Submission of the United States of America
Topics for the 13th Research Dialogue at SBSTA-52
April 2021

The United States welcomes the opportunity to provide inputs to inform the thirteenth Research Dialogue (RD-13) during the fifty-second session (SBSTA-52). The Research Dialogue provides an important forum for scientific experts to engage with policymakers to provide a better understanding of the current state of climate science across a range of topics. The United States is supportive of efforts to make the Research Dialogue an interactive session with a small number (1-2) of narrowly defined themes that include a combination of presentations, panel discussions, and sufficient time for questions and answers. Focusing RD-13 on one or two topics will allow for a more in-depth discussion and consideration of multiple dimensions of each issue including both natural and social sciences. The Research Dialogue should also avoid duplication, to the extent possible, with topics covered during other events.

It is essential that the Research Dialogue be sensitive to the multiple dimensions of diversity, equity, and inclusion to ensure that a range of voices and knowledge systems can contribute to the collective understanding of the topics presented. Recognizing that RD-13 will be a virtual session, similar to RD-12 (November 2020), we encourage the use of a platform that can be open to both Party and non-Party stakeholders to enable robust participation by scientific and policy experts, particularly those that are typically unable to participate in the session due to travel costs. The Research Dialogue can provide insights on recent scientific advancements that can help to inform and catalyze the actions that are necessary to meet the challenges we face in both addressing climate change and building back better from the Covid-19 pandemic. This event can also facilitate an exchange on translating research and climate assessments into climate-informed actions on resiliency planning, adaptation, and mitigation. In light of the opportunity that RD13 presents, the United States would like to propose several topics for consideration to inform this and subsequent Research Dialogue sessions. It is noted that these potential topics align well with several other Parties' submissions to date.

Potential Topics

- *Climate and Health*

Climate change and variability have substantial implications for human health and well-being around the world. The global Covid-19 pandemic has created increased urgency for understanding these linkages and how environmental factors play a role in epidemiological forecasting, contributing to the spread of disease, and affect preparing for and executing response actions. In partnership with the international health community, the United States supports interdisciplinary science, stakeholder engagement, capacity and network building activities that advance the integration of weather and climate research, assessments and services in practical risk management settings related to health risks including risks to the ecological and biological systems upon which communities depend. For example, the National Oceanic and Atmospheric Administration (NOAA) helped launch and leads the National Integrated Heat Health Information System (NIHHIS) and its international counterpart, the

WMO-based Global Heat Health Information Network (GHHIN), to address heat risk on multiple time scales and provide critical considerations for managing the compound disaster of extreme heat and the Covid-19 pandemic. Additional examples include NOAA's Harmful Algal Bloom and Marine Mammal Health Programs and National Institutes of Health's (NIH) Oceans and Human Health Program which provide information on how climate impacts on oceans affect human health. The U.S. Department of State and U.S. Agency for International Development (USAID), together with NOAA, Health and Human Services, and several other federal stakeholders, are supporting work to apply climate services for infectious disease forecasting and preparedness in Africa, the Asia-Pacific, and beyond. Meanwhile, NIH and the Centers for Disease Control and Prevention (CDC) are developing methods for infectious disease forecasting in the US and globally. The CDC is further involved in activities to bolster the resilience of local communities and public health departments across the country. The Research Dialogue could include an overview of the latest science on the linkages between climate and health, including biological and ecological indicators, to understand lessons learned from the Covid-19 pandemic building from the discussion in RD-12. There could also be a discussion of the tools and resources available for modeling, predicting, and mitigating health risk. Climate impacts on human health, healthy populations, and resilience may result from impacts to biological or ecological systems; therefore the Research Dialogue could include discussion of the current science to better understand those linkages, improve forecasts and predictions, and inform approaches for responding to those changes. Under this topic, the Research Dialogue could also explore linkages between climate change, food production (e.g., fisheries and aquaculture), food security, and health outcomes as well as topics related to health implications of climate mitigation and adaptation.

- *Opportunities for Nature-based Solutions*

There is increasing recognition of the role and potential for nature-based solutions (terrestrial, coastal, and marine) to pathways that limit warming to 1.5 degrees while providing co-benefits for ecosystem health, community resilience, and biodiversity. The science is rapidly advancing on approaches and methods for incorporating nature-based solutions into climate mitigation measures and verifiably measuring emissions reductions provided. For example, the United States is working to provide technical support to developing countries and to advance the development of tools and capacity to facilitate the preparation of greenhouse gas inventories for coastal wetlands (consistent with the IPCC *Wetlands Supplemental)*. This initiative also contributes to adaptation and resilience efforts, as these coastal ecosystems can protect communities and habitats from storms, waves, erosion and flooding. The Research Dialogue could provide case studies of terrestrial, coastal, and marine solutions, approaches for effectively incorporating nature-based solutions into national climate policies, and methods to accurately quantify and verify the potential emission reductions. This Research Dialogue could include presentations on how to ensure new technologies are developed in a way that protects ecological and biological systems while reducing greenhouse gas emissions. The Research Dialogue should also explore potential synergies between mitigation and adaptation for nature-based solutions and how to evaluate opportunities and tradeoffs including the role of nature-based solutions in achieving net-zero.

- *Climate and Infrastructure*

Climate change is and will continue to present risks to infrastructure. As nations focus on economic recovery from the Covid-19 pandemic, there is an opportunity to build back better and more resilient through incorporating climate considerations into planning and infrastructure decisions. Sea level rise and extreme events pose significant threats to infrastructure and therefore it is important to understand the tools, technologies, and innovations that can enable more sustainable infrastructure. The Research Dialogue could highlight sector-specific examples (e.g., energy, transportation, fisheries, and ports) of sustainable infrastructure or planning tools that can help decision makers to better incorporate climate considerations into their planning choices. For example, the NOAA Climate and Fisheries Initiative is designed to provide the operational science infrastructure needed to provide decision-makers with the early warnings and longer term projections of changing ocean conditions needed to prepare for and respond to impacts on fisheries, transportation, public health and other ocean sectors. This Research Dialogue could include presentations on how to ensure new technologies are developed in a way that protects ecological and biological systems. The Research Dialogue could also incorporate social science dimensions by presenting research on the economic opportunities and costs associated with sustainable infrastructure development (e.g., the co-benefits that nature-based solutions to infrastructure resilience can provide to communities). Additionally, the Research Dialogue could include the role and value of critical research infrastructure such as climate scale observations and opportunities for ensuring these needs are sustainably funded and strengthened.

- *Extreme Weather and Climate Events*

Changing frequency and intensity of extreme events (both land-based and marine e.g., marine heat waves, tornadoes, hurricanes, etc.) around the world presents an increasingly urgent challenge. For example, 2020 was an historic year for extreme events with twenty-two separate billion-dollar weather and climate disasters across the United States alone. The Research Dialogue could present updates on the state of the science regarding frequency and severity of these events, attribution that links extreme events to natural and human-caused climate change, and the opportunities for improving observations, predictive capabilities, and products and services at regional and local scales. The Research Dialogue could also provide insights on the tools available for risk and vulnerability assessments for communities, biodiversity, and habitats and approaches for risk communication associated with both acute and slow-onset extreme events that can provide integrated decision support to communities to help them to better prepare and respond to these events.