

# Meeting with the representatives of WMO Thorpex program and UCAR to discuss possible collaboration on the UCAR Africa Initiative

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## WMO Thorpex Attendees

David Burridge, [d.m.burridge@btinternet.com](mailto:d.m.burridge@btinternet.com); [dburridge@wmo.int](mailto:dburridge@wmo.int)  
Director of the THORPEX International Programme Committee (IPO) and Executive Board (EB)

Dr Michel Beland, [Michel.Beland@ec.gc.ca](mailto:Michel.Beland@ec.gc.ca)  
Meteorological Service of Canada, Chairman of WMO/CAS and Chairman of Thorpex International Core Steering Committee (ICSC)

## Other Attendees

Rick Anthes, UCAR, [anthes@ucar.edu](mailto:anthes@ucar.edu)

Raj Pandya, UCAR, [pandya@ucar.edu](mailto:pandya@ucar.edu)

Rebecca Boger, GLOBE, [rboger@globe.gov](mailto:rboger@globe.gov)

Reolof Bruintjes, RAL/NCAR, [reolof@ucar.edu](mailto:reolof@ucar.edu)

Bill Gail, Microsoft, [bgail@microsoft.com](mailto:bgail@microsoft.com)

Mohan Ramamurthy, Unidata, [mohan@ucar.edu](mailto:mohan@ucar.edu)

Tim Spangler, COMET, [tspang@ucar.edu](mailto:tspang@ucar.edu)

Mel Shapiro, NOAA, [mshapiro@ucar.edu](mailto:mshapiro@ucar.edu)

Note: Mel is a chair of the Thorpex Science Advisory Board (SAB)

Susan Friberg, UCAR Corporate Affairs, [friberg@ucar.edu](mailto:friberg@ucar.edu)

Benjamin Lampty, RAL/NCAR, [lamptey@ucar.edu](mailto:lamptey@ucar.edu)

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## Summary

David Burridge and Michel Beland were impressed by the UCAR level of activity in Africa and the plans for the AAAS/UCAR Africa Initiative (AI). They are willing to advocate for making AI a Region 1 pilot project for the WMO World Weather Research Program. This designation would not guarantee funding from WMO; but would put AI in a better position to receive funding from US and international agencies. Pilot project designation would also facilitate collaboration with African National Meteorological and Hydrological Services (NMHSs). UCAR was invited to present an overview of these activities at the WMO Region 1 meeting in January in Nigeria.

The group also discussed the need for a full time lead for AI, with funding from multiple sources, and the need for a better name for the initiative.

With Bill Gail, from Microsoft, there was discussion of how the AI might leverage consumer-oriented geospatial technologies, particularly MS Virtual Earth, to disseminate weather information in Africa.

## Meeting Notes

The meeting consisted of a series of short presentations, with discussion during and after the presentations. Many of the presentations are available at <http://www.soars.ucar.edu/AfricaInitiative.php>

### **Tim Spangler**

Tim described COMET's capability to support training for African students and operational forecasters by drawing from and adapting COMET's catalogue of existing materials. He suggested that the most effective way to do this is to augment materials with new African case studies created with African meteorologists. This is the successful model used in the ASMET program.

### **Raj Pandya**

Raj presented an overview of the African Initiative, describing the societal benefits of an operational research program in Africa, and the values that guide UCAR's participation in this initiative. Fundamentally, UCAR's goal is to support African Universities and NMHSs as they improve the quality of life in Africa by improving the accuracy and usability of weather forecasts and products based on weather forecasts, such as disease and locust forecasts. Raj presented an integrated package of UCAR support, beginning with enhanced observational and data distribution; continuing to include WRF modeling, operational forecasts and user support; and all supported by a long-term partnership with training at multiple levels including K-12.

### **Roelof Bruinjtes**

Roelof presented a brief overview of his work in Mali and Burkina Faso, and the potential for a multinational network to share radar data. He has worked in both countries to fix existing radar and developed a robust, PC-based system for the distribution of data. In both for both countries, real-time data from their radars is now available over the internet. There is high-level government support for these projects in both countries, and we are working on MOUs with both counties. This would facilitate longer-term collaboration, and is the first step toward a Western African regional focus. As part of this, Roelof described a planning workshop that Burkina Faso would like to host, with UCAR's logistical support, in January or February.

### **Mohan Ramarthy**

Mohan outlined Unidata's mission and philosophy, and described the existing networks for sharing real time meteorological data and analysis tools in North and South America. The South American project is particularly relevant, since it could provide a model for efforts in Africa. Mohan mentioned that 5 meteorologists from Mali and Burkina Faso are attending training sessions at UCAR this week, and intend to use Unidata products when returning home. Already, a site in Burkina Faso is using Unidata to acquire data.

### **Mitch Moncrief:**

Mitch presented slides prepared with Arlene Laing, who couldn't attend the meeting. They analyzed patterns of convection in sub-Saharan Africa and showed a marked seasonal and diurnal cycle, with convection generated in the lee of topography and propagating westward. Further, they were able to identify preferred zones for initiation and propagation; all of which is encouraging when considering predictability of convection. The research also has global implications since, like the summer convection in the US, environmental shear controls convective organization

### **Ben Lamptey:**

Ben presented a plan for running WRF operationally in Africa, beginning with the societal benefit from improved short-term forecasts and the current lack of high-resolution forecast models customized to Africa. He described an RAL strategy to

build capacity in Ghana over the next 3-4 years, and their efforts to partner with ZedX, Inc, a Pennsylvania-based company specializing in developing user-tools for decision support from weather forecasts. Ben will be spending time in Pennsylvania to learn about these tools and use that knowledge to in configuring the model output.

Discussion after Ben's talk included a description of the capacity in Ghana: including the University of Ghana, the Kofi Anan Center, and the Ghana Meterological Agency.

### **Mel Shapiro**

Mel concluded the UCAR presentations with a compelling description of the societal need, emphasizing meningitis. Meningitis is linked to severe dust, and Mel presented some analysis of existing Dust events. He also demonstrated WRF's ability to simulate dust events. Finally, Mel described how meteorology can be integrated into the context of multi-hazard warning and response system, and described current work with the WMO and World Health Organization toward that end.

### **Rebecca Boger:**

Rebecca outlined the mission and global scope of GLOBE, highlighting recent activities in Africa. GLOBE is a multinational program in which K-12 students collect meteorological and environmental data, contribute the data to a scientific database, and work with scientists to understand the data. In Africa, GLOBE includes 26 countries, and is negotiating with 4 more. Over 900 teachers have been trained in GLOBE protocols, and 550 schools are reporting data. A GLOBE Africa Consortium has been formed, and regional workshops are being held annually. In February 2008, the GLOBE Learning Expedition, an international meeting of GLOBE students, teachers, and scientists, will be in George, South Africa. Finally, GLOBE is working with the WMO to prepare a statement that would encourage NMHS employees to participate in GLOBE as part of their official duties.

### **Bill Gail**

Bill described Microsoft's interests in creating a communications platform based on geospatial organization of information, called Virtual Earth. This is primarily a consumer-driven technology, but Bill recommended leveraging that platform to make meteorological information available. As an example, the Virtual Earth will operate with cell phones, allowing users to find information based on pictures on their phone or their location. This technology could allow rural farmers to access up-to-date forecasts or real-time data.

## **Discussion**

There was some frustration over Thorpex's difficulty in addressing societal impacts, a difficulty similar to the one faced by UCAR. All agreed that improving the quality of life for African citizens, required a focus on the usability of information for different audiences; decision makers, rural farmers, the energy sector, hydrologists, resource managers, etc. We discussed the need to find partners in these areas, and considered several examples:

- Ranet, which uses community-operated FM radios to distribute weather and other information
- Regional Climate Outlook Forums – which invite users and forecasters to work together in seasonal planning
- Zedex Corporation – a private firm, with experience in Africa, specializing in developing products for different sectors from weather information

- USAID or WMO or the Gates Foundation – An established humanitarian effort in Africa who could use weather information (provided by African NMHSs) to do a better job
- Microsoft might provide a vehicle for disseminating the weather information, taking advantage of cell-phones, perhaps within the Virtual Earth framework.

There was a brief discussion of the African interest in weather modification, and way in which many NMHS's are able to secure continued funding because of this interest. By describing how modeling and monitoring can enhance the effectiveness of modification, this interest may provide an opportunity to build capacity in these areas.

Much discussion centered on the fit between these activities and WMO activities. David and Michel felt that these activities fit better under the WMO World Weather Research Program than under Thorpex, and they are willing to advocate for making AI a Region 1 pilot project for the WMO World Weather Research Program. This designation would not guarantee funding from WMO; but would put AI in a better position to receive funding from US and international agencies. Pilot project designation would also facilitate collaboration with African National Meteorological and Hydrological Services (NMHSs). UCAR was invited to present an overview of these activities at the WMO Region 1 meeting in January in Nigeria.

The meeting ended with a discussion of moving the AI toward an ongoing program, and two needs were identified.

- AI needs a full-time leader. Rick suggested that UCAR need not lead the effort, but instead contribute toward an effort led by other groups, like WMO. In that case, the leader should be from another organization, and UCAR might contribute to the funding.
- AI needs a less tentative name.