U.S. Global Change Research Program

Food, Culture, and Climate: Webinar Series Report

September–October 2021

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INTRODUCTION

The Social Sciences Coordinating Committee (SSCC) is one of multiple interagency working groups that support the U.S. Global Change Research Program (USGCRP). USGCRP began as a Presidential initiative in 1989 and was mandated by Congress through the U.S. Global Change Research Act of 1990 "to assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change." USGCRP is overseen by the Subcommittee on Global Change Research, composed of representatives from each of USGCRP's 13 member agencies. The mission of the SSCC is to foster the integration of the methods, findings, and disciplinary perspectives of the social, behavioral, and economic sciences, along with interdisciplinary and transdisciplinary approaches that include these sciences, into USGCRP activities. The SSCC serves as a social science resource to other USGCRP interagency working groups, the Subcommittee on Global Change Research, and other USGCRP activities such as the National Climate Assessment.

The SSCC's Food, Culture, and Climate webinar series (held from September 14 to October 12, 2021) highlighted the ways in which social science research can elucidate the role of climate change in socio-cultural systems. It drew attention to the humanistic frameworks that underpin social scientific understanding of the ways individuals, households, and communities experience climate change. In particular, the seminars explored how the impacts of climate change are felt and understood by individuals and communities, how they interact with other stressors, and how they amplify existing inequities and vulnerabilities. This understanding is vital not only to the production of scientific knowledge, but also to the use of that knowledge in practice.

This report provides a summary of the key takeaways from this webinar series. The workshop organizers highlight central issues of the discussion on the relationships among food, culture, and climate, as well as the role that social science plays in elucidating them. Recordings of the webinar series are available online from USGCRP.

Food, culture, and climate as a focus

This three-part webinar series built on past efforts by USGCRP to understand how people are at the center of interactions between climate change and food (for example, see Brown et al., 2015). While climate change affects a wide variety of sectors and systems, food was chosen as a focal point because of its universal nature. Food is essential to the survival of every human being, regardless of social positioning. As such, its availability, producibility, and consumability can be used as indicators for human and environmental well-being and vulnerability.

The impacts of climate on food production are well documented, particularly by the natural and physical sciences, which demonstrate how climate conditions affect resources like water, oceans, and soil (for example, see Gowda et al., 2018). However, food is not just a biological outcome; it is embedded in socio-cultural systems. How and which food is produced, prepared, and consumed is a product of localized histories and global processes, and food is shaped and given meaning through relationships across communities and institutions over time. Climate affects food security (the ability to access sufficient and safe foods) not only through disruptions in production, but also

through impacts on distribution, processing, and other related activities (Brown et al., 2015). Therefore, climate inherently affects culture, creating a need to further explore relationships between food, culture, and climate that are often overlooked.

In the webinar series, the SSCC emphasized the **meaning** of food systems by using a socio-cultural and humanistic lens that highlights the experiences of communities: their values, norms, attitudes, practices, and beliefs. This lens, often referred to in the social sciences as foodways, also points to the regulatory, economic, political, and social systems that shape food systems and are shaped by them. These dynamic interactions can illustrate how climate risks are distributed and formed over time. Alternatively, this lens can show how those same socio-cultural frameworks affect the ways that communities adapt to climate change, including what actions they take and how their resilience to climate change is constrained.

This webinar series offered direct understanding of food systems and their relationships to climate through specific social science examples across a variety of communities and populations in the United States and internationally. The focus on food also serves as a proxy: a means of asking much larger questions about the human experience of, and adaptation to, climate change.

Overview of the seminar series

To explore the nexus of food, culture, and climate, this seminar series brought together researchers and practitioners who regularly employ frameworks, knowledge, and general philosophies from or inspired by the social sciences. These experts came from a variety of disciplinary backgrounds, including social and cultural anthropology, geography, sociology, political science/policy, community sustainability, and environmental social science, and work across the Federal Government, nonprofits, and academia. The goal of the series was to create a space for interdisciplinary discussion from across the social sciences that points to the intersection of food, culture, and climate and generates ideas for future research collaborations.

The seminar series consisted of three webinars with corresponding themes. The first webinar, "Socio-Cultural Approaches to Climate, Food, and Agricultural Systems," was held on September 14, 2021. The webinar explored socio-cultural relationships and processes that maintain and adapt land-based food systems as climate changes.

The second webinar, "Sustainable and Just Fisheries: Rethinking Climate Resilient Food Systems," was held on September 28, 2021. The webinar discussed how culture, climate variability, and climate change are shaping the role of fisheries in a sustainable and equitable food system.

The third webinar, "Putting Culture into Practice: The Role of Social Science in Building Resilient and Adaptive Food Systems," was held on October 12, 2021. The webinar drew on discussions from the previous two webinars to consider how culture and social systems inform resilient and adaptive food systems.

The webinars began with brief panelist introductions and were followed by conversational panel discussions. For their introductions, panelists across all three webinars gave their perspectives on two broad guiding questions:

1. *What are the intersections and relationships among climate, food, and culture?*
2. *How does understanding food and food systems within larger socio-cultural contexts give us a way to better understand social dynamics related to climate change?*

KEY TAKEAWAYS

Here, workshop organizers summarize key takeaways that emerged from across the series. These takeaways highlight central issues in the relationships between food, culture, and climate, as well as the role social science plays in elucidating them.

1. Climate change is one of many stressors within food systems

Climate change and cultural change are interconnected parts of the same dynamic global system. People's cultural and social practices are intertwined with their environments, and socio-cultural understandings affect how environments and ecologies are managed and valued. As climate changes, social and cultural practices will also change, and thus can significantly affect cultural well-being. For example, panelist Dr. Marie Schaefer discussed the deep cultural significance of *monoomin* (wild rice) for the Anishinaabe and other Indigenous peoples. Growing and eating *monoomin* evokes Anishinaabe history, identity, knowledge, and ways of being. Settler colonialism, including forced migration and land degradation, has impacted the Anishinaabe's ability to grow traditional foods, which in turn has affected their mental, physical, and spiritual health. While these histories represent immense loss, they also reflect a legacy of resilience and adaptation by many Indigenous people reclaiming and sharing their cultural knowledge and practices. This is a legacy likely to continue under the increased pressure of cultural and ecological change that climate change threatens to bring. We also see this when looking at local food economies, where the production of certain foods is directly related to local identity, and where that identity is under threat. For example, panelist Dr. Laurel Bellante described her research in Mexico, where agricultural practices such as the cultivation of corn are deeply cultural for small-scale farmers. Yet, for many farmers, the industrialization of agriculture followed by a shift to neoliberal agricultural policies have led to a loss of farmer autonomy in what and how to farm. These policies, coupled with climate change risks, make it challenging for farmers to recover native seed varieties in order to try and reduce their vulnerability to environmental changes. A socially informed systems approach to understanding food demonstrates how one facet of a food system–economic, political, environmental (including climate), historical, cultural–impacts another.

Climate change exacerbates social stressors for historically marginalized communities where food security, housing, income, and health are already precarious (Chu & Cannon, 2021). In this context, climate change is one of numerous co-existing and often interacting threats to human and ecosystem well-being, which can make it difficult for food producers to prioritize which threats are

of most urgent concern and require more immediate action. Panelists across all three webinars spoke to persistent structural racism in the United States as one of these stressors: among other interconnected effects, racism exacerbates the impacts of climate change through unequal risk distribution. Furthermore, panelists described how many communities are unable to adapt to or even fully conceptualize the climate problem due to the everyday stresses of living in an unjust society. Daily, acute stresses complicate the interventions of governments and community groups interested in preserving access to culturally relevant foods and can make it politically and logistically difficult to devote resources to long-term sustainable food systems.

In addition, the concept of a threat multiplier is often referenced in the context of security, where extreme weather events such as drought, heat, and sea level rise can lead to a variety of insecurities including but not limited to loss of crops, degraded water quality, environmental health threats, water scarcity, health and safety impacts, and population migration. Understanding the distribution of risks posed by climate change highlights not only those who are most vulnerable to impacts, but also those who lack the means and support to recover fully.

2. Social science research approaches

The social sciences are an integral part of climate and adaptation science because they focus on the experiences and values of people across timescales, socio-economic strata, and geographies. Through the collection of empirical qualitative and quantitative data, perspectives from fishing and agricultural communities provide deeper understanding of our food systems and how they are connected to climate change. For example, panelist Dr. Lauren Gentile described how fishers on the North American East Coast provide rich data through their stories and perspectives. This includes insights about climate change, which fishers are experiencing and adapting to, even though many do not refer to it as climate change and do not accept that human activity is a primary driver of the environmental changes they are experiencing. Social science research and data can shed light on daily realities as well as challenges faced within and across communities due to climate change. The panelists covered a variety of social science approaches that help achieve this, including the integration of critical and historical analysis, and equity in scientific practice.

Integration of critical and historical analysis

The social sciences include critical analyses, a process through which researchers assess, evaluate, and characterize what has been observed through empirical data. This approach is foundational for uncovering the nature and sources of injustices and proposing ideas that recognize the impacts of power dynamics. Socio-cultural perspectives also help us to envision just futures that could result from structural/systemic change.

Beginning any exploration of the socio-cultural dimensions of climate change with a deep understanding of history provides key insights into the current food system. Historically, gathering and producing food has relied on relationships: people's understanding of their environments–as well as the shared and learned practices about growing, finding, cooking, eating, gathering around, and valuing food–is crucial. As panelist Dr. Laurel Bellante stated, agriculture and culture share

linguistic roots, meaning “to cultivate” and “to care for.” Panelist Dr. Gail Myers discussed how West African rice traditions were a central reason why Senegalese and Gambian farmers were enslaved and brought to the United States. These traditions included a holistic and conservation-oriented framework for resilience of the food and ecosystem. Today, their descendants, like the Gullah Geechee along the lower Atlantic coast, continue to value rice, not only from a cultural perspective, but as part of a holistic ecosystem approach for managing the environment. This approach takes into account the impacts of climate change and other stressors on Gullah Geechee resources and refines practices to ensure continued cultural and ecological health. Additionally, other panelists reflected on how histories of settler colonialism and industrialized capitalism have created a complex global food system that, in much of the world today, separates people producing food from the people who consume it, and in turn masks the cultural connections to food systems.

Adopting a historical perspective also illuminates the development of complex interactions around food and power, including the distribution of vulnerabilities to climate change and to the food system that we see today. In one example that brings together empirical data and critical perspectives with a historical lens, panelist Dr. Monica Barra’s research on Black coastal fishing communities in Southeast Louisiana illustrates how race and class-based inequalities relate to environmental management. Civil rights advocacy for equity and inclusion in environmental management paved the way for oyster farmers to be self-employed, rather than being low-wage employees. Civil rights advocacy was crucial, as many Black coastal fishing communities make their living through access to and use of coastal lands and waters. Understanding these community histories identifies how historical inequities have affected past and current environmental management. Further, if large-scale coastal restoration projects in Louisiana do not acknowledge past histories and are based only on scientific and engineering best practices, they could replicate past disenfranchisement. Putting this understanding of local histories into practice can include the participation of these communities as key stakeholders in determining how the coastal landscape will be reconfigured.

Equity in scientific practice

In climate and adaptation research, there is a difference between being *accountable to* communities and *accounting for* communities. Both are important. Through research design, data methods and sources, analysis, and communication, climate scientists can *account for* communities by ensuring broad community representation and diversity of climate risks being studied. Climate scientists can be *accountable to* communities by asking more equity- and justice-oriented questions about risk distribution, asking how and who to engage in research and research outcomes, and considering local perspectives on what is needed to support sustainable futures. One way that social scientists ensure they are both *accountable to* and *account for* communities is by using diverse data sources, which include Traditional Ecological Knowledge, place-based knowledge, and other social, cultural, and humanistic forms of knowing. These can be both qualitative and quantitative data. These diverse forms of knowledge ensure that community values drive all stages of the research process.

Panelist Dr. Patricia Pinto de Silva referenced the National Oceanic and Atmospheric Administration (NOAA) Voices Oral History Archive. NOAA Voices contains interviews from NOAA stakeholders

including community members, fishermen, scientists, and others from across the United States, where they discuss experiences of environmental change over their lifetimes. Oral histories record the stories of people who are not often heard and might not feel comfortable sharing their experiences through other forms of data collection. This approach also facilitates the collection and storage of data in peoples' own voices and ensures both important forms of accountability.

Oral history is one example of a method that challenges the idea that the most important information comes from observational unbiased study by finding patterns and variation in the meanings people give to their own life stories. Historically, researchers and decision-makers have prioritized specific kinds of knowledge and expertise above others by assigning more authority or value to Western scientific knowledge over local or Indigenous knowledge in management practices and policies. Continuing to do so can reinforce inequalities in the food system. Panelist James Rattling Leaf Sr. emphasized that care should be taken in efforts to remediate these biases, arguing that "when it comes to Tribal Nations, we have to look at data sovereignty and Tribal colleges and universities to determine the questions that we ask and how Tribes are involved. We know the history of research and what it has done to us." Without careful practices to enhance participation, research can extend the legacy of exploitative, exclusive, and inequitable histories, while foreclosing possibilities for change and innovation.

To this end, participation and engagement are an important part of centering equity in research. This means developing relevant and respectful partnerships with communities and individuals with shared goals, methods, and benefits from the research. Panelist Dr. Cynthia Grace-McCaskey explained that her work is deeply rooted in engagement. She aims to break down the political, social, and economic barriers that have historically excluded resource managers like fishers from participating in interdisciplinary sciences, resource management, and policy development. She argues that fishers and fishing communities are the people living, using, and benefitting from water resources every day. Their lived experiences offer important perspectives that are not typically integrated into economic, natural, or scientific data, but bring valuable knowledge of how to understand the landscape. Nurturing relationships with these communities requires substantial trust and takes time and effort (Bamzai et al., 2021).

Acknowledging the relationships between researchers and their work can reveal unconscious biases that impact their research, as well as validate researchers' lived experience. Multiple panelists referenced how their own experiences shaped their research and, in turn, how their research shaped their understanding of their own perspectives. For example, Natalia Pinzón Jiménez said, "I understand the necessity of migration, myself being an immigrant from Colombia, when it comes to agriculture. I can relate with many of the migrant workers that I have interacted with, where migration is a necessity of the condition of the countries that they are from. This helps me to understand the vulnerability of the workforce." Scientists from across all disciplines of social, physical, and natural sciences can consider both their personal and the broader social contexts of their work. This can enhance both the quality of the research itself as well as the equity of the broader science enterprise.

3. Resilience for whom?

The term resilience is used in many fields to describe the ability to mitigate disruptions and recover from stresses, hazards, or shocks. Within global food systems, either on land or at sea, the vast scale can make it challenging to understand the diversity of perspectives on resilience, and how they manifest across different scales (i.e., locally, nationally, and globally). Panelist Natalia Pinzón Jiménez posed the question, "Resilience for whom?", highlighting that modern global agriculture often results in environmental degradation and the exploitation of vulnerable laborers. Often, the resilience of the food system is assessed based on yields, distribution and transportation route maintenance, economic stability, and growth, without room to consider the existing inequalities that make the food system possible. Solutions based on these assessments can perpetuate vulnerabilities. For example, panelist Dr. Yoshitaka Ota has worked with communities who cite fishing as key to their cultural heritage. Climate change has exacerbated species losses that motivate a global push to eat less seafood. Dr. Ota noted that people promoting narratives about poorly regulated fisheries are often the ones least affected by changes in fishery policy or global fish consumption. Although many fishing communities have proven an ability to sustainably fish their waters for centuries and bear the brunt of changes in fishery policy and global consumption, they have a small voice in the international discussion surrounding seafood. The social sciences have an important role to play in resolving tensions at various scales by highlighting injustices and promoting paths to equity in policy discussions.

Beyond policy, in daily practice our current food system has distanced consumers from the interconnections between places, people, culture, and food, making knowledge of resilient food systems an abstract concept. Panelist Dr. Amy Trubek noted, "A paradox of our modern, global food system is that we live out our days in very proximate decision-making systems around food–the nearest grocery store, the backyard, or allotment garden–and yet our capacity for nourishment is substantially dependent on national global supply chains for which most individuals have no real understanding or connections, whether it be through identity, knowledge, or belief systems." An increased focus on local food systems and traditional foodways is one attempt to reconnect us. To do this, panelists urged new research and practice agendas going forward that center on justice and equity at multiple scales to explore who benefits if the current food system is resilient.

Local and regional information may also provide insight into what a just, resilient global food system could look like, supported by robust local food systems as well as fair and equitable distribution systems. The use of critical analysis (described above) offers additional understanding of why some groups are included in dominant narratives related to resilience and others are excluded. Research that highlights these experiences can inform local policies and practices by engaging with locally specific and culturally relevant knowledge. But this is not an easy task, and defining scale and scope for effective use can be varied. For example, panelist Suzan Erem described local knowledge gaps that make it challenging for new and young farmers and nonprofits to successfully access support and resources for climate resilient food systems. Research needs include analyses of options for small-scale farm profitability that include wage and in-kind farm work and support, tied with accessible, relevant, and affordable environmental and climate impact data. Social science research at the local scale provides context for what resilience means for different groups.

CONCLUSION: THE INTERCONNECTEDNESS OF FOOD, CULTURE, AND CLIMATE

Across the webinars, the need for more social science research to understand the relationships between food, culture, and climate emerged as a common thread. Social science approaches highlight local community perspectives, including how communities face climate change as one or part of many challenges. They are also a crucial mechanism to address the inequities and historical injustices that exist throughout food systems. Critical inquiry is needed to provide insights into how and why historically marginalized communities become the frontline communities most at risk to climate impacts. This inquiry includes examination of histories of exploitation, disenfranchisement, and resource extraction, in order to create culturally sensitive adaptation and resilience efforts.

Just like agricultural systems need diverse crops to flourish, our understanding of and responses to climate change require interdisciplinary knowledge and practices from natural and physical sciences to social sciences to the arts and humanities to be truly effective. To do this type of research, participation, engagement, and taking time to build trust with local communities are essential to ensuring that a diversity of voices and perspectives are included. Furthermore, braiding traditional, local, and Indigenous knowledge and scientific knowledge can lead to improved climate change adaptation capacity, as these types of knowledge are reliant on relationships between people and the environment. Even when people's relationships with the environment have been disrupted, the ability to observe and understand local ecosystems has enabled many people to adapt and survive over the course of history.

To build an equitable and resilient food system, it is important to consider impacts of climate and climate policies across populations and ask what the co-benefits and unintended consequences may be. Social science research, particularly on a local scale, has the power to elucidate those connections, drawing attention to the ways in which inequitable risks and solutions are distributed. These types of data and perspectives are fundamental to actively working towards just solutions that are respectful of food, climate, and cultural systems and their many interactions.

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