

Observation of desertification: Observation and analysis of processes of desertification as controlled by climate change and land use change

CIRCULAR 3

Date: Thursday, 6th September & Friday, 7th September 2007

Time: 10:30 – 18:30

Venue: Please note: The workshop has two venues:

On 6th September, from 10:30 to 12:00 we will be at the University of Hamburg, in the Department of Chemistry, Hall C (Martin Luther King-Platz 6). For site see conference Site map at:

<http://www.biologie.uni-hamburg.de/bt07/eht07map4.htm>. After lunch, we will move together to the Max Planck Institute for Meteorology (5 minutes walk), Bundesstrasse 53, 20146 Hamburg, Germany, Rooms: O 22 on 6th September 2007 and Room N 101 on 7th September 2007.

The session is partly listed as lecture session S48 within the frame of the Botanical Congress taking place on the occasion of the 125 birthday of the German Botanical Society– September 3rd – 7th 2007, (for further information also for accommodation and transport see: <http://www.biologie.uni-hamburg.de/bt07/es48.htm>)

In past years, desertification and land degradation have caused substantial environmental and societal implications. This has sparked a range of measures and initiatives, such as the formulation of the UN Convention to Combat Desertification (UNCCD). While decision-makers and politicians are seeking solutions on national and global levels, land managers are actively tackling the problem on local areas with a strong emphasis on prevention and mitigation strategies. Notwithstanding the scale addressed, it is obvious that any measure taken against desertification, or the design of dedicated early warning systems, must take into account the spatial and temporal dimensions of process driving factors. Equally important, past and present reactions of ecosystems to physical and socio-economical disturbances or management interventions need to be understood. In this context, remote sensing and geo-information processing support the required assessment, monitoring and modelling approaches, and hence provide an essential contribution to the scientific component of the struggle against desertification.

Significant climate- and human-induced changes to dryland ecosystems underscore the urgent need for robust information on quantitative and qualitative changes to water, soil and biodiversity as well as information on the demographic, social and economic status and trends in drylands. The creation of an internationally coordinated, globally comprehensive network of specific terrestrial sites for monitoring the status and changes of ecological features and processes in time and space is an important issue which will be discussed. Besides the discussion of suitable approaches to the monitoring of land cover changes, in-situ monitoring within an ecosystem context is of specific interest because it allows a deeper understanding of the processes involved.

Obviously, remote sensing methodologies and geo-information processing techniques have considerably matured in the past years. This is underlined by the wide range of application studies conducted in various parts of the world. Beside continuous conceptual improvements and refinements, the scientific community should promote the use of advanced methodologies in operational monitoring and assessment frameworks and in the context of sustainable land management. Still, the availability of appropriate data remains a crucial issue, strongly justifying actions such as the recently established GEOSS (Global Earth Observation System of Systems) or GMES (Global Monitoring of Environment and Security) initiatives. These build upon national capabilities for observation and dissemination of information for generating user-oriented information products in different fields, with a strong focus on the continuation of well-established data acquisition missions and the maintenance of long-term archives of remote sensing based data sets on local, regional and global levels.

This workshop is being carried out in partnership with the GLOBAL NETWORK OF DRYLANDS RESEARCH INSTITUTES (GNDRI)

Background information was compiled in collaboration with the UNCCD Secretariat



1st Workshop of the Working Group “Drylands Observation System” of the European DesertNet

Against this background, it is felt important to stimulate the conceptual development of integrated terrestrial and space-borne observation concepts in the field of desertification and land degradation. The topics of the lectures as suggested for 6th September 2007 are conceived as an interdisciplinary entrance gate to the follow-up discussions on Dryland Observations of the Working Group of European DesertNet on “**Dryland Observation System** - including spatial observation” which will take place on 7th September 2007 in Hamburg.

Observation Across Scales (Chair: Joachim Hill)

- 10:30 – 11:00 Key note: *Desertification – what to strive for and what to observe*
Uriel Nahum **Safriel**, Hebrew University of Jerusalem, Israel
- 11:00 – 11:15 *Ecologically-based approaches to land degradation monitoring*
Mónica García, Gabriel **del Barrio** & Juan **Puigdefábregas**, Estación Experimental de Zonas Áridas (CSIC), Spain
- 11:15 – 11:30 *Agriculture and observation for sustainable land use*
Weicheng Wu & Eddy De Pauw, Center for Agricultural Research in the Dry Areas (ICARDA), Syria
- 11:30 – 11:45 *Optimal herd composition for biodiversity maintenance – Case study of small stock farming systems in southern Namibia*
Stephanie Domptail¹, Alexander **Popp**² & Ernst-August **Nuppenau**¹,
¹Institut für Agrarpolitik und Marktforschung, Justus-Liebig University, Giessen, Germany, ²Vegetation ecology and nature conservation, University of Potsdam, Germany
- 11:45 – 12:00 *Dryland Biodiversity – Aspects for terrestrial Biodiversity Observation Systems*
Norbert **Jürgens**, Biocentre Klein Flottbek and Botanical Garden, University of Hamburg, Germany

12:00 – 14:00 Lunch

The Physical Environment and Observation (Chair: Norbert Jürgens)

- 14:00 – 14:15 *Imaging desertification syndromes from space – Regional assessment and monitoring strategies for a global problem*
Joachim Hill, Achim Röder & Marion Stellmes, University of Trier, Germany
- 14.15 – 14:30 *Modelling biodiversity patterns with remote sensing data*
Konstantin **König**, University of Frankfurt, Germany
- 14:30 – 14:45 *Population Analysis as Indicator for Processes of Degradation*
Anna Augustin and Manfred **Finckh**, BIOTA Maroc, University of Hamburg, Germany

Socio-economic Aspects and Observation (Chair: Mariam Akhtar-Schuster)

- 14:45 – 15:00 *National Strategy and Action Plan to Combat Desertification in Kazakhstan*
Kamila **Magzieva**, National Coordinator, Almaty, Kazakhstan
- 15:00 – 15:15 Suggested topic: *Spatial modelling of socio-economic aspects for Observation Systems*
Maud **Loireau**, Institut de Recherche pour le Développement, Centre de Montpellier, France

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15:15 – 15:30 Suggested topic: *Perceptual and institutional constraints on obtaining reliable knowledge about desertification*
Alan **Grainger**, School of Geography, University of Leeds, United Kingdom

15:30 – 16:00 Coffee Break

16:00 – 16:30 Key note: *Global Environment Monitoring - Aims and strategies of the European Commission*
Alan **Belward**, Environment Monitoring Unit, Institute for Environment and Suitability (IES), European Commission, Joint Research Centre

16:30 – 18:00 General Discussion (Chair: Norbert **Jürgens**)

Friday, 7th September 2007: Meeting of the Working Group of European DesertNet “Dryland Observation System”

Time: 09:00 – 15:00 (organised by Joachim **Hill**, Norbert **Jürgens** and Mariam **Akhtar-Schuster**)

Venue: Max Planck Institute for Meteorology, Bundesstrasse 53, 20146 Hamburg, Germany, Room: N 101

We herewith welcome all members of the Working Group “**Dryland Observation System**” to the two-day meeting on 6th and 7th September 2007 in Hamburg Germany which will partly be held within the frame of the German Botanical Congress.

In order to integrate further experts in our two-day meeting, we would like to inform you that we are in contact with the UNCCD in order to elicit further important scientists and research initiatives who could contribute significantly to our discussions on Dryland Observation. We will contact you as member of the Working Group and inform you of scientists who have been named to us. Together with you we would like to discuss and agree upon a short list of guests whom we as a working group would like to invite to Hamburg.

Attention: For any further logistic queries, kindly do not hesitate to contact us:

Norbert Jürgens: Norbert.Juergens@t-online.de and

Mariam Akhtar-Schuster: makhtar-schuster@botanik.uni-hamburg.de

Members of the Organising Team: Dr. Mariam Akhtar-Schuster, Prof. Dr. Joachim Hill, Prof. Dr. Norbert Jürgens, Mr Jens Oldeland, Mrs Annegret Saphir

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