

# NEWSLETTER

No 2, December 1997

International Geographical Union  
STUDY GROUP ON LAND USE/COVER CHANGE

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## PROGRESS OF IGU-LUCC

From step one to step two

**1997** has been the year of launch for the Study Group. The Group now has nearly 200 members from some 40 countries and regions throughout the world. Since the first issue of the Newsletter in April, there have been several notable achievements, including meetings and other initiatives.

### Meetings

- Open Group Meeting: Brisbane, Australia; July 3; 15 participants, 11 countries.
- Special Programme for Young Researchers - Developing Skills for Land Use/Cover Change Research: Brisbane, Australia; July 1-2; 25 participants, 13 countries; 3 lectures and 1 workshop.
- Symposium - Information Bases for Land Use/Cover Change Research: Brisbane, Australia; July 3-5; 34 participants, 15 countries.
- Conference - Sustainable Rural Systems and Land Use/Cover Change (co-organised with Commission on Sustainability of Rural Systems): Armidale, Australia, July 5-12; 75 participants, 22 countries.

### Publication

Himiyama, Y. and Crissman, L. (eds.): *Information Bases for Land Use/Cover Change Research - Proceedings of IGU-LUCC'97*, ISBN 4-907651-01-5.

The book is available at a cost of JY4,000 from:

Prof. Y. Himiyama, Hokkaido University of Education, Hokumoncho, Asahikawa, 070, Japan.

E-mail: [himiyama@asa.hokkyodai.ac.jp](mailto:himiyama@asa.hokkyodai.ac.jp)

Account No. 1533665 (IGU-LUCC Y Himiyama), Fuji Bank, Asahikawa Branch.

(Participants at the meeting will receive a copy free of charge)

### Other Accomplishments:

- A liaison committee was established with Commission on Sustainability of Rural Systems for the enhancement of research related to the LUCC Program.
- A co-operative relation was established with United Nations University, especially in relation to its PLEC Programme.
- A co-operative relation was established with Elsevier Scientific concerning the promotion of *Land Use Policy* as an international scientific journal in the

LUCC community. Elsevier agrees to have a special issue of *Land Use Policy* in 1998 for selected papers of IGU-LUCC'97 in Australia.

- A co-operative relation was established with the Asia-Pacific Network (APN) for the promotion of research and training of young researchers in Asia-Pacific region.

## **PLAN FOR 1998**

### **Meetings**

Lisbon (August); Prague (September). Please see page 8 for details.

### **Projects**

Several new research projects will be undertaken by the members of the Group. The Group itself will take the initiative in the implementation of the following projects:

1. Assemblage and Evaluation of Databases and Maps (Regional and Global) of Land Use/Cover Changes
2. Cross-National and Historical Comparative Studies of Drivers of Land Use/Cover Changes
3. Atlas - Land Use/Cover Changes in Selected Regions in the World

### **Networking**

In order to promote networking, corresponding members of the Group who are willing to put their website or e-mail address in the IGU-LUCC website are requested to contact to me ([himiyama@asa.hokkyodai.ac.jp](mailto:himiyama@asa.hokkyodai.ac.jp)).

Yukio Himiyama  
Chair of IGU-LUCC

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## **IGU-LUCC symposia**

### *Successful meetings in 1997*

The resurgence of interest amongst geographers in land use/cover change was reflected in two recent international conferences in Australia. The first meeting of IGU-LUCC was in Griffith University, Brisbane on 1-4 July 1997. It was followed by the conference of the longer-established IGU Commission on Sustainability of Rural Systems (CSRS) in Armidale, New South Wales on 5-8 July. At Armidale, a joint session involved both bodies, and it was followed by a study tour encompassing various issues relating to land-use change and rural sustainability in northern New South Wales.

The Brisbane symposium, ably organised by Professor Larry Crissmann, attracted an attendance of over 30, and a feature of the meeting was the active participation by all present. Generous support from the Asia-Pacific Network permitted attendance by a number of young research workers from Asian countries, and the meeting involved GIS training workshops as well as more formal paper sessions. In the latter, a good breadth of topics was covered, ranging from an analysis of historical trends in land

use in the Czech Republic over the last *ca* 200 years to land-use modelling for Thailand. An important part of this first IGU-LUCC symposium consisted of round-table discussions on the evolving agenda of the group, and on defining the main themes and priorities for the next few years.

The IGU Commission on Sustainability of Rural Systems had set a number of tasks for its annual conference, which was efficiently organised by Roger Epps of the University of New England at Armidale. One of these was defined as contributing to the LUCC program: the others related to the meaning of sustainability as regards rural systems, the regulation of rural sustainability, sustainability and the rural business enterprise, and sustainability in the interaction between rural and urban systems. Conference papers reflected these themes, including both theoretical contributions and more empirical presentations.

In recent years, geographers have perhaps been less actively involved in contributing to the agendas of research on global environmental change than their traditional interests might have suggested. It is encouraging that there are now increasing signs - including the activities of the IGU groups - of a growing involvement in the field.

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### **Land Use and Land Cover Change in Europe**

The European electronic conference, organised by the IGBP-IHDP LUCC Project in collaboration with Directorate General XII/D of the European Commission was held in November-December 1997. Its primary objective is to adapt the rationale and methods of land-use/cover change research, as defined for global issues in the IGBP-IHDP/LUCC Science Plan, to the specific and complex European reality.

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### **Land-cover change trajectories in Central Africa**

Eric Lambin and Benoit Mertens

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We conducted a study to better understand the complexity of deforestation processes in Central Africa by testing a multivariate spatial model of land-cover change trajectories associated with deforestation. The spatial model integrates a spectrum of independent variables which characterise the land rent on a spatially-explicit basis. We used time-series of high spatial-resolution remote-sensing images over a collection of study sites distributed across Central Africa. Remote-sensing observations revealed a few 'hot spots' characterised by a continuous trend of forest clearing and forest degradation, but with highly fluctuating rates of deforestation. A significant proportion of the areas which were subject to a land-cover conversion

were subject to another change in the following years: i.e. deforestation is highly reversible in the region. Statistical results suggest that most deforestation is taking place where the forest cover is already fragmented and in accessible areas. The effect of roads is mainly to increase the accessibility of the forest for migrants rather than to provide incentives for a transformation of local subsistence agriculture into market-oriented farming systems. The spatial model permits simulations of human actions leading to a transformation of the landscape (e.g. road projects) on key landscape attributes (e.g. biodiversity).

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### **Reforestation in New Zealand**

William Smith

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Forests cover 7.9 million hectares (29 percent) of New Zealand's land area. Of this 6.4 million are indigenous forests (most of which are protected) and 1.5 million are planted. The rate of forest planting has increased six-fold from an average of 15 000 ha/annum in 1990 and 1991, to an average of 85 000 ha/annum between 1994 and 1996. This rate of planting is unprecedented in New Zealand's forest history. It also differs from previous planting booms (1926-1936, and 1968-1987) in that the State plays only a minor role. Moreover, while in earlier booms forest planting targeted the least productive and most erosion-prone land, much of the current planting is on productive pastoral hill country, and involves farmers directly, either as sellers of land or as planters in their own right.

Despite broad acceptance that forest planting may provide a basis for improved environmental management and economic development in the hill country, there remains continued uncertainty over the social impact of this change in land use. The capacity of communities and local authorities to plan for land use change to forestry is hampered by a lack of information on the rate, causes and effects of the new planting.

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### **Forest resource trends in China**

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Because of rapid population growth and irrational management, the forest resource of China had been seriously damaged over a long period prior to the 1970s. After realising the impact of this damage on sustainable development, both government and people have paid much attention to increasing the forest resource since then. Through

continuous efforts, the forest resource has been increased tremendously in last two decades, in both area and volume. According to the results of nationwide survey completed during the years from 1989 to 1993, the forest cover was  $133,700 \times 10^3$  ha, representing 13.92% of the total land area, and the living standing volume of timber was  $101.37 \times 10^8 \text{ m}^3$ . In order to improve the forest resource, the Chinese government has already decided to increase the inputs to forestry, for improving the effectiveness of protection and management, and strengthening the related research and education. It can be predicted that the forest resources of China will continue to be improved in the future.

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### **Present and Historical Nature-Culture Interactions in Landscapes**

September 6-13, 1998  
Prague, Czech Republic

It is proposed to hold a symposium on Land Use/Cover Change on September 8, during the conference which is being organised by IALE Regional Organisation of the Czech Republic, Faculty of Science, Charles University, Czech National Committee for the UNESCO Program on Man and Nature. The specific theme of the IGU-LUCC symposium will be 'Data sets, methods of research, interpretation', but most of the conference will be of interest to IGU-LUCC members. Please use the enclosed response form to contact the organisers (Doc. RNDr. Ivan Bicik, CSc. - chair; RNDr. Leo Jelecek, CSc. - organiser; RNDr. Vit Stepanek - co-organiser. Further information is available from Dr Jelecek (e-mail [jelecek@prfdec.natur.cuni.cz](mailto:jelecek@prfdec.natur.cuni.cz))).

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### **IGU-LUCC98 Symposium**

August 27-29, 1998  
Lisbon, Portugal

The second annual symposium will precede the IGU Regional Conference, and will include a joint session with the IGU Commission on Sustainability of Rural Systems (as in Australia in 1997) as well as a field excursion. It will be followed, on August 30, by a joint session with the IGU Commission on Dynamics of Marginal and Critical Regions. Organisation will be by the Department of Geography and Regional Planning, New University of Lisbon. The program of scientific themes encompasses the objectives of IGU-LUCC, and is arranged in three main sections. Offers of papers and posters on topics relating to one or more of the themes are invited, and should be addressed to the local organiser (please see below).

1. Land-use databases and maps: their compilation and characteristics
2. Comparative land-use studies: cross-cultural and inter-temporal dimensions
3. The drivers of change in land use and land cover: their identification and operation
4. Other topics of mutual interest to IGU-LUCC and IGU CSRS members, and to

IGU-LUCC and IGU DMCR members

Further information is available from:

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