An Introduction to the AAAS-UCAR-NCAR Africa Initiative

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VISION

A healthy, secure, prosperous, and sustainable life for all people on Earth

“Understanding the complex, changing planet on which we live, how it supports life, and how human activities affect its ability to do so in the future is one of the greatest intellectual challenges facing humanity. It is also one of the most important for society as it seeks to achieve prosperity and sustainability.”

NRC (2005, 2007)
Overview

• The University Corporation for Atmospheric Research (UCAR) and the National Center for Atmospheric Research (NCAR) has capabilities in a range of Earth-related disciplines

• These capabilities integrate into a package that can help African Scientists and Meteorologists address weather-related societal and scientific challenges

• With AAAS we seek to partner with an established presence in Africa which could take immediate advantage of this enhanced capacity
UCAR Expertise

- Community weather and climate models on global, regional and local scales
- International networking and real-time weather & satellite data distribution
- Distance learning, training, and outreach
- Observational capabilities - radar, aircraft, in-situ, satellites
Monitoring and modeling are required to understand and predict changes in local climates which could exceed thresholds of cyclical recovery for the ecosystems and human settlements.
Kilimanjaro Snow Melt
Abrupt Ice Retreat Could Produce Ice-Free Arctic Summers by 2040

- Recent retreat of Arctic sea ice is likely to accelerate so rapidly that Arctic Ocean devoid of ice during summertime as early as 2040
- “Positive Feedback”
- As the ice retreats, the ocean transports more heat to the Arctic and the open water absorbs more sunlight, further accelerating the rate of warming and leading to the loss of more ice
• Seamlessly integrate the weather and climate models to capture all important spatial and temporal scales
• Assists decision-makers to plan for regional climate changes
Africa Initiative Ideals

“African Solutions to African Problems”

- Explore Earth science research themes that are critical to Africa and important for the world
- A priority on research applications with direct societal benefit
- Long-term capacity building, education and research in the atmospheric and related sciences
- Deep collaboration with African institutions
- Leverage existing networks and infrastructure