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COMMISSION ON LAND USE/COVER CHANGE**

**NEWSLETTER**

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**PROGRESS OF IGU-LUCC**

The biggest events of IGU-LUCC in 2006 were IGU-LUCC sessions in IGU 2006 Brisbane Conference and the Joint IGU Commission Conference co-organized by Commissions on Sustainability of Rural Systems, Local Development and Land Use/Cover Change held in Cairns in July 2006.

The Brisbane conference was held at Queensland University of Technology, attracting some 1000 participants from about 50 countries/regions. IGU-LUCC organized three sessions, where twelve papers were presented. The session chairs decided to issue the proceedings of those papers, and Professor Ivan Bicik assumed the role of its editor.

The Cairns conference was attended by about 70 participants from 23 countries, and 38 papers were presented. The conference is remembered for its interesting papers and sometimes heated discussions, impressive excursions with a little bit of rain and storm, and friendly atmosphere, thanks to the efforts of Professors and Mrs. Tony Sorensen and Roger Epps. The three-day excursions included visits to a large sugar mill, a coffee industry, and an exciting river and island cruise & dive. The local organizers are planning to issue the conference proceedings.

Twenty five or so papers related with LUCC were presented in the two events, and national to regional case studies and cross-national comparative studies of land use changes were conspicuous. Although IGBP/IHDP LUCC Programme was officially closed a year ago, IGU-LUCC remains active in order to pursue the LUCC's uncompleted mission, particularly Focus 1 of it, i.e. comparative case study analyses, and to contribute to the newly born Global Land Project (GLP), the successor of LUCC.

IGU is among the Founding Partners of the UN International Year of Planet Earth (IYPE), and Professor Anne Buttimer, the past president of IGU, represents IGU-IYPE, i.e. IGU contribution to IYPE. On the occasion of the Brisbane conference, there was a meeting of IGU-IYPE, and I agreed to assume leadership role on the theme "Resources" of IYPE. IGU-LUCC is strong in land resources and rural sustainability, which is closely related with the use of various resources, and its contribution to IYPE in these respects is particularly promising. For more detail, see the section of IGU-IYPE.

I have been asked by Professor Elena Milanova, the IGU-LUCC vice chair, to write this in place of Professor Alexander Mather, the chair, as he is in hospital. I wish Sandy's quick recovery, and believe in IGU-LUCC's uninterrupted stride during his absence. Let us meet in Central Europe in 2007, where the Commission has its next conference.

Yukio Himiyama, SC member and Past chair, IGU-LUCC

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**LINKS OF IGU-LUCC WITH OTHER PROGRAMS**

**IGU-LUCC and International Year of Planet Earth**

At its meeting on June 27-July 1, 2006 in Brisbane, the IGU Executive Committee asked Professor Anne Buttimer, the past president of IGU, to design a strategy for IGU's potential contributions to the UN International Year of Planet Earth. She met with colleagues who were willing to assume leadership

and liaison roles for some of the main IYPE themes. Each theme leader has issued an open invitation letter inviting contributions on the primary questions to be addressed within particular themes, outlining also a proposed time-table of activities between now and August 2008 (XXI IGC in Tunis) which would be a culminating event for IGU contributions to IYPE.

On the invitation of IGU Executive Committee, I have agreed to assume the task of theme leader for contributions by geographers to the IYPE theme of Resources. I believe that my involvement in IGU-LUCC can help, as land is not only an important resource itself, but also it is closely related with the use of other resources.

Resources, like the other themes, is not standing alone in IYPE. Instead, it is closely linked with the other themes, e.g. soil, which is mainly treated in the theme of Soil, is an important resource which supports biosphere (Earth & Life), and ocean, which is mainly treated in the theme of Ocean, is full of various mineral, biological and other resources. An important role of geographers, who have holistic and multidisciplinary eyes, will be to present comprehensive views of resources including not only mineral resources but also land, scenic places supporting tourist industries and other things, filling various gaps of understanding related with them. Drawing global and regional pictures with the aid of maps and GIS will be another important challenge of geographers.

With these in mind, I propose to focus on the following key questions, without excluding others:

- How can we expand and improve our knowledge base of resources for sustainable development?
- How can our improved knowledge base contribute to betterment of society and the environment?
- How can we improve the ways we use resources with the help of geosciences?
- How can land-use planning skills be used to resolve conflicting aims of different land users?
- How can we lessen adverse effects associated with resource development?
- How can we contribute to solving or easing land degradation or other resource-related problems?
- How can we communicate better with society in general, and with students in particular?

Geoscience here includes geography and geographical information sciences, of course.

As theme leader it will be my responsibility to act as a key facilitator for geographers who wish to contribute to IYPE. IYPE Science Programme is essentially 'bottom-up' in approach, hence inclusive rather than exclusive. It means that we should not be passive. I would like to receive your forward-looking suggestions, information on your research findings and other information and materials which speak to the questions listed above and in the IYPE brochure (see <http://www.esfs.org/>), and also examples of places and mechanisms used to communicate your findings in the media, education and the wider public. Please also send me addresses of colleagues who work on these research questions. Your suggestions and recommendations are highly appreciated. The contribution of IGU-LUCC members in the theme of Resources is crucial for its success.

Yukio Himiyama

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#### **GLOBAL LAND PROJECT (GLP) - Information details from GLP website**

The Global Land Project (GLP) is a proposed joint research project for land systems for the International Geosphere-Biosphere Programme ([IGBP](#)) and the International Human Dimensions Programme ([IHDP](#)). The Global Land Project Science Plan represents the research framework for the coming decade for land systems. This development of a research strategy is designed to better integrate the understanding of the coupled human-environment system. These integrated science perspectives reflect the recognition of the fundamental nature of how human activities on land are affecting feedbacks to the earth system and the response of the human-environment system to global change. The Global Land Project Science Plan has been defined by scientists sponsored by the IGBP and the IHDP.

The focus of the new project will be largely "land-centric" which includes the people, biota, and natural resources (air, water, plants, animals, and soil). The strategy presented here critically emphasizes changes in the coupled human and environmental system. The research planning builds upon the extensive heritage of IGBP I global networks of scientists, data, and largely disciplinary understanding, particularly from the Global Change and Terrestrial Ecosystems ([GCTE](#)) project and the Land Use/Cover Change ([LUCC](#)) project. Their heritage will become basic components of the evolving integrative science of IGBP II and strongly promotes the linkage with the research approaches of the IHDP. In addition, during the past decade the value of critical assessments of global change science has

proven to be essential in providing timely information to decision makers. Our research strategy will provide research support for the Intergovernmental Panel for Climate Change and the Millennium Ecosystem Assessment in the coming decade.

The Science Plan is the outcome of numerous meetings during the past two years beginning with an initial scoping meeting in October 2001 at the Max-Planck Institute of Atmospheric Chemistry, Mainz, Germany, where the Global Land Project and the Integrated Land Ecosystem - Atmosphere Processes Study (ILEAPS) were defined. This meeting was followed with a series of Global Land Project meetings at the Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, CO in January of 2002 and again in April of 2003. A critical joint IHDP and IGBP-sponsored meeting in Bilthoven, The Netherlands, in October 2002, enabled scientists from core projects associated with both programs to provide input in the development of the science plan.

The International Project Office of the Global Land Project under the leadership of Anette Reenberg is established in Copenhagen (Denmark) and fully functional as of 1st September. Tobias Langanke (Executive

Officer) and Lars Jørgensen (Administrative Officer) will be happy to assist you in matters relating to the GLP Project. A slightly updated version of the GLP homepage including the "GLP Science Plan and Implementation Strategy" is available under [www.globallandproject.org](http://www.globallandproject.org).

This (updated but still provisional) homepage will be replaced with a completely new design in the coming weeks.

Formal endorsement from the GLP will be a first important step in mutually beneficial cooperation with interested projects. A final set of conditions and the detailed procedure for endorsement will be available after the issue is being discussed and approved by the SSC (Scientific Steering Committee) in Beijing in early November 2006.

#### **Contact Details:**

GLOBAL LAND PROJECT - International Project Office Department of Geography, University of Copenhagen, Øster Voldgade 10, DK-1350 Copenhagen K., Denmark Room 05.0.503 Tel. +45 35 32 25 08 Fax. +45 35 32 25 01 Email (Tobias Langanke): [tla@geogr.ku.dk](mailto:tla@geogr.ku.dk)  
(Lars Jørgensen): [lj@geogr.ku.dk](mailto:lj@geogr.ku.dk)

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#### **PUBLICATIONS**

**China-Japan Comparative Study of Land Use/Cover Changes (V)** Edited by Yukio Himiyama. CJLUC Project Office, Asahikawa, Japan, March 2006, 202 pages. For further detail and request for a copy, contact [himiyama@asa@hokkyodai.ac.jp](mailto:himiyama@asa@hokkyodai.ac.jp)

This is the final volume of the annual CJLUC Project Report, which started in 2002. It contains some 18 papers written by the CJLUC project members and associates. It presents the latest achievements of the project to the international readers first hand. Many of the papers in this volume can be regarded as a model of LUCC research of various kinds, and it is hoped that they are used accordingly by those who are interested in land use/cover changes, and contribute to the progress of LUCC study and to the enhancement of the society's awareness of the importance of land-use/cover changes and the urgency of the related problems.

#### **Land-Use and Land-Cover Change**

Local Processes and Global Impacts

Series: Global Change - The IGBP Series

Lambin, Eric F.; Geist, Helmut J. (Eds.)

2006, XVIII, 222 p., 44 illus., 19 in colour, Hardcover

ISBN-10: 3-540-32201-9

ISBN-13: 978-3-540-32201-6

The book presents recent estimates of the rates in changes of major land classes such as forest, cropland and pasture. Among the causative mechanisms behind land change, synergetic factor combinations are found to be more common than single key factor explanations. Aggregated globally, multiple impacts of local land changes are shown to significantly affect central aspects of Earth System functioning. Innovative developments and applications in the fields of modeling and scenario

construction are presented. Finally, conclusions are drawn about the most pressing implications for the design of appropriate intervention policies, and on new directions and frontiers of research. The edited book synthesizes research achievements by dozens of scientists related to the Land-Use/Cover Change (LUCC) project of the International Geosphere-Biosphere Programme (IGBP) and the International Human Dimensions Programme on Global Environmental Change (IHDP). It summarizes relevant findings on global land-use change which arose from value-adding activities of the LUCC project, starting in 1995 and extending until its termination in October 2005. The main intention is to describe how human modification of land cover became a major driving force of Earth System changes over the past 300 years, a period of most rapid transformations, with fundamental implications for current landscape configurations. In writing this book, current knowledge and understanding is reported on the rates, causes/pathways, impacts, future scenarios/models, policy implications and new research directions in the field of land-use/cover change.

**Written for:**

World community of global environmental change scientists, both natural and social scientists; researchers, teachers and students at university departments dealing with land-related issues of global environmental change

**Keywords:**

Environment  
Land cover  
Land surface  
Land use  
Terrestrial ecosystem

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**A Comparative Study on Land Use Change, A Case in Fujian and Taiwan Provinces**

By Wei Suqiong and Chen Jianfei

The comparative analysis of LUCC in different regions was considered an important research field during 2004-2008 by IGU-LUCC. A comparative study of LUCC between Fujian and Taiwan provinces could be a good case for the study because of their bio-geophysical proximity and their historical and cultural similarity except for their different economic development phases. By using the official statistics, the growth rate, scale and structure of economy in Fujian and Taiwan provinces were analyzed. The results show that Taiwan province is in the stage of post-industrialization and Fujian province is in the middle stage of industrialization. Based on the official statistics and remote sensing data, the quantity and quality change and spatial distribution of land use change, especially cultivated land and built-up land in Fujian and Taiwan provinces were analyzed by comparison. The land use patterns were quantitatively coupled to relevant socioeconomic factors for the first time in Fujian and Taiwan provinces. Major driving forces of the changes in cultivated land and built-up land of the both provinces were analyzed based on Grey Relevance Degree calculation and Causal Models of Path Analysis. The agricultural acreage and built-up acreage of Fujian province in 2010 were forecasted by Multiple Regression, Grey Forecast and Grey-Markoff simulation models respectively, with the deduction of their change trend in Fujian province based on a comparative analysis between Fujian and Taiwan provinces. In addition to comparison between the two provinces, comparative analysis of LUCC in city level were addressed also, taking Fuzhou city and Taipei city, as well as Quanzhou city and Kaohsiung city as examples. The policies and measures that could be implemented on a regional level and the allowance of a sensible balance between sustainability and development were discussed in the end.

**Contents:**

- 1 Introduction
- 2 The natural and social basis of comparative analysis of land use change in Fujian and Taiwan provinces
- 3 Comparison of the pattern of land use and its dynamic change between Fujian province and Taiwan province
- 4 Comparative analysis of the dynamic change of cultivated land use and its driving force between Fujian province and Taiwan province
- 5 Comparative analysis of the change of urban built –up land and its driving force between Fujian province and Taiwan province

6 The cases of the comparative analysis on land use change in Prefectural-class Cities in Fujian and Taiwan provinces

7 Conclusion and prospect

**Publisher:**

Science Press, Beijing, China; <http://www.sciencep.com>

**Contact info how to get the book:**

Zhao Feng

Science Press, Chinese Academy of Science

Add.: 16 Donghuangchenggen, North Street, Beijing 100717, China

E-mail: zfeng18@163.com

**Transboundary Geo-systems in the South of the Russian Far East and in Northeast China**

**Vladivostok**

By Ganzey S.S.

This monograph explores the geographic constructs underlying the concepts “border territory” and “transboundary territory” and provides a description of methodological approaches for conducting transboundary diagnostic analysis. The volume examines existing physical-geographical zoning for the southern portion of the Russian Far East and for Northeast China and offers a diagram of such zoning for transboundary geo-systems.

Special attention is provided to a description of natural resources and to economic development indicators for both Heilongjiang Province as a whole and for its border districts and border counties in particular. A description of forest and land resource use in Heilongjiang Province for the last 150 years is provided. Key transboundary environmental problems and measures to reduce the negative impacts of these problems are discussed. A comparative analysis of economic development and environmental conditions in transboundary territories in the South of the Russian Far East and in Heilongjiang Province of the People’s republic of China is undertaken at three levels: regional, sub-regional and local. Factors affecting integrating processes in border territories of this region are analyzed.

This monograph will be interesting to a broad range of specialists studying regional development issues, including issues associated with transboundary territories and the analysis of transboundary problems.

Ill. 59, tabl. 65, bibl. 219.

**Editor**

Academician RAS, professor *P.Ya.Baklanov*

**Reviewers**

Professor *Yu.B.Zonov*, Dr. *V.V.Yermoshin*

It is authorized for printing by the Academic council of the Pacific Geographical Institute FEB RAS

**Publishers:**

Vladivostok: Dalnauka, 2005. 236 p. + 0,25 quire color insert.

The printing of the English translation of the book was partly supported by the Amur-Okhotsk Project, Research Institute for Humanity and Nature, Japan

The researches submitted in the given work are supported by grants of the Russian Fund of Fundamental Investigations № 01-05-64583 and the joint grant of the Russian Fund of Fundamental Investigations and the State Fund of Natural Sciences of China № 03 - 05-39019

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## Journal of Land Use Science

### Journal Details



### Journal of Land Use Science

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### Aims & Scope

ANNOUNCEMENT: Issue 1 is now available!

Please [click here](#) for free access to the Editorial.

The study of the nature of land use and land cover, their changes over space and time, and the processes that produce these patterns and changes can be termed 'land use science'. Land use science is necessarily an interdisciplinary science since land uses are influenced by, and influence, environmental, ecological, social and economic systems through a complex series of natural and socio-economic processes, including management and decision making.

Land use science, therefore, adopts an integrated approach that couples natural and human systems and fosters interdisciplinary collaboration between social, economic, behavioural, environmental, ecological, biological and atmospheric scientists. Land use scientists must also draw on a broad range of interdisciplinary scientific methodologies and enabling technologies.

Potential areas for submission would include -

- the dynamics of change
- the integration and feedbacks between land use, climate, socio-economic, and ecological systems
- the resilience, vulnerability, adaptability and sustainability of land use systems
- the linkages of natural and human systems
- relationships between land use and land cover
- spatial and temporal scale issues
- accuracy issues
- evolving public and private land management questions and decisions
- new data and information and improved scientific bases for decision-making related to land use
- interpretation and communication of scientific knowledge for adaptive management of land use systems
- human responses to land use change
- explicit management of uncertainties and definition of the limits to applicability of land use change projections and other analyses, particularly as translated into decision support and participatory approaches

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### **FORTHCOMING MEETINGS**

#### **IGU-LUCC 2007**

*Department of Human Geography and Regional Development, Faculty of Science, Charles University in Prague, Czech Republic*

*Institute of Social Ecology, University of Klagenfurt, Austria*

*Anton Melik Geographical Institute, Scientific Research Centre of the Slovenian Academy of Sciences and Arts, Slovenia*

*Department of Human Geography and Demography, Faculty of Science, Comenius University in Bratislava, Slovakia*

#### ***IGU/LUCC Central Europe Conference 2007***

**28 August - 4 September 2007**

**Slovenia - Austria - Slovakia - Czech Republic**

November 2006

First announcement:

We would like to invite you to participate in the IGU/LUCC Central Europe Conference 2007, organized by academic and research institutions from four countries. The theme of the event is:

**“Man in the landscape across frontiers... different societies in different conditions”**

The conference will be rather unusual – in order to be in contact with different Central European landscapes, we will visit various sites in four countries. The conference starts in Ljubljana, Slovenia, continues through Austria and Slovakia to the Czech Republic, and finishes in Vienna, Austria (see map in the front page). During the eight days, we will visit various regions interesting for their cultural or semi-natural landscapes (see the Program and the Description). In the field, we will discuss many topics connected with the past, presence and future of landscapes of Europe. And three half-day seminars will be held with presentations of your papers and posters - in Ljubljana, Slovenia, in Bratislava, Slovakia, and in Mikulov, Czech Republic.

For further information, please contact:

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Albertov 6, 12843 Praha 2, Czech Republic

Web: [www.luccprague.cz](http://www.luccprague.cz)

E-mail: [conference2007@luccprague.cz](mailto:conference2007@luccprague.cz)

Conference Coordinators:

*Czech Republic:* Doc. RNDr. Ivan Bičík, Csc., Mgr. Jan Kabrda, Mgr. Petr Mareš, Mgr. Robin Rašín

*Austria:* Prof. Fridolin Krausmann, Mag. Veronica Gaube

*Slovenia:* Dr. Matej Gabrovec

*Slovakia:* Mgr. Pavol Hurbánek

Main Topics of the Conference:

Central Europe is a region with a long and rich history, culturally and ethnically immensely diverse. Throughout the 20<sup>th</sup> century, several wars and changes in political and economical regimes had a strong impact on agriculture, land use and landscape there. The differences between countries, and also many results of political and economical changes, can be clearly seen in the border regions. Thus, the central issue of our conference is “landscape and land use changes in border regions.”

**However, we will accept any articles and posters coping with following issues:**

1. Long-term land use and landscape changes
2. Man in the landscape in the past, presence and future
3. Peripheries and border regions - threats and opportunities
4. Impacts of policies and institutions on land use and landscape
5. Changing agriculture and landscape in the enlarged European Union

#### GLOBAL LAND PROJECT

**2006**

**Earth System Science Partnership (ESSP) Global Environmental Change Open Science Conference, in Beijing the 9-12 of November 2006.**

For more information please see: <http://www.essp.org/ESSP2006/index.html>

**Workshop on Harmonisation of Forest and Land Cover Classifications using LCCS for the Asia Pacific Region, in India the 4-8 of December 2006.**

For more information please see: [www.fao.org/gtos/meetLCCS5.html](http://www.fao.org/gtos/meetLCCS5.html)

[Call for papers for "The 9th Biennial Conference of the International Society for Ecological Economics"](#) (ISEE), to be held in New Delhi, India the 15-19 of December 2006.

For more information please see: (<http://www.ISEE2006.com>)

**2007**

**USEPAM conference, in Hanoi the 6-8 of March 2007.** For more information regarding USEPAM please see: <http://www.usepam.ait.ac.th>

**Association of American Geographers, in San Francisco in April 2007.**

For more information please see: <http://www.aag.org/annualmeetings/Intro.html>

**International Association for Landscape Ecology, in The Netherlands in July 2007.**

For more information please see: <http://www.iale2007.com>