



Editorial

Applications of Integrated Assessment Techniques for Natural Resource Management

This special issue of Integrated Assessment incorporates papers describing the application and development of integrated assessment techniques across a range of natural resource management issues. These papers were selected from a Special Session on Integrated Assessment held during the iEMSS2002 conference, which was held by the International Environmental Modelling and Software Society in Lugano, Switzerland from 24th to 27th June 2002. This Special Session was run by The Integrated Assessment Society (TIAS). Thanks go to Jan Rotmans who was a co-organiser of the IA Special Session in Lugano and to the many reviewers of both the conference proceedings and journal papers that gave insightful and constructive comments on the papers selected.

Seven papers have been selected for this issue. The papers consider applications of Integrated Assessment techniques in three main areas: water resource management, land use planning, and climate change. These papers reflect the diversity of papers presented at the conference and are useful examples of the current state of applied integrated assessment research.

The first paper, by Matt Hare, Rebecca Letcher, and Anthony Jakeman, presents a comparison of four participatory modeling case studies. These case studies are from Switzerland, Africa, and Thailand and represent the work of researchers from Europe, Asia, Africa, and Australia. This paper considers the different approaches to participation used in the case studies and considers the potential for a *scale of action mismatch* in these studies. Important lessons on participatory process design are drawn in the paper from these case studies and from the literature.

Rebecca Letcher and Anthony Jakeman report on the application of an adaptive method for integrated assessment

of water allocation issues in an Australian basin. The paper describes feedback from stakeholders on a decision support system developed as part of an on-going project in this catchment. The process by which stakeholder feedback is sought through the model development phase is also described. Karn Trisophon and Varaporn Punyawadee outline an integrated model developed to consider resource management options in northern Thailand. This system contains economic, agronomic and hydrological components and uses a nodal network approach to model integration. Guy Engelen, Roger White, and Ton de Nijs report on a Spatial Support System they have developed for considering policy interventions at national, regional and local levels in the Netherlands. This paper presents an interesting application of integrated modeling using a grid-based method for model integration.

The final three papers in the special issue are all concerned with aspects of climate change. Kirsten Zickfeld and Thomas Bruckner present a modeling framework for deriving emissions corridors that preserve the Atlantic thermohaline circulation. The authors demonstrate that when applying the precautionary principle the maneuvering space for climate policies is likely to be tight. Hans-Martin Füssel outlines a graphical user interface, the ICLIPS IMPACTS Tool, which has been developed to provide access to a large set of climate impact response functions from an integrated assessment model of climate change (ICLIPS). Finally, Jonathon Köhler demonstrates the capacity for a descriptive theory of long-run technological change to be interpreted for incorporation into a macro-economic modeling framework. This work is to be incorporated in an integrated assessment model of climate change.

Rebecca Letcher, Guest Editor