Leveraging AI to Build Climate Resilience and Adaptation Capacity

Background Note

Artificial Intelligence (AI) offers transformative potential for climate mitigation and adaptation in Africa by enabling real-time, data-driven decision-making across agriculture, energy, disaster management, and climate finance. When grounded in African data realities and local knowledge, AI-driven tools can enhance predictive capabilities, optimize resource use, and support evidence-based policymaking aligned with Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs). However, current gaps in localized, high-quality datasets and context-aware model design risk limiting these benefits. This session will explore how AI, when designed inclusively and deployed through partnerships between governments, academia, and the private sector, can accelerate a just, resilient, and innovation-led climate transition in Africa.

Objectives

1. Showcase practical applications of AI for climate mitigation and adaptation across key sectors.
2. Discuss strategies to localize AI models and integrate African datasets for greater accuracy and equity.
3. Identify opportunities for policy alignment, financing, and capacity building to scale AI solutions.
4. Foster cross-sector partnerships to advance African-led AI innovation for climate action.

Expected Outcome

Create a collaborative forum to establish an African Centre for Leveraging AI for Climate, serving as a continental hub for climate modeling, disaster and risk management, impact-based early warning systems, including AI applications in energy, agriculture, resilience. The Centre will foster African-led innovation, integrate localized datasets, and build technical capacity to deliver context-specific, evidence-based climate solutions

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African Climate Summit 2.0 – September 8–10, 2025

Day 2 – September 9, 2025

#	Organization	Full name	Proposed Topic	Remark
1	Ethiopian Ministry of Technology and Innovation	H.E. Belete Molla, Minister	Opening Remark and Framing the Need for AI in Africa's Climate Response	Confirmed
2	AUDA-NEPAD	Mrs. Nardos Bekele-Thomas, CEO	Framing the Need for AI in Africa's Climate Response	Agreed
3	IGAD Climate Prediction & Applications Centre (ICPAC)	Dr Abdi Fidar, Director ICPAC	AI for Regional Climate Modeling and AI in ICPAC	Confirned
4	African Centre of Meteorological Applications for Development (ACMAD)	Ousmane, Director ACMAD	AI for Regional Climate Modeling and AI in ACMAD	Confirned
5	ADIA Lab	Dr. Yousef Weheb, Senior Scientist – Climate Science Lead	AI for Climate Science	TBC
6	International Institute for Applied Systems Analysis (IIASA)	Prof. Karen R. Lips, Deputy Director	AI for Climate Modeling	TBC
7	BETiN	Prof. Kassahun Tesfaye, Director Genera	AI in Ethiopia	Confirmed
8	Tsinghua University	Professor Dabo Guan, Deputy Director, Tsinghua Institute of Carbon Neutrality (ICON)	AI for Climate Mitigation and Adaptation	Agreed
9	Tsinghua University	Professor Yunxin Liu, Institute for AI	AI to Reduce Energy Consumption and	Agreed

		Industry Research (AIR)	Carbon Emissions in Industry	
10	Woodwell Climate Research Center	TBC	AI for Disaster and Risk Assessment	Agreed
11	Global Green Growth Institute (GGGI)	Professor Sang-Hyup Kim, Director General	Lessons from South Korea	Confirmed
12	GRHYMET (Agriculture, Hydrology, and Meteorology), Permanent Interstate Committee for Drought Control in the Sahel (CILSS)	TBC	Participant from the Floor	TBC
13	Southern African Development Community (SADC) Climate Services Centre (CSC)	TBC	Participant from the Floor	TBC
13	Foundation	TBC	Participant from the Floor	TBC
14	Prime Analytica	Facilitator /Moderator	Facilitator /Moderator	Confirmed
15	African Center for Climate Adaptation and Mitigation	Board Chair	Participant from the Floor	Confirmed
16	African Group of Negotiators (AGN)	Chair	Moderator	Confirmed