

Introduction: Historical and Regional Perspectives on Landscape Transformations in Northeastern Tanzania, 1850–2000*

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Studies of land use and of landscapes as expressions of human activities, in space and time, are gaining increasing attention in a variety of disciplines. This focus has relevance both for our understanding of society, culture, and nature, and for research on food security, land cover change, and biodiversity. The idea behind this special issue is to show that a *regional* historical approach to land cover changes provides an analytical field that can bridge the gap between local case studies and generalized macro-scale overviews. To reach the goal of a truly regional and historical political ecology, this volume gathers an interdisciplinary group of scholars with in-depth knowledge of human-environmental relationships and political economy in northeastern Tanzania. The contributions cover a number of common themes that emphasize history and spatial interactions in one region. All the articles go beyond the focus on economic determinants of land use, so common in the literature. They also show how social institutions and cultural models, both at local and regional levels influence trajectories of changing human-environment relationships.

Land Cover Change as an Effect of World Systems

Despite the historically demonstrable integration of the continent into successive world-systems during the last 2000 years,¹ much environmental research on Africa treats the pre-colonial period as a baseline in which farmers were engaged only in subsistence production and natural environments were literally “undisturbed.”² In contrast to such implicit or explicit assumptions, the approach presented in this special issue takes the position that any understanding of human history and environments in Africa during the last millennia

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¹ Peter Mitchell, *African Connections: An Archaeological Perspective on Africa and the Wider World* (Walnut Creek, CA: Altamira Press, 2005).

² For example the “Merry Africa Approach,” which sees “stable precolonial communities as having lived in harmony with nature,” as discussed by James Gibling and Gregory Maddox, “Introduction,” in Gregory Maddox, James L. Gibling, and Isaria N. Kimambo, eds., *Custodians of the Land: Ecology and Culture in the History of Tanzania* (London: James Currey, 1996), 2.

must cast a wide net to capture the complex linkages between local societies, regional and global trade, and politics.

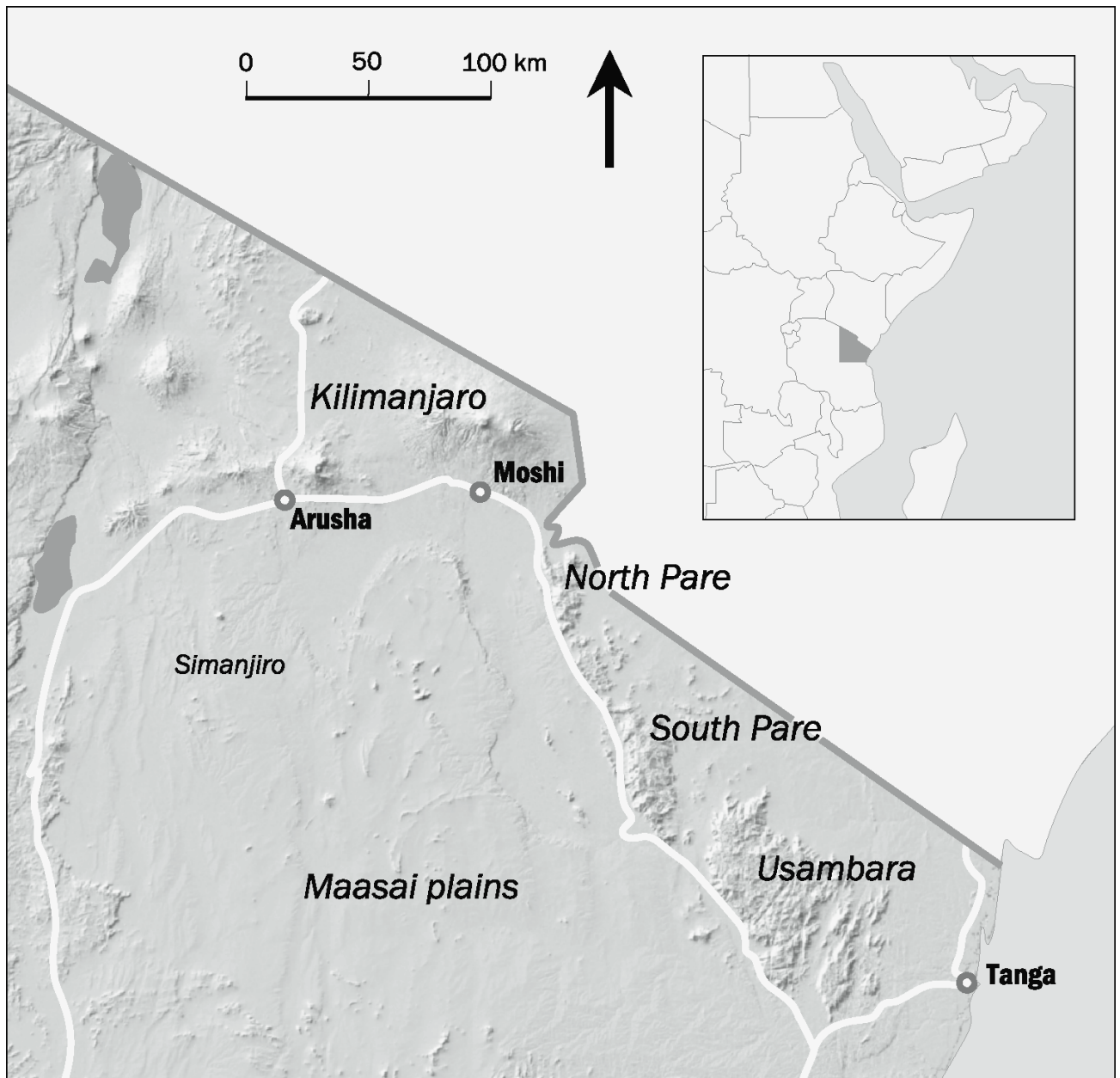


Figure 1. Northeast Tanzania.

We thus argue that the environments in eastern Africa prior to colonialism cannot be understood without reference to the wider economic networks and interrelationships of the Indian Ocean trade. For 2,000 years, the trade in ivory and other export goods linked communities far from the African coast to China, India, the Middle East, and Europe. While a lack of data does not allow us to see the details of long-term changes, it is clear that in the nineteenth century the caravan trade in eastern Africa had profound effects on environments and land use. In the mid-nineteenth century more than 500 tons of ivory

were exported annually from eastern Africa to markets in Europe and the United States.³ At 45 kg per pair of tusks, this represented a removal of *ca.* 11,000 elephants per year during the heydays of the trade. An increasing number of studies show that such large-scale decimation of elephant populations would cause a decline in grasslands and an expansion of woody vegetation.⁴ This in turn promotes the spread of tsetse flies, the vectors of bovine and human sleeping sickness. Hence, the reduction in elephant population densities must have had a widespread impact on vegetation and disease in pre-colonial eastern Africa. Indeed, the nineteenth century saw a dramatic spread of tsetse flies and a consequent reduction of grazing areas suitable for cattle.⁵

Recent studies of the effects of elephants on vegetation cover⁶ make it possible to estimate the ecological impact of harvesting ivory for one piano. A 32 kg tusk supplied ivory for about forty-five keyboards,⁷ or ninety pianos per elephant. Using data from Zimbabwe, a rough estimate of the effect of the removal of one adult elephant would be the reduction of *ca.* 30 percent of the grassland per square kilometer.⁸ We may therefore speculate that ninety pianos contributed to the re-growth of wooded vegetation on thirty hectares of grassland, or 0.33 hectares per piano.

In addition to the direct effects of elephant removal, the caravans also generated other environmental changes, such as the physical effects of several hundreds of thousands of porters passing through central Tanzania annually.⁹ Added to this was the indirect impact of increased food production that was needed to supply the caravans,¹⁰ and the

³ N. Thomas Håkansson, "The Human Ecology of the Ivory Trade," *Human Ecology* 32, 5 (2004), 561–91; Abdul Sheriff, *Slaves, Spices, and Ivory in Zanzibar* (Athens: Ohio University Press, 1987), 171.

⁴ Håkansson "The Human Ecology of the Ivory Trade;" Wilhelm Leuthold, "Recovery of Woody Vegetation in Tsavo National Park, Kenya, 1970–94," *African Journal of Ecology* 34 (1996), 101–12.

⁵ Helge Kjekshus, *Ecology Control and Economic Development in East African History* (Berkeley and Los Angeles: University of California Press, 1977).

⁶ In one study from a national park in Zimbabwe, an increase in elephant population density from 1/km² to 1.5/km² resulted in a reduction in woody vegetation with at least 30 percent. Isaac N. Mapaure and Bruce M. Campbell, "Changes in Miombo Woodland Cover in and around Sengwa Wildlife Research Area, Zimbabwe, in Relation to Elephants and Fire," *African Journal of Ecology* 40 (2002), 212–19.

⁷ <http://www.ivoryton.lioninc.org/ivoryand.htm>.

⁸ Of course, there may not be a linear relationship between these variables. The decline from three to two elephants per km² may not have the same effect as a reduction from two to one.

⁹ Carl Christiansson, *Soil Erosion and Sedimentation in Semi-Arid Tanzania: Studies of Environmental Change and Ecological Imbalance* (Uppsala: Scandinavian Institute of African Studies, 1981), 163.

¹⁰ N. Thomas Håkansson, "The Decentralized Landscape: Regional Wealth and the Expansion of Production in Northern Tanzania before the Eve of Colonialism," in Lisa Cligget and Christopher Pool, eds., *Economies and the Transformation of Landscape* (Walnut Creek, CA: Altamira Press, 2008).

increase in violence from the slave trade that accompanied the ivory trade later in the nineteenth century.¹¹

Food production increased all along the caravan routes and led to investments in landesque capital or to the pursuit of short-term strategies of extraction and degradation in the productive capacity of the land.¹² The number of porters passing through the Pangani region of Tanzania was smaller than along the central route, but judging from the amount of ivory transported through this path in the 1880s, food for approximately 10,000 persons per season had to be produced. The coastal caravan trade represented a significant increase in the number of people transporting ivory to the coast. The demand for food by the caravans contributed to an increase in production over and above the volumes already bartered to the pastoralists and others. This would have amounted to a minimum of 400 metric tons annually and would have caused an increase in the cultivated acreage.¹³ Generally, the increased cultivation in the Pangani region led not only to an expansion of irrigation systems, but also to the establishment of seasonal fields along the foothills of the mountains.¹⁴ In areas such as Ugogo in central Tanzania, the voluminous trade was accompanied by an expansion of cultivation onto marginal soils without any attempt to apply soil conservation methods. Continuous agriculture and pastoralism along the nineteenth century caravan routes removed much of the natural vegetation and created a so-called cultivation steppe.¹⁵

Although these figures are imprecise they serve to underline the impact of world-system connections on the environment before colonialism. Hence, contemporary land use has a long history of regional and global interconnections that cannot be reduced to a dichotomy between a precolonial subsistence economy and its subsequent incorporation

¹¹ James L. Giblin, *The Politics of Environmental Control in Northeastern Tanzania, 1840–1940* (Philadelphia: University of Pennsylvania Press, 1992).

¹² N. Thomas Håkansson and Mats Widgren, “Labour and Landscapes: The Political Economy of Landesque Capital in Nineteenth-Century Tanganyika,” *Geografiska Annaler: Series B, Human Geography* 89 (2007), 233–48.

¹³ Håkansson, “The Human Ecology of the Ivory Trade.” The most heavily traveled caravan route passed through some of the most inhospitable environments in Tanzania—Ugogo and Kondoa. Until the middle of the nineteenth century most caravans in central Tanzania originated in the interior, notably from Unyamwezi, but later the majority was organized from the coast. Sissons estimates that 80,000 persons transversed Ugogo each year between the 1850s and the 1880s. The caravans obtained food in exchange for cloth, beads, iron hoes, and other goods. In the second half of the nineteenth century ca 1,090,909 kilos of grain was produced per year as surplus sold to caravans. See Carol Jane Sissons, *Economic Prosperity in Ugogo, East Africa, 1860–1890*. (Ph.D. dissertation, University of Toronto, 1984).

¹⁴ Håkansson, “The Decentralised Landscape;” Gregory Maddox, “Njaa: Food Shortages and Famines in Tanzania,” *International Journal of African Historical Studies* 19, 1 (1986), 17–34.

¹⁵ Christiansson, *Soil Erosion and Sedimentation*, 149, 153.

into an exploitative capitalist political economy.¹⁶ The study of historical processes involves not only evidence about how, where, and why processes of change take place, but also an understanding of how the present is intimately integrated with our conceptualizations of the past.¹⁷

While the role of political economy and the long history of world systems connections in eastern African landscapes may seem evident to the historian, this is a new perspective for many environmental researchers. Simplistic explanations, related to population pressure or poverty, still underlie many of the orthodox approaches to understanding the causes of changes in land use and land cover.¹⁸ Such simplistic explanations generally rely on deductive models and the use of short term data from localized studies.¹⁹ In his discussion of the empirical understanding of the concept of sustainability, Abe Goldman argues convincingly that neither contemporary nor historical food production systems can be measured in relation to static equilibrium models of optimal resource use.²⁰

Historical information plays a key role in breaking this deadlock and transcending a static view of African agriculture. Niemeijer thus argues for a new development paradigm based on a true understanding of the dynamics of African agricultural history.²¹ While in past studies of landscape change in sub-Saharan Africa a mere passing reference to population pressure would suffice as a causative factor to “explain” land use change, there is today an increasing awareness of the role of historical processes. The study of land cover and vegetation, as expressions of different political and economic structures in space and time, is gaining increasing attention in a variety of disciplines. For example, it has been shown that during times of population growth in southwestern Ethiopia, both the contraction and expansion of croplands occurred (in different areas) as a result of the

¹⁶ N. Thomas Håkansson, “The Decentralized Landscape,” Michael Sheridan, “Tanzanian Ritual Perimeters and African Landscapes: The Case of *Dracaena*,” *International Journal of African Historical Studies* 41, 3 (2008), 491-521.

¹⁷ Ferguson demonstrates how an imagined primitive subsistence past of Lesotho shaped development projects in the 1990s. See James Ferguson, *The Anti-Politics Machine: “Development,” Depoliticization, and Bureaucratic Power in Lesotho* (Cambridge: Cambridge University Press, 1990).

¹⁸ This has been discussed in a series of studies, see for example Eric F. Lambin et al., “The Causes of Land-Use and Land Cover Change: Moving beyond the Myths,” *Global Environmental Change* 11 (2001), 261–69; Michael Mortimore, *Roots in the African Dust: Sustaining the Sub-Saharan Drylands* (Cambridge: Cambridge University Press, 1998); Vigdis Broch-Due and Richard A. Schroeder, eds., *Producing Nature and Poverty in Africa* (Uppsala: Nordiska Afrikainstitutet, 2000).

¹⁹ Discussed in Jane I. Guyer and Eric Lambin, “Land Use in an Urban Hinterland: Ethnography and Remote Sensing in the Study of African Intensification,” *American Anthropologist, New Series*, 95 (1993) 839–59; and David Niemeijer “The Dynamics of African Agricultural History: Is It Time for a New Development Paradigm?” *Development and Change* 27 (1996), 87–110.

²⁰ Abe Goldman, “Threats to Sustainability in African Agriculture: Searching for Appropriate Paradigms,” *Human Ecology* 23 (1995), 291–334.

²¹ Niemeijer, “Dynamics of African Agricultural History.”

combined effect of climatic, sociopolitical and biological causes.²² Market forces and national policies are also implicated in the decline of wildebeest populations in the Serengeti-Mara area (Tanzania/Kenya). The reduction in their numbers can be explained not by the growth of human agropastoralist populations, as has been a widespread assumption, but by an institutional structure that encouraged commercial cultivation on the Kenyan side.²³

Besides addressing the long term perspective, these studies also show the value of going beyond the detailed local-scale level analyses that figure so prominently in the stories of both successes and failures in natural resource management. As noted by Lambin et al.:

“the rich array of local-level human-environment case studies can be used to create *regional* ‘generalities’ of land-use and land-cover change that promise to improve understanding and modeling of critical themes in global change and sustainability studies” (italics authors’).²⁴

The study of regional level dynamics thus plays an important role in bridging the gap between the local and global levels.

Landscapes have a “nested political ecology” in that the different forms of political and economic circumstances at particular junctures of history and at different spatial scales provide the incentive structures for how labor is used on the land.²⁵ Rather than assuming invariant relationships between political forms and land use, this perspective employs a chain of explanations that begins at the local level and proceeds to the conjunctures of causation at progressively wider levels of interaction. However, such an analysis easily becomes unwieldy unless analytical distinctions are made among the various levels of interaction.

Regional Approaches

Regional approaches have a long but intermittent history in anthropology and history. There are a number of classic studies in anthropology that adopt a regional perspective on political and economic processes. These authors argue that the structures and changes of

²² Robin S. Reid et al., “Land-Use and Land-Cover Dynamics in Response to Changes in Climatic, Biological, and Socio-Political Forces: The Case of Southwestern Ethiopia,” *Landscape Ecology* 15 (2000), 339–55.

²³ K. Homewood, E.F. Lambin, E. Coast, A. Kariuki, I. Kikula, J. Kivelia, M. Said, S. Serneels, and M. Thompson, “Long-Term Changes in Serengeti-Mara Wildebeest and Land Cover: Pastoralism, Population, or Policies?” *Proceedings of the National Academy of Sciences of the United States of America* 98 (2001), 12544–12549.

²⁴ Lambin et al., “Causes of Land-Use,” 266.

²⁵ Simon Batterbury, “Landscapes of Diversity: A Local Political Ecology of Livelihood Diversification in South-West Niger,” *Ecumene* 8 (2001), 437–64, quote from page 440; Paul Robbins, *Political Ecology: A Critical Introduction* (Malden, MA: Blackwell Publishers, 2004), 72–74.

local societies not only were the result of local conditions, but also were determined by the social and economic logic of larger and wider interaction networks.²⁶

Several recent historical studies have drawn attention to the analytical benefits of a more serious consideration of spatial processes and relations in African history. A recent book, entitled *The Spatial Factor in African History*²⁷ offers examples of how such an analysis effectively challenges a number of typical and conventional images of the dynamics of settlement and land use histories in Africa. For example, the analytical filter of 'ethnic groups' or 'tribes,' which have dominated much thinking about local economic, social, and political histories on the continent, can indeed be made redundant by a more spatial approach. One prerequisite for taking the spatial perspective seriously is to reach beyond the limiting boundaries (physical or conceptual) of local case studies, which for long have been a dominant method of research on African environments and societies. In East Africa, two recent, major historical studies of political economy and environmental change in the nineteenth century have applied a regional perspective to great analytical advantage. Giblin's study of the Handeni region of Tanzania and Ambler's work on the Kenya highlands show how changing regional economic and political interactions affect land use as a result of changing political power constellations within the region, and economic connections with the coastal caravan trade.²⁸

Although the regional perspective is becoming more popular in the analysis of economic, political, and environmental history, most studies use the region as a heuristic device without specifying the theoretical implications of the concept. The authors of such studies often select a region within which they investigate various parameters of interaction, such as migration, trade, warfare, and political networks. The use of this perspective has produced new insights and has made convincing arguments for the utility of this scale of analysis. However, we believe that the regional approach must become more rigorous in its theory in order to promote comparative research and provide insights into processes that go beyond the regional interests of East Africanist scholars.

Analytical conceptualizations of space may include regional economic and social conditions such as ecology, kinship networks, land tenure, and gender relations that mitigate and transform world-systems influences. Social relationships in the form of kinship, marriage, and blood-siblinghood provide region wide vehicles for establishing long-term trust and credit among people under pressure from state power and international

²⁶ For example, Kajsa Ekholm-Friedman, *Catastrophe and Creation: The Transformation of an African Culture* (Reading, UK: Harwood, 1991); Jonathan Friedman, "Notes on Structure and History in Oceania," *Folk* 23 (1981), 275–95; Edmund Leach, *Political Systems of Highland Burma* (Cambridge, MA: Harvard University Press, 1954); Carol Smith, ed., *Regional Analysis*, vols. 1 and 2 (New York: Academic Press, 1976); Peter Little, *The Elusive Granary* (Cambridge: Cambridge University Press, 1992).

²⁷ Allen M. Howard and Richard M. Shain, eds., *The Spatial Factor in African History: The Relationship of the Social, Material, and Perceptual* (Leiden: Brill, 2005).

²⁸ James L. Giblin, *The Politics of Environmental Control in Northeastern Tanzania, 1840–1940* (Philadelphia: University of Pennsylvania Press, 1992); Charles H. Ambler, *Kenyan Communities in the Age of Imperialism: The Central Region in the Late Nineteenth Century* (New Haven: Yale University Press, 1988).

markets.²⁹ Geological and climatic factors, hydrology, and soil conditions may present new opportunities *in a restructured region*. Communities within relatively close proximity may benefit from lower transportation costs and generate demand for local products from urban areas or specialized rural producers such as pastoralists.³⁰ Such regional specificities can be analyzed in terms of the extent to which wealth can be retained and transformed into long-term investments in land use.

Hence, as a scale of analysis between the world system and the local community, the region can be examined according to the parameters of economic and political power that are contained in regional networks versus world-systems linkages. We argue that only through a historical perspective can we hope to identify and understand the complex linkages among the causal factors that affect land use. The character of land use and landscape transformations may vary greatly over time in the same locality. Thus, we must specify how regional parameters affect labor investments as they filter more distant influences, whether from international markets or state imposed regulations.

Modes of Exploitation and Changing Land Use

As macro-level economic and political structures and strategies for exploitation and control changed over time, they continuously reshaped the conditions for regional interaction. The impact of world-system factors on land use in northeastern Tanzania during the last 150 years can be summarized as five consecutive dominant modes of exploitation. From 1850 to the 1890s the region was *a source of luxury goods* in the form of ivory, and to some extent slaves, but without direct political domination from outside forces. From the 1890s to 1916 the area was part of the German colonial state. While still characterized by an outflow of luxury goods, it gradually became dominated by a *settler economy*. Large tracts of land were alienated for European plantations and labor was obtained by means of force. During the British period, between 1918 and 1961, *peasant production of cash and food crops* was stressed and land alienation for settlers halted, while simultaneously land for sisal plantations continued to be alienated.

This economic emphasis continued through the first years of independence from 1961 until the Arusha Declaration in 1968, when a policy of “self-reliance” was initiated that lasted until the early 1980s. Peasant production was suppressed by state control of prices and marketing. Instead, *industrialization was emphasized and foreign aid became a*

²⁹ Wilhelm Östberg, “The Expansion of Marakwet Hill-Furrow Irrigation in the Kerio Valley of Kenya,” in Mats Widgren and John E.G. Sutton, eds., *Islands of Intensive Agriculture in Eastern Africa: Past & Present* (Oxford: James Currey, 2004), 19–48; Dan Brockington, *Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania* (Oxford: James Currey, 2002), 37; N. Thomas Håkansson, “Regional Political Ecology and Intensive Cultivation in Pre-colonial and Colonial South Pare, Tanzania,” *International Journal of African Historical Studies* 41, 3 (2008), 433–459; Sheridan, “Ritual Perimeters.”

³⁰ Patrick Fleuret, “The Social Organisation of Water Control in the Taita Hills, Kenya,” *American Ethnologist: A Journal of the American Ethnological Association* 12 (1985), 103–18; Kevin Phillips-Howard, “The Rapid Evolution of Small Basin Irrigation on the Jos Plateau, Nigeria,” in Chris Reij, Ian Scoones, and Camilla Toulmin, eds., *Sustaining the Soil: Indigenous Soil and Water Conservation in Africa* (London: Earthscan, 1996), 213–27.

major source of revenue.³¹ Finally, Tanzania entered the current era of economic liberalization through structural adjustment in the late 1980s. In the present (fifth) phase, *market liberalization* has again brought peasant production to the fore. However, as coffee and other cash crops face stiff competition on the world market other forms of exploitation have emerged, such as mineral extraction, tourism, and biofuels. Massive land alienations have again become important forces that affect regional land use regimes and economies.

The Precolonial Period

Prior to colonialism, economic activities in the region varied from pastoralism to intensive cultivation, interspersed with foraging, iron manufacturing, salt making, and exchange networks. Movement of people between communities and economic specializations paralleled the regional interaction of exchange of goods. This regional economy was connected with the Indian Ocean through the ivory trade, which until the mid-nineteenth century was organized by communities in the interior of East Africa. At mid-century the coastal trade became controlled by Zanzibar and large caravans begun to aggressively penetrate the interior. The increased caravan trade in ivory and slaves changed the character of the region's connections with the coast and the Indian Ocean economic system. The production of an agricultural surplus by farming communities along the caravan routes impacted farming communities and agrarian landscapes in different ways. While some communities invested in cattle, others invested in terracing and irrigation. The outcomes for the environment were radically different. While it can be said that the world system through the caravan trade, laid the basis for the later land degradation problems in some of the areas, it could in other areas lead to investments in landesque capital and sustainable agriculture.³²

Political and economic processes were not always peaceful but could also generate sustained violence, which is an important aspect of landscape history that caused qualitative transformations in land cover and soil conditions.³³ Violence and exchange were interconnected through the political economy. The nodes of exchange and trade were rearranged and the politics of control resulted in violence and slave raiding which in turn had an impact on land use. In the South Pare highlands populations decreased and the agricultural system on the mountain was disrupted, which led to famines and depopulation in the 1880s.³⁴ Giblin³⁵ has shown how in the Handeni region south of Usambara the

³¹ Deborah F. Bryceson, *Food Insecurity and the Social Division of Labour in Tanzania, 1919–85* (London: Macmillan, 1990).

³² Håkansson and Widgren, "Labour and Landscapes."

³³ Christopher Allan Conte, *Highland Sanctuary: Environmental History in Tanzania's Usambara Mountains* (Athens: Ohio University Press, 2004).

³⁴ Isaria N. Kimambo, "Environmental Control and Hunger in the Mountains and Plains of Nineteenth Century Northeastern Tanzania," in Gregory Maddox, James L. Giblin, and Isaria N. Kimambo, eds., *Custodians of the Land: Ecology and Culture in the History of Tanzania* (London: James Currey, 1996), 71–95.

³⁵ Giblin, *Politics of Environmental Control*.

entire political economy was transformed through the emergence of a competitive political economy in which leaders armed with guns created new enclaves of intensive cultivation and population concentrations that relied on imported food.

The contribution by Lowe Börjeson, Dorothy L. Hodgson, and Pius Yanda shows that even before these events the Maasai expansion in the mid-1800s caused reverberations throughout the region.³⁶ As the Maasai moved further southeast of Kilimanjaro they were in conflict with another Maa speaking population, the Kwavi or IIPakaruyu, whom they pushed toward the southeast of Usambara.³⁷ This in turn increased the supply of cattle and a thriving trade in livestock for agricultural products, and increased wealth accumulation in the highlands. These conflicts between Maasai and Kwavi and the increased political competition for control of the ivory trade on Kilimanjaro in turn increased the demand for iron weapons. The Pare supplied iron for the entire region, and by the middle of the century much of North Pare was denuded of forest to supply wood for iron smelting.³⁸ The Maasai advance also contributed to an increased accumulation of wealth in southwest Pare, and the expansion of irrigation on the plains on the eastern side of the mountain where, by the 1880s, irrigated fields were developed.

German Colonial Rule

The establishment of the colonial state drastically changed the configurations of power in the region. Although the distinction “pre-colonial–colonial” can be exaggerated as a watershed between two epochs of wealth accumulation and resource exploitation, it is clear that the establishment of the colonial state rapidly extended a power grid with institutional and military powers that affected how people used the environment. There was a transformation of regional nodes of political power and economic linkages, which were grafted onto a global market network for bulk goods and the exploitation of labor by outside interests.

The articles by Hanan Sabea and Frans Huijzendveld show that the political power of the colonial regime was projected on to the region through force by land alienation, the establishment of new forms of cultivation (coffee and sisal plantations), and forced labor.³⁹ The expropriation of land and the establishment of sisal plantations not only transformed the environment at these sites but also rearranged land use in the region. The need for labor

³⁶ Lowe Börjeson, Dorothy L. Hodgson, and Pius Z. Yanda, “Northeast Tanzania’s Disappearing Rangelands: Historical Perspectives on Recent Land Use Change,” *International Journal of African Historical Studies* 41, 3 (2008), 523–556.

³⁷ G.A. Fischer, “Bericht über die im Auftrage der Geographischen Gesellschaft in Hamburg unternommene Reise in das Masai-Land,” *Mitteilungen der geographischen Gesellschaft in Hamburg* (1882–83), 36–99.

³⁸ Lindsey Gillson, Michael Sheridan, and Dan Brockington, “Representing Environments in Flux: Case Studies from East Africa,” *Area* 35, 4 (2003), 371–89.

³⁹ Hanan Sabea, “Mastering the Landscape? Sisal Plantations, Land, and Labor in Tanga Region, 1893–1980s,” *International Journal of African Historical Studies* 41, 3 (2008), 411–432; Frans D. Huijzendveld, “Changes in Political Economy and Ecology in West-Usambara, Tanzania: ca. 1850–1950,” *International Journal of African Historical Studies* 41, 3 (2008), 383–409.

attracted migrants from western Tanganyika who eventually settled and took up land at the peripheries of the estates. The rapidly expanding sisal business also created a demand for food that affected land use in the surrounding areas such as Usambara.

Frans Huijzendveld describes how the German colonists quickly occupied the region, especially Usambara and the neighboring plains, for the purpose of coffee and sisal plantations. The German period was characterized by land alienation and severe labor extractions that caused environmental transformations in much of the region. Increased demand for food by the sisal plantation workers encouraged short-term profit taking and expansion of maize cultivation in Usambara with erosion and declining food production as a result. Successive alienations of land for settler coffee plantations pushed the Shambaa populations into regions where they could not maintain the banana based cultivation. Before colonialism bananas were the staple of the economy, but land and irrigation water was expropriated by Germans, and male labor was forcibly extracted, resulting in the collapse of both the irrigation system and the banana plantations. Together, the research by Huijzendfeld and Sabea illustrates various aspects of the ecological disasters that followed land alienation and German labor exploitation.

British Rule

British rule largely halted the expansion of settler owned plantations, and small-holder peasant production of export products became the focus of colonial economic policy. Simultaneously alienation of land to plantations, particularly sisal remained as aggressive and as prominent as during the German era. And the previously alienated areas continued to have a profound impact on regional land use outside their boundaries. Most of the alienated land around the southern slopes of Kilimanjaro was retained as settler ranches and plantations. The combined action of land alienation on the lower slopes and the forest reserve was described by colonial planners as acting like “a vice” with the Chagga farmers in between. In his contribution to this special issue, Mattias Tagseth suggests that the rapid expansion of the area under coffee cultivated by smallholders, together with bananas under shade trees, in the period after 1930 can be seen as one of the responses to a politically-induced land scarcity. In addition, he also demonstrates that while irrigation on Kilimanjaro has been maintained for a long period, its spatial configuration changed over time.⁴⁰

The British encouraged the cultivation of coffee and cotton as cash crops, and maize and rice spread both as food and market crops. In addition, the marketing of cattle expanded both to satisfy the demand for meat in urban areas and to supply hides for export. In and around the Pare Mountains there was little land alienation except a few small sisal plantations. A major change in the terms of trade to the detriment of agricultural products in terms of cattle was a result of the connection to global markets. This collapse in prices for food crops and the restriction of the Maasai pastoralists to a reserve transformed the economy of regional exchange towards the extraction of labor and agricultural and pastoral products for outside markets. Household economic viability and access to livestock for

⁴⁰ Mattias Tagseth, “The Expansion of Traditional Irrigation in Kilimanjaro, Tanzania,” *The International Journal of African Historical Studies* 41, 3 (2008), 461-490.

social payments deteriorated. This resulted in a continuously increasing number of men that left their home areas for wage labor removing labor that was needed for soil conservation in the Pare and Usambara mountains. The loss of male labor created a vicious circle of declining farm incomes due to soil degradation, which stimulated further outmigration and thus exacerbated the loss of productive potential.⁴¹ In these areas the irrigation system declined and both terracing and manuring ceased. However from a regional perspective land use change in different areas may exhibit varied and interconnected trajectories. Håkansson and Tagseth show for South Pare and Kilimanjaro respectively, that where high farm incomes could be combined with food production the local communities were able to maintain regional exchanges and investments in sustainable irrigated cultivation such as on Kilimanjaro and in the rice growing areas of South Pare.⁴² In his contribution to this issue, Thomas Håkansson links disinvestment in land in the South Pare highlands to expanding irrigation in the plains where long-term social and economic investments were profitable.

The British colonial period was not only a time of economic restructuring, but also entailed the imposition of new administrative institutions that impinged on land use. The contribution of Michael Sheridan analyzes how the farmers of Usangi, North Pare, renegotiated the new land tenure regulations, especially in the light of how the *Dracaena* plant carries a complex cultural load in northeastern Tanzania and also in many societies across Africa. He argues that landscape boundaries such as hedges and fences are not simply “things,” they are social relationships in which people negotiate the meanings of land, resources, and property.⁴³

Independence, Ujamaa, and Liberalization

After the Arusha Declaration in 1968 Tanzania embarked on a program of so called self-reliance that lasted until the beginning of the 1980s. The state attempted to remove private crop trade and instituted price and market controls. The low prices for agricultural products and declining investment in rural production led to a reduction in agricultural output. While this period represented a hiatus in the cash-crop oriented economy of the colonial era, the alienation of land from the Maasai that had begun in the colonial era continued after independence in 1961. This is not remarkable since Tanzania has not until recently provided profitable exports for the centers of the world system. Instead its wild life and natural scenery has become an inexhaustible source of recreational consumption for the outside world. In this issue, Dan Brockington, Hassan Sachedina, and Katherine Scholfield analyze how western cultural models drive conservation and land alienation in Tanzania.

⁴¹ Stephen Feierman, “Defending the Promise of Subsistence: Population Growth and Agriculture in the West Usambara Mountains, 1920–1980, in B.L. Turner II, Göran Hydén, and Robert W. Kates, eds., *Population Growth and Agricultural Change in Africa* (Gainesville: University of Florida Press (1993), 114–44; Håkansson, “Regional Political Ecology.”

⁴² N.T. Håkansson, “Regional Political Ecology and Intensive Cultivation in Pre-Colonial and Colonial South Pare, Tanzania,” *International Journal of African Historical Studies* 41, 3 (2008), 433–459; Tagseth, “The Expansion of Traditional Irrigation.”

⁴³ Sheridan, “Ritual Perimeters.”

This country now sells *recreational services* to the industrialized world in the form of national parks and reserves.⁴⁴

The Tanzanian government's recent embrace of neoliberal economic "reforms" (including the privatization of state parastatals, encouragement of foreign investment, liberalization of trade, withdrawal of support from social services such as health and education, and streamlining of the government workforce) has intensified the pace of land alienations and agricultural market production. The Maasai have been removed from their former lands through the establishment of new national game parks, the spread of large-scale commercial farms, and state appropriation of land for mining and large hunting concessions. Households have diversified their economic activities to compensate for reduced pasture, which has simultaneously fixed and expanded the resource base of families, as well as restructured their labor and spatial dynamics.

The expansion of commercial agriculture has followed different paths in terms of regional integration and investment in landesque capital. Wealthy farmers (including Maasai) and other investors have captured the expanding opportunities created by recent development policies, to specialize in large-scale commercial cultivation. However, in contrast to the specialization in cattle herding in the nineteenth century this specialized land use is more directly linked to national and global markets and incentives and thus only indirectly related to other production systems within the region. The appropriation of land for wildlife conservation, commercial hunting and mining are forms of specialized land use that are aimed at national and global markets and thus largely disconnected from the regional economy, even if their presence in the landscape as alienated blocks of land evidently has far reaching impacts on the regional political economy.⁴⁵

While the large commercial farms are relatively new developments with questionable effects on long-term productivity, other areas are expanding older indigenous irrigation systems and mixed fields. The importance of a regional historical perspective on changing land use is illustrated by the case of irrigation in Kilimanjaro. Tagseth shows that when earlier reports on a reduction of the irrigation system are set in a regional perspective there has been a spatial reorientation from highland to lowland rather than an overall decline. The expansion of irrigation in the lowlands has some similarities with those in the South Pare plains in terms of the regional political economy and the trade in grains. The privatization of estates under the policies of liberalization led to the revitalization of dormant coffee estates on the mountain slopes. Increases in water use in the lowland areas have continued under conditions of comparatively low regional population growth since the 1980s, partly due to the introduction of a new rice variety, which has made irrigation more water intensive, and to policies of liberalization leading to the privatization of estates and other changes.⁴⁶

⁴⁴ Dan Brockington, Hassan Sachedina, and Katherine Scholfield, "Preserving the New Tanzania: Conservation and Land Use Change," *International Journal of African Historical Studies* 41, 3 (2008), 557–579.

⁴⁵ Börjesson et al., "Northeast Tanzania's Disappearing Rangelands."

⁴⁶ Tagseth, "The Expansion of Traditional Irrigation."

Concluding Remarks

As this introduction to a large extent provides a commentary on the contributions to this special issue of the journal, we will here only provide a few summary statements on what we believe are useful general observations of comparative relevance. First, it is clear that the changing patterns of land use in northeastern Tanzania cannot be interpreted directly from such theoretical concepts as luxury versus bulk goods, market exchange, or unequal exchange. The effects and interconnections of world-systems and human environmental relationships at the local scale must be set in specific regional economic, ecological, and social contexts through which modes of exploitation and regional specific factors combine.

Second, the application of a combined historical and regional approach overcomes generalizations based on local cases by showing how changes in one place may be related to change in other localities over time. Thus, as we have shown above, degradation in soil conservation and productivity may be related to the opposite development in another part of the region.

Third, the landscape as a human construct in physical space has its own effects through time in shaping constraints and possibilities. The building of landscapes capital in one time period may present opportunities for later development in new political and economic contexts. Likewise, reductions in productive resources, whether pasture or labor, may in themselves create forces of change as a form of path dependency, as is evident both in the case of soil degradation in Usambara and land alienation in Maasai land.