The Global Land Project Nodal Office on Integration and Modelling, Aberdeen, UK

Global Land Project Background

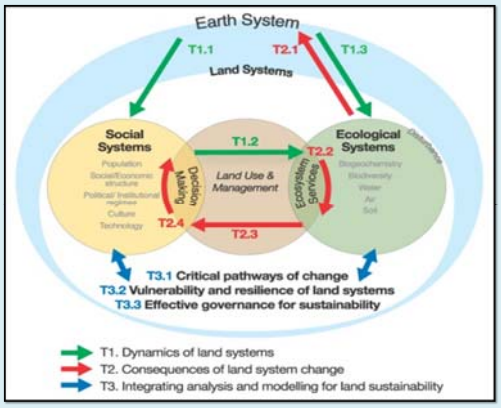
The Global Land Project (GLP) is a joint research project for land systems for the International Geosphere-Biosphere Programme (IBGP) and the International Human Dimensions Programme (IHDP). The goal of the GLP is:

'measure, model and understand the coupled human-environmental system'

GLP activities/interests covers 3 themes:

i Dynamics of Land Systems
ii Consequences of Land System Change
iii Integrating Analysis and Modelling for Land Sustainability

To support and assist the GLP International Project Office in Copenhagen, with the implementation of the GLP science plan, nodal offices were established in Aberdeen (Integration and Modelling), Beijing (Land Use and Ecosystem Interactions) and Sapparo, Japan (Vulnerability, Resilience and Sustainability of Land Systems).



Analytical structure of the GLP

Source: GLP (2005) Science Plan and Implementation Strategy, IGBP Report No. 53/IHDP Report No. 19, IGBP Secretariat, Stockholm. 64pp

Aberdeen Nodal Office

An office to coordinate, facilitate, and lead Global Land Project scientific efforts in integration and synthesis of land system models

Nodal office is a joint venture between the Macaulay Land Use Research Institute and the University of Aberdeen. It aims to: focus international effects on the scientific aspects of integration and modelling, facilitate links between researchers for multi-disciplinary studies and publish scientific and policy related material.

For further information about the GLP Nodal Office, Aberdeen, please email Dr Carol Ann Stannard, Executive Officer –
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Meeting the challenges of modelling coupled human-environmental systems

A series of international workshops undertaken have been directed at the necessity for land system change models which integrate human and environmental systems and associated issues.

Richard Aspinall (Macaulay Land Use Research Institute)

'The design of integrative models of natural and social systems in land change science'

The workshop was organised in recognition of the increasing need to model land system change using scientific approaches that integrate and human and environmental systems.

The aims were i) to take a broad overview of where the land change community is today in terms of integrative models of natural and social systems and ii) to provide an opportunity for land use modellers working at different scales with different remits and approaches to discuss commonalities and differences.

The workshop produced the criteria for an integrated model of land system service and a full characterisation.
Papers generated from the workshop were published in a special issue 'Integrated modelling of natural & social science' (2009) Landscape Ecology Vol 24.

'Data and model integration for coupled models of land use change'

Integrated models of land systems require a variety of data to drive them. Data can be for different spatial and temporal scales (from the global to the local) and record different aspects of the land system (socio-economic, biophysical etc.).

The workshop explored some of the issues that arise when using different data types and sources in integrated models of land systems.

Together with the outcomes from the workshop on the design of integrative models, the workshop shaped the international agenda that supports the Global Land Project and land systems within the earth system science programme of IGBP.

Dagmar Haase (Humboldt University Berlin)

'Representation of ecosystem services in the modelling of land systems'

Models of ecosystem services as an integral part of land systems are needed, both adequately to capture complex dynamics of human-environmental processes, and to explore consequences of land change in provision and management of ecosystem services. This workshop brought together international researchers to explore the measurement and representation of ecosystem services in land systems and models for application in policy and practice.

Issues addressed included: stakeholder participation, communicating and visualisation of results, typology, data availability and how current models could be adapted and coupled to modal ecosystem services.

A collaborative review paper is currently in preparation based on the findings of this workshop. Pdfs of the workshop presentations are available from: www.glp.macaulay.ac.uk

Workshops sponsored by the Nodal Office

Agent-Based Modelling in Land Use Effects on Ecosystem Processes & Services, Utah. The symposium considered developments in coupled human-natural system modelling using agent-based simulation. Papers will be published in a special issue of Journal of Land Use Science.

Agent-Based Land Market Models Workshop, Aberdeen. Co-sponsored with the US NSF-sponsored SLUCE 2 project; a small, interactive workshop on agent-based land market models at the Macaulay Institute in Aberdeen, Scotland.

International Congress on Environmental Modelling & Software, Canada 2010 - session entitled 'Spatial agent-based models for socio-ecological systems'.