military installations to identify decisions affected by weather and climate change
- Then develop state of the art probabilistic climate change information targeted toward the managers' and planners' decisions
- Finally, one might incorporate climate and other information into a structural decision-making process that will minimize disruption of the mission



Suggestions for the Future: Planning for Operations

- Increasing awareness of environment and climate impacts that can increase state fragility and hinder reconstruction
- Maybe we could review recently completed conflict assessments to determine the relevance of environmental and climate related impacts.
- We could then design a scenario, introducing diverse climate change related data, for a multi-disciplinary inter-agency meeting.
- At the end of the pilot test we could identify information gaps to improve material security planning including climate change.

