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Editors

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Preface

The transformation of land use and land cover is driven by a range of different factors and mechanisms. Climate, technology and economics are key determinants of land-use change at different spatial and temporal scales. Whilst the implications of climatic warming at a global level are hugely worrying for low lying parts of the world, the processes of urbanisation continue in a seemingly uninterrupted manner. As time goes by, the use of land in both natural and man-made environments is influenced by the pressures associated with development. The demand for land for new residential housing in northwest European countries has been a huge challenge for governments striving to protect greenfield sites in recent years, whilst brownfield regeneration has been a common response to the decline of staple manufacturing in older industrial heartlands. The variety of forces that drive change in the use of land is extensive and complex, including spatial planning policies designed at local, regional, national and supra-national levels.

Given this complexity and in order to understand the mechanisms of change and the impact of policies, researchers and practitioners have turned their attention to formulating, calibrating and testing models that simulate land-use dynamics. These land-use change models help us to understand the characteristics and interdependencies of the components that constitute spatial systems. Moreover, when utilized in a predictive capacity, they provide valuable insights into possible land-use configurations in the future. Models of land-use change incorporate concepts and knowledge from a wide range of disciplines. Geography, as a spatial science, contributes significantly to the understanding of land-use change whilst demography and economics help explain underlying trends. Model building relies heavily on mathematics and (geographical) information science, but also includes many elements from the softer sciences, such as management studies and environmental science.

This book offers a cross-sectional overview of current research progress in the field of land-use modelling. The contributions that are included in the chapters of the book range from methodology and model calibration to the