

Part II

Land Change and Landscape Management Approaches

The chapters that follow take a landscape-level approach to a range of themes central to human-environment interactions. The chapters go across gradients of institutional arrangement, demographic pressure, resource ownership systems, and ecosystem types. Chapters complement each other in terms of cultural and historical contexts and methodological approaches to research and to applied situations.

In Chap. 5, Fiorini uses a combination of participatory approaches to examine the case of red deer management in Scotland, an iconic and keystone species that poses challenges to the organization of property systems and different views of land use. Fiorini describes this case of natural resource management first by framing it within European and Scottish regulatory contexts, then across different groups of stakeholders and landscapes bounded by overlapping units of institutional arrangements. The research process illustrates the use of different interview techniques and qualitative data analysis, sketch maps, institutional analysis, and population modeling integrated within a participatory geographic information system. The analysis highlights the importance of understanding the views and perspectives of different stakeholders, the need for flexible and adaptive management plans, and the need for a landscape approach to resource management.

In Chap. 6, Nagendra, Mondal, Adhikari, and Southworth focus on the challenge of understanding forest change in the densely populated, forested landscapes in 15 protected areas in India. Selecting 15 case studies of protected areas from the peer-reviewed literature, four of which they examine in detail, the authors use a combination of meta-analysis and remote sensing approaches to examine their effectiveness amid different drivers of change. They evaluate the role of different forms of population pressure—infrastructure, consumption needs, markets, and settlement—by examining the larger landscapes within which protected areas are embedded. They find that protected areas are an important influence on the rural Indian landscape, in some cases isolating users from the resources they depend on. In general, they find that protected areas contribute to maintaining forest cover at least within the core areas of these reserves. They call attention to growing pressures in the rate of change around the borders and peripheries of these areas, even those once distant from denser human settlements. The authors raise questions about the

future of protected areas as proximate and distant pressures are projected to increase in this second most populous nation in the world.

In Chap. 7, Ruseva and Fischer overview forest protection in private areas in the United States, a category that encompasses 56 % of US forests of which 92 % are owned by families, mostly in small properties. They highlight different forms of interactions between private and public decisions regarding the use of forest resources. Using an institutional approach, they start by reviewing the interactions between private and public stakeholders involved in private forestry and propose a typology that characterizes four spheres of public and private interaction concerning investments in forestland management. Their focus is on the challenges and opportunities of governing private forests as a bundle of property rights and bundles of ecosystem services. They highlight the importance of considering the spatial and temporal scales used to manage different aspects of forest resources and their implications for the provisioning of ecosystem services to different groups of stakeholders.

Finally, Chap. 8 focuses on the challenges of monitoring landscapes representing a gradient of land-cover types in the African continent. Gibbes, Cassidy, Hartter, and Southworth carry out analyses across three African countries—Uganda, Botswana, and Namibia—representing different gradients of vegetation, institutional arrangements, and types of resource management. This chapter offers critical perspectives to the limitations of categorical land-cover classification approaches to gradient landscapes. Their cases illustrate remote sensing methodologies to overcome these problems and their limitations. Their contributions go far beyond remote sensing methodologies. Their cases illustrate common themes in human-environment interactions in Africa and elsewhere, such as revealing factors affecting land-use/cover change, the impact and effectiveness of protected areas, and management of livestock-wildlife interaction.