



# AN EVIDENCE-BASED COLLABORATIVE FRAMEWORK FOR IMPROVING PREDICTIVE CAPABILITIES

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## EXECUTIVE SUMMARY

Evidence that climate change poses critical security risks to the U.S. homeland, national security, and global stability has been mounting in recent years. To take early action to manage or reduce extreme weather and climate-related disruptions, high-level and timely quantitative and qualitative assessments and predictive information are needed. Working with the University Corporation for Atmospheric Research and the National Oceanic and Atmospheric Administration, the Wilson Center developed a framework to improve predictive capabilities for security risks posed by a changing climate. To operationalize the framework, this brief provides recommendations on how to align and sustain engagement across the U.S. government and its partners for increased and better coordination among decision-makers, and practitioners.



## BACKGROUND

The former [National Research Council](#) (now named the [National Academies of Sciences, Engineering, and Medicine](#)) and the [National Intelligence Council](#) (NIC), among others, have outlined the national security implications of current risks and anticipated environmental change. Climate-linked security risks for the United States will continue to increase as a result of both extreme weather events—like coastal flooding, hurricanes, storm surges, and heat waves—and slow-onset events, like droughts. In its report, the NIC outlines six potential pathways to increased tensions by which climate change and its resulting effects will pose wide-ranging national security challenges for the United States, as well as other countries, over the next 20 years. These include threats to the stability of countries; heightened social and political tensions; adverse effects on food prices and availability; increased risks to human health; negative impacts on investments and economic competitiveness; and potential climate discontinuities and secondary surprises.

The NRC recommended monitoring potential new conflict dynamics through periodic “stress testing” of specific countries and regions, to assess whether they can “handle potentially disruptive conjunctions of climate events and socioeconomic and political

conditions.” A deeper evidence-based, interagency framework is needed to understand the pathways as outlined by the NIC, and to develop guidance for such “stress-testing” and decision-making in specific contexts. External dependencies on data (i.e., climate, political, social, and forecasting capabilities) diminishes interagency forecasting and predictive capabilities.

In response to the growing recognition that climate change poses critical security risks to the U.S. homeland, national security, and global stability, the Wilson Center collaborated with the National Oceanic and Atmospheric Administration (NOAA) and the University Corporation for Atmospheric Research (UCAR) to develop a framework to improve predictive capabilities for security risks posed by extreme weather and water-related events. Through two workshops with key analysts and decision-makers from across relevant U.S. government agencies and additional related organizations, the project team explored four country and regional case studies—the Horn of Africa, Pakistan, the Caribbean, and the Pacific (specifically, the COFA states)—to better understand the compound risks posed by climate change and identify entry points for action.



*A family crosses flooded streets of Pakistan. Photo Credit: Flickr user Asian Development Bank.*



## FRAMEWORK

The goal of the workshops hosted in 2018 and 2019 was to develop a common conception of the security threats posed by weather and water-related disruptions and identify cases where the connections between these disruptive events and security challenges are evident. In the 2018 workshop, analyses of the Pakistan, Horn of Africa, and Caribbean case studies informed the identification of vulnerabilities related to the following “tipping points”:

### 1. Physical and natural systems vulnerabilities

(e.g., water scarcity in Pakistan, ongoing food insecurity in the Horn of Africa, hurricanes in the Caribbean)

### 2. Transboundary and regional dynamics

(e.g., IDPs in East Africa, in-migration to the Caribbean, the fragility of the Indus Basin Water Treaty between Pakistan and India)

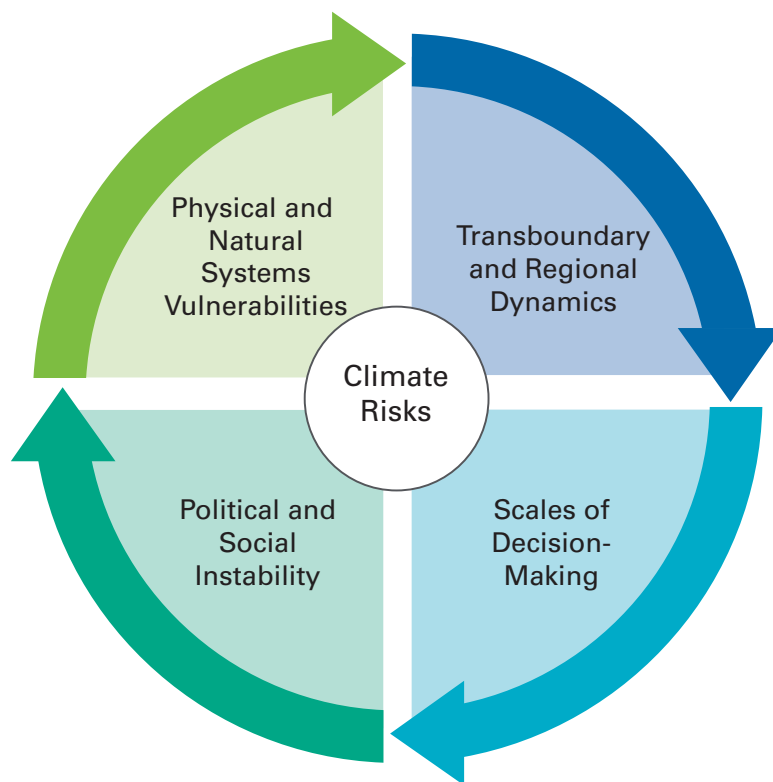
### 3. Political and social instability

(e.g., farmer-herder violence in East Africa, poor emergency response capabilities following natural disasters in Pakistan, and weak governance in the Caribbean).

The purpose of the 2019 workshop was to apply the framework to a new region—the Pacific—and, in doing so, expand and refine the framework. Through the analysis in this second workshop, participants identified a fourth critical component of the framework:

### 4. Scales of decision-making

Through the inclusion of this fourth tipping point the framework demonstrates that each of the other three tipping points, and responses to them, impact governance at all scales—from international dimensions, to regional decision-



making, to local community decision-making—and that the impacts at one level of decision-making could have implications across all scales. With the addition of scale, the framework informs an understanding of extreme weather events as proximate events that can have cascading impacts and create compound risks, which are often difficult to understand and complicated to unpack.

## RECOMMENDATIONS

The second workshop generated four recommendations:

1. Increase information sharing between the Department of Defense (DoD) and Pacific Island Countries (PIC) civil society as a means of strengthening capabilities to prepare and respond to extreme weather events. This recommendation could be applied more broadly to other regions through the implementation of a technical, interagency working group (see Recommendation #4).
2. Conduct emergency preparedness training with populations most at risk, including elderly and youth.
3. Increase and deploy advanced predictive capabilities for extreme weather events and related climate risks across the weather-climate continuum, highlighting both predictions and predictability.
4. Create an interagency working group that meets and coordinates regularly on the topics of predictive capabilities and resilience-building efforts for extreme weather events that impact security.

In particular, stakeholders and workshop attendees identified the fourth recommendation—to create

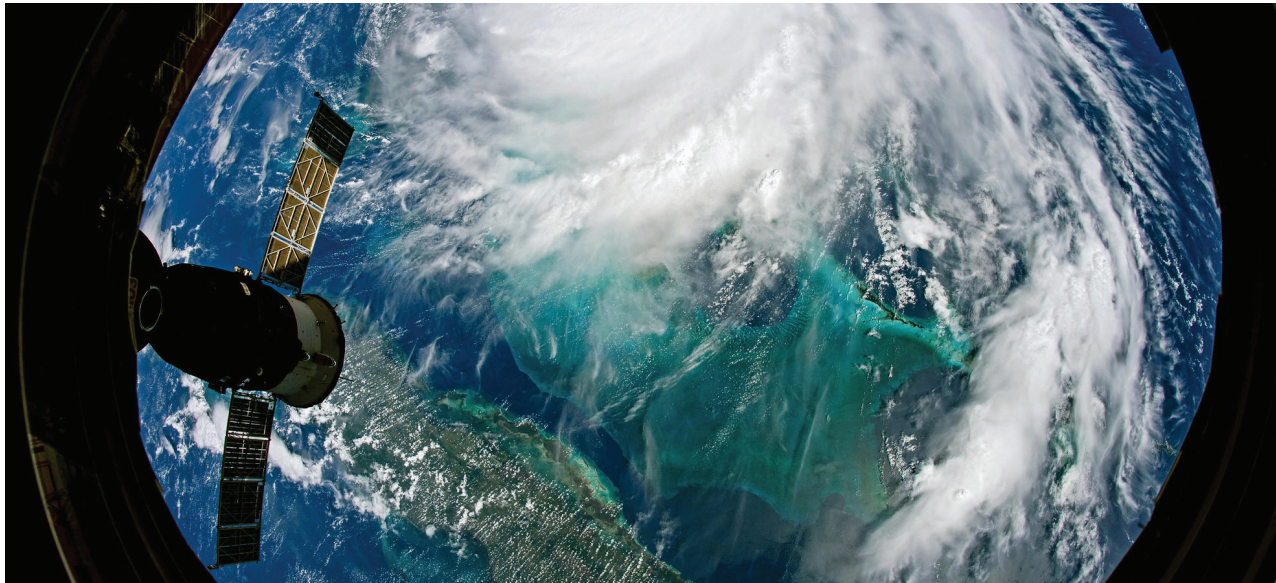
an interagency working group to coordinate on predictive capabilities and resilience-building efforts—as critical to connecting science, intelligence, and policy for decision-making. Importantly, such a working group would address existing barriers to coordinated decision-making to address climate risk, such as the ad hoc nature of current interagency communication, policy coordination at senior level decision-making, a lack of shared definitions, and access to non-USG expertise and local/regional knowledge. There are existing mechanisms that address some of these barriers within, but not across, agencies (see below).

An interagency working group informed by subject-matter experts and on-the-ground experience (i.e., local, sub-national, and regional engagement) would provide agile, coordinated, and sustained collaboration across U.S. government agencies. The working group would be charged with 1) the creation of a forum of weather/climate predictive information and 2) aligning ongoing interagency efforts. Creating a forum across the science agencies, response and resilience focused agencies and organizations, and the national security and intelligence realm would provide a clearing-house for data and information that allows subject-matter experts and decision-makers, including their supporting analysts and research personnel, across agencies to coordinate existing areas of knowledge development while identifying and addressing gaps. This would serve to consolidate efforts, pool resources, and put attention towards areas of need. Secondly, the interagency group would align ongoing efforts to understand the national security impacts of weather and climate extremes.

## EXISTING MECHANISMS

Creating interagency cooperation requires a knowledge of existing institutional mechanisms—





*Hurricane Dorian seen from aboard the space station, September 2019. Photo Credit: Christina Koch/NASA.*

how to both support their mandates through the interagency working group, and incorporate their knowledge into the interagency efforts. As such, it is key to identify existing mechanisms present in policy-making. Initial consultations highlighted the following institutional mechanisms:

- United States Indo-Pacific Command (INDOPACOM) Overseas Humanitarian, Disaster, and Civic Aid (OHDACA)
  - » Focuses specifically on the Pacific Islands, including both bringing and ensuring full connectivity of broadband to Pacific Islands.
- Resource Competition, Environmental Security and Stability (RECESS) at DoD
  - » The group serves as a bridge to the intelligence community, interagency, and academics, with an overarching goal of informing DoD strategic thinking on environmental resilience issues outside of the United States.
- Intelligence Community's Climate Security Advisory Council (CSAC)
  - » As mandated in the FY20 National Defense Authorization Act (NDAA), the CSAC can be a key coordinating mechanism for climate security assessments within the intelligence community (IC). Under this initiative, the NDAA links the IC with the USG scientific community, making sure that research and data is broadly available for the IC.
- Defense Advanced Research Projects Agency's (DARPA) World Modelers Project
  - » Functions as a predictive modeling project.
- Intelligence Community's Environmental Security Working Group
  - » An interagency forum for environmental security collaboration, meeting at both the unclassified and classified level.



## MOVING FORWARD

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To create an interagency working group, workshop participants identified the following priority steps:

- 1. *Embed the group within an existing infrastructure to provide the sustainability and longevity necessary to help generate success.*** Embedding the working group within an existing institution can ensure the sustainability and the longevity necessary to help generate success.
- 2. *Construct the group to include both key federal and regional/local insights.*** Building capacity within the local and regional communities will be key for sustainable efforts and on the ground execution.
- 3. *Consider a two-tiered structure to ensure leaders operate at common clearance levels and both intelligence and science experts can share information appropriately, with a technical working group at a level below for non-sensitive action planning.*** Establishing a two-tiered structure ensures that participants have common security clearances that enhances the ability for officers from intelligence and science agencies to share information appropriately, augmented by a technical working group for non-sensitive action planning that does not require security clearances. This makes it
- 4. *To complement the ongoing efforts of the interagency working group, convene an annual meeting hosted by the Wilson Center (non-partisan and non-advocacy)*** that provides a platform for formal and informal discussions that help move the needle, and provides a pathway to entry for new stakeholders and participants.
- 5. *Ensure an effective and sustainable budget coordination process that reflects scientific priorities, investment in national scientific and technical agencies with regional presence (including NOAA, USACE, USGS, USAID, etc.), coherence around international research and observations, and underwrites the mandates of participants and partnering agencies.*** As a matter of long-term investment, funding for technical agencies strengthens U.S. regional presence on priority issues for those regions and has co-benefits for broader U.S. regional engagement.





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