



Mikael Wolfe, [\*Watering the Revolution: An Environmental and Technological History of Agrarian Reform in Mexico\*](#). Durham: Duke UP, 2017. HC. xii + 317 pp. ISBN: 978-0-8223-6359-0; PB 978-0-8223-6374-3.

This important new book takes an “envirotechnical” approach to examining the agrarian reforms of the Mexican Revolution, particularly during the 1930s under President Lázaro Cárdenas. Author Mikael Wolfe combines a focus on the role of technologies, like water pumps, in the process of agricultural transformation with insights from environmental history – and in doing so he provides fresh analysis of a familiar topic. The book is divided into two parts of three chapters each. The first, “El Agua de la Revolución,” examines agrarian reform in the Laguna

region from 1910 to 1940; the second, “The Second Agrarian Reform,” begins with the building of the Nazas River Dam from 1936 to 1946 and carries the story into the 1970s. An Epilogue provides an overview of related developments over the past quarter-century. The book includes appendices comprising a graph and several tables that illustrate changes in Nazas River flow and cotton production over time. The author has provided a number of historical images, maps, tables, and figures to help readers understand the geography and culture of the Laguna region and the changing scale of its agricultural production.

Wolfe’s book makes several important contributions to our understanding of this historical period. First, it emphasizes the critical importance of water distribution in the cotton growing Laguna region of northern Mexico. The traditional, “textbook” narrative of Cárdenas’s agrarian reforms focuses on land redistribution, but land without secure access to water is useless for farming (a point made eloquently in Juan Rulfo’s short story *They Gave Us the Land*, from which the opening epigraph of Wolfe’s book is drawn). The centrality of water access to the success or failure of Cárdenas’s reforms has apparently been the focus of Mexican scholarship for over a decade, but Wolfe introduces this theme to English-language readers. Second, Wolfe highlights the relationship between social class and access to water-distributing technologies, describing the “water apartheid” (his term) that adversely affected farmers on newly created *ejido* collectives who lacked access to expensive mechanical pumps. They were dependent on the state’s provision of reservoir water, which was more effectively regulated than private pumping of the aquifer. Finally, the book focuses on *técnicos* – men with some technical training in subjects like civil engineering or agronomy – as key

mediators between state agendas and other interests during this period of revolutionary reform. Cárdenas-era *técnicos* promoted the “conservation” of Nazas River water in reservoirs where its release could be controlled to meet the region’s economic development goals. Their interventions in the landscape and hydraulic cycle destabilized a longstanding system, called *aniego*, of diverting floodwaters into canals. This traditional form of irrigation recharged groundwater; although less controllable by state-employed *técnicos* than dams were, it was better aligned with regional ecology.

Enthusiasm for the Cárdenas administration’s projects (the primary focus here is Nazas dam, later renamed after Cárdenas) was strongest among poor farmers who embraced the revolutionary president’s reformist promises, as well as middle class proponents of social reform through technological change. Notably, large landowners in the Laguna region were skeptical about the benefits that dam construction would bring, fearing its likely harm to soil fertility and aquifer recharge. They were also, presumably, less enthusiastic about revolutionary promises of social transformation through new hydraulic technology, having less to gain and a great deal to lose from such changes.

This study will be of interest for historians of Latin America beyond Mexico, particularly those interested in the intersecting histories of science, technology, environmental change and economic development in the region. Wolfe’s book highlights the role that technologies (and technocrats, or *técnicos*) played as perceived instruments of progressive reform and economic modernization in twentieth-century Latin America. It expands on historian Michael Ervin’s analysis of the “middle road” that technocratic reformers tried to construct and navigate; as Wolfe argues, “hydraulic technology [it was hoped] would bring social liberation to the agrarian masses without the government radically altering existing land-tenure patterns.”<sup>1</sup> (72). For many technocratic reformers across Latin America in this period, modern science and technology seemed to offer a panacea for longstanding social ills, proffering seemingly apolitical solutions through which they could mediate the antagonistic interests that pitted elites against the very poor. Middle class technocratic professionals often viewed both decadent landowners and the untutored rural masses as obstacles to progress and saw themselves—aided by scientific tools and expertise—as uniquely able to address the most urgent needs of the marginalized without provoking the ire of the powerful.

Wolfe’s book also emphasizes the significance in the twentieth-century Americas (and beyond) of a technocratic mindset that spanned political ideologies and profoundly impacted environments. Reflecting on these tumultuous decades, he observes in the Epilogue: “Although they were ideological opposites within the emergent postrevolutionary one-party state, both the left-of-center, downwardly

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<sup>1</sup> Michael Ervin, “The Art of the Possible: Agronomists, Agrarian Reform, and the Middle Politics of the Mexican Revolution, 1908-34,” Ph.D. diss., University of Pittsburgh, 2002.

redistributionist (rich-to-poor) Cárdenas and the right-of-center, upwardly redistributionist (poor-to-rich) Alemán shared a technological optimism in dams and other hydraulic infrastructure as politically ‘neutral’ facilitators of their developmentalist programs” (222). This similarity is a sobering acknowledgement for left-leaning historians who are inclined to commend the transformationist goals of progressive administrations like Cárdenas’s. But it is important to recognize that such promises incentivized massive, technologically driven change to landscapes, in order to demonstrate the state’s commitment to effect change. There is little political capital in allowing nature, or even traditional cultivation methods like *aniego*, to take their course—even if such a restrained approach to regional “development” would be most prudent in the long term.

Wolfe indicates early in this book that he sought to understand why “governments persistently deploy invasive technologies for development...when they know those technologies are ecologically unsustainable?”—as many of the engineers and agronomists in his story clearly did (2). The simplest answer, confirmed in his study, is that a government’s ability to deliver resources to core constituencies (on the left or right) is essential for leaders’ legitimacy—and technocratic solutions like dams are often highly visible ways of accomplishing that. In the Laguna region, large dams were symbolically important but, in combination with mechanical pumps, devastating to the water supply and thus to the agriculture on which inhabitants of all social classes depended.

Wolfe’s envirotechnical analysis reminds us that technological inputs have tremendous environmental impact and that technocratic solutions (to issues ranging from food production to national defense) are portable and can be adopted in quite diverse political and social contexts. One insight we might draw from this study is that historians need to follow technocratic prescriptions themselves, as historical agents that cross political and cultural boundaries, and to trace the environmental and social changes that dams, irrigation systems, modified crops, weaponry, reproductive technologies, and so on have effected in multiple contexts. Technocratic governance is a crucial theme in twentieth-century environmental history, within and beyond the Americas. Scholars would do well to trace the continuities in the technocratic impulse across political boundaries like national borders or party ideology.

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