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IGAC Sponsored

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HOST INSTITUTIONS

FUNDING

PARTICIPANTS
Algeria, Botswana, France, Ghana, Kenya, Nigeria, Norway, South Africa, Sweden, United Kingdom, Zambia

BACKGROUND
IGAC sponsored this workshop to foster the development of an atmospheric science community in Africa as part of its effort to create National/Regional Working Groups and promote scientific collaborations on scientific issues in Africa.

IGAC Africa Science Activity: Scoping Workshop

IGAC Africa Scoping Workshop Participants

Excellent atmospheric science and air quality research is being done across Africa, but efforts are often limited in duration or regionally isolated, without strong collaboration between researchers across the continent. This hampers the development and impact of atmospheric research locally, regionally and internationally, and also limits the ability to perform cutting-edge research by both individual scientists and institutions, as resources are limited. A better understanding of atmospheric science in Africa would have large impacts on key societal issues for the continent (e.g. air quality, human health, agriculture, climate change). Currently, there is no formal forum or platform to connect African researchers focusing on atmospheric science research.

A three-day workshop was held at CSIR, Pretoria, South Africa in June 2017 with 31 participants from eleven countries. The participants came from universities, research councils, government, and NGOs. The workshop focused on addressing the following questions,

- What are the broad atmospheric science questions for Africa?
- What is the current state of Africa atmospheric science research? What has been done, what does it show, and does it meet stakeholder needs?
- How can the global community collaborate to work towards answering these questions?

Day 1 of the workshop began with scene setting presentations highlighting the current state and gaps in emissions, monitoring,

CSIR campus, Pretoria, South Africa

modelling, health impacts, and air quality management policies. In addition, all participants gave an overview of their interests in a lightning round of 1-minute presentations. Days 2 and 3 were the "working" part of the workshop, where participants discussed and answered the three guiding questions in break-out groups, followed by plenary discussions. This format supported a diversity of views being presented and discussed.

During the discussions, overarching research gaps and questions became clear, and were specifically related to emissions, observations and process modelling themes. This was identified across the range of scientists and stakeholders, and the participants highlighted the importance of developing a strong new African network drawn from the current continent's atmospheric science community with a remit for capacity building. The new body would incorporate oversight for continent-scale awareness and development activities to cover: young scientist training, continent-wide conferences, a commitment to open science, data sharing tools, interfacing with the global atmospheric science community, and developing new links with other researcher and stakeholder communities (e.g. urban planners). Development across these issues would allow the pressing issues to be addressed.

In summary, the workshop outcomes were three-fold: 1) The participants concurred that there was a need for an African Working Group on Atmospheric Science and mandated an interim steering committee made up of one member from each African country at the workshop to organize the first meeting of the Africa working group. This meeting will establish the working group, and elect the initial steering committee. 2) The participants developed a Statement of Intent (see text box insert, next page) detailing participant commitments to work together with the new working group to help addressing atmospheric science questions across the continent. 3) The participants will contribute to a position paper clarifying the workshop participants' understanding of current resource deficits, science area priorities, and increased collaboration opportunities. The paper will also highlight where research and resources might be lacking and are needed.

All participants expressed a desire for open and inclusive participation across all African nations and collaboration with the global atmospheric science community to enable scientists to achieve the large impacts on key societal issues for the continent which are possible and urgently needed. IGAC

Atmospheric Science across Africa: A statement of intent

Arising from the IGAC Africa Scoping Workshop, 7-9 June 2017
Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa

Excellent atmospheric science and air pollution research is being done across Africa, but efforts are often limited in duration, and locally or regionally isolated. A group of 30 atmospheric scientists and stakeholders, from across Africa and the world, participated in the IGAC Africa Scoping Workshop and discussed ways to begin to address this issue. We, the undersigned, are the attendees of this workshop and this document sets out our intent to: 1) unite atmospheric expertise across the African continent, and 2) to work with the global community to identify and address pressing atmospheric science questions that could improve the lives of the continent's citizens and protect the environment.

Uniting expertise across the African continent: Regional working group

A clear consensus emerged from the workshop participants to form a regional working group for atmospheric science in Africa, comprised of Africa-based scientists and the diaspora. An interim committee, appointed from the workshop's participants, has been tasked to take the next steps to establish this group and seek the guidance and sponsorship of the International Global Atmospheric Chemistry (IGAC) project. We are clear that IGAC should not be the only scientific community represented in this group, and that it must welcome and encompass a broad range of scientific expertise to advance atmospheric science for the benefit of the continent's citizens.

An initial meeting, with greater geographical and disciplinary representation from across Africa, will define the structure and governance of the Africa group. The interim committee will then dissolve itself and make way for a new leadership to take the group forward. We make no recommendations on the priorities of this group, except that it shall adhere to the principals stipulated and recommended by IGAC, and that it shall welcome and support scientists and stakeholders from all African nations, and from all career stages.

African science; global collaboration

It is clear to us that there are several pressing science questions where the African and international science community can work together. We recognize limitations in our understanding of anthropogenic and natural emissions, and the limitations in available observations. These lead to limitations at all scales (local to continental) in applying atmospheric science models to understand issues and impacts across the continent.

Our statement of intent is therefore to work through the new regional group of African atmospheric scientists to make progress in addressing atmospheric science questions, particularly those related to understanding air quality - an issue of great societal and economic importance. We will work together to define projects, seek funds, and engage complementary disciplines including social scientists, decision makers and civil society in our efforts. Our hope is that the nations of Africa can leap-frog the development timeline of the Global North, and that we can help facilitate a pathway to cleaner air.

Agreed by the workshop participants (listed alphabetically)

Katye Altieri, University of Cape Town, South Africa
Paul Beukes, North-West University, South Africa
Johan Boman, University of Gothenburg, Sweden
Douglas Booker, Lancaster University / NAQTS, UK
Christine Braban, Centre for Ecology and Hydrology, UK
Nana Ama Browne Klutse, Ghana Space Science and Technology Institute, Ghana
Roelof Burger, North-West University, South Africa
Constance Colnex Okuk, Kenya Meteorological Department, Kenya
Lisa Emberson, SEI York, UK
Ugwuoke Maximus Emeka, Lagos State Ministry of the Environment, Nigeria
Magnuz Engardt, Swedish Meteorological and Hydrological Institute, Sweden
Mathew Evans, University of York / UK National Centre for Atmosphere Science, UK
Rebecca Garland, CSIR, South Africa
Michael Gatari Gichuru, University of Nairobi, Kenya
Michael Gauss, Norwegian Meteorological Institute, Norway
Bode Gbobaniyi, Swedish Meteorological and Hydrological Institute, Sweden
Merabet Hamza, Centre de Développment des Energies Renouvelables, Algeria
Cheikh Kane, Red Cross Red Crescent Climate Centre, France
Hanlie Liebenberg-Enslin, Airshed Planning Professionals (Pty) Ltd, South Africa
Cathy Liousse, CNRS, France
Andriannah Mbandi, University of York, UK
Mohammed Iqbal Mead, Cranfield University, UK
Baagi Mmereki, University of Botswana, Botswana
Phenny Mwaanga, The Copperbelt University, Zambia
Mogesh Naidoo, CSIR, South Africa
Victor Nthusi, UNEP, Kenya
Philip Osano, Stockholm Environment Institute, Kenya
Odjugo Peter Ovuyovwiroye, University of Benin, Nigeria
Janine Wichmann, University of Pretoria, South Africa
Paul Young, Lancaster University, UK