

The Working Group on Climate, Nuclear, & Security Affairs

A Note on Climate, Nuclear, and Security Affairs

This document is an excerpt of the read-ahead materials provided to the Working Group on Climate, Nuclear, and Security Affairs, which convened its first meeting at the Airlie Hotel and Conference Center on May 25-26, 2017. The intent of this document is to provide a sense of the issues and concerns driving the Working Group's efforts.

The Center for Climate and Security will issue a forthcoming report capturing the overarching framework and key concepts that resulted from the May workshop. A second workshop will be held in Fall 2017 and a final report will be published by December 2017.

Background and Scene-Setter

Today, the international community is experiencing a number of nuclear-related trends and pressures. New nations are pursuing civilian nuclear capabilities. Some countries long holding nuclear energy are increasing their nuclear capacity, while others are witnessing the opposite trend. The threat of non-state actors seeking nuclear materials may be growing. Countries continue to debate proper approaches for keeping nuclear systems safe and secure, while innovative concepts such as nuclear fuel banks are reshaping the intellectual landscape regarding nuclear issues. At the same time, governments worldwide are having difficulty managing the effects of the rapidly changing climate, such as severe natural disasters, new disease trends, sea level rise, and exacerbated resource stress. Even without these major influencers, international affairs and security trends are experiencing monumental stresses from technological change, continually-evolving terrorist threats, massive waves of migration, an emboldened Russia, the strength of the nonproliferation regime under question from flagrant use of chemical weapons and the emergence of a nuclear weapons ban treaty, and other pressures.

In some ways, climate, security, and nuclear trends are evolving in parallel, shaping the global landscape alongside political changes, demographic stress, globalization, and other factors. In other ways, these trends are directly influencing one another and intertwining. We can already see innumerable examples. Bangladesh is struggling against sea level rise and changing Himalayan glacial patterns in tandem with rising terrorist threats and overpopulation, all as its government continues cooperation with Russia to build nuclear reactors. Jordan, a critical security partner of the United States, has seen protests over the country's potential nuclear program in recent years as the government pushes forward on plans to develop a nuclear energy sector, in part to enable desalination to help address the country's dire water shortages that are growing worse with the combined pressures of refugees and climate change. Given their

humanitarian impacts and the existential risk they pose, the effects of nuclear weapons and climate change have both driven new legal challenges in targeted countries and international courts, combining to showcase a new type of lawfare that is empowering individuals and small states such as the Marshall Islands. Climate change is making the International Atomic Energy Agency's nuclear work in medicine, agriculture, and clean water more important than ever, just as it seems its nuclear safety, security, and nonproliferation responsibilities will continue to grow.

Several specific trends have become clearer since 2015, including through the Nationally Determined Contributions (NDCs) submitted by many countries in support of the December 2015 Paris climate change agreement:

- *Clarity on the increasing scale of nuclear ambitions.* The scale, scope, and speed of some countries' civil nuclear ambitions have caused concern for those focused on nuclear affairs and for some of their neighbors. China's plans have been a major focal point since the country publicly detailed plans for an even-more ambitious rate of nuclear energy expansion in its 2015 climate commitments, including targets of building 6-8 new reactors per year through 2020 and increasing production thereafter, becoming the world's top nuclear energy producer by 2030, and becoming a major supplier to other countries.
- *Nuclear programs pursued in absence of climate considerations.* Other concerns stem from countries that appear to be reinvigorating their pursuit of nuclear energy without linking these ambitions to climate considerations. For the international community, this can exacerbate fears that these countries seek to develop latent nuclear weapons capabilities or challenge the existing balance of power among their neighbors. Saudi Arabia is the most extreme case, having rhetorically tied its nuclear energy ambitions to the Iran nuclear agreement in 2015 while simultaneously omitting its nuclear energy activities from its commitments in the Paris negotiations. The absence of policies that account for climate, nuclear, and security linkages can be equally dangerous for political and social reasons. Countries such as Jordan, Saudi Arabia, India, and Bangladesh are in various states of pursuing or expanding nuclear energy despite the clear indicators that the changing climate may affect their future ability to operate water-intensive power stations, at times on lands that may be vulnerable to natural disasters or precious to local populations. Governments pursuing nuclear power in ways that aren't sensitive to climate pressures have already met with protests, and risk driving social instability and stoking political opposition, which can raise new security risks within and beyond their borders.
- *Detailed intentions regarding nuclear technologies of high concern.* India's NDCs not only state the scale of its nuclear energy expansion goals but also provide details that raise deeper security questions. India's Paris submission specifically called out fast breeder reactors -- of higher concern for the presence of weapons-usable materials and history of unreliability -- to illustrate the emissions mitigation

technologies the country is eyeing. Subsequently, India reported the country is

planning to increase its fast breeder reactor capacity in statements later called out by Pakistani media as regional security concerns. While India already possesses nuclear weapons, the designation of systems that entail the highest-risk nuclear materials as necessary for addressing climate change is broadly concerning.

- *Security risks of climate change manifesting.* Climate change is influencing security and stability dynamics globally, from evolving Arctic dynamics, to droughts and water stress affecting migration patterns and intrastate unrest, to changing disaster patterns and sea level rise creating new pressures on civilian capacities and defense forces for many countries. Climate-security dynamics that were once projected as possibilities in the 2020s and beyond have already begun taking place. Resulting tensions, periods of transition or instability, or the empowerment this may bestow on especially-stricken countries raise new concerns for global governance broadly and managing nuclear risks in particular. In late 2016 these trends, as they are manifesting around Kashmir, led nuclear expert Zia Mian to warn in the *Bulletin of the Atomic Scientists* that climate change heightening water stress in South Asia is already combining with the tense conventional and nuclear weapons balances of India and Pakistan to increase the risk of nuclear conflict.¹
- *A changing nuclear export marketplace, with implications for norms, standards, and legal mechanisms.* The governments of Russia and China are positioning their nations as key nuclear energy partners, already influencing how global norms and standards of nuclear safety, security, and nonproliferation are being set and acted upon. Their potential partners include countries already grappling with severe security challenges and resource stress, such as Bangladesh, South Sudan, and Jordan. India continues to seek to join the Nuclear Suppliers Group, and now argues there is a climate change imperative to its membership. Relationships and programs that are grounded in assumptions that countries like the United States, Japan, and France will continue their past presence the international market may be outdated, with implications for the influence of these countries on civil nuclear affairs.

It is now clear that the relationships among nuclear, climate, and security trends and risks are growing more complex and interconnected, and these issues are converging in new ways. Yet discussion of their connections are often limited to debating the merits of nuclear energy as a means of reducing greenhouse gas emissions. This is only a small part of the equation. Security concerns are often left out of the conversation, and all three issue areas are too often treated independently from one another. This is not only inefficient; without sufficient understanding of how climate, nuclear, and security issues

¹ Zia Mian, "Kashmir, climate change, and nuclear war," *The Bulletin of the Atomic Scientists*, December 7, 2016.

² The Center for Climate and Security will issue a report in Summer 2017 that describes how the draft www.climateandsecurity.org

interrelate, the U.S. government and global actors may make advances in one area that undercut their objectives in another.

The pressing need to understand and characterize the fuller range of ways in which climate change, nuclear, and security issues are intersecting is the challenge animating this project.

Developing a Common Framework

There is a need for a common framework to improve our understanding of how climate, nuclear, and security issues are intertwining.² The following categories -- intended as an initial draft concept -- aim to capture the multiple dimensions in which these issues are interacting in a relatively simple, easily-to-communicate framework.

1. Security Trends & Suspicions: Among many concerns, countries may be using climate rationale to endeavor into nuclear technologies that present security challenges (e.g., superfluous enrichment capacities, high plutonium or highly enriched uranium pathways). Nuclear cooperation between and among nations could reduce climate risks while raising new suspicions regarding security or geostrategic intentions (e.g., the nuclear cooperation between China and South Sudan). Countries may suspect their neighbors of using climate change as an excuse for ambiguous nuclear intentions and hedging (e.g., Saudi Arabia). The transparency normally involved in nuclear energy programs can alter threat perceptions in ways that either amplify or reduce tensions.

2. Climate-Nuclear-Security Hotspots: Climate, nuclear, and security risks are present and increasing in unison in a number of countries. Even where these risks are connected by geographic correlation and not necessarily causation, they may exacerbate one another in new and unexpected ways (e.g., Bangladesh). Nuclear desires, security challenges, and climate change effects may create compounding risks (e.g., Jordan, Turkey). States possessing nuclear weapons and their neighborhoods may face unique concerns from coinciding security tensions, water stress, power generation issues, and other resource challenges (e.g., India, Pakistan, and Kashmir).

3. International Affairs, Norms, and Order: In diplomatic affairs, climate, nuclear, and security issues often overlap and bleed into one another, especially as countries develop new negotiating blocs that influence behavior across issue areas (e.g., from China's shaping of international climate change negotiations). Nuclear, climate, and security issues are intertwining to present new challenges and opportunities (e.g., climate change agreements being argued in Nuclear Suppliers Group deliberations). Treaties, legal tools, and diplomatic agreements and channels that now promote nuclear security and nonproliferation norms are under new pressures just as climate change effects are taking root and influencing national and international affairs. American power and the U.S. role in the world are shaped by these pressures.

² The Center for Climate and Security will issue a report in Summer 2017 that describes how the draft framework displayed in this read-ahead package was affirmed and altered.

4. Political & Social Disruptions: Many publics around the world consider climate change and nuclear issues linked as their greatest or only existential threats (e.g., Marshall Islands), and are taking legal and political action to address them as such. In many regions, emotions over both climate and nuclear affairs are deep and pervasive, influencing the behavior of local populations and countries. National-level decisions regarding nuclear energy (for climate or other reasons) can clash with local desires (e.g., in Japan, India). Social, cultural, and emotional trends and tensions are disrupting long-held tenets of international systems (e.g., the nuclear ban treaty), and may hold the potential to make monumental gains in global security if harnessed well. While nuclear-related protests are not new, the encroaching effects of a changing climate, the continually expanding access to information, legacy and emerging security dynamics, and other trends are combining in new patterns that may be changing the potency of these disruptions.

5. Science, Technology & Markets: Nuclear- and climate-related fields of science and technologies have been intertwined for decades, and overlap in countless ways. National security has been greatly enhanced by public and private ventures to leverage scientific and technical work to benefit both the climate and nuclear fields (e.g., National Labs applying computational and modeling power across both issues). Advances in sensing, artificial intelligence, robotics, 3D printing, and beyond are reshaping our security environment while offering new tools for addressing nuclear and climate concerns. The S&T fields will continue to evolve, as will the markets that shape their trade, application, and proliferation, carrying a range of security implications.