

The Arab Group is pleased to submit its views, **in response to the invitation contained in the conclusions of the Subsidiary Body for Scientific and Technological Advice at its sixty second session (FCCC/SBSTA/2025/4, para. 33)**, on possible themes for the eighteenth meeting of the Research Dialogue to be held in conjunction with SBSTA 64.

The Arab Group welcomes the opportunity to provide views on the seventeenth Research Dialogue. The Research Dialogue serves as a key platform for exchanging scientific knowledge and enhancing the understanding of emerging research relevant to climate action. To ensure its effectiveness, the Dialogue should remain a space for scientific discussions rather than policy-prescriptive outcomes, allowing Parties to access the best available science while considering their national circumstances and priorities. Maintaining a balanced and inclusive approach to scientific contributions is essential to ensuring that the Dialogue reflects diverse perspectives of all Parties.

The Arab Group suggests the following themes:

### **Incorporating national circumstances into scenario development for climate mitigation, adaptation, and integrated pathways**

Global climate scenarios and pathways provide essential frameworks for understanding long-term mitigation and adaptation options. They play a central role in informing UNFCCC processes and IPCC assessments. However, these scenarios are often based on aggregated and standardized assumptions that do not adequately reflect the diverse national circumstances of countries. These include differences in stages of economic and social development; technological readiness, institutional capacity, and data availability; socio-economic vulnerabilities, equity considerations, and sustainable development priorities, national endowments; as well as local knowledge systems. This creates significant research and methodological gaps. Insufficient consideration of national circumstances can lead to implicit biases toward certain development pathways, under-representation of mitigation and adaptation options relevant to different developing countries and reduce confidence in the use of global scenarios for national decision-making and planning.

Addressing this gap is increasingly relevant considering ongoing efforts within the IPCC's Seventh Assessment Report cycle to enhance the policy relevance, inclusivity, and usability of scenarios.

**Suggested topics** to be covered under this theme include identifying methodological approaches for better integrating national circumstances into scenario development; sharing national and regional experiences in tailoring global scenarios to inform

domestic planning; discussing data and capacity-building needs, particularly in developing countries.

## **Integrating trade and response measures into climate scenario development**

Global climate mitigation and adaptation scenarios increasingly inform national and international climate policy, investment decisions, and long-term development strategies. However, most existing scenario frameworks have limited capacity to represent the interactions between climate policies, response measures, and international trade.

Trade-related impacts of climate action, including changes in competitiveness, shifts in trade flows, and cross-border economic effects, can significantly influence national transition pathways, particularly for developing countries and economies with trade-exposed sectors. The absence of robust modeling approaches to capture these dynamics represents a critical gap in current scenario development and limits the usefulness of global scenarios for assessing the full implications of mitigation and adaptation pathways. This theme would focus on advancing research and modeling approaches to better account for trade and response measures in climate scenarios.

## **Emerging Research Needs: Carbon Dioxide Removal and CCUS Technologies**

Carbon dioxide removal (CDR) and carbon capture, utilization, and storage (CCUS) are essential components of comprehensive climate mitigation strategies. They enable deep emission reductions across sectors, including hard-to-abate industries, and address residual emissions that are difficult or costly to eliminate entirely. These technologies underpin pathways toward net-zero GHG emissions and enable net-negative outcomes in scenarios involving temporary temperature overshoot.

CDR and CCUS are particularly important for accelerating the energy transition, enabling industrial decarbonization, and supporting just, equitable and sustainable development pathways in developing countries, in particular those that are heavily reliant on energy exports. They can help preserve economic opportunities, align with national development priorities, and contribute to global ambition while respecting the principle of Common but Differentiated Responsibilities (CBDR) considering national circumstances.

Despite significant progress, crucial knowledge and methodological gaps remain. This is particularly important given the IPCC's assessment in AR6 that the deployment of carbon dioxide removal to counterbalance hard-to-abate residual emissions is unavoidable if net zero CO<sub>2</sub> or GHG emissions are to be achieved. These gaps are being actively addressed through key IPCC processes, including the 2027 IPCC Methodology Report on Carbon Dioxide Removal Technologies, Carbon Capture, Utilization, and Storage for National Greenhouse Gas Inventories, which provides guidance on robust measurement, reporting, and verification of CO<sub>2</sub> removals, and the dedicated chapter on 'Potentials, Limits, and Risks of Carbon Dioxide Removal' in Working Group III of the Seventh Assessment Report (AR7).

**Suggested topics** to be covered under this theme include assessing maturity, scalability and regional feasibility of CDR and CCUS for both emission reductions and removals; advancing MRV and accounting methodologies; enabling conditions, particularly for developing countries; and identifying research, capacity-building, finance and technology transfer needs to support equitable deployment.