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COMMISSION ON LAND USE/COVER CHANGE**

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PROGRESS OF IGU-LUCC

The International Geographical Congress (IGC) in Glasgow, Scotland in August 2004 was a milestone in the life of IGU-LUCC. It marked the completion of eight years of activity under the leadership of Professor Yukio Himiyama. That leadership was characterised by dynamism, and both the establishment and the performance of the Commission were largely due to Professor Himiyama's initiative and drive. IGU-LUCC has much for which to be grateful to him: perhaps the most fitting way in which to express this gratitude is through a continuing high level of activity.

The Programme of the IGC listed some 10 paper sessions under the auspices of IGU-LUCC, with 45 papers. The paper sessions included both regional and thematic issues of land-use change. Among the former were 'Land Use/Cover Change in Central and Eastern Europe', while examples of the latter included sessions on 'Information and methodology' and 'Land cover changes and forests'. In addition, two sessions on modelling, with seven papers, were jointly organised with the IGU Commission on GIS. Overall, IGU-LUCC activities featured prominently at the Congress.

Immediately before the main Congress, a conference/excursion on the theme of 'Land use and rural sustainability' was organised jointly with the IGU Commission on the Sustainability of Rural Systems. Some 70 persons from around 20 countries participated in the event, which began in Aberdeen in the north-east of Scotland before travelling through the Scottish Highlands to the Isle of Skye and ending in Glasgow on the eve of the main Congress.

Since the Congress, activity has continued. Several members of the Commission contributed to the production of a major encyclopaedia on land use/land cover change, while 2005 saw the publication of an edited volume based on the 2003

conference/excursion, as well as the *Proceedings* from the 2004 event (see *Publications* below). The Open Meeting of the International Human Dimensions Program at Bonn, Germany in October 2005 was a major event, at which one of the themes was 'Land use/land cover change'. Many members of IGU-LUCC were involved in presenting papers and in organising sessions. Given the salience of the IHDP event, a separate IGU-LUCC conference was not arranged for 2005, but a gathering took place during the Open Meeting.

The Bonn event marked the formal completion of the IGBP Programme on Land Use/Cover Change (LUCC) and the inauguration of its successor in the form of the Global Land Project (GLP). Interaction between IGU-LUCC and LUCC has increased in recent times, and we look forward to active involvement and collaboration with GLP.

Issues of land use/cover change have been attracting increasing attention in recent years, with widening acknowledgement of their significance in global environmental change. Geographers, with their characteristic focus on interactions between humankind and the natural world, are uniquely positioned and equipped to contribute in this field, and a primary function of IGU-LUCC is to facilitate and optimise that contribution. Major events are scheduled for Brisbane and Cairns in Australia in 2006, and then in Central Europe in 2007 before the next IGC in Tunisia in 2008. In addition to such occasions, however, the Commission can also facilitate networking and collaboration among researchers, and this role is extremely important. The commitment of many existing members is much appreciated, and new members will be warmly welcomed.

Alexander Mather, Chair, IGU-LUCC

PUBLICATIONS

Understanding Land-Use and Land-Cover Change in Global and Regional Context (Eds. Elena Milanova, Yukio Himiyama, Ivan Bicik) was published in 2005 by Science Publishers, Inc. (<http://www.scipub.net>, sales@scipub.net).

One of the objectives of IGU-LUCC is to promote the study of land use/cover change throughout the world as a geographical research focus. IGU-LUCC has been particularly interested in fostering regional studies that integrate regional information and knowledge into wider frameworks. This book is a result of activities of the IGU-LUCC Workshop in Moscow on 'Global and regional land use /cover change' and the

related session on 'Land use dynamics and sustainable development' in the International Conference on 'Society and Environment Interaction under Global and Regional Changes' held in Russia (Moscow – Barnaul) in July 2003. The IGU-LUCC Workshop and the session in the International Conference consisted of paper and poster presentations, as well as site visits in the vicinity of Moscow and on Altai to be acquainted with regional LUCC studies. The topics of papers include global trends of LUCC/ interaction of global environmental changes and LUCC/ integration of environmental, socio-economic and historical knowledge of LUCC following the concept of DPSIR/ documenting, classification and mapping LUCC issues/ regional diversity of land use/cover changes/ regional and local trends of LUCC under different human impact in comparison with general different-scale trends/land-use management and policy in different regions.

The papers collected in this book offer important points of view, insights and examples that contribute to understanding and development of global and regional approaches to LUCC studies. The main idea was not the static description of land use/cover changes at different levels, but the explanation of causes and impacts, including both the biophysical and socio-economic dimensions. It is expected that the book will be useful for communities involved in LUCC studies as well as general environmental researches in global and regional perspectives.

Most of papers were presented in the above-mentioned meetings in 2003. We wish to thank Professor N.S. Kasimov of Moscow State University and Professor V.M. Kotlyakov of Russian Academy of Sciences for hosting them and also all who attended them, presented papers and participated in discussions. Particular thanks are also due to the IGU-LUCC members who contributed a lot to this book.

Land Use and Rural Sustainability: Proceedings of Conference on Land Use and Rural Sustainability. Aberdeen, Scotland 10-14 August 2004; 184 pages (ISBN 92-9502709-4; £10.00)

This volume contains some 29 papers based on presentations at the pre-IGC conference/excursion organized by IGU-LUCC and the IGU Commission on Sustainability of Rural Systems. As the title implies, the papers are on themes related to land-use change and to rural sustainability. They include both theoretical and empirical contributions: amongst the former is a paper on sustainability as 'stable adaptation', while the latter include contributions on land use and sustainability issues with settings ranging from Iceland to Brazil. Further details are available from, and orders should be sent to, a.mather@abdn.ac.uk

Our Earth's Changing Land: An Encyclopaedia of Land-Use and Land-Cover Change (Two Volumes) Edited by Helmut Geist. Greenwood Press, Westport NH and London. 792 pages ISBN 0-313-32704-1, \$125.00 Further details from <http://www.greenwood.com>

This major publication, edited by the Executive Director of LUCC and member of the Steering Committee of IGU-LUCC, represents a landmark in work on land use/cover change. It contains more than 300 entries written by almost 100 contributors, many of whom are members of IGU-LUCC; publication date for Vol. 1 (A-L) is December 2005, and January 2006 for Vol. 2 (M-Y). It is expected that this encyclopaedia will be a standard reference work for years to come, and it is pleasing that IGU-LUCC has been closely associated with its production.

Journal of Land Use Science

The first issues of a new outlet for land-use research are expected to appear in 2006. The *Journal of Land Use Science* is being launched by the publishers Taylor and Francis, under the editorship of Professor Richard Aspinall of Arizona State University. Several members of the Steering Committee of IGU-LUCC are on the editorial board. Publication will involve four on-line issues per year, consolidated in one hard-copy volume. Submission of papers for consideration for publication is now invited: papers should be sent to Prof. Richard Aspinall, Department of Geography, Arizona State University PO Box 870104, Tempe, AZ 85287-0104, USA Richard.Aspinall@landusescience.org. Further details are available from <http://www.tandf.co.uk/journals/titles/1747423X.asp>.

The encyclopaedia and the new journal signify a maturing of work on issues relating to land-use change. They represent, respectively, a state-of-the-art review of our understanding of land-use change at the turn of the millennium and an important new vehicle for the reporting and dissemination of land-use research.

IGU-LUCC-RELATED SESSIONS AT THE OPEN MEETING OF THE INTERNATIONAL HUMAN DIMENSIONS PROGRAM, BONN 2005

While land use/cover change was a major theme of the Open Meeting, two sessions were particularly closely associated with IGU-LUCC activity and involved IGU-LUCC members in central roles. One focused on 'Land Use/ Cover Change and Environmental Issues in Asia', while the topic of the other was the concept of the 'Forest transition'.

Land-use change in Asia

The Fifth International Colloquium on Land Use/ Cover Change and Environmental Issues in Asia was held at Geography Institute of University of Bonn, Oct. 12th, 2005. As a special thematic session of the 6th IHDP Open Meeting, this Colloquium was an 'embedded conference' within the OM in the presence of researchers from all over the world. The Colloquium was sponsored by the IHDP OM and National Natural Science Foundation of China (NSFC). The co-chairs of the Colloquium are Prof. Peijun Shi from Beijing Normal University, China and Prof. Yohei Sato from National LUCC Committee of Japan. Besides, the members of scientific committee includes Prof. Dennis Ojima from US, Prof. Yukio Himiyama from Japan, Prof. Günther Fischer from IIASA and Prof. Xiubin Li and Prof. Jiyuan Liu from China.

The theme was 'Land Use/ Cover Change and Ecological Security Assessment in Asia'. Asia now is experiencing faster economic growth and land use/ cover change than any other region in the world. Fast land-use changes induced rapid land-cover change. Due to irrational land resource utilization, ecological security issues, including frequent floods, drought and dust storms, accelerated soil erosion, deteriorating water quality, and sharply decreasing biodiversity, have had a deep impact on the sustainable development of Asia. This problem is now entering the earth system through global cycling and feedbacks. Asia is not only one of the regions experiencing the greatest land use/ cover changes, but is also a 'critical region and vulnerable region' in global change. Discussion at the Colloquium focused on several topics including: 1) Dynamics and modelling of land use/ cover change in Asia; 2) Affecting mechanism of land use/ cover change on soil erosion and food productivity in Asia; 3) Effects of land use/ cover change on dust storm disaster in Asia; 4) Effects of land use/ cover change on floods and droughts in Asia; 5) Effects of land use/ cover change on living health in Asia; 6) Affecting mechanism of land use/ cover change on rural sustainability.

Some 80 researchers from 14 countries and districts submitted abstracts: 40 were accepted as papers or posters. Researchers from US, Japan, Indian, Indonesia, Mongolia and China made thematic presentations: Prof. Peijun Shi, Prof. Dennis Ojima and Prof. Yukio Himiyama made keynote presentations relevantly focusing on LUCC and ecological-security issues in China, Mongolia Plateau and Japan. The latest scientific findings about the inter-acting mechanisms between land use /cover change and ecological changes and the impact of human activities on eco-environmental changes in Asia were presented and discussed. Delegates believe that eco-environmental problems in Asia are closely related to fast economic development in the continent and global warming, within which dust storms, floods, land degradation and water-resourceissues have direct linkages to the changes of temporal-spatial patterns of land use and industrial structural transition of Asia. Finally, participants agreed that to guarantee the sustainable development of Asia, attention should be paid

to the mechanisms of human-environment interaction that lead to risk and vulnerability, and that scientific studies should be undertaken to deepen our understanding of the dynamics of the human-environment system in order to increase resilience and adaptability of the system. To do so, we should increase the efficiency and benefit of resource utilisation and decrease waste emission by adjusting industrial structure and developing a recycling economy. Also, we should build eco-environmentally friendly regional development paradigm by adjustment in land-use structure and pattern aiming at eco-environment security.

Prof. Peijun Shi,
Vice Ph D., Vice President, Institute of Disaster and Public Security, College of Resources Science and Technology, Beijing Normal University, China

The forest transition

The ‘forest transition’ is the term applied to the change from net deforestation to net reforestation that has taken place in many European lands and in some countries in Asia and the Americas. Deforestation in many countries continues to give rise to concern, especially in relation to global climatic change and loss of biodiversity, and therefore it is important that we improve our understanding of the causes of the change from deforestation to reforestation in the countries where that has occurred. A large attendance enjoyed eight paper presentations, from fields such as economics and human ecology as well as from geographers, on both general issues relating to forest transitions and to case studies from settings as diverse as Brazil and Slovenia. It is expected that some of the papers will appear in a thematic issue of *Journal of Land Use Science* in 2006, and it is hoped that IGU-LUCC can function as a network in which further international collaboration on forest-transition research can occur.

Oliver Coomes, McGill University, Montreal, Canada
Alexander Mather, University of Aberdeen, Scotland

GLOBAL LAND PROJECT

The Global Land Project (GLP) was launched in October 2005. It is a joint research project of the International Geosphere-Biosphere programme (IGBP) and the International Human Dimensions Programme (IHDP): the underlying theme is the coupled human and environmental system. It is intended to build on two projects – the Land Use Cover Change (LUCC) project that concluded in 2005, and the Global Change and Terrestrial Ecosystems project (GCTE). GLP’s *Science Plan* sets out the research agenda for the coming decade. It lists three main themes: ‘Dynamics of land systems’, ‘Consequences of land system change’, and ‘Integrating analysis and

modeling for land sustainability', and is clearly of interest to IGU-LUCC members. It is accessible at <http://www.glp.colostate.edu/plan.htm>

THE EARTH COLLABORATORY
Integrating global and local perspectives on tropical deforestation

While impressive gains have been made in understanding the Earth's environment as a 'whole system', through computer modelling techniques and satellite-based observations, there is still a large 'disconnect' between global, top-down views of changing planetary conditions, and the local, bottom-up perspective of how humans affect and live in a changing environment. Critical place-based information is often 'washed-out' in global views, but global environmental problems are not merely the sum of local conditions. True integration of both local and global perspectives is requisite to answering key science questions and ultimately to cultivating a more sustainable future.

The Center for Sustainability and the Global Environment (SAGE) is leading an effort to build an *Earth Collaboratory* to serve as an interface between global environmental scientists and local experts drawn from all over the world. We are attempting to integrate the globally-consistent 'top-down' view with the thematically-rich 'bottom-up' view provided by place-based science. The Earth Collaboratory builds on new collaborative Internet-based technologies (e.g., Google Earth, Wikipedia) to bridge global and place-based science and connect experts and citizens.

The prototype Earth Collaboratory focuses on tropical deforestation and subsequent land-use practices. By querying local experts, we hope to achieve a level of 'ground-truth' for global maps of tropical deforestation, revise the data set, and incorporate and share place-based data sets that will dramatically enrich the data content and provide a genuine exchange of ideas of how deforestation is manifest from both global and local perspectives. Regional networks of experts will provide a minimal level of editorial oversight.

We invite your feedback and participation in this evolving effort. Please contact Holly Gibbs (hkgibbs@wisc.edu) or Jon Foley (jfoley@wisc.edu) for additional information or to become part of the Regional Network of Tropical Deforestation Experts.

Please visit www.earthcollaboratory.org.

Holly Gibbs
University of Wisconsin-Madison

FORTHCOMING IGU-LUCC MEETINGS

IGU Regional Conference: Brisbane

An IGU Regional Conference with the theme of 'Regional Responses to Global Changes - A view from the Antipodes' will take place in Brisbane, Australia July 3-7, 2006. It is proposed that IGU-LUCC will be centrally involved in four paper sessions, with two each on 'Drivers of land-use change' and on 'Multifunctionality'. The latter will be organised jointly with the Commission on Sustainability of Rural Systems. Registration is now invited: further details are available at <http://www.igu2006.org/>

Post-Congress Scientific Excursion: Cairns

IGU-LUCC is joining the Commission on Sustainability of Rural System and the Commission on Local Development on an event of which the theme is 'Sustainable development in Tropical Far North Queensland'. Organised by Roger Epps and Tony Sorensen of the University of New England, it will be based in Cairns from July 9-14. Paper sessions will alternate with study visits and excursions, including one to the Great Barrier Reef.

This event promises to be very interesting and enjoyable, and can be participated in either as an 'add on' to the Regional Conference or as a 'stand alone' event. Pre-registration is now invited, with details from the IGU-LUCC website (<http://www.abdn.ac.uk/~geo028/igulucc>) and further information is available from Tony.Sorensen@une.edu.au

Central Europe 2007

An IGU-LUCC conference/excursion is planned to take place in Central Europe in early September or late June 2007. Starting from Vienna, it will visit Czechia and Slovakia before ending in Ljubljana in Slovenia (the itinerary may be reversed, beginning in Ljubljana and ending in Vienna). Excursions and visits will alternate with paper sessions. Central Europe is a region with outstanding historical records of land use, and in which much land-use research is taking place. It should prove to be an excellent venue for an IGU-LUCC meeting.

IGU-LUCC MEMBERSHIP

Please contact Alexander Mather (a.mather@abdn.ac.uk) for further information or if you would like to be associated with IGU-LUCC.

The IGU-LUCC website is at <http://www.abdn.ac.uk/~geo028/IGULUCC/igulucc.htm>