Many inconsistencies characterized the outcome of the Mexican Revolution. On the one hand, social-reformist and nationalist approaches shaped the political agenda that followed the belligerent events of the 1910s. Most prominently, the constitution of 1917 and the presidency of Lázaro Cárdenas (1934-1940) represented this strand of policy. Cárdenas, for instance, implemented a land reform that benefited mostly indigenous strata of the population by designating ejidos or communal lands where peasants and indigenous people could cultivate their own fields. Additionally, the Cárdenas-administration promoted the nationalization of natural resources, above all petroleum.

On the other hand, the international context and, more specifically, developmentalism characterized the events following the revolutionary upheaval. Most notorious for this approach was President Miguel Alemán (1946-1952) who championed state investments in infrastructure and industrialization projects, obtained loans from the United States, and fostered, more decidedly than his predecessors, the interests of the growing urban middle-class, whereas he slowed down social reforms that benefited the rural population.

For both sides of revolutionary reform, the development of natural resources became crucial. The environment supported, on the one hand, the existence of peasants and indigenous groups, and state agencies set out to control and protect it against misuse and foreign interventions. On the other hand, the exploitation and concerted use of natural resources offered the opportunity to boost economic growth, development, and modernization. Therefore, the utilization and distribution of natural resources, the modernization of invasive technologies and infrastructure, and the tension between destruction and protection of the environment all became central topics of the post-revolutionary political debate.

Development policy often had international implications, be it US-American influence or the globalization of the development paradigm after the Second World War. Mexico represented an important arena for these debates, and the so-called Green Revolution with its mechanized and industrialized agriculture started its global trajectory.
here. The state acted as the central development actor, and international development agencies and banks often participated in this endeavor.

Recent scholarship on the history of Mexico engages with these problems, and some contributions do so innovatively. These studies focus on Mexico’s handling of its natural resources and the social conflicts that arose from it. They also trace the global relations that were constitutive for the country’s development policy between 1910 and the 1950s. By applying such perspectives, the monographs reviewed in this essay contribute to larger trends in historiography, namely to Environmental History, the history of development during the Cold War, and Science and Technology Studies.

Ryano M. Alexander: Sons of the Mexican Revolution. Miguel Alemán and His Generation

Maybe the most conventional of all these monographs is Ryan Alexander’s Sons of the Mexican Revolution (2016), which offers a traditional account of Mexico’s political history centred on the presidency of Miguel Alemán (1946-1952). The book remains mostly in a nationally embedded historicist narrative but has its merits in offering an accurate historical context of the Alemán years.

Alexander asks why the Mexican Revolution had failed to realize its promises in the field of social reform, and he argues that a generational change in politics by the mid-1940s was responsible for that. He describes how this new generation of Mexican politicians emerged as an outcome of social change and a “process of elite socialization” (p. 6) and underlines that these actors had very different ideas about politics and social reform than the first generation of revolutionary politicians.

According to Alexander, Miguel Alemán and his cohort, who were middle-class academics rather than military, came up with new political ideas they had developed during their years of study when they formed a network of law students at Mexico City’s Universidad Autónoma de México (UNAM), a network that later transferred to politics. The core idea of Alemán’s generation was a “vision of national development” (p. 5) that connected to global post-war discourses of modernization and prioritized industrialization and the interests of the emerging urban middle-class.

While one strand of previous scholarship has criticized Alemán as a betrayer of the revolution who fostered social inequality by promoting large-scale infrastructure and industries and implementing a corrupt state apparatus, a more US-friendly perspective has stressed that the President successfully modernized his country while closely cooperating with the United States. Alexander combines the two interpretations and tries to understand the change in Mexican politics in the late-1940s by using “biographical and generational approaches” (p. 6).

The author agrees with criticism of Alemán that points to corruption and dictatorial aspects of his tenure, but he also emphasizes the stability, winning populism, and economic policy of the regime that set the basis for economic growth in the following
decades. By implementing “a new development paradigm centred on an inward-looking process of statist industrialization” (p. 10) and by creating “national aesthetics of modernity” (p. 13), Alemán also updated the public image of the presidency and eventually the country’s national culture, if we go with Alexander.

The book offers a chronological account, starting with a chapter on the education years of the Alemán group in the 1920s. Alexander portrays young men from the countryside who, during their adolescence, became friends and grew into the urban middle-class. The formation of the group started in the prestigious Athenaeum school and matured at UNAM’s law school. Early on, the Alemán group engaged in political debates and valued their new social situation, enjoying personal liberties and economic ascent.

After graduation, as chapter two explains, the young men climbed the social ladder even further. Alemán and others invested in business and real estate and pursued a career in the party that led the revolutionary process, the Partido de la Revolución Mexicana (PRM). Young Alemán started as Senator and Governor of the state of Veracruz and cooperated with President Lázaro Cárdenas. Certain characteristics of his later tenure already became visible in Veracruz, specifically his liaison with rich landowners and corruption allegations. From 1940 to 1945, he served as Minister of the Interior in the administration of President Manuel Ávila Camacho. In 1946, he became the presidential candidate of the PRM which he renamed Partido Revolucionario Institucional (PRI) the same year.

Chapter three depicts President Miguel Alemán’s domestic politics with a focus on his developmentalist agenda. Alexander situates Mexico’s efforts to achieve economic growth by bureaucratic planning and promoting industries in a Latin American context and refers to the import substituting industrialization as advanced by the Economic Commission for Latin America and the Caribbean (ECLAC). The ECLAC-inspired approach included state investments in infrastructure such as roads and power plants, the foundation of state-owned enterprises, and the Mexicanization of private corporations. The state also attracted foreign investments and founded development banks such as Nacional Financiera to offer capital for domestic investments. Alemán’s policy led to exceptional economic growth, urbanization, and middle-class consumerism.

In the countryside, however, the president stopped agrarian redistribution to indigenous groups and initiated the Green Revolution instead. Agriculture changed from ejidos, i.e. peasant-based small rural structures, to industrialized, mechanized, and artificially irrigated agriculture based on monoculture and the introduction of new crops such as wheat. Alemanista reforms resulted in the ascent of new social groups and technocratic elites, while social inequality and poverty increased.

In the medium term, as chapter four points out, debts and inflation became a problem as well. Alemán’s reforms relied on US-American cooperation and credits. After two mutual presidential visits in 1947, the Mexican head of state established a friendly relationship with the United States, albeit not completely free of conflicts. Even though Mexico received credits from the Eximbank, controversial topics such
as the nationalized Mexican petroleum or the Bracero program remained disputed between the two countries.

The last chapter gives a quick overview of the aftermath of alemanismo and the next President Adolfo Ruiz Cortines (PRI). Cortines tried to distance himself from Alemán by combating corruption, but continuity characterized the economic policy. The impact of the Alemán-generation on Mexican politics was too strong to change it radically.

MIKAEL D. WOLFE: WATERING THE REVOLUTION. AN ENVIRONMENTAL AND TECHNOLOGICAL HISTORY OF AGRARIAN REFORM IN MEXICO

Mikael D. Wolfe’s *Watering the Revolution* (2017) is a much more innovative monograph. The author portrays the “envirotech history” (p. 6) of the Laguna region in Northern Mexico by combining perspectives of environmental history and Science and Technology Studies. He looks at the interplay between technology and nature and traces how Mexican engineers (*técnicos*) tried to change and improve nature for agricultural needs. He focusses on revolutionary water politics and argues that Laguna’s water issue oscillated between developmentalist measures to improve water access and conservationist demands that resulted from environmental damage. Técnicos tried to combine both approaches.

At the core of Wolfe’s book is the implementation and use of water infrastructure for agriculture on the Río Nazas. Canals and dams enabled cotton production and, beginning in the late-1940s, the rise of dairy industry. Water constituted a disputed resource in semi-arid Laguna, and big landowners struggled about water access with ejidatarios, peasants on communal land called ejidos, which were created as part of the land reform by Lázaro Cárdenas in 1934. Water, thus, played a crucial role in the Mexican Revolution, and had much to do with social justice or inequality.

The study starts with a short overview on the agricultural, social, and political situation in Laguna around 1900. The region’s predominant cotton production relied on the aniego irrigation system, which used a set of small canals and dams to regulate the floods of the Nazas. Due to popualtional growth, water quickly became a scarce resource that had to be distributed on a legal basis. In 1906, the later president Francisco I. Madero proposed the construction of a dam to improve water availability, but the Revolution, starting in 1910, interrupted these plans. The revolutionary events soon brought changes in land ownership to the region, with landowners and large companies facing expropriation.

The following chapter shows how the Revolution boosted the Nazas River dam project because the government understood the relevance of water for agrarian reforms. During the three decades following 1917, different lobby groups struggled over the dam project. While landowners looked at the new technology with suspicion since
they feared negative consequences for their land ownership and political power, unions and workers who had emerged as new social forces in Laguna supported it. Also, national engineers and US-American experts joined the scene and discussed adequate forms of water distribution in the region.

During that time, a new technique of providing water was established in Laguna: pumps that brought ground water to the surface and enabled the reclamation of new agricultural lands. While the dam project remained disputed, pumps initially enjoyed a good press, since they made irrigation independent from the Río Nazas and were easily accessible for rich landowners without being dependent on a centrally administered dam. Moreover, US-American business interests facilitated the distribution of pumps, with 365 in use in 1932. The debate returned to the dam when the Comisión Nacional de Irrigación (CNI) pointed to the overuse of ground water and its potential loss. In 1929, the government decided to build a dam and started to regulate water use to avoid over-pumping.

In 1936, Cárdenas implemented his land reform and replaced most haciendas with ejidos, as chapter 3 points out. Cárdenas championed land redistribution and saw irrigation projects as a key feature for successful social change. To achieve social reforms, he consequently relied on technology and técnicos. Laguna was a model region for his policy where 300 técnicos adjusted water use and built hydraulic infrastructure. The struggle over water increased, however, since many ejidos still had little access to it. Simultaneously, small landowners used more pumps (1,000 in 1937), so that more effective rules became a necessity. The same year, the CNI took responsibility for the issue.

The main project was the construction of Palmito Dam, which opened as Lázaro Cárdenas Dam in 1946. Wolfe describes how the engineers completed surveys of the river, how US-American experts joined the project, and which social dynamics unfolded on the dam site and in the worker’s camps. The construction camps were segregated, but even the sections for the workers provided modern infrastructure such as hospitals. The workers, many of them ejidatarios, developed a certain agency and were able to articulate their political demands. However, they did not question the dam itself since governmental propaganda made sure they learnt about the future benefits of the infrastructure.

After the opening of the dam, short-term water redistribution failed due to a severe drought. In the meantime, the new Alemán administration and the Secretaría de Recursos Hidráulicos, which had replaced the CNI, changed their concept. Alemán supported a more industrialized approach to agriculture, known as Green Revolution. For Laguna, this meant an increase in dairy as well as intense use of pesticides, fertilizers, and new crops, the latter in cooperation with the Rockefeller Foundation. Therefore, pumps remained an important infrastructure because huge amounts of water were needed for this transition. Marte Gómez, a former Minister of Agriculture, became an important actor in this context: he made a fortune selling pumps, first on behalf of US-American firms, later with his own company. The weakening of ejidos and the rise...
of environmental problems such as salinization represented the most visible negative outcomes of Alemán’s development policy and the Green Revolution.

When water scarcity and environmental damage started to threaten the ecosystem of the whole region, the government took decisive measures to stop pumping. Finally, in the 1960s, the López Mateos administration implemented a second agrarian reform that had short-term success. In cooperation with the World Bank, the government built new concrete canals, supported the compactation of land, and constructed a second dam. While production increased in the late-1960s and early-1970s, with dairy finally replacing cotton, environmental problems returned and worsened, leaving land contaminated with arsenic.

In conclusion, technology proved to be a volatile force in the complex interplay between agriculture, water use, and environmentalism. Técnicos who tried to develop “envirotechnical knowledge” (p. 220) in order to introduce a “utilitarian conservationism” (p. 222) clashed with personal business interests, economic needs, and political agendas. Social redistribution failed, and the implementation of water infrastructure came with “high social and environmental costs” (p. 222).

MARÍA CONCEPCIÓN MARTÍNEZ OMAÑA / LOURDES ROMERO NAVARRETE (EDS.): AGUA E HISTORIA. EXPERIENCIAS REGIONALES, SIGLOS XIX-XXI

Water is also the central topic of the collected volume Agua e Historia by María Concepción Martínez Omaña and Lourdes Romero Navarrete, published in 2015, which makes the reader acquainted with the complexity of water as a historical driving force. Starting from the assumption that water scarcity, water use, water contamination, and water regulation play a crucial role in recent political conflicts, the editors intend to contribute to the increasing historiography on water. Their book looks at water politics in Mexico from the late 19th century to the present from an interdisciplinary perspective. It describes water use as an entangled history of national and regional/local scales, and contributes, thus, to a more historical understanding of recent water conflicts. Martínez and Navarrete underline the importance of three constants for Mexican water history: the “permanente presencia del Estado” (p. 13) in water distribution, a national institutional framework that interacts with local and regional dynamics, and a perspective that tries to integrate all these different actors and spaces.

Three thematic sections structure the volume. The first six articles deal with urban water supply and the dynamics of multiple water use, mainly in Mexico City. The texts show continuity and change during the 20th century and argue, in general, that urbanization often led to the exclusion of certain populational strata from water access. As a consequence, new social actors emerged and claimed their water rights, often in dissent to the authorities. A good example is the actor-centered paper by María Concepción Martínez Omaña on water use and appropriation in Iztacalco (Distrito
Federal). In the two decades after the revolution, different actors such as villagers and landowners submitted petitions for water access. This competition for water proves the increasing demand for water and the conflicts between users and the state.

The second section analyzes social conflicts and environmental problems created by agricultural irrigation, which links the volume to Wolfe’s study. The articles revisit the rise of governmental activities in agriculture and water distribution since the 1930s. As in Watering the Revolution, they show the implementation of an irrigation bureaucracy that had to deal both with the provision of water and with environmental damage as a result of irrigation works. Sandra Rosario Jiménez exemplifies these issues with her study on the Valsequillo district in Puebla (1915-1952). There, local peasants would hardly change their subsistence farming when the Comisión Nacional de Irrigación started to develop water resources by building a dam. Only after some time, abundant water changed the economic and social setting of Valsequillo and enabled the residents to articulate their own interests. The third section brings the international dimension in by analyzing binational water politics at the northern and southern Mexican borders.

All articles share the interest in interactions between the nation-state, local actors, and the environment. They illustrate the relevance of water as an “eje articulador” (p. 421) for social conflicts and power relations inside the nation-state.

TORE C. OLSSON: AGRARIAN CROSSINGS. REFORMERS AND THE REMAKING OF THE US AND MEXICAN COUNTRYSIDE

As the title Agrarian Crossings suggests, Tore C. Olsson’s exceptionally well-written book from 2017 on agricultural reforms in Mexico takes a comparative angle by looking at connections between Mexico and the United States. Olsson describes an “era of dramatic social and political convergence between the two nations” (p. 3) and emphasizes the importance of exchange for both countries in the 1930s and 1940s.

Olsson develops two arguments. First, he criticizes the historiographic gap between the United States and Latin America that has obscured parallels and relations between both regions. He exemplifies his claim with the history of agrarian reforms. The Roosevelt and Cárdenas administrations and scientists from both countries looked at each other, sent experts to the neighboring country, and exchanged ideas, experiences, and technology. These relations were particularly strong, Olsson argues, because Mexico and the American South shared a similar agricultural and social history.

Second, the author presses the argument that Cold War developmentalism and, more specifically, agricultural modernization originated in the American South, as early as the 1910s. Olsson argues that US-American experts transplanted Southern experiences and concepts to Mexico in the 1940s, where they further developed these ideas and exported them, under the banner of the Green Revolution, to the world, from the 1950s on. The author challenges both the dichotomic world view of devel-
opmentalism and the biased critique of the Green Revolution as a hegemonic Western concept because the two standpoints forget to address the domestic roots of US-American developmentalism and the heterogeneity inside the United States. The American South, thus, shared more history with the so-called Third World than with the Northern states. US-exceptionalism, Olsson concludes, is a myth.

The book unfolds these arguments by first giving an overview on the social and economic situation of the countryside in Mexico and the American South from 1870 to 1920. Both regions experienced agrarian restructuration for increasing exports, efforts to make agriculture more efficient, and social protest by peasants against the new big landowners.

While the first chapter remains in a comparative perspective, the following chapters trace relations. In the 1930s, US-American politicians and scientist followed with interest the revolutionary events in the neighboring country. Specifically, it was Lázaro Cárdenas’ land reforms that influenced Roosevelt’s agrarian New Deal. Sociologist Frank Tannenbaum played a crucial role in this respect. He was excited about the Mexican Revolution, published a book about it in 1923, and served as advisor for the US government later on. His proposal to improve the agrarian situation in the American South was much inspired by Mexican reforms, and the Farm Security Administration, founded in 1937, was eager to redistribute land in the cotton belt to tenants in an almost Cardenist style. The Southern Tenant Farmers Union even organized a workshop in the Laguna region to learn more about Mexico’s land politics. In addition, New Deal experts visited Mexico, such as Henry A. Wallace, Secretary of Agriculture and Vice President under Roosevelt. Even though Olsson can identify these South-North transfers, he cannot show how sustained this exchange was.

In the 1930s, there were transfers from the United States to Mexico, too. The New Deal and its agrarian reforms proved interesting for the Cárdenas administration. US-Ambassador in Mexico, Josephus Daniels (1933-1942), who compared, as a Southerner, the Mexican situation to his homeland and championed land redistribution as seen in Mexico, helped to maintain contacts between both countries on a scientific and political scale. Several Mexican experts read literature from the U.S. and studied agricultural technology there, whereas US-American engineers started to work in Mexico.

While the exchange of agrarian knowledge between the two countries was still developing in the 1930s, the 1940s showed a more consolidated picture. Two chapters describe the start of the Green Revolution in Mexico with US-American participation. In the first decade of the 20th century, the Rockefeller Foundation had failed in implementing new agricultural techniques and promoting small farmers in the American South, especially Alabama, and its health program foundered as well. In the 1930s, the same experts who participated in these programs discovered Mexico as a similar region and began to revive their ideas.

The first approach of the Rockefeller Foundation differed comprehensively from the high modernist development policy of the 1950s and 1960s. With the problem-
atic experiences of the American South in mind, the institution went to Mexico and started a program for small-scale farmers that considered local needs and interests. Olsson calls that a “low modernist” (p. 130) approach. The attempt to support small peasants and increase their crop yield fit beautifully with Cárdenas’ land reform and the foundation of ejidos. One of the main scopes of activity was the experimentation with corn seeds that should increase productivity.

In the late-1940s, though, the Alemán administration changed to industrialized agriculture so that new US-American experts, namely Norman Borlaug, appeared on the scene. Instead of continuing small-scale programs and developing seeds that could be reproduced by the farmers themselves, Borlaug prevailed with his attempt to introduce optimized wheat seeds that had high productivity and resistibility, but had to be distributed centrally and did not fit the eating habits of the rural population. Large farms profited from the policy shift, and the Mexican success in yield increase became a model for other countries in the Global South that were eager to get US-American development aid, in the context of the Cold War.

Olsson’s monograph ends with the irrigation policy under President Alemán. Industrialized agriculture was in urgent need of water, as already Wolfe’s book made clear, and the Mexican government tried to provide water by building dams and implementing irrigation schemes. In this context, Mexican engineers and politicians were fascinated by New Deals’ centerpiece, the Tennessee Valley Authority (TVA). There, in the American South, a state-owned agency coordinated quite successfully the construction of a network of dams, canals, and fabrics to improve economic output and living conditions. Mexican experts travelled to Alabama and Tennessee to learn from the project, and TVA experts worked as consultants in Mexico where the Alemán administration tried to copy the model by founding commissions to develop river basins. While the Comisión del Papaloapan had a high modernist agenda, the Comisión del Tepalcatepec, presided over by former President Cárdenas, tried to preserve the small-scale approach and to promote ejido agriculture. As Olsson underlines, the Mexican commissions were not simple copies of the TVA, but new kinds of development programs, which used the TVA image only for propagandistic goals. In the end, rural populations did not benefit from large-scale development, and social inequality increased.

The book reminds us that development also mattered inside the United States—it was not just a paradigm for the “undeveloped other,” and it shows that different models of development struggled for hegemony. In the Mexican case, these models were often influenced by Mexicans themselves.

CHRISTOPHER R. BOYER: POLITICAL LANDSCAPES. FORESTS, CONSERVATION, AND COMMUNITY IN MEXICO

Christopher R. Boyer’s Political Landscapes (2015) brings us back to environmental history. Boyer argues that, after the Revolution, forests became political arenas where
different interests of indigenous groups, logging companies, and state authorities competed for forest use. Business interests, frequently from US-American corporations, the application of “modern” forestry, “the often discriminatory application of state power” (p. 10), the exploitation of woods by local populations, and resistance against the destruction of woodlands made forests extremely complex and contested landscapes. By looking at the national level and two regional case studies—Michoacán and Chihuahua—Boyer tries to write a history about environment and social conflict. The fact, however, that he combines a chronological account over a century with three regional narratives, makes it sometimes hard to follow the plot.

The book starts with a description of increasing logging activities under the Porfiriato when the construction of railroads and early industrialization required huge amounts of wood. As a result, indigenous communities faced expropriation and conflicts with logging companies. This was specifically the case in Northern Chihuahua where US-American corporations started to extract timber. Soon, the Díaz administration became sensitive about deforestation and environmental destruction, but new legal provisions, the foundation of a forest service, and the lobbying by forester and early environmentalist Miguel Ángel de Quevedo could not hinder the exploitation of forests, not least because national efforts did not connect with local needs.

Only the revolutionary upheaval from 1910 to 1917 did harm to the foreign timber industry, because it generated local resistance by indigenous people who lived in the forests. At the same time, the revolutionaries nationalized natural resources and saw woodlands as national property that had to be exploited for the national good. Ángel de Quevedo tried to establish rules for sustainable logging and educate the local population to interact with the forest in a conservationist way. He not only founded the Sociedad Forestal in 1921, but also initiated the Forest Code of 1926, which set forests under the control of the national government. Whoever wanted to log from now on, had to ask for a permit. While in Chihuahua ejidatarios started to extract wood under these conditions, often in rivalry with local indigenous groups, corrupt logging companies in Michoacán still managed to trick the authorities and continued to clear forest land.

In the 1920s and 1930s, the social reform program of the government led to a stronger emphasis on local needs. Cárdenas founded a Forest Ministry, and forest experts went to the countryside to educate peasants to practice sustainable, i.e. “revolutionary forestry” (p. 95). Forest research increased, and the government declared several conservation areas. To a certain degree, the attempt to modernize and regulate forest use succeeded. In Michoacán, cooperatives replaced private companies. In Chihuahua, however, corporations remained a strong actor.

In the late-1940s, especially under the Alemán administration, this approach gave way to a more industrialized notion of development that increased the demand for timber. As a consequence, logging was mechanized, and production enhanced. Now, national development again prevailed over local interests. The change of land use came not without resistance, and in certain cases, local groups were even successful in pre-
venting expropriation. Again, governmental politics certainly proved contradictory. While authorities issued new logging concessions, they still tried to protect certain forests, often with little success.

In the 1950s and 1960s, this meandering policy continued. Whereas river basin commissions adapted a centralistic approach and tried to modernize rural and indigenous populations, the Instituto Nacional Indigenista (INI) set out to teach indigenous groups to “manage and conserve their own natural resources” (p. 176). Both approaches “promoted the growth of grassroots organizations” (p. 201) and enabled residents to engage actively with their forests.

Most of the reviewed books share an emphasis on the interplay of local, national, and global frameworks, and indeed the environmental history of development provides a good background for this perspective. While surely offering new insights into the history of environment, technology, and development, the monographs also reshape our understanding of the Mexican Revolution and its aftermath. Not only do they contextualize national reforms in a wider setting, they also point to the conflictive and constantly changing character of the revolution and its goals. Multiple reform models, from ejidos to industrialization, competed for hegemony, and local populations could often intervene and impose their own political agendas. Similarly, nature proved to be an ambivalent resource, which could contribute to development or hinder it. The balancing between exploitation and conservation determined politics then and now.

REVIEWED MONOGRAPHS


