

Ian M. Miller, *Fir and Empire: The Transformation of Forests in Early Modern China*

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In the current century, sustainability has become embedded in many aspects of our lives. When tracing the lineage of this concept, historians have often looked to the Western tradition of natural-resource management that emerged in fifteenth-century Europe. This same scholarly narrative has described non-Western cultures as more exploitative and predatory in their relations with natural resources. Thus Mark Elvin's highly influential book on China's environmental history *The Retreat of the Elephants* (2004), portrayed the country's past as a prime example of unsustainable development and characterized its forest history as a continuous retreat of forest land towards south and south-western China, which was accompanied by a significant loss in biodiversity. As Chinese environmental history matures as a research field, historians have begun to scrutinize and revise earlier understandings of what happened to China's native woodlands.

Ian M. Miller's *Fir and Empire* admirably challenges the currently well-established narrative of China's Great Deforestation through an imaginative and meticulous survey of historical evidence. Miller identifies China's dramatic departure from exploitative forestry as its response to the wood crisis of the eleventh century, which facilitated the soft-touch state regulation of forest exploitation and the significant expansion of the private market for timber. The absence of centralized state machinery for administering access to forest resources in twelfth- to sixteenth-century China was, Miller argues, the key to understanding the system's longevity, as well as the reason why China's silvicultural revolution has escaped historians' eyes for a long time. Rather than putting forests under strict state regulation, as was the case in Europe in later times, the system operated under the Song, Yuan and Ming Dynasties encouraged long-term investment in reforested land, as the authorities recognized the regenerative work of landowners as the basis for property rights that were to be legally and economically protected. In exchange for tax obligations, owners of *shan* (taxable forest) were free to profit from trading timber and financializing their claims to the land. Far from seeing a history of continuous forest disappearance, Miller claims, China experienced a historical phase of regenerative forestry that operated for much longer than its Western counterpart of more recent origin.

The book's introduction and first chapter set out a general argument about China's forgotten silvicultural revolution. Forest resource depletion in eighth-century China led to the creation of an embryonic form of official forest regulation that existed until the eleventh century, when the general 'assumptions of abundance' gave way to the 'fears of scarcity' (p. 22). The scale of deforestation pressure at the peak of the eleventh-century wood crisis was massive – official oversight turned out to be inadequate for meeting the challenge of resource management. Chapter 2 details the subsequent emergence of mixed forest regulation by tracing the process through which woodlands were measured, categorized and recognized as taxable property. Through this process, forest owners gained claims over forest land, which incentivized them to maintain the value of the forest by

planting timber with commercial value. Miller argues that the growing coverage of registered forest land proves the expansion of a new forest biome in south China. Crucially, Chinese dynasties during the forest revolution kept their direct intervention to a minimum, leaving the private timber market to expand so that forest owners could profit by constantly supplying timber. Simultaneously, state officials extracted revenue from timber merchants at customs stations established at major strategic sites on the trade routes, through which the officials made occasional market intervention, driving prices on the wood market by modifying tax rates. Chapter 3 elaborates on the interaction between the taxation system, the organization of forest labour and the broader monetization of the Chinese economy at the time, especially in relation to the use of silver currency, which ushered in a new tax-accounting regime. Another testament to China's strikingly sophisticated forest economy can be found in the complex forms of financialization through land shareholding and partnerships for forest owners and investors.

Chapters 5 and 6 describe the distinctive manners in which the aforementioned Chinese dynasties engaged with the forest economy. The direct appropriation of forest resources was generally the exception rather than the rule and the state's aggressive exploitation of labour and timber was usually followed by a period of low activity due to the state's extra-market interventions jeopardizing the sustainability of the existing forest economy. The tremendous pressure from the demand for timber to construct imperial palaces and urban cities spelled the end of China's native forest – and eventually the nation's sustainable forest regime. By the eighteenth century, it claimed the last of the Yangzi's deep forest, the loss of which was a symbolic statement that there was no longer any margin to China's resource frontier.

The new perspective on China's forest history presented in Miller's book compels us to revise our chronology of the genesis of regenerative forestry and, more broadly, the history of sustainability. Well before European conservationist forestry found expression in silvicultural textbooks and official regulations, a distinctive form of sustainable forest economy operated in China. *Fir and Empire* will undoubtedly stimulate future work, as our knowledge is far from complete in terms of the early history of sustainable forestry – for instance, existing literature on the history of sustainability has yet to fully integrate the studies on Asian nations such as China and India. Miller's book makes a significant contribution to globalizing our historical narrative of sustainability.

Fir and Empire draws strength from its robust yet imaginative use of empirical evidence. Where we lack direct evidence of how Chinese forests have transformed over hundreds of years, Miller builds his argument by piecing together various proxy evidence. Miller turns official surveys, local gazetteers, cadastral registries and legal records into rich historical sources that illuminate the dynamic transformation of China's woodland biomes that started in Song China. *Fir and Empire* demonstrates how a rigorous and creative approach to historical evidence can yield new and exciting findings that profoundly change our understanding of the past.

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