Climate Research for Development in Africa:

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Part I

State of Science and Research in Africa
Africa is:

- a home to 1.1% of the world’s scientific researchers (The World Bank, 2010).
- contributed to <1% of the world’s research output (Scopus database).
- spent only 0.4–0.72% of global expenditure in research and development (R&D) (The World Bank, 2010).
- accounted for only 0.1% of global patents.
Poor Scientific infrastructure in research laboratories of most African countries are characterized by:

(i) outdated lab buildings, which needs refurbishments to qualify the current biological and chemical safety standards; 

(ii) lack of sufficient equipment; 

(iii) inconsistent power and water purification supply systems.
Reasons for low scientific contributions

Poor allocation of R&D fund far below the AU’s 1% commitment by African countries

<table>
<thead>
<tr>
<th>Country</th>
<th>ERD ($m)</th>
<th>GERD % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>4,021.3</td>
<td>0.76</td>
</tr>
<tr>
<td>Kenya</td>
<td>652.0</td>
<td>0.98</td>
</tr>
<tr>
<td>Uganda</td>
<td>237.8</td>
<td>0.50</td>
</tr>
<tr>
<td>Ghana</td>
<td>150.2</td>
<td>0.38</td>
</tr>
<tr>
<td>Senegal</td>
<td>130.5</td>
<td>0.54</td>
</tr>
</tbody>
</table>

* Top five countries Gross Expenditure on R&D in 2010 (GERD) (WB)
Reasons for low scientific contributions

- Africa’s science and research lacks strong intra-regional collaboration to address common problems through transdisciplinary research.

- Providing insufficient incentive for key actors (e.g., private) to invest in research.

Source: Thomson Reuters’ Web of Science, Science Citation Index/Expanded, 2014
Reasons for low scientific contributions

- dominated by donor priorities over national priorities and their outcomes ended up in grey publications.

- Skewed funding towards few disciplines and physical sciences & STEM makes only 29% of all research in SSA (World Bank, 2014)
Part II

Climate Science Research in Africa
Contribution of African climate scientists to IPCC is law but there research in climate is crucial for Africa
Major Gaps and Challenges in Climate Research in Africa

- Poor production and delivery of weather and climate services to support sustainable development;
- Weak collaborative research partnerships;
- Lack of pan-African strategic capacity building and development programme;
- Poor understanding of climate impacts across five priority GFCS areas; and
- Weak climate research (atmosphere-ocean coupling) that support resilience of vulnerable communities, ecosystems and livelihoods.
Recognizing the above short-comings and the growing demand for climate research, more than 300 participants drawn from top African climate scientists, policy makers, climate service providers, and practitioners gathered in Arusha to discuss

- the state of African climate science and
- existing gaps in climate knowledge
Climate Research for Development (CR4D)

- Strengthens the links between climate science research and climate information needs in support development planning in Africa

- an African-led initiative supported by partnership between ACPC-UNECA, AMCOMET, WMO and GFCS

- an outcome of the African Climate Conference 2013 (ACC-2013), which was held in Arusha, Tanzania

- Officially launched in 2015 during the third AMCOMET meeting in Cape Verde
CR4D also envisages to frame ideas to move science for development forward...

- **Science beyond academies**: Co-design, engagement with stakeholders

- **Re-negotiate process**: projects have to be participatory or engaging the local/national actors to enhance ownership
  - focus on national interest
  - avoid duplication
  - improve networking: Linking people to people for impactful research
  - sustained commitment from the leadership

- **Regional collaboration**:
Part III

CR4D Key Achievements
CR4D Key Achievements

Functional structure established and operationalized

• CR4D governance bodies
  – Oversight Board (OB)
  – Scientific Advisory Committee (SAC)
  – Institutional Collaboration Platform (ICP);

• Independent Research Review Panel
CR4D Key Achievements...

The overall CR4D governance structure
CR4D Key Achievements...

- a comprehensive study on institutions, initiatives and experts in Africa in the past 10 years conducted;
- sub-seasonal to seasonal ($S2S$) pilot projects conducted in West and Central Africa;
- regional trainings on $S2S$ forecasting and the Climate Information Services (CIS) conducted;

Research study and Capacity
CR4D Key Achievements...

- development of the 5-years CR4D strategy plan (2019-2023);
- the CR4D research grant management mechanism framework established, etc.

Others
CR4D 5-Years Strategy (2019-2023)

- 4 structural goals
- 3 knowledge frontiers
- 11 research thematic areas
CR4D Knowledge Frontiers (KF) and Research Thematic Areas (RTA)

1. Foundational climate science

- underpinning drivers and dynamics of climate variability and change
- climate forecast skill on multiple scales in time and space
- robust climate change projections for Africa
- prediction and attribution of climate and impact extremes
CR4D KF and RTA...

2. Impacts, information, translation, communication

- added-value in sub-seasonal to seasonal prediction
- understanding of climate impacts across GFCS priority areas
- CIS communication theory, barriers and opportunities
- metrics and analytics for evaluation and validation of skill and uncertainty in forecasting and projecting
3. Engagement with policy, development and decision communities

- Improved assessment of the uptake, application and user value of climate and impact information by stakeholders
- Enhanced capacity for co-production and transdisciplinary research
- Technology innovations for effective climate services

CR4D KF and RTA...
Part IV

WISER-Funded CR4D Research Grant
CR4D Research Grant

- aims at establishing an African-led, small but potentially scalable research grant management facility in African institution.
  - A comprehensive project document on WISER funded CR4D research definition, oversight and uptake developed,
  - £2,847,000 from DFID secured,
  - Grant managing institution selected through international bidding processes.
The first cohort of the research grant...

- Amount of fund per research grant is in the range of 100k to 130k USD,
- Project span time will be one year,
- 180 proposals received and reviewed by 5 independent reviewers,
- 30 applicants invited face-to-face interview (Gender, geographic distribution, thematic areas, originality, capacity building...),
- 21 research projects from eleven countries selected.

The WISER-funded CR4D research grant was officially launched on 3rd of June 2019 in Nairobi, Kenya.
Further information

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Thank you