



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**.





Reasons for low scientific contributions



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- (i) outdated lab buildings, which needs refurbishments to qualify the current biological and chemical safety standards;**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

<u>Country*</u>	<u>ERD (\$m)</u>	<u>GERD % of GDP</u>
South Africa	4,021.3	0.76
Kenya	652.0	0.98
Uganda	237.8	0.50
Ghana	150.2	0.38
Senegal	130.5	0.54

* 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** (*WorldBank, 2014*)





Part II

Climate Science Research in Africa



**Contribution of African climate scientists to IPCC is
low but their 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**



Arusha, Tanzania



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

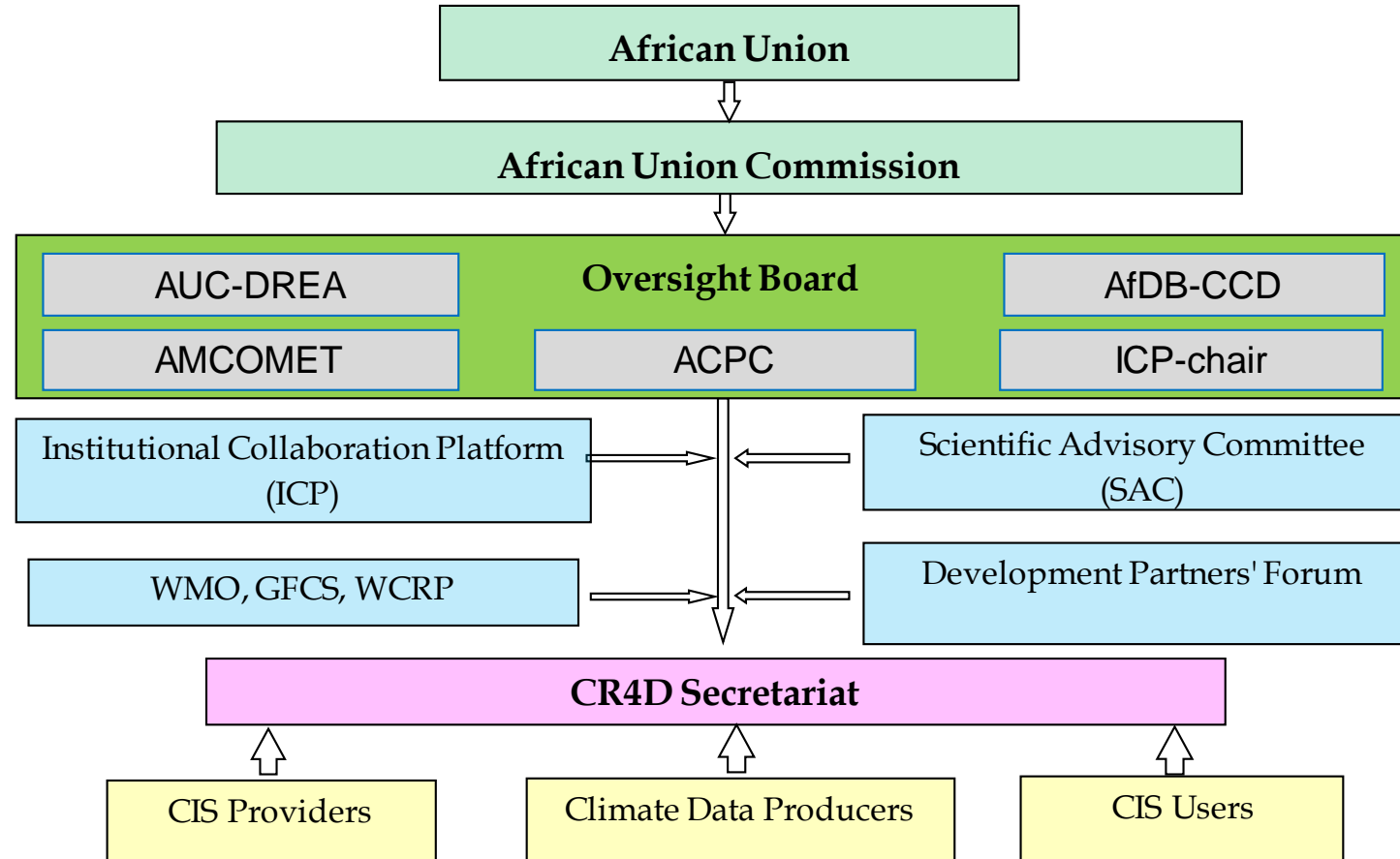
Functional structure established and operationalized

- **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...

**Research study
and Capacity**

- **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;**



CR4D Key Achievements...

Others

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

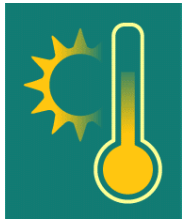


CR4D 5-Years Strategy (2019-2023)

- *4 structural goals*
- *3 knowledge frontiers*
- *11 research thematic areas*



CR4D Knowledge Frontiers (KF) and Research Thematic Areas (RTA)



**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**

1. Foundational climate science



CR4D KF and RTA...



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

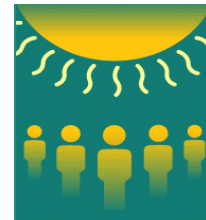
*2. Impacts, information, translation,
communication*



CR4D KF and RTA...



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

*3. Engagement with policy, development
and decision communities*



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