

*Building on Water: Venice, Holland and the Construction of the European Landscape in Early Modern Times.* By Salvatore Ciriaco, translated by Jeremy Scott. New York: Berghahn Books, 2006. x + 308 pp. Glossary, maps, tables, bibliography, notes, index. Cloth, \$80.00. ISBN: 1-845-45065-5.

Reviewed by Mark Cioc

Land issues loom so large in the economic development of early modern Europe that historians tend to overlook another important “commodity”: water. Hydraulic engineers and their financial backers made land reclamation and large-scale irrigation projects feasible, just as they created new opportunities for the transport of goods and people on rivers and canals. As Salvatore Ciriaco makes clear in his engaging book, *Building on Water*, they were also behind the success of the Venetian Republic and the United Provinces of the Netherlands, and they opened up the prospect for commercial expansion and capitalist development over much of the European continent.

Ciriaco devotes the first three chapters of his book to the Venetian Republic—Venice, its lagoon, and its hinterland (known as *terraferma*)—where land reclamation played a central role in the creation of new agricultural terrain (especially rice fields), and where canal projects helped create the infrastructure for Venice’s far-flung internal and external commercial empire. The Department of Uncultivated Natural Resources, an innovative Venetian agency created in 1556, did much to promote private local and regional hydraulic projects, not least by resolving legal and administrative hurdles, but Ciriaco’s main emphasis is on the difficult choices and dilemmas that urban Venetian elites, politicians, and land speculators faced as they strove to dominate the hinterland and construct an agriculture-based trading economy. Chapter one focuses mostly on the physical impact that Venetian irrigation and land-reclamation projects had on urban and rural landscapes during the early modern era. Chapter two highlights the conflicts between a new breed of private speculators, who sought to remake the Republic along protocapitalist lines (entrepreneurship with feudal residues), and the champions of the older monasteries and independent communities, who strove to maintain the region’s traditional “corporatist” way of life. Chapter three provides an especially perceptive look

at the wide array of water experts and specialists—a grab bag of personalities that included both genuine scientists and greedy land speculators—whose incessant tinkering with the Venetian waterscape helped contribute to Italy’s preeminence in the new field of hydraulic science by the early seventeenth century.

Ciriacono is a well-known historian of Venetian agricultural and water-management policies, and his first three chapters (all reworked versions of previously published articles) are based on painstaking archival research. In his final two chapters, he expands his territorial scope and intellectual perspective to examine the major breakthroughs in hydraulic engineering that occurred outside Italy, especially in the Netherlands, Germany, France, and Great Britain. Chapter four compares Venetia and Holland, Europe’s two greatest “*civilisations d’eau*.” Both Venice and Amsterdam underwent rapid commercial and economic growth in the late Middle Ages, and both staved off impending food shortages by extending their territorial reach. Both regions also had an “excess” of water and a “shortage” of land, which prompted them to develop new technologies designed to drain their hinterlands for cultivation. Differences in landscape necessarily gave rise to different technologies (hill-ringed Venetians, for instance, could rely on gravity for drainage, while flatland Hollanders had to depend on drainage windmills to pump the polders dry). Yet, as Ciriacono points out, more united than divided the two regions from a hydrological perspective. The Venetians could have reclaimed a good deal more land had they been willing to introduce Dutch windmill technologies. Given Venice’s persistent problems with lagoon siltation, the Venetians could also have benefited from early exposure to Dutch dredging practices (not introduced until the seventeenth century). Similarly, it is hard to understand why the Dutch did not get around to creating its central water-administration agency, the *Rijkswaterstaat*, until 1795 (and then only under the duress of the French Revolution), more than two centuries after the Venetian experience had amply demonstrated the benefits of centralized and coordinated water management.

Chapter five offers an in-depth examination of technology transfers from the Netherlands and Italy to other regions in northwestern Europe, where land reclamation and the advent of capitalist agriculture emerged hand in hand. Most of the chapter is devoted to describing how various governments relied on Dutch techniques, European

engineers, and international financiers to drain large portions of their wetlands and coastlines (as can be seen by the excellent maps on pages 196 and 200) in the interest of market-oriented agriculture, at least until construction costs, agrarian prices, climate changes, and migration patterns brought reclamation to a standstill in the eighteenth century. It is a pity that Ciriaco's main focus is on agrarian drainage projects and that he therefore ends his account in the eighteenth century. It was only with the Enlightenment that the French government began to make use of Italian hydraulic science and Dutch engineering skills to establish some of Europe's finest engineering schools, build an impressive network of canals, engage in large-scale river engineering, and generally introduce to the world the advantages of a government-sponsored water infrastructure designed to foster industrial and urban growth.

*Mark Cioc is professor of history at the University of California, Santa Cruz. He is author of The Rhine: An Eco-Biography, 1815–2000 (2002) and coeditor of How Green Were the Nazis? Nature, Environment, and Nation in the Third Reich (2005). He is currently serving as editor of Environmental History, the jointly sponsored journal of the American Society for Environmental History and the Forest History Society.*