

University Corporation of Atmospheric Research (UCAR) Responses to Request for Input on the Global Climate Action Agenda

- **Q1: What should success look like over the next 5 years, and how can it be measured effectively?**

As an observer organization, UCAR would like to emphasize the importance of using scientifically underpinned knowledge and leveraging reports such as the IPCC in support of activities associated with the first Global Stock Take (GST) outcome, Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs). We hope that the 2025 Global Climate Action Agenda (GCAA) will describe the science needed to quantify changes in risk, exposure and vulnerability, how to integrate the existing body of scientific knowledge with other decision constraints and identify current gaps and limitations in knowledge.

It is not possible to determine the “scale and frequency of loss and damage, and the associated economic and non-economic losses” (CMA6.19) without **a full and comprehensive scientific assessment of existing vulnerabilities and exposure**, and probability of hazardous events, against which future risks, vulnerabilities and exposure can be assessed. Successful adaptation planning is premised on estimates of the likely future risks and impacts posed by climate change. This requires leveraging the best available research to determine future risk profiles, and iterative collaborative engagement to understand each country’s vulnerability and potential for adaptation. We recommend that systematically establishing risks, vulnerabilities and exposure be a foundational topic, and that this be developed in collaboration with the scientific community. Notably, co-developing and drawing on research from Global South and Indigenous Peoples and Local Communities.

We would highlight the urgent need to consider the evolving risks from **extreme weather events**. Successfully developing NAP actions for climate resilience will also help to reduce the burden on the Loss & Damage fund.

Climate models have assisted with apportioning funds for Loss & Damage through attribution science, that is by mathematically estimating the geophysical contribution of climate change to the occurrence of individual events. A successful outcome would build on this knowledge, encouraging the scientific community to develop similar mechanisms including improved observations to assist with estimating economic and non-economic losses. We recommend that the GCAA explicitly calls out the importance of the IPCC in establishing the scientific baseline, and where necessary identifies the knowledge gaps that need to be filled.

- **Q2: How can the GCAA facilitate direct and impactful engagement between Parties and NPS (Non-party stakeholders) to support implementation efforts at both national and sectoral levels, in order to advance the full delivery of the GST (Global Stock Take), NDCs (Nationally Determined Contributions) and NAPs (National Adaptation Plans)?**

Many developing countries face substantial challenges in pursuing climate research, for example through inadequate access to computing resources and training, or rolling power outages that prevent climate model simulations from being completed. The collaborations necessary to support adaptation planning must explore innovative mechanisms to further Global South capacity to lead and direct research questions. Potential activities include:

- Financial support to enable computing in the cloud, together with training in operational tools, data storage and access, and developing expertise in cloud computing environments;
- Explicit funding to pair Global South with Global North research collaborators on an equitable footing that builds local expertise and capacity for research;
- Support for data sharing initiatives such as the [WCRP Data Advisory Council](#);
- Support to improve global observation facilities to monitor local adaptation progress and successes.

We emphasise the need for the scientific community to be involved in understanding individual countries' exposure, vulnerabilities, risk, and adaptation pathway, and the importance of collaborative engagement between scientists and policy makers. Engagement with other global knowledge brokers such as the World Meteorological Organization or the World Climate Research Programme could facilitate opportunities where the two communities can be convened to establish dialogues around scientific knowledge and existing research gaps.

- **Q3: How can the CGAA promote inclusive and equitable engagement, in particular from underrepresented groups and regions?**

The fundamental science needed to underpin all CGAA activities, and particularly adaptation actions such as Early Warnings for All and national capacity building, is dependent on reliable and continuous observations of the Earth system. Conducting this science requires free and fair global access to data, analysis tools, training, and open source code.

Many developing countries face substantial challenges in pursuing climate research, for example through inadequate access to computing resources and training, as well as the financial challenge of participating in global meetings. The collaborations necessary to support adaptation planning must explore innovative mechanisms to further Global South capacity to lead and direct research questions.

- **Q4: What improvements can be made to ensure better transparency, reporting and follow up of the GCAA, including in existing tools such as the Global Climate Action Portal (a.k.a. NAZCA) and the Yearbook of Global Climate Action?**

In convening and collaborating across disciplines, we recommend that the GCAA be guided by the successful example of other research to implementation efforts such as *Early Warnings for All*, and the United Nations Office for the Coordination of Humanitarian Affairs disbursement of Central Emergency Funds in response to disasters. The World Meteorological Organization has

established local partnerships linking scientific knowledge and current research to users that could also be leveraged to support follow up of the GCAA. Consistency with the scientific underpinnings of other multilateral treaties (e.g., Plastics Pollution Treaty, UN Ocean Conference Declaration, Biodiversity Loss, etc.) in drawing attention to impacts from climate change, and the associated urgent need for action is also important.

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