



African Representatives Use Satellite Data at CARBOAFRICA Greenhouse Gas Workshop

Greenhouse gas emissions were the focus of an international workshop at the University of Leicester attended by participants from Africa and the UK.

The Geography Department at Leicester, together with the European project CARBOAFRICA and the United Nations Food and Agriculture Organisation, held a Training Course on "Remote sensing of fire for national greenhouse gas accounting". 14 participants from African countries and the UK took part in the event.

The event aimed to train African experts in best practice of accounting for greenhouse gas emissions from fires for the purposes of reporting to the United Nations Framework Convention on Climate Change using satellite data.

Professor Heiko Balzter, Head of the Department of Geography at Leicester, said: "At the CARBOAFRICA consortium meeting in Ghana, our African partners made us aware of a significant training need for African specialists on how to use satellite remote sensing data of biomass burning to monitor greenhouse gas emissions to the atmosphere. We then agreed to hold the training at Leicester.



Above: Photo of all participants and lecturing staff in the foyer of the Bennett Building at Leicester.

"During the course the participants worked with satellite images of burned areas in Africa, calculated statistics for different land cover types and administrative areas from the data files and learned how to fill in the greenhouse gas accounting tables provided by the Intergovernmental Panel on Climate Change (IPCC). We also had several presentations on the state of the art in characterising fires from satellite instruments, how to use computer models to simulate greenhouse gas dynamics and how to estimate gas emissions from satellite and ancillary information.

"About 2 million square kilometres of savannah are burning in Africa every year. The world needs to know the amount of greenhouse gases that is released from these fires, particularly those other than non-carbon dioxide. This is because the amount of carbon dioxide released from savannah fires is taken out of the atmosphere when the savannah grasses regrow after the fire. However, other fire related emissions include carbon monoxide, methane, nitrous oxides and smoke particles that can affect human health and are also climatically active. This training course was the first of its kind and defines a new best practice how satellite data can be used to improve our knowledge of climate change. I got very positive feedback from all participants. They were a group from different cultural, national and professional backgrounds, which made the course very exciting and led to a great exchange of ideas."

The course was taught by recognised international experts: Ms. Sally Archibald, Council for Scientific and Industrial Research, South Africa Prof. Heiko Balzter, University of Leicester, UK Dr. Diane Davies, University of Maryland, USA Dr. Veiko Lehsten, University of Lund, Sweden Dr. Kevin Tansey, University of Leicester, UK Prof. Martin Wooster, Kings College London, UK

"The workshop was well organized, the notes well delivered, the instructors very competent and the content very beneficial. I personally plan to use the material in my lectures and get students do research in the areas we covered.", said workshop participant Dr. Anthony Gidudu, a lecturer at Makerere University, Kampala, Uganda."

An anonymous evaluation at the end of course found that 92% of the participants agree ("mostly agree" or "definitely agree") that they have developed an understanding of the state of the art in using remote sensing data of fire in a greenhouse gas account using GIS tools. 100% agree that they gained an understanding to estimate greenhouse gas emissions using burned area data. 92% say they have developed their skills in using the MODIS reprojection tool and ArcGIS. 92% agree that the course allowed them to take responsibility for their own learning and that this was encouraged. 100% found the course interesting. The weakest point was that only 53% agree that there was enough time to complete the exercises, while 15% would have wanted more time. However, 100% agree that they made useful contacts during the course and 92% that the course has practical relevance for their job. Textual comments made on the feedback forms included the following things the participants liked:

- "Meeting experts from different parts of Africa and Europe"
- "Excellent blend of lecture and practical"
- "Strong discussion and interaction"
- "Hands-on lab/computer sessions were quite useful, especially each participant had one PC"
- "Quantity of instructors"
- "Diversity of participants"

- “The facilities were great”
- “The networking opportunities”
- “All material given out on USB key”
- “The training environment was very conducive”
- “Good interaction between the participants and the resource staff”
- “Opportunity to try out practical approaches”
- “Individual modules linked together well and produced a coherent whole”
- “Openness to questions from participants”

Suggestions for improvement included:

- “Insufficient time to really explore accounting issues in depth”
- “Course should be expanded to two whole days”
- “At least 3 days of training using the handouts would be useful”

Professor Balzter added: "Overall, the workshop was a full success and I received very positive feedback from the participants, some of whom will use the teaching material in their home countries in their own education system."

Because of its success, all training materials will be made available online on the MIMAS web site at Manchester and are already available for download from the CARBOAFRICA project web page (limited until March 2010).

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