Graham Hunt
Jul 17, 2023
Week 7/2 - 6/8

How Climate Change Impacts Nuclear Weapons

Date: Jul 12, 2023
Host Organization: Carnegie Endowment for International Peace
Moderator: George Perkovich, *Vice President for Studies*, Carnegie Endowment
Panelists: Tom Ellison, *Deputy Director,* The Center for Climate and Security
Jamie Kwong, *Nuclear Policy Program Fellow,* Carnegie Endowment

This event focuses on the little-researched intersection of climate science, defense strategy, and nuclear weapon development. Climate change has historically been cast in the framework of most direct impacts – i.e. extreme weather, floods, droughts, sea level rise, food, and water insecurity, as well as the indirect 2nd and 3rd order problems that stem from that – migration, resource/energy strains, transportation difficulties, and supply chain bottlenecks. The panelists highlight a new topic entering the climate chat: defense and national security. The reality is that there is a growing concern in the defense community regarding the impacts of events caused by climate change on US military operations, particularly when it comes to the stability and security of the nuclear infrastructure. The most recent National Defence Authorization Act, as well as Executive Order 14008 "Tackling the Climate Crisis at Home and Abroad," both include the designation of climate change as a factor that must be addressed in US military weapons sustainability efforts. The panelists note that despite this directive, mainstreaming integration of climate action plans throughout agencies remains an ongoing challenge, exacerbated by the fact that climate efforts continue to be underfunded by Congress.

Jamie Kwong argues that sea level rise and flooding could significantly impact the Navy's capacity to service submarines, specifically SSBNs, which carry nuclear ballistic missiles. After each deterrence patrol, SSBNs must return to undergo 35 days of maintenance, and if they cannot port using the current infrastructure, it will delay the United State's

international defense operations. Extreme heat and flash floods affect the times in which stealth bombers can freely take off or land on the base, which could severely delay US counterdefense capabilities in the event of an emergency. Ms. Kwong stresses that this is not all theoretical either; already, North Korea and Pakistan have experienced record-breaking floods that posed a threat to nuclear energy facilities, wildfires have affected Russia's ICBMs, and India's coastal nuclear facilities are projected to be hit by more cyclones.

Tom Ellison points out that while the threats the US nuclear armament facilities face can be dramatically improved by special infrastructure and alert systems, extra funding does not take away from the fact that extreme weather is unpredictable and can show itself in many ways, shapes, and forms. He also emphasizes that the Pentagon and military-industrial complex are coming at this problem from a pure "operational effectiveness" perspective, meaning that any considerations of climate change taking place within national security agencies are rooted in possible threats to military efficiency, not for the well-being of the planet or with the goal of reducing greenhouse gas emissions.

Overall, I found that this discussion highlights an aspect of climate change that we may inherently know, but is seldom acknowledged in the national security sphere: threats to the sustainability and resilience of the environment are threats to the security of humans and our institutions. However, predicting the effects that climate change will have on nuclear weaponry comes across as infeasible and unreliable, and would undoubtedly result in high expenditures; Ms. Kwong states that ensuring one base is resilient to coastal flooding could cost $45 million! That being said, this should be seen as an opportunity to foster international cooperation around an issue that all countries can agree upon – security threats. If climate change is first presented as

a national defense issue, there is a promising probability it will also be acted upon as an economic threat, human rights violation, and environmental injustice.

Analytical Questions:

1. Is there a potential for the threat of climate change to be leveraged as a means of further securing nuclear disarmament and non-proliferation efforts?
2. Besides delaying military operations and nuclear weapon efficiency, do the implications of climate change pose the threat of nuclear fallout or meltdown? Is there any risk that extreme weather/infrastructure damage could actually destabilize the warhead?
3. Is the discussion around the threats of climate change indicative of the military taking on a greater role in response to climate-related disasters? Is there a future in which the military will in some form switch its focus to “fighting” the climate crisis?