

AMERICAN ACADEMY  
OF ARTS & SCIENCES

Human and National Security Working Group White Paper

# Climate Change Security Risks and Opportunities



COMMISSION ON ACCELERATING CLIMATE ACTION

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AMERICAN ACADEMY OF ARTS & SCIENCES

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Lake Mead water level as of August 2022.

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# Introduction

The Commission on Accelerating Climate Action of the American Academy of Arts and Sciences formed three working groups, including one focused on human and national security, chaired by Gary Roughead and Hilary Tompkins. We are indebted to Phyllis Bayer and the rest of the working group for their insightful contributions. The working group determined that case studies of domestic regions impacted by climate change would help with the development and framing of recommendations for action. While many regions are already suffering from climate change impacts, from the Arctic to the Everglades, the working group selected the Gulf Coast region and the Colorado River Basin for their unique attributes and current challenges. Much of this publication is based on conversations with human and national security experts, conducted across nineteen expert interviews in the two regions. The discussions reflected the following themes: lack of consistent, regional-based climate data and modeling; antiquated practices and response measures; the need for locally generated solutions combined with federal incentives to foster durable outcomes; and the importance of economic growth opportunities and equal access for all.

# Human and National Security

## National Security

Climate change and human and national security are inextricably linked. Considering each in isolation is a barrier to solving the most pressing, indeed existential problems of our time. Looking through a national security lens to assess the causes and dire effects of climate change can inform and enable strategies to mitigate and counter climate change. The impact of those strategies on human security cannot be an afterthought. Our recent pandemic experience is a case in point. The human health impacts of the COVID-19 pandemic exposed the interconnected vulnerabilities to our livelihood and well-being, serving as a wake-up call for the global impact of climate change and the imperative for climate planning and action that is attuned to our national security.

While military and national security are frequently conflated, they must be differentiated in the context of climate change. To be sure, climate change will have implications and consequences for the military.<sup>1</sup> However, the need for action goes well beyond the military and must involve stakeholders and institutions at every level. In addition to military preparedness, the challenge of climate change must be embraced as a national security issue by the entire country as broadly and tenaciously as the



Guard towers at an Army training area in the Southwestern United States (left); the same type of guard tower, toppled and severely damaged by flash flooding from an extreme precipitation event at this training area (right). U.S. Government work.

United States embraced the industrial challenge required to win World War II. This task requires a substantial apportionment of our economic resources and a total commitment from every member of our society, at every level: governmental (federal, tribal, state, and local); corporate (including banks and investment firms); and nonprofit (universities, grass-roots organizations, and religious entities). Creating stability at home with long-term, effective planning in response to climate change is a necessary tool for achieving national security.

Political differences and emotionally charged partisan rhetoric threaten our energy transition and pragmatic responses to climate impacts. The United States and other countries have not been attuned to the consequences of failing to lead the international transition to renewable energy. Nor did we discern the consequences of China's near monopolization of solar panel manufacturing and related supply chains.<sup>2</sup> We have failed to respond to China's rush to dominate the rare earth minerals market, further disadvantaging our position in energy transition.<sup>3</sup> Recently, Russia's aggression against Ukraine brought home the vulnerability of continued energy dependence on autocratic states, especially for our European and Asian allies. The disruption of Russian oil and gas supplies and rising prices have challenged governments' priorities for accelerating climate action and efforts to transition away from fossil fuels.<sup>4</sup> To create maximum stability in energy and national security, the United States must be more proactive in transitioning more of its fuel demand to renewable energy while maintaining sufficient infrastructure and production of low-carbon fossil fuels to make that transition. These international conflicts highlight the importance of anticipating climatic impacts on national security before they escalate.

To begin to address these needs, the United States passed the Inflation Reduction Act in August 2022, creating incentives for renewable energy, increasing research and development in clean technology, and driving demand for low-carbon products with federal building and transportation initiatives.<sup>5</sup> While the act will help the United States be more competitive in a global green economy, this legislation has not been fully implemented, as funding and eligibility criteria are still in the works. The Infrastructure and Investment Jobs Act passed in 2021 also provides fiscal incentives to increase the development and implementation of renewable energy and climate adaptation measures. It will be imperative that the executive branch continues to implement this landmark legislation quickly if the United States is to legitimize its standing on the global stage and provide energy security at home.

As the country undertakes mitigation efforts, we must also consider our adaptation strategy. We must actively prepare for permanent changes

to our climate and adjust procedures accordingly. For example, rethinking emergency disaster response policy, coming to grips with long-term and permanent water shortages, and planning for coastal damage as we experience more severe weather and sea-level rise—all must factor into a comprehensive national strategy to address climate change.

### Human Security

The working group's regionally focused human security approach is important because it concentrates on the stakes and responses in places where climate change impacts have and will continue to occur, and where mitigation responses must be put into practice. In considering the climate effects and responses in the Colorado River Basin and the Gulf Coast, we saw that local and regionally attuned efforts to address climate change effects are more effective, especially when they include local tribes, universities, and other nonprofits. Collectively, such regional exemplars can serve as a basis for national guiding principles and a more nuanced national approach to effective and just climate action.

The working group understood *environmental justice* to be the process of achieving human security equitably, and advocates that strategies and policies must be developed, assessed, and implemented through this lens. Vulnerable communities have been exposed to some of the earliest and worst impacts of climate change. About half of the tribes in the Colorado River Basin, for example, lack access to clean and safe water.<sup>6</sup> The tribes are the most senior (highest priority) water-rights users in the river basin but suffer from inadequate infrastructure, the resistance of the U.S. government to ensure a clean water supply, and the lack of quantification of their water rights by the courts, which take decades to make such determinations.<sup>7</sup> Along the Mississippi River between Baton Rouge and New Orleans is an area known as “Cancer Alley,” where communities must deal with adverse health consequences caused by pollution.<sup>8</sup> Without thoughtful solutions informed by the communities who live with these adverse conditions, efforts to decarbonize and impose climate adaptation measures further threaten their livelihood, culture, and economic stability. Early climate migrants seeking to escape uninhabitable conditions likely will be forced to move to locations that will soon be ravaged by climate change. Tribal nations face the prospect of their promised homelands becoming inhospitable, wreaking havoc on tribal societies that have already endured decades of destructive federal policies of removal, termination, and assimilation.



Flooding after Hurricane Isabel near Fort Meade military base in 2003. Photo by Chesapeake Bay Program. Published under a Creative Commons Attribution-NonCommercial 2.0 Generic (CC BY-NC 2.0) license.

Climate change will force unfavorable changes in lifestyle, onerous individual costs, and loss of treasured traditions. How we respond to those challenges will impact our human and national security and affect our ability to implement durable and equitable climate solutions.

The working group on human and national security identified current barriers that impact climate mitigation and adaptation and reflect the regional diversity of our nation. An appreciation of those barriers can underpin the formulation and implementation of climate legislation and policy at all levels of government. Through a series of nineteen listening sessions with human and national security experts, the working group explored barriers to climate mitigation and adaptation, specifically focusing on the Colorado River Basin and the Gulf Coast. While other regions also experience pressing climate challenges, these two case studies were chosen because they are emblematic of the diverse, multifaceted threats to human and national security, including food, water, and energy security, and supply-chain resiliency.

### The working group identified three key messages:

1. Action on climate change is a national security issue. Meaningfully addressing its consequences will revive the nation's dynamism, accelerate innovation, strengthen societal resiliency, and rebuild trust in government institutions.
2. A lack of baseline data and modeling on a sufficiently granular, regional basis, plus a lack of relevant, adequate research, is impeding action, and laboratory successes are not being adequately scaled up to commercially viable engineering solutions and applications.
3. Because the United States is so geographically diverse and the impact of climate change is varied across regions, nuanced and local approaches to climate adaptation are impactful and necessary.



The U.S. Army Corps of Engineers surveys the damage in Lee County, Florida, after Hurricane Ian in October 2022. Photo by the U.S. Army Corps of Engineers, October 3, 2022. Published under a Creative Commons Public Domain Mark 1.0 license.

# Factors Underpinning Human and National Security

**A**s human and national security are entwined, so are the factors that underpin them. This white paper highlights those linkages. How we respond to climate change and how we alter our approach to those underpinnings will directly influence our human security. While the changing climate demands action, how we make decisions, and the soundness and degree to which those decisions are attuned to the needs of those affected, will determine our future security, prosperity, and national cohesion.

## Water

In the United States, droughts and floods are among the most noteworthy climate-related effects involving water, and the Western United States today finds itself in historically low water conditions, presenting significant risk to domestic and municipal water supplies. As much of the water is used for agriculture, these conditions can drive up prices and impact food security. Water is also the motive force for hydropower generation and is essential as a cooling medium for many manufacturing processes. Historically low water levels are creating national security vulnerabilities.<sup>9</sup>

Barriers to addressing stewardship of water resources are many. Water sources, uses, and regulation are overseen by multiple levels of government, and the complexity of these systems can lead to inefficient management. Inconsistent federal and state water management laws hinder adoption of common approaches to water conservation and management. The “use it or lose it” doctrine of prior appropriation law and the disregard and resistance to tribal water rights further undermine sound water policy. The lack of quality data and sustained funding for accurate climate models and mapping inhibit efforts to turn data into useful information for decision-makers. Inefficiencies and gaps exist in cutting-edge research for low-water-consumption food production and manufacturing.

## Food

From changes in growing season length to plant hardiness zones, climate change is already impacting agricultural production nationwide. However, one of the COVID-19 pandemic's outcomes is a heightened awareness of how our food supply chain is globally connected and how small fluctuations in availability can have cascading effects. Food production remains siloed, and many who grow, raise, or process food are skeptical of federal efforts to make the system more agile. As a result, food supply chains are highly efficient but fluctuate in response to global issues, such as COVID-19 or the grain crisis in Ukraine. To prepare for the global impacts of climate change, new and innovative research on feed stocks must be encouraged and incentivized. Proactive strategies for crop and herd substitutions are needed, as are alignments of subsidies to encourage and facilitate transitions. Employment loss can no longer be an afterthought for where crops or herds are or will no longer be sustainable. Additionally, food insecurity will pose significant challenges to communities that rely on traditional and locally grown foods, which are often entwined with important cultural traditions. Incentivizing the adoption of new technologies and new agricultural training, coupled with the development of more robust food supply chains, may help lessen the impacts of climate-related perturbations.

## Transportation and Supply Chains

Recent supply chain disruptions also brought to the fore greater awareness of our dependence on shipping, port operations, and road and rail networks. For example, climate change in the form of droughts stopped the movement of more than 2,000 barges in October 2022 at various locations on the Mississippi River, which transports 92 percent of the nation's agricultural exports.<sup>10</sup> Without predictable river transportation, industry must rely on less efficient rail and road networks for relief, which increases consumer costs and requires greater use of diesel fuel. Even if food production can adapt to climate change, impacts to transportation networks may make agricultural supply chains vulnerable, particularly on a global scale.

Ports are heavily affected by climate impacts and can be relocated only at great cost, if at all.<sup>11</sup> Larger ports with significant resources may be able to upgrade infrastructure continually and incrementally to accommodate ongoing coastal changes, but smaller ports often lack the resources to implement similar resiliencies, thus leading to their obsolescence.<sup>12</sup> Further, port governance feels little pressure to create resiliency plans because of the expectation of insurance compensation and federal bailouts after disasters.

While recent attention has been paid to large ports on the East and West Coasts and the emergence of growing Arctic commerce, the transportation networks of our nation's rivers are often under threat. In the Gulf of Mexico, the mouth of the Mississippi River is undergoing physical changes, worsened by climate change, that will alter supply chain operations. Not understanding, appreciating, and thoughtfully addressing those compounding impacts is a barrier to effective strategies and action.

## Energy

Just as the COVID-19 pandemic shocked our supply chains, Russia's invasion of Ukraine disrupted energy markets, heightened awareness of the vulnerabilities of energy transition strategies, and called into question the pace of our current trajectory for a global energy transition.<sup>13</sup> Global stability and security require energy security, from the United States and our allies. The United States, as a major consumer, producer, and exporter of fossil fuels, is capable of shaping and driving change and responding to the evolving energy landscape. But our capabilities and influence cannot be assured in the years to come unless we are willing and ready to lead in developing more renewable energy and carbon-free or low-carbon sources.

The current global energy disruption can be a near-term barrier to rapidly transitioning to renewable energy sources, but it can also be the catalyst to transition more effectively to longer-term energy solutions while considering human and national security factors. The concentration of global solar panel supply chains in China has implications for future energy security and decarbonization and is one of the key factors affecting U.S. national security.<sup>14</sup>

With the passage of the Inflation Reduction Act of 2022 and the leasing of renewables on public lands and waters, the United States has made progress in the transition to renewables and carbon-free or low-carbon sources. Furthermore, growing numbers of entities at the federal and state level, as well as private corporations and younger generations, are advocating for further reducing our dependency on fossil fuels, and this transition is already underway in many sectors. Trade policies and economic feasibility will also continue to be important factors in developing domestic renewable energy sources and manufacturing capabilities. Access to necessary consumer and national security hydrocarbon-based products must remain uninterrupted during this period of transition. Thus, government, academia, industry, and local communities must come together to develop effective stewardship for the fossil fuels still needed in national security applications and manufacturing while we continue to aggressively reduce emissions.

# Regional Case Studies

## Taking a Regional Perspective

The vastness of our nation and the complexity of our society and economy demand an appreciation of the interplay of these underpinnings with the regional diversity of geography, climate, local economies, cultural values, and politics. Although regions differ, some greatly, regional case studies can serve as templates for other regional strategies. The Colorado River Basin and the Gulf Coast region offer two illustrative case studies. They are emblematic of the multifaceted effects that threaten national security, including both protracted and sudden consequences, socioeconomic disparities, and the unavailability of critical resources such as water, agriculture, and energy.



Agriculture along the Colorado River Basin. Photo by Ken Lund. Published under a Creative Commons Attribution-ShareAlike 2.0 Generic (CC BY-SA 2.0) license.

## Colorado River Basin

### *Key Climate Issues*

The Colorado River Basin includes the upper basin states (Colorado, New Mexico, Utah, Wyoming) and the lower basin states (Arizona, California, Nevada). The Colorado River Compact is an interstate agreement about the allocation of water from the Colorado River among the U.S. states in the basin. Allocation of that water also affects the downstream Mexican states.<sup>15</sup> The central issue in the Colorado River Basin is protracted and straightforward: there is less water in the basin every year.<sup>16</sup> Because of the decreasing availability of water, the region is experiencing and will continue to experience social and economic instability; threats to hydropower generation, food supply, and wildlife; as well as public health crises stemming from a lack of clean drinking water.<sup>17</sup>

Traditionally, local and state stakeholders have been skeptical of federal interventions to apportion water resources or enact compromise within an already complex political environment. Tribes are generally suspicious of state and local governments' motives and the federal government, which has failed to adequately protect the tribes' senior water rights. At present, the largest tribe in the region—the Navajo Nation—is fighting the Department of the Interior in the Supreme Court, where the United States is asserting that it does not have a trust obligation to protect the Navajo Nation's water rights.<sup>18</sup> The United States is taking this position despite the fact that some Navajo communities continue to live without running water, a factor that increased their exposure to COVID-19 to unprecedented levels.<sup>19</sup>

Meanwhile, given the increasingly dire situation in the region, the Department of the Interior recently executed the 2022 Drought Response Operations Agreement (DROA).<sup>20</sup> DROA requires the release of water from upstream reservoirs to Lake Powell to ensure that the lake does not drop below levels necessary for hydropower generation at Glen Canyon Dam and water delivery to surrounding communities, such as Page, Arizona, and the Navajo Nation. In September 2022, the Interior Department announced new water cuts to basin states due to the record low levels in the river system. Forecasting indicates that by 2023, Lake Powell will have insufficient water to generate hydroelectric power.<sup>21</sup> Bureau of Reclamation Commissioner Camille Touton recently testified before Congress that the states within the region will need to conserve between 2–4 million acre-feet of water in 2023 to protect the Lake Mead and Lake Powell reservoirs.<sup>22</sup> The Bureau of Reclamation is working to allocate funding under the Inflation Reduction Act to address the dire situation. The act includes \$4 billion

in funding specifically for water management and conservation efforts in the Colorado River Basin and other areas experiencing similar levels of drought. As this white paper was being written, the Department of the Interior announced plans to modify long-standing operating criteria for Lake Powell and Lake Mead to address “serious operational realities facing the System.”<sup>23</sup>

### *Preliminary Findings*

Water supply and demand are increasingly imbalanced in the region, even though those with quantified water rights or agreed governmental allotments do not include all the Native American tribes in the basin.<sup>24</sup> Access to water is not efficiently allocated because of conflicting claims and the different societal values placed on different water uses. Because of historic “use-it-or-lose-it” policies, water users are not incentivized to reduce their usage without the creation of water markets or another motivating factor. Additionally, when farmers do not receive the water they expect,



Lake Mead water level as of October 2022. Photo by United States Bureau of Reclamation, Christopher Clark. Published under a Creative Commons Attribution-ShareAlike 2.0 Generic (CC BY-SA 2.0) license.

they may turn to pumping groundwater, which causes further long-term water issues.

Changes to agricultural practices in the region must occur quickly because growing cycles are long, which leaves only a few opportunities for implementation. At the same time, uncertainty in agribusiness and carbon markets, as well as the hope of better private or public options in the future, discourages farmers from signing up for costly, long-term commitments. Regenerative agricultural practices, which refer to a broad category of processes and outcomes that lower the environmental cost of production, could alleviate stress on the water system. However, these practices can also have high start-up costs, may produce lower yields in the short term, and require more incentives.<sup>25</sup> Other technological and policy changes, such as water recycling, desalination, increased efficiency, or water conservation programs also need more funding for research and development.

Competing priorities in federal regulations can also exacerbate existing issues. For instance, the Endangered Species Act may require certain instream flow levels to protect wildlife that depend on those waters, while irrigation districts have obligations to deliver water to their members who are dependent upon Bureau of Reclamation contract deliveries, and federal reservoirs are subject to management regimes that do not prioritize storage and conservation.<sup>26</sup>

Listening session participants suggested that universities and other local institutions can play an important role in developing solutions, as they are often highly trusted in communities. For example, partisan politicization of water issues has made it difficult for even informed, motivated state-level officials to direct resources toward climate change. However, third-party facilitation, including by universities, can help opposing stakeholders trust one another and come to an agreement. Universities can also help mobilize the creation and implementation of high-quality data. However, most localities and researchers lack the funding to create and sustain climate models that could provide valuable local information and forecasts. In many areas, important data are not available. For example, we do not know the impact of reduced river flow on food security.<sup>27</sup> Marshaling tangible and intangible university resources can be an important step in developing bottom-up solutions for climate action.

Another area for potential success is the ground-level coalition. The working group identified several examples of local governments, ranchers, farmers, environmentalists, and tribes coming together to reach agreement on local water policy. Waiting for courts to resolve disputes can result in a no-win situation. Consensus-based solutions appeared to be effective when they had local buy-in. However, the working group also heard that the Interior Department needs to take a greater role to spur federal change.

The emergency situation, in the eyes of many, calls for emergency action. To that end, some promising solutions are emerging at the federal level. As we approach an increasingly fraught situation, in which energy generation, domestic and municipal water supply, and economic stability face increasing risk of destabilization in the region, Congress has responded with financial assistance:

- **Investment in aged and inefficient water infrastructure.** The Bipartisan Infrastructure Law includes an \$8.3 billion investment to address water and drought challenges, including rebuilding existing projects to withstand changing hydrology.<sup>28</sup>
- **Funding for water management and conservation efforts in areas experiencing extreme drought.** The Inflation Reduction Act includes \$4 billion for this goal. However, tackling the current situation in multiple ways—including by strengthening climate resiliency and helping communities adapt so they can reduce future adverse climate impacts—will require short-, medium-, and long-term planning at all levels of government: local, tribal, state, and federal. This will not be easy. Hard work, cooperation, compromise, and policy consistency are required.

## Gulf Coast Region

### *Key Climate Issues*

The U.S. Gulf Coast region extends about 100 miles inland along the Gulf of Mexico from the tip of the Florida panhandle to the mouth of the Rio Grande. It is the largest gulf in the world and the ninth-largest body of water on Earth.<sup>29</sup> The region is critically important to the United States and the global economy because of the Mississippi River and the key ports of New Orleans and Houston, among others.

The Gulf Coast is also a biological resource, providing habitat for sea-birds, waterfowl, fish, shrimp, shellfish, and oysters. Commercial fishing in the region supplies approximately 25 percent of the U.S. market.<sup>30</sup> The region is also a significant source of oil and natural gas. The Outer Continental Shelf in the Gulf of Mexico is the source of about 15 percent of U.S. oil production and about 1 percent of U.S. natural gas.<sup>31</sup> The Gulf Coast and the Mississippi River ports also have a long history of environmental injustice (for example, in Cancer Alley), and the U.S. petrochemical industry's sizable and consequential presence in the region is today matched by a strong history of environmental justice advocacy.



Low water levels along the Mississippi River near Memphis in November 2022. Photo by Matthew Nichols. Published under a Creative Commons Attribution 2.0 Generic (CC BY 2.0) license.

The central threats along the Gulf Coast are subsidence, sea level rise, and extreme weather events such as hurricanes and tornadoes. Extreme weather events produce destructive coastal and inland flooding, property damage and destruction, and disruption to local and regional economies because of damage to key transportation corridors such as roads, bridges, airports, seaports, and railways. Extreme temperatures and areas of poor air quality also affect the lives of the people residing on the coast and proximate inland areas. Additionally, periods of drought in the Central Plains area of the Mississippi River watershed have led to low water levels on the Mississippi River corridor, disrupting transportation and U.S. and global supply chains (as witnessed in October 2022).<sup>32</sup>

The Bureau of Ocean Energy Management (BOEM), which oversees and manages offshore oil and gas, released in July 2022 a five-year plan detailing the government's proposals for the development and production of oil and gas resources in the Outer Continental Shelf.<sup>33</sup> But long-term planning is made difficult by changes in federal policy, which often requires compromise among different political stakeholders. Frequent litigation has resulted in inconsistent rulings and the absence of a coherent legal regime.

The tension between competing views is apparent in the recent Inflation Reduction Act, which mandates that for the next ten years BOEM sell oil and gas leases (consisting of not less than sixty million acres) in the year prior to offering offshore wind leases.<sup>34</sup> The lack of a consistent national policy on how much and when to reduce domestic oil and gas production, particularly in the Gulf of Mexico, is a significant barrier to a sound and effective climate change strategy.

### *Preliminary Findings*

Like the Colorado River Basin, the Gulf Coast region could benefit from climate models that forecast climate effects and underpin infrastructure and resilience investments. Like the Colorado River Basin, cooperation among municipal, state, tribal, and federal organizations could lead to more effective, prompt climate action. The region is home to prestigious universities, climate change research organizations, and important military installations. Many of these entities are diligently working to implement local and regional climate change adaptations. These efforts should be optimized to create proactive regional strategies and predictive, science-based models that can drive political and complimentary investments to address climate change and environmental justice as well as offer solutions to climate change–related public health and national security concerns.

The Gulf of Mexico is home to several military installations that are critical to the nation’s overall defense strategy. The increasing frequency of hurricanes, tornadoes, and flooding along the Gulf Coast will reduce our overall military readiness as military installations are damaged and destroyed. That damage and the costs to rebuild impose significant burdens on the military and the taxpayer.<sup>35</sup>

Many of the nation’s military bases are decades old, having been planned and built before, during, or just after World War II. They rely heavily on their surrounding communities for services and infrastructure. Often, the military undertakes resiliency projects only when the problem reaches a state of emergency, because protracted, integrated improvements compete with other military procurement, personnel, and readiness priorities. Additionally, appropriated military budgets are short-term, precluding multiyear funding for large, transformational infrastructure projects. Such short-termism complicates and frustrates the coordination of military base improvements with municipal and state projects and investments.

The Department of Defense has begun to develop climate change plans and risk assessments that are helping to prioritize and coordinate mitigation measures. These plans and assessments require the military to build in resiliency and to be better prepared for future natural disasters. However, putting these plans into action is often thwarted by frequent continuing

resolutions and associated restrictions that further complicate longer-term climate adaptation or mitigation projects in the military and in our cities and communities.

Short-termism also means money is not always spent wisely or optimally. FEMA's distribution of funding following extreme weather events is one such example of needed restructuring. Eliminating, or even reducing, repetitive losses would prioritize adaptation strategies while allowing funds to be used for more productive projects. The status quo of government-subsidized risk will become more and more costly as the pace of climate change continues to increase.



The U.S. Army Corps of Engineers works to make Grand Isle, Louisiana, more resilient against storms in January 2023. Photo by Team New Orleans, U.S. Army Corps of Engineers. Published under a Creative Commons Public Domain Mark 1.0 license.

# Common Barriers to Climate Action

In addition to the barriers addressed above, several common shortcomings and impediments must also be overcome to enable effective climate action. These include misinformation, lack of trust in government agencies, inadequate funding, ineffective communication among grant-funded mitigation efforts, and an absence of master planning strategies. Community-development block grants are also insufficient to meet apparent community needs. Furthermore, institutions and officials operating at the national and regional levels often fail to capitalize on the qualities of local institutions—such as competence, influence, and the respect of local stakeholders—that might help generate confidence in data-driven climate solutions and transform scattered local successes into a national strategy.

As this commission moves forward with its work, we will continue to revisit the barriers to effective climate action. The regions selected as case studies for this white paper remain under increasing climate strain. However, that strain is broadening awareness of the dire consequences of inaction. And that awareness can create opportunities for coherent action and stimulate willingness to overcome barriers to implementing meaningful policy and outcomes.

# About the Commission on Accelerating Climate Action

The Commission on Accelerating Climate Action was formed in 2021 by the American Academy of Arts and Sciences, reflecting a significant long-term commitment by its Board of Directors to address the challenges of climate change. The Commission's work answers two core questions: 1) What policies would most effectively and equitably remove barriers to climate action? 2) How can the United States accelerate climate mitigation and adaptation strategies for all Americans? While the science of climate change is well-established, the Commission aims to leverage its diverse composition to identify strategies for building a durable and inclusive political coalition for climate action. In the first phase of the project, the Commission assessed the national landscape on climate action by interviewing seventy experts across three domains: communication, the private sector, and human and national security. Summaries of the findings from all areas are accessible at <https://www.amacad.org/project/accelerating-climate-action>. These documents form the basis for innovative recommendations for climate action across sectors and ideologies.

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# Endnotes

1. The Department of Defense must be prescient in assessing where climate change will stress populations, destabilize areas around the globe, and create conflict. The military can also serve as an exemplar for adapting to climate change through the modification and creation of equipment and systems suited to harsher environments and the training and preparation of servicemen and -women to optimize performance in increasingly adverse conditions. Military installations that coexist with communities can partner to build resiliency and overcome the many hazards of climate change. Finally, the military, as a large consumer of energy, can be a leader in piloting and fully implementing projects focused on decarbonization and green innovation. For example, military installations could serve as test sites for climate technologies and mitigation processes or serve as climate adaptation models for civic government.
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