

The International Workshop on Environmental Changes and Sustainable Development in Arid and Semi-arid Regions

Alashan Left Banner, Inner Mongolia, China
10–14 September, 2007

Arid regions, dominated by deserts, are characterized by a severe shortage of moisture, and a lack of perennial and integrated systems of drainage. Distributed over a very large range of temperatures, from the very hot to the very cold zones, arid regions cover about one third of the world's land surface and occur in every continent, including Antarctica. Although their environmental conditions generally represent the ultimate natural challenges for life, arid and semiarid regions are the cradles of human civilizations, as ancient Egypt, ancient Babylon, India and northern China are all in arid and semi-arid regions. Currently around 500 million people live in deserts and desert margins, amounting to eight percent of the global population. Therefore research on arid and semiarid regions is of great importance in both the natural and the social sciences. To exchange the latest knowledge and to foster future collaborative initiatives, "The International Workshop on Environmental Changes and Sustainable Development in Arid and Semi-arid Regions" was held in Alashan Left Banner, Inner Mongolia, China in September 10–14, 2007.

This workshop was co-sponsored by the International Geographical Union's Commission on Land Degradation and Desertification (COMLAND), International Association of Geomorphologists (IAG), National Natural Science Foundation of China, Chinese Academy of Sciences, Chinese Quaternary Association (CHIQUA), Geographical Society of China, PAGES (Past Global Changes), and IGCP500 (International Geological Correlation Program 500—Dryland Change: Past, Present and Future). The local organizer was the Institute of Geology and Geophysics, Chinese Academy of Sciences, supported by the Government of Alashan District, Inner Mongolia and the Government of Alashan Right Banner. The workshop was attended by 83 delegates from 17 countries, namely Australia, Egypt, Germany, Iceland, Italy, Kuwait, The Netherlands, Oman, Poland, Slovenia, South Africa, South Korea, Spain, Sweden, the United Kingdom, the USA and China.

The workshop was focused on four themes: 1) case studies and theories relating to land degradation and sustainable development in arid and semi-arid as well as sub-

humid regions of various continents; 2) comparisons of regional-scale reconstruction of Late Quaternary changes in the deserts of various climate zones (monsoon regions, subtropics and westerlies); 3) natural and human impacts on the landscape in various climate zones; and 4) interactions amongst aeolian, fluvial and lacustrine processes in desert margins.

Academician Jiaqi Liu, the President of the CHIQUA and the chairman of the organizing committee of this workshop, made the opening speech. Dr. Dayong Li, Assistant Governor of Alashan District, Inner Mongolia, delivered the welcoming address. Professor Andrew Goudie, President of IAG, and Professor Gudrun Gislodottir, Chair of COMLAND, addressed the workshop. The keynote talks were given by the following scientists: 1) Professor Arthur Conacher (University of Western Australia): A future for research in land degradation; 2) Professor Bojie Fu (Research Center for Eco-environmental Sciences, Chinese Academy of Sciences): Land degradation and rehabilitation in China; 3) Professor Andrew Goudie (Oxford University, UK): Desert dust: sources and trends; 4) Academician Ying Wang (Nanjing University, China): Discussions on the origins of the sands in the Chinese deserts; and 5) Professor Jianguo (Jingle) WU (Arizona State University, USA): A framework for sustainable development in arid and semiarid regions: with particular reference to the Inner Mongolia grassland.

Contributed papers, 55 in total, were presented in both oral and poster presentations, resulting in a very busy schedule. The contributed papers were based on original and innovative research carried out in all continents by the delegates in recent years. Both the oral and poster presentations were of very high quality, reflecting the most recent progress the scientific communities have made towards better understanding and more successful management of arid and semiarid environments. A half-day mid-conference

trip offered a good opportunity for delegates to see field evidence of environmental changes in the Helan Mountains and in the Tengger desert, both located relatively close to the workshop venue in Alashan Left Banner, where the landscape is dominated by extensive sand seas, steppes and mountains.

The workshop was warmly appreciated by the people and the Government of Alashan District, Inner Mongolia, demonstrating the great importance of geoscientific work to society. The local appreciation was distinctly demonstrated not only by the welcoming address at the opening ceremony, but also by local residents' friendly attitude that the delegates gladly experienced throughout the workshop as well as by outstanding banquets provided by the government of the district during the workshop and by the government of the Right Banner during the post-conference field trip. Both banquets were greatly enriched by superb Mongolian singing and dancing, and the many informative discussions concerning society's potential adaptations to global climate changes.

The workshop was accompanied by two (pre- and post-conference) optional and fully attended field trips, into the fields of re-activated and active dunes in Inner Mongolia, respectively. The pre-conference field trip, from September 7 to September 9, dealt with the reactivation of the stable dunes and rehabilitation measures (mainly by vegetation) in the Hunshandake Sandy Land (Yang *et al.*, 2007), located in the eastern part of Inner Mongolia. The post-conference field trip, September 14–17, offered the opportunity for participants to see the high sand dunes (often ca 300 m) and permanent lakes in the inter-dune basins, as well as palaeo-shorelines indicating late Quaternary climatic changes in the Badain Jaran Desert of western Inner Mongolia (Yang *et al.*, 2003). Both trips proved to be valuable additions to the workshop, and some delegates commented that the workshop and the field trips were "exciting, fun and intellectually stimulating". The opportunity to see the vast, complex landscapes being researched by Chinese scientists was particularly appreciated by their international colleagues, as were the meetings with some local farmers. An enhanced



Anthropogenic induced reactivation of formerly stable dunes in the Hunshandake Sandy Land, eastern Inner Mongolia.



Group photo on post-conference field trip.

appreciation was also obtained of the long and complex history of this part of the world.

At the closing ceremony, Jiaqi Liu thanked all delegates for their great contributions, the Government of Alashan District, and the venue of the workshop (Longxin Hotel) for their much-appreciated support. Andrew Goudie, on behalf of the IAG, praised highly the work of the local organizers, and the presentations by delegates, in particular by the younger ones; and extended warm thanks to the funding agencies for their support. Xiaoping Yang, secretary general of

the organizing committee, received the COMLAND Award from the Commission's Chair, Professor Gudrun Gisladottir.

Arrangements have been made to publish the scientific outcomes of this workshop in special issues of two internationally well-known journals. The authors were required to revise their papers in the light of the comments and advice received at the meeting. Currently, papers on land degradation and desertification are being considered for a special issue of *Geographical Research* (the March issue of 2009, vol. 47 no. 1), and man-

uscripts on geomorphology and palaeoenvironmental changes are being handled for intended publication in *Quaternary Research*.

References

- Yang X., Liu T., and Xiao H., 2003. Evolution of megadunes and lakes in the Badain Jaran Desert, Inner Mongolia, China during the last 31000 years. *Quaternary International* 104, 99-112.
- Yang X., Ding Z., Fan X., Zhou Z., and Ma N., 2007. Processes and mechanisms of desertification in northern China during the last 30 years, with a special reference to the Hunshandake Sandy Land, eastern Inner Mongolia. *Catena* 71, 2-12.

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The presentations, given at the Conference may be grouped into following main topics:

- Neotectonics, geodynamics and paleogeography of coastal zones (Bitinas, A., Damušte, A., Dobracki, R., Jegliński, W., Koszka-Maróń, Raukas, A., Relisko-Ryba, J., Miotk Szpiganowicz, G., Uścińowicz, S., Uścińowicz, G., Zachowicz, J.);
- Glaciotectonics (Aleksa, P., Bitinas, A., Piotrowski, A.);
- Satellite interferometry and geophysics (Graniczny, M., Cyżenie, J., Korabliova, L., Mikulenas, V., Minkevičius, V., Satkūnas, J., Wasowski, J.);
- 3D modelling of the subsurface (Dominik, W., Juschus, O., Mazurowski, M., Schroeder, J. H.);
- Seismicity and geohazards (Pačesa, A., Lazauskienė, J., Graniczny, M., Piątkowska, A., Kowalski, Z., Satkūnas, J., Čyžienė, J., Kanopienė, R.);
- Hydrogeology of Salt domes (Holzbecher, E., Mazurowski, M., Kohfahl, C., Bączik, A., Dobies M.);
- Geomorphology and morphotectonic studies (Piotrowski, A., Graniczny, M., Satkūnas, J., Schroeder, J. H., Bregman, E., Bosch, A., Koomen, A. J. M.);
- Public education, geoparks (Schroeder, J. H.);

Morphotectonics of the European lowland areas

Vilnius, Lithuania August 27–31, 2007

The conference "Glaciotectonic structures, palaeobasins and neotectonic setting" (August 27–31, 2007, Lithuania), organized by the Lithuanian Geological Survey and the Polish Geological Institute was held under the auspices of the European Union Project MELA (Morphotectonic map of the European Lowland Area), Contract No. MTKD-CT-2004-003108, <http://www.mela.3dsign.pl>). The event was the 2nd Conference of the MELA project.

The MELA conference was focused on discussion of the relationship of glaciotectonic structures, Quaternary palaeobasins and neotectonic setting, the geological modeling and visualization, digital mapping of subsurface relief and remote sensing. However the methodology of creation of the Morphotectonic Map of the European Lowland Area was the main subject of the Conference.

The territory of Lithuania can be regarded as one of classical regions having a Quaternary cover formed during continental glaciations. The average thickness of cover

is 130 m and varies from 10–30 m in the northern part of Lithuania—the area of prevailing glacial erosion—up to 200–300 meters in marginal highlands and the buried valleys of palaeoincisions. Through the Quaternary Period Lithuania was covered by continental ice sheets that originated in Fennoscandinavia and which correspond to all glaciations known so far in Eastern Europe, thus producing a very complicated structure for the Quaternary in Lithuania.

The relationship of Quaternary structure with morphotectonic phenomena was demonstrated and discussed during the conference and field excursions and the knowledge gained meshed with the scientific focus of the Conference.

The Conference was attended by 49 geoscientists from Denmark, Estonia, Germany, Lithuania, The Netherlands and Poland.

During the conference 20 oral presentations, poster session, workshops in three thematic groups and 1.5 day field excursion were scheduled and arranged.