

Part IV

Historical and Archeological Approaches

The three chapters in this part, ranging from decadal to millennial time scales, demonstrate the importance of long-term perspectives to different questions concerning human-environment interactions. Different historical, environmental, and sociocultural contexts provide the backdrop for the chapters to examine conditions underlying long-term trajectories of social change and land-use intensification. The chapters illustrate the integration of various methodologies and forms of evidence to interpret the temporal intensity and the spatial pattern of changes and their social and environmental consequences. The reader will see examples of archival research, institutional analysis, meta-analysis of published studies, remote sensing of various time depths, vegetation ecology, and archeological field investigation.

In Chap. 14, Batistella, Bolfe, and Moran provide us a window to the fascinating history of Japanese colonization in the Amazon and their institutional and land-use trajectories, particularly since WWII when local farmers became global leaders of black pepper production. The crash of this commodity due to *Fusarium* infestation is iconic in how vulnerable a monocultural system is, based on a limited genetic diversity and dependent on a competitive global market. Their economic rebound has been equally impressive, this time through the development of intensive agroforestry systems using local and exotic fruit crops. They link research on historical land-use analysis to changes in land cover by coupling remote sensing analysis and detailed field inventories. Property maps reconstructed from the early phase of settlement allow the analysis of land-cover change and carbon stocks at the farm level. The study goes further in examining the consequences of agroforestry intensification for land-cover change, carbon sequestration, and other ecosystem services vis-à-vis a growing tendency toward conversion to pasture in the region. The authors suggest that intensive agroforestry systems contribute to carbon sequestration and land-cover diversity while supporting a good economic return for local farmers.

In Chap. 15, Vogt extends the time scale to the late nineteenth century using archival and historical records, aerial photography, satellite remote sensing, institutional analysis, and ethnohistorical interviews. Vogt reconstructs institutions affecting land use and land tenure in the west Mengo region of Uganda that borders the rapidly growing capital Kamapala, in the Baganda region of the Lake Victoria

basin. The chapter reconstructs the landscape of the region since 1880 in four main periods: pre-colonial (late 1800s), early colonial (1900–WWII), late colonial to early independence (WWII–1995), and the era of structural adjustments (1990s–2002). He contrasts narratives of degradation of forest resources by smallholders with data demonstrating stable forest cover in reserves created during colonial times and smallholder areas where intensive agroforestry has developed. Tree cover in village areas has increased since WWII as a response to local needs and to the increasing market demand for natural resources (fuelwood, construction timber, and staple foods) in growing regional urban areas. Vogt analyzes these processes as a result of the interplay among customary and formal land-tenure arrangements, market fluctuations, and sociopolitical shifts shaping each historical period.

Neves offers a fascinating discussion in the closing chapter of Part IV, where the Amazon serves as a window to take us back to the fundamental question of the relationship between environmental conditions and the rise of social and cultural complexity in human history. He starts by reviewing evidence that places the Amazon as an early center of independent technological innovation, i.e., of pottery and plant domestication. Reviewing the archeological record on the expansion and retraction of cultural and political integration of the region, Neves proposes that linguistic diversity in the Amazon (where language is not segmented by major physical barriers) can be used as a proxy to understand the process of plant and landscape domestication that happened in the early and mid-Holocene. This argument is then linked to the process of political fragmentation and decentralization in the region. Particular attention is paid to the farming-language dispersal hypothesis. The chapter offers detailed discussions of the social and political landscapes of the Amazon while exploring theoretical parallels to other regions of the world. Within this context, Neves flips the environmental determinism argument (iconic to the scholarship of the Amazon region) about the limitations of soil, climate, protein, and staple crops to the formation of complex polities in the Amazon to one of resource abundance. Abundance, however, has not resulted in marked patterns of social hierarchy and related material culture (as typical of the Andes and Mesoamerica). That is, he argues that the abundance of resources and their distribution and the dissemination of knowledge and technology to manage aquatic and terrestrial resources may have set the conditions to prevent the emergence of institutionalized social hierarchies in pre-Columbian Amazon.