

Africa Initiative Update

From: Raj Pandya

Based on notes from Rick Anthes and many individual conversations

To: africa@ucar.edu

Re: Update on the Africa Initiative

One of the primary goals of the Africa Initiative, as an initiative, is to provide a forum for learning about and sharing activities in UCAR, as a first step toward synergizing and leveraging the many activities already occurring and developing new ones. This memo is meant to initiate regular updates about the progress of the Africa Initiative.

Background

Notes on the Africa Initiative are available at

<http://www.soars.ucar.edu/AfricaInitiative.php>

Motivation/ Goals

The motivations for the Africa Initiative are

- Understand and address relevant African issues with tools and knowledge from the atmospheric sciences and in collaboration with stakeholders in Africa
- Mobilize UCAR/NCAR/UOP expertise to assist in strengthening atmospheric research capacity in Africa
- Foster long-term collaboration between UCAR/NCAR/UOP and African scientist and educators

Potential Projects

1. Radar Network in West Africa

Roelef Bruintjes has written a "Proposal to sustain a network of three C-band radars for the next three years in West Africa." Chris Thorncroft (University of Albany) and others have proposed to extend the MIT radar in Niamey; see proposal "The MIT Radar deployment in Niamey 2006: Preliminary results and a proposal to extend the deployment into 2007." Both of these are associated with the AMMA (African Monsoon Multidisciplinary Analysis) Program. An interesting aspect of these proposals is the involvement of Unidata and operating these radars remotely, e.g. from NCAR, as well as distributing the radar data in Africa. Roelef estimates it would cost \$338,178 for three years to do his project.

UCAR/NCAR/UOP People: Roelef Brujntes (lead), Arlene Liang

Potential UCAR/NCAR/UOP Collaboration: Unidata for data distribution, E&O and GLOBE for education, COMET for training

People (outside UCAR): Chris Thorncroft, Earle Williams (MIT)

Potential Partners: MIT, AMMA

2. Unidata in African Universities

Unidata, with its data, software tools and spirit of collaboration among universities, is an ideal model for connecting African universities with each other and globally.

Establishing a Unidata node in a single African university is the first step. Given our contacts through Ben Lamptey, the University of Ghana seems like a good place to

start. Others, like the University of Nairobi, could follow. Connections with the Radar project have already been established; Mohan and Roelof met and Roelof is taking materials to introduce Unidata to Africa.

UCAR/NCAR/UOP People: Mohan Ramamurthy, Roelef Brujntes,
Potential UCAR/NCAR/UOP Collaboration: Radar Initiative & WRF (additional local data sources), COMET for operational training, CISL/SCD for infrastructure
People (outside UCAR):
Potential Partners:

3. African WRF

Ben Lamptey is very interested in establishing a high-resolution version of WRF over northern Africa, for operational and research purposes. A climate version could also be developed. He is developing a prototype and could lead this effort from Africa when he returns to Ghana after his ASP Post Doc here at NCAR. The African WRF could be used to drive other models of importance to North Africa, including dust models, locust models and malaria models. The WRF possibility is of significant interest to people in both RAL and MMM. As I understand it, RAL is focusing on developing an end-to-end operational system including infrastructure, tools, training, and hardware. MMM's focus is on research questions around the genesis of easterly waves, monsoon flows, and mesoscale convective systems. Navigating these approaches in such a way that efforts complement rather than compete will be important.

UCAR/NCAR/UOP People: Ben Lamptey, Mitch Moncrieff, Arlene Liang, Tom Warner, Scott Swerdlin
Potential UCAR/NCAR/UOP Collaboration: Unidata for data distribution, COMET for training, E&O and GLOBE for education
People (outside of UCAR): Fred Samazzi, North Carolina State University
Potential Partners: NCEP, AMMA

4. Climate Modeling:

This is something that came up in the discussion at the UMC, primarily in comments by Jim Hurrell. This merits further investigation.

UCAR/NCAR/UOP People: Ben Lamptey, Jim Hurrell, Andrea Sealy
Potential UCAR/NCAR/UOP Collaboration:
People (outside of UCAR):
Potential Partners:

5. Education, Outreach and Training

From conversations with Shirley Malcom and a number of you, a key component of sustainability involves the direct participation in K-12 educational development. GLOBE has a strong presence in Africa and has developed partnerships that can aid this initiative. In Nigeria, for example, WMO and GLOBE are preparing a MOU that will allow employees of the national meteorological service to participate in GLOBE E&O activities as part of their job. UCAR E&O is investigating repurposing existing resources for an African context. COMET and RAL both have training materials, around using models and other topics, which can be extended to include African examples. With assistance from DLESE, the ASMET project continues to produce self-paced learning modules on meteorological topics of interest to African forecasters and meteorology students.

UCAR/NCAR/UOP People: Rebecca Boger, Roberta Johnson, Tim Spangler, Arlene Laing

Potential UCAR/NCAR/UOP Collaboration: COMET, E&O, GLOBE

People (outside of UCAR):

Potential Partners: GLOBE, African Regional Centre for Space Science and Technology Education in English

Funding

A quote from Rick Anthes: "As far as I know, we do not have a sponsor for any of this yet. Thus, we need to carry out planning and initial prototyping activities with internal funds. Many of the interested people are funded and this represents a huge resource. Program funding may be used in some cases. STORM funds from the programs, UCAR entities (NCAR, UOP, EO) and UCAR may be able to help."

Next Steps

1. Issue a summary of activities (this document) to Africa Initiative email and UMC. Copy UMC. **(That is this note)**
2. Establish a small Executive Committee to lead the planning, seek funding, etc. Need relatively detailed plans for the five projects, with budget, to "shop around." I would welcome your suggestions for executive committee members.
3. Follow up with Shirley Malcom about AAAS collaboration.
4. Explore other partners such as AMS and AGU.
5. Discuss with NSF, for possible funding opportunities.
6. Brief UMC and President's Council in October

Role of the Executive Committee and Coordinator

I have agreed to coordinate, and am in the process of developing an executive committee. Please let me know if you would be interested in joining this committee.

Based on conversations with a number of you, I have formulated a set of goals for my role as the coordinator of the Africa Initiative. The most important role, I believe, is to assist you in your worthwhile efforts. This assistance will come in a couple of primary forms:

- Coordination and Communication of activities: On the plus side; the idea is that by combining expertise of many UCAR/NCAR/UOP programs, we can build a comprehensive approach that addresses all facets of need: research capacity, infrastructure, education & training, scientific collaboration. On the negative side, a coordinated set of proposals might overwhelm potential funders and participants. One possible solution is a compelling vision that could engage a variety of supporters, with a menu of choices for engaging in that vision.
- An overarching framework: The goal is to develop, with stakeholders, an effective and engaging narrative for the Africa initiative that will engage new funders. As mentioned above, this should include a set of opportunities for different levels of support
- Enhanced visibility: Many have noted the concern that UCAR seems to be doing little in Africa, when in fact a lot is going on there. A simple goal of this office is to raise awareness of UCAR/NCAR/UOP's activities in Africa.

- A support structure: There will probably be a common set of issues for those who work in Africa, and the Africa Initiative will collect best practices and support those activities. JOSS will be invited to contribute their expertise as well.
- Liaison: New partners and supporters need a central point of contact. We propose to offer that.

Potential Collaborators and/or Funders

Shirley Malcom, AAAS.

Shirley initiated the UCAR level approach and wants to partner with us. She thought the AAAS was going to assign the development of this planning to someone (Vaughan Turekian?) Raj should follow up with Shirley to see where their activities stand and if they are still interested in working with us, and how they want to proceed.

Hassan Virjii (Deputy Director, international START directorate in Washington).

He has said he would be interested in writing joint proposals with us. Has a network in Africa and knows Ben Lamptey very well. He also knows Kathy Hibbard (IGBP, works with Dave Schimel) well.

Tony Hollingsworth (ECMWF)

Rick knows Tony well. He could be instrumental in helping plan, advise us, open doors with his contacts, help us with getting ECMWF data if we need it.

Bill Gail, Microsoft

Bill is a good friend of Rick and others here at UCAR. He is very interested in applications of Virtual Earth (Microsoft's version of Google Earth). He could be a connection here with all three of our proposed projects, especially perhaps the malaria/locust applications of African WRF.

Dave Rogers (WMO)

Mel Shapiro knows him well, and he might be a good WMO contact.

Fred Samazzi, North Carolina State University

Led "The Workshop for Enhancing Collaborative Research on the Environment in Sub-Saharan Africa."

Rick Rosen, NOAA

Has been in contact with Raj about a THORPEX connection and Bruce Hewitson (University of Cape Town and co-chair of the IPCC Task Group on Data and Scenario Support for Impact and Climate Assessment).

NSF Office of International Science and Engineering

Libby Lyons; sub-Saharan Africa

Osman Shinaishin; Near East (Egypt)

Jay Fein, NSF, says that Libby Lyons is really good. Someone should talk to her and see if we could meet with her for advice.