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**Mikael D. Wolfe.** *Watering the Revolution: An Environmental and Technological History of Agrarian Reform in Mexico.* Durham: Duke University Press, 2017. Illustrations. 336 pp. $94.95, cloth, ISBN 978-0-8223-6359-0.

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When students of Mexican history learn about the postrevolutionary agrarian reform, a highlight of class discussion is often the collectivization of the Comarca Lagunera's (La Laguna) cotton plantations. Rarely, however, does the natural environment figure in these discussions. Mikael D. Wolfe's *Watering the Revolution: An Environmental and Technological History of Agrarian Reform in Mexico* will alter how scholars understand Mexico's emblematic agrarian reform in La Laguna and, one would hope, how teachers teach it. *Watering the Revolution* joins other monographs by Angus Wright, Myrna Santiago, Sterling Evans, Luis Aboites, Christopher Boyer, Martín Sánchez Rodríguez, and Anna Rose Alexander as some of the leading pieces of scholarship on Mexico's environmental history. Wolfe's special contribution lies in his employment of a sophisticated envirotech approach that studies the mutual constitution and melding of environmental and technical systems to reinterpret Mexico's land reform from the 1920s to the 1950s.

Wolfe seeks to unravel a paradox of Mexico's irrigation regimes: why did *técnicos* (as he calls a cadre of hydraulic engineers, agronomists, and related technocrats) continue to implement invasive hydraulic technologies, such as dam building and groundwater pumping, despite possessing the knowledge that such technologies wreacked havoc on the environment and imperiled the aquatic foundation of desert agriculture? The problem leads Wolfe to a compelling answer. Mexico's técnicos were "incidental conservationists"; they ascertained the ecological problems spawned by invasive technology but held firmly to the belief that future applied science would resolve all environmental problems down the road. There were also political-economic variables at work, Wolfe notes, namely, the business investments made by the same técnicos in invasive technologies and the government's steadfast support for agribusiness starting in the 1940s.

Wolfe shows how in the Comarca Lagunera, a semi-arid basin that receives the torrential flows of the Nazas and Aguanaval Rivers, hydrology and hydraulic technologies were bound up with the Mexican Revolution of 1910. Landowners, government técnicos, and land reform beneficiaries sparred over water and how the fragile Laguna environment should be governed and reworked after 1910. By the early 1950s, environmental changes conspired with a more business-friendly government and a package of environmentally damaging technological inputs—from dams and pumps to pesticides and fertilizers—to not only deepen the ecological crisis but also hinder the

success of the agrarian reform's original intent: the redistribution of water to favor the agrarian ejidos set up by Lázaro Cárdenas.

*Watering the Revolution* is a well-researched book, relying on a large number of archives and newspapers in Mexico and the United States, including the underutilized Archivo Histórico del Agua in Mexico City. The chapters cover a century of agrarian history, from the Porfirian moment when cotton became king of this northern space to the effects of President Carlos Salinas's revision of article 27, the constitutional basis of the agrarian reform, on ejido agriculture. The book is composed of two parts: "El Agua de la Revolution" and "The Second Agrarian Reform." In this first part, Wolfe tracks how large cotton plantation owners devised a flood-irrigation system (***aniego***) comprising miles of canals to sustain their crop and the debates between Porfirian técnicos and landowners over how to govern this intricate system. The call for a dam on the Nazas to better "conserve" and regulate the distribution of water dates back to Francisco Madero in 1907, but by the dawn of the Cárdenas six-year presidency, agrarian reform advocates and many técnicos conceived of the dam as an essential complement of land reform, the most efficient way to redistribute water to newly formed ejidos. Not everyone agreed. Big landowners correctly saw the dam as a reworking of nature that would undermine their enterprise rooted in the aniego system, and more than a few experts warned of the negative environmental consequences of dam construction: reduced aquifer recharge and fewer soil sediments to replenish the desert soil. In the second part, Wolfe shows how the completion of the Nazas River dam in 1946, hailed as the consummation of "revolutionary envirotechnical modernity" (p. 59), failed to deliver on its promise at the same time that groundwater pumping and pesticide use accelerated. These new agricultural technologies favored agribusiness and aggravated existing environmental troubles, of which the foundering ejidos bore the brunt.

Some readers may wish for a deeper class analysis of the various landowning interests and, especially, of the cotton workforce on plantations and ejidos, but these topics, relatively neglected in chapters 1 and 2, become more integral to Wolfe's envirotech approach throughout the rest of the book. His treatment of class-driven debates over the construction of the dam are fascinating, as is his discussion of the investment portfolios of certain técnicos, such as Marte Gómez, who helped found Worthington de México. ***Watering the Revolution*** is without a doubt a major contribution to the field and is suitable for graduate-level seminars on environmental history, science and technology studies, and Latin American history.

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