



**International Geographical Union  
STUDY GROUP ON LAND USE/COVER CHANGE**

***NEWSLETTER***

No 5

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**PROGRESS OF IGU-LUCC**

Start of a new phase

2000 was a memorable year for IGU-LUCC, not only because it entered its second phase, but also because it achieved so much. The 29th International Geographical Congress was held in Seoul in August, and the Group organised pre- and post-congress meetings and excursions in Japan, Korea and China, as well as paper/poster sessions during the main congress. They all went remarkably well, thanks to the efforts of local organisers and all those concerned. The issuing of a preliminary version of 'pilot atlas of land use/cover changes in selected regions in the world' was another notable achievement of the year.

In 2001, the Group has already seen three major publications as listed below, and one more is expected to come by the end of the year. The first conference of the Group in its new term held in Prague in July also added a memorable page to its history. The progress of research in the IGU-LUCC community was demonstrated not only in the Group's symposia and publications, but also in larger global science events. These included the IGBP Conference at Amsterdam in July, where the Group took charge of a poster cluster on 'long-term changes of land use/land cover – data, methods and findings'.

As the world LUCC community is increasingly concerned with human and regional dimensions of land use/cover changes, the role of geographers, with their experience in comprehensive land-use studies and skills of field surveys, statistical analyses, GIS and remote sensing, is growing. I hope that the objectives of the Group for its second phase, i.e. 2000-2004, which are shown below, are widely accepted and more people join the Group's activities in various ways. Major achievements of the Group during its first phase include those in historical studies, comparative studies and studies related with information bases. I hope that we can also achieve something in such hot issues as sustainability, urbanisation and education during the new phase.

IGU-LUCC is planning to hold Pre-congress and Main-congress symposia in the occasion of IGU-2002 in South Africa. This and other conferences sponsored by the Group are where we consolidate our past achievements, initiate new dimensions of study, and appeal to the larger environmental community. It is your zeal and participation that determine the success of these activities.

Professor Yukio Himiyama, Chair, IGU-LUCC

### **Meetings in 2000**

- IGC Pre-congress Meeting in Japan; Tokyo-Tsukuba & Asahikawa-Sapporo, Japan; August 7-11, 2000; 33 participants from 11 countries, 12 papers/posters (Tokyo-Tsukuba); 50 participants from 11 countries, 11 papers (Asahikawa-Sapporo); organised by Prof. Y. Himiyama, Hokkaido University of Education, Dr. T. Ichinose, National Institute for Environmental Studies.
- IGC Pre-congress Meeting in Korea; Seoul and vicinity, South Korea; August 12-14, 2000; 20 participants from 11 countries; organised by Prof. M. Hwang, Seoul National University.
- IGC Main Congress paper session; August 16-17, 2000; 24 papers.
- IGC Main Congress poster session; August 16, 2000; 13 posters.
- IGC Post-congress Tour in Northern China; August 19-24, 2000; organised by Prof. Lu Qi, Institute of Geographical Sciences and Natural Resources Research.
- IGC Post-congress Tour in Western China; August 26- September 5, 2000; organised by Prof. Lu Qi.

### **Forthcoming Meetings**

IGU-LUCC plans to organise Pre-congress and Main-congress symposia in the occasion of IGU-2002 in South Africa in August 2002. The first announcement of these events will be issued shortly. Contact: Prof. Coleen Vogel, University of Witwatersrand, E-mail: [017chv@cosmos.wits.ac.za](mailto:017chv@cosmos.wits.ac.za)

IGU-LUCC sponsors the International Conference on “Environment, Energy, Technology, Development and Society’s Response & 23rd IIG Meet”; Varanasi, India; 1-3 December 2001. Contact: Dr. S. B. Singh, Department of Geography, Banaras Hindu University, Varanasi 221005, India. E-mail: [sbsingh@banaras.ernet.in](mailto:sbsingh@banaras.ernet.in)

IGU-LUCC sponsors the International Symposium on “LUCC Contribution to Asian Environmental Problems”, Tokyo, Japan; 13-14 December 2001. Contact: Dr. K. S. Rajan, CSIS, University of Tokyo, E-mail: [LUCC-J@skl.iis.u-tokyo.ac.jp](mailto:LUCC-J@skl.iis.u-tokyo.ac.jp)

## **Publications**

- Otsubo, K. ed. (1999): Land Use for Global Environmental Conservation – Final Report of the LU/GEC First Phase. NIES, ISSN 1341-4356. (IGU-LUCC Research Reports IL-99-01)\*.
- Otsubo, K. ed. (1999): Information Bases and Modelling for Land-use and Land-cover Change Studies in East Asia. NIES, ISSN 1341-4356. (IGU-LUCC Research Reports IL-99-02)\*.
- Himiyama, Y, I. Bıcık, J. Feranec, M. Gabrovec, D. A. Gillmor, E. V. Milanova, R. B. Singh, B. Tsai, Lu Qi, eds. (2000): Preliminary Version of the Pilot Atlas ‘Land Use/Cover Changes in Selected Regions in the World’, IGU-LUCC. (IGU-LUCC Research Reports IL-2000-01)\*.
- Hwang M, Himiyama, Y eds. (2000) Land Use and Land Cover Change – the contribution of geography. *Journal of Geography Education*, Special Issue for IGU-LUCC, 29<sup>th</sup> IGC Seoul 2000, Seoul National University\*.
- Singh R B, Fox, J, and Himiyama, Y eds. (2001) *Land Use and Cover Change*. Science Publishers, ISBN 1-57808-147-5. Contact: [sales@scipub.net](mailto:sales@scipub.net)
- Himiyama Y, Mather, A, Bičık I, and Milanova, E V eds. (2001): The Pilot Atlas – Land Use/Cover Changes in Selected Regions in the World – Vol. 1. IGU-LUCC. (IGU-LUCC Research Reports IL-2001-01)\*

\* For information on availability, please contact Professor Yukio Himiyama, Institute of Geography, Hokkaido University of Education, Asahikawa, 070-8621, Japan (E-mail [himiyama@atson.asa.hokkyodai.ac.jp](mailto:himiyama@atson.asa.hokkyodai.ac.jp))

## **Special appeal for contribution to the Atlas Volume 2**

Following the publication of Atlas – Vol. 1, the Group has started to prepare Atlas – Vol. 2. Those who wish to contribute a national/regional report to the atlas are requested to submit their work to Professor Himiyama by 15 March 2002. The publication is scheduled in June 2002. For more detail, visit our website or contact Professor Himiyama.

## **Educational Activities**

IGU-LUCC sponsors the Children’s Environmental Map Contest held in Asahikawa, Japan in October each year. For information about the Contest, see <http://www.asa.hokkyodai.ac.jp/research/staff/himiyama/chizuten/>

IGU-LUCC is willing to promote educational activities relevant to the Group's objectives. Those who wish to get the Group's support are requested to contact Professor Himiyama.

### **Website**

The Group's website is at <http://www.csis.u-tokyo.ac.jp/igulucc/>

Those who wish to join the Group are requested to visit it, and register as a corresponding member through it. Current members are requested to up-date their personal information through it.

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## **OBJECTIVES FOR THE PERIOD 2000-2004**

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The major aim of the Study Group is the enhancement of research on land-use/cover change in general, and in particular to contribute to the LUCC Programme. Geographers can, and should, make a variety of contributions to this important international environmental project from both natural science and socio-economic perspectives. The Study Group can use not only its own network and symposia but also its expertise for the promotion and advancement of the LUCC Programme. The objectives of the Study Group are as follows:

- a. To promote the study of land use/cover changes throughout the world as a geographical research focus.** The study of land use/cover changes should neither stop at local level, as seen in many land-use studies, nor be trapped within the abstract 'global' argument. Filling the gap between the two extremes is an important task of the Study Group. Emphasis is hence put on the research projects that can lead to national and international level outcomes. The Group's publication scheme of pilot atlases on land use/cover changes in selected regions in the world will encourage many geographers in the world to study land-use/cover changes at such levels. It is noted that the main interest of the Study Group is not the static description of land use/cover, but the explanation of its changing patterns and qualities, their causes and effects, including the bio-physical and socio-economic dimensions.
  
- b. To stimulate the production and the use of land-use information bases of both the present and the past.** Many land-use databases and maps exist in various places and in diverse forms, but they are far from being sufficient for current world needs. In order to fulfil the objectives of LUCC, we need information on land-use/cover changes with considerable spatial accuracy and extent, and historical depth. Without adequate information on the changes, it is difficult to identify their drivers, nor is it possible to pursue geographically explicit study of land-use/cover changes and their effects. The information bases that the Study Group deals with should be more than a mere collection of static

land-use data or maps. They include wide-ranging information and data on land use/cover changes, their drivers at different levels, including proximate and underlying ones, socio-economic and environmental effects, and their causal and spatial relations. The Group considers it important to support and co-operate with the existing database/mapping programmes, such as the 'Global Map Project'. Emphasis will be put not only on recent data, but also on historical materials going back as far as the 18<sup>th</sup> century, or even further where possible. Technical issues related to data, such as classification and scale of land-use/cover changes, are also considered to be important.

- c. **To co-ordinate the comparative study and the model study of land use/cover changes and their driving forces in different regions.** Detailed case studies in different countries/regions or at different settings provide the bases of understanding land-use/cover changes in the corresponding areas. They are not enough on their own, however. A comparative approach is considered to be important, as there are broad similarities between different countries at similar stages of development. In particular, as countries undergo development, they may experience recurring sets of land-use problems. The causes behind the changes are best studied in a comparative perspective. The comparative study should be integrated with the model study, as they depend on each other. Diagnostic spatio-temporal models of land-use/cover changes can be effective tools to incorporate wide-ranging research findings on the processes and mechanisms of the changes.

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## **IGU-LUCC Meeting 2001**

### ***Land Use / Land Cover Changes in the Period of Globalization***

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This meeting was held in Prague, Czech Republic 15-20 July 2000. It was organised and hosted by Professor Ivan Bičík and colleagues from Charles University. The conference was attended by some 40 participants from 14 countries. Proceedings will be published in due course. The programme was as follows:

15 July

#### **Field excursion**

Urban and peri-urban land use around Prague, led by Dr V Štěpánek and colleagues

16 July

#### **Opening paper session**

I Bičík

Welcoming address from the President of the Czech  
Geographical Society

Y Himiyama

Welcoming address from the Chair of IGU-LUCC Study  
Group and Introduction

- A Mather *The reversal of land-use trends: the beginning of the reforestation of Europe*
- V Winiwarter and C Sonnlechner *Cultural landscape development in Europe: why going back 300 years is not enough*

**Session: Historical Land Use/Land Cover**

- Chair: V Winiwarter
- L Jeleček *Historical development of society and LUCC in Czechia 1800 - 2000: progress and regress*
- M Gabrovec and F Petek *New possibilities for analysing Emperor Francis' cadaster maps*
- F Krausmann *Land use and socio-economic metabolism. the case of Austria 1830 to 1995*
- L Uhlířová *GIS and old maps as historical data sources in landscape dynamics monitoring: case of model area Jáchymov - Bohemia*
- Chair: L Crissman
- R Singh *Environmental degradation and its impact on land use/land cover changes in agriculturally developed regions of India*
- M Hwang *Environmental conservation and land reclamation of tidal flats in the western coast in Korea: Conflict issues and policy dilemma*
- B Zhang *Changes in wetland in Northeast of China*
- Chair: Y Himiyama
- I Bičík and L Kupková *Development of agricultural land from point of view of natural productivity of soils in Czechia 1948–1990*
- E Milanova and M Sennikova *Landscape approach to LUCC classification: land uses as drivers for land- cover changes*
- L Podmaniczky and K Balázs *Evaluating agricultural potentials and environmental sensitivity for sustainable land use planning*

July 17

**Session: Transitional (transformational) processes and their effect on LUCC**

- Chair: A Mather
- D Carr *Agricultural expansion in Petén, Guatemala: the importance of internal migration*

L Kupková, P Mareš and P Štych

*Analysis of development of Czech cultural landscape in period 1845–2000: case studies and general trends*

S Tewari and J Kulhavý *Adopting LCCS for South Moravian floodplain, Czech Republic*

Chair: R Singh

J Feranec, J Otahel, J Pravda, K Husár and T Cebecauer

*Map presentation of landscape changes: assessment of Slovakia*

J Otahel, J Feranec, M Suri and K Husár

*Land cover of Slovakia: assessment of its changes*

Z Lipský

*Land use and landscape structure changes from the point of view of landscape ecology*

V Štěpánek

*Czech frontier in the process of economic transition: responses of land use structure*

Visit

A visit to the Prague Main Architectural Office, Department of Strategic Planning, offered an opportunity to learn about the strategic plan of the development of the city and to discuss related issues with the chief planner.

Discussion

Following the day's paper sessions, a round-table discussion offered the opportunity for a detailed review of IGU-LUCC's strategy and plans for the next three years. This stimulating discussion pointed to several ways in which the group could constructively contribute to LUCC debates.

July 18

**Session: Urbanization and recent urban sprawl related to LUCC**

Chair R Perlin

T Doucha

*Multifunctionality of the Czech agriculture and land utilisation*

R Perlín

*Czech Agricultural Policy – Documents and Priorities*

F Kressler, M Kőstl and K Seinocher

*Monitoring suburban developments from space*

K Otsubo, J Ji, K Torii

*Mechanism of town center expansion in the rural areas of Chang Jiang Delta, China*

Chair: Ivan Bičík

M Gabrovec and F Petek *Evaluation of methodology of land use changes in Slovenia in view of sustainable development*

H Millward *Delineation of built-up areas by building proximity*

Visit

A visit to the Czech Land Fund Office/Czech Cadastre Office & Geodetic Survey provided an interesting opportunity to consider issues of modern and historical maps in relation to land use and land cover.

### **Posters**

Belenyesi M, Kristof D, Skutai J, Balázs, K *Comparative historical map analysis a tool for tracing landscape changes*

Chromý P, Jančák V, Marada M *LUC in Czechia: the micro regional analysis*

Chromý P, Jančák V, Marada M, Pobuda, M *Connection in LUC development in Czechia on case of Moravské Kopanice and Rajchěrov regions*

Fujibayashi K *Land Use/Cover Change in Hainan Island in the 20th Century*

Kristof D *Remote sensing as a tool for habitat preference calculations – case study in Hungary*

Lorinci R, Balázs K *Comparative historical map analysis a tool for tracing landscape changes*

Lorinci R, Balázs K *Local ecological network planning - the case of Istvan Grange*

Tewari S, Kulhavý J *Adopting LCCS for South Moravian Floodplain, Czech Republic*

### **July 19 Field Excursion**

Full day field visit to Northern Bohemian Coal Basin (Led by Professor I Bičík and colleagues)

Main topics: open-cast coal-mining and its environmental impact; transformation processes in old industrial region; land reclamation

### **July 20 Field excursion**

Full day field visit to Biosphere Reserve Třeboňsko (Led by Professor I Bičík and colleagues)

Main topics: biomes of ponds and wetlands; output of sand; development of nature – society interaction; protection of landscape

For further details of the meeting, please see <http://www.natur.cuni.cz/LUCC2001/>