

DEVELOPMENT LANDSCAPES

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The Helmand Province of Afghanistan produces more opium poppies than any other region of Afghanistan, almost half of the nation's crop. In the second decade of the twenty-first century, the opium harvest has increased as farmers have abandoned their more traditional wheat fields in favor of the fast and easy money promised by poppies. Throughout the month of May, as the milky, alkaloid sap is harvested from the ripening poppy pods, over one hundred thousand hectares of fields across the province exhibit the trademark yellow-brown stubble of the bare opium poppy bulbs drying slowly in the warm springtime air. Today the poppy fields of Helmand Province are a familiar, if unwelcome sight. Much of the money generated by this crop finds its way into the hands of the ruling Taliban. Indeed, it's fair to say that this political group survived over two decades of American occupation thanks to the revenue generated by opium poppy farming.

One might assume that Afghani farmers have grown opium for generations. In fact, the poppy of Helmand Province is at least in part the unintended environmental yield of an earlier American intervention gone tragically wrong. Most Americans know the US military arrived in Afghanistan in 2001 to fight the Taliban, but they do not know that this was not the first, or even most enduring, example of American involvement in Afghanistan. From the late 1940s well into the 1970s, the United States poured millions of dollars into a series of development projects in Afghanistan's Helmand Valley focused on improving the welfare of the people and giving legitimacy to the Kabul government, part of a Cold War effort to win friends and influence in Asian countries bordering the Soviet Union. These projects were classic examples of political scientist Joseph Nye's idea of diplomatic "soft power."¹ At the heart of these persuasive projects was a series of dams intended to bring electricity and irrigation to the Helmand Valley. In the late 1940s the Afghani government used funding from the US Export-Import Bank and hired a group of American engineers to construct a Tennessee Valley Authority-style dam, the one-hundred-meter-high Kajaki Dam (the project

was named the Helmand Valley Authority, or HVA). A few years later, the US government sponsored the addition of two large electricity-generating turbines and another dam; the sixty-meter-high Arghandab Dam. They also added a five-hundred-kilometer network of concrete irrigation canals to help local wheat farmers plant two crops per year.²

The dams provided electricity and water to thousands of Afghans, but serious environmental problems plagued the project from its very beginning. The dams and canals degraded the soils, drainage capacity, and ultimately the agricultural productivity of the entire region. Although the arid, subtropical Helmand Valley differed greatly from the temperate United States, Morrison Knudsen, the American engineering firm that oversaw the dams' construction, failed to thoroughly investigate the local soils and drainage patterns.³ The first dam they constructed lifted the water table almost to surface level, ringing the reservoir with salt and damaging local soils. In spite of this observed problem, dam construction continued for years without amendment. The three dams captured the riverine silt whose nutrients had previously enriched downstream floodplains each season. The irrigation canals were supposed to increase agricultural productivity, but because of the loss of silt deposits and the increasing salinization of the soil, crop yields actually dropped.⁴

Engineering reports that revealed these problems were overlooked or dismissed by American technicians and Afghani officials. The historian Nick Cullather blames this indifference on a mix of Cold War politics and internal Afghani dynamics. "From the start," he writes, "the Helmand project was primarily about national prestige and only secondarily about the social benefits of increasing agricultural productivity."⁵

It is in this landscape, transformed by Cold War tensions and American engineering negligence, that the United States, its Afghani allies, and the Taliban competed for control during the first two decades of the twenty-first century. The Taliban movement started in Helmand in the 1980s, funding itself by selling opium from poppies grown in the region. Opium poppies, it turns out, grow remarkably well in the alkaline and saline soils created by the American-sponsored dams and irrigation networks, and have only recently become the crop of choice for regional farmers, who are unable to grow other crops profitably in the infertile soil.⁶ The unintended legacy of American development in Afghanistan was to push regional farmers into a new and more problematic cash crop, one that the United States had spent more than \$7.6 billion to eradicate by 2014.⁷

ABOUT THIS BOOK

The Helmand Valley project is only one of thousands of "international development" projects that have literally remade the world over the last century,
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in a process that intensified after World War II. In general, development denotes movement of growth toward some future condition. International development was planned development, an effort at purposeful change, usually toward industrial society. We argue here that it was an effort to transplant modernity, often involving an envisioned transfer of knowledge or technology, from places seen as more developed to places perceived as un- or underdeveloped. President Harry Truman emphasized technological transfer in his famous 1949 inaugural address calling for vastly expanded US development programs: “Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge.”⁸ Some examples of development projects predate World War II—and this volume includes a study of one such project—but the heyday of development came in the decades after the war. During these years, as this volume shows, development included not just dams, roads, health programs, and agricultural development projects but also animal husbandry projects, urban development, and wildlife protection plans.

Some of the longest-lasting consequences of development projects were environmental, and it is these impacts on which the current volume focuses. International development projects all took place in an environmental context, and the projects often aimed to directly reconfigure nature in significant ways. Nature shaped development, and development shaped nature. Projects often succeeded or failed because of environmental conditions, and in turn, international development programs remade—or tried to remake—the rivers and mountains, forests and deserts, cities, farms, plants, animals, and people of the world. Most of the people in the world today live in what could be called “development landscapes.” Surprisingly, historians have not written much about the environmental dimensions of development.⁹

Transplanting Modernity? tells stories similar to the history of the American-sponsored Afghani dams and their contribution to the unexpected increase in opium poppies. These histories reveal how, around the world, international development projects and their intended and unintended aftereffects have shaped environments and the communities that rely on them. Above all, *Transplanting Modernity?* places the environment at the center of the history of development. Our purpose in collecting these examples is to examine the role of nature and ideas about nature in shaping projects and the range of environmental transformations that development projects have created, as well as to look for patterns in what kinds of changes unfolded.

In particular, two questions drive this book’s analysis. First, how has nature shaped, assisted, and stymied development projects over the course of the twentieth century? Second, how have development projects in turn transformed the natural world?

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In answering these questions, our contributors draw from the insights of environmental history and the history of science and technology. Borrowing a technique from environmental historians, the authors featured here approach nature as an active participant in history's unfolding. Animals, weather events, and unusually harsh terrains often direct human outcomes, not the reverse.¹⁰ Often "voiceless" nonhumans are vital actors in these stories. The stories collected here also show how human development agendas have shaped environments in ways that were later forgotten, such as in the Afghan case, even as those environments continue to shape events. Environmental history also insists that nature is rarely static, but instead shifts and morphs, due to both human and nonhuman influences. Looking at nature historically reveals the complicated, fascinating, and often unrecognized interweaving of human and nonhuman nature. Just as human society plays out within a biophysical world, so too does the natural world sit enmeshed within larger social and political webs. Indeed, the natural and the social overlap to such a degree that the tidy boundaries that we think separate them ultimately break down. Looking historically at nature can be extremely powerful; it can show how dynamics assumed or claimed to be natural really have human political origins, and how many political or social dynamics have under-recognized natural components.¹¹

In the twentieth century international development projects aimed to remake environments around the world by importing the modern science-based knowledge systems that the United States and Western Europe had adopted in the nineteenth century. Faith in technological progress defined these projects. Because of this strong tie between technology and development, core concepts from the history of technology add insights to this volume's essays. Perhaps most central is the notion of techno-politics—the idea that technology is not neutral but is often used strategically to influence public life and power relations within society.¹² Another core approach is Michael Adas's idea that the "civilizing mission" of various development projects implicitly and explicitly ranked societies based on flawed technological benchmarks in order to validate Western interventions and reinforce their dominance.¹³ Finally, many of the development projects the authors in this collection examine take place in countries that could be classified as postcolonial. The scholars Clapperton Mavhunga, Judith Carney, Akhil Gupta, and James Scott serve as touchstones for several of these essays, critiquing development and its environmental effects by examining how the state and its citizens struggle for and share power.¹⁴

The result is a series of essays that offer a broad understanding of the environment and the many ways it factored into international development. The environment took many forms in these histories of development: it served

as an enabling or blocking force, a backdrop against which traditional and modern approaches could be contrasted, a field for state engagement and intervention, a form of bureaucratic expertise that often marginalized local or Indigenous knowledge, and, after the environmental movement of the 1970s, as a distinct realm of public policy and politics.

Not only does this volume propose an innovative frame for taking the measure of the history of development by focusing on environmental factors, it also examines development actors and topics generally under-explored by historians. While we still give plenty of attention to US development programs, other nations such as Germany and the Soviet Union play central roles in some case studies, as do nongovernmental actors such as the World Bank and the World Wildlife Fund. We look at the worldviews and impact of experts, but also the thoughts and actions of ordinary people. The book also sheds light on under-examined topics. Most of the development literature to date has focused on three subjects: dams, agriculture, and population control programs. Our volume adds to the literature on these topics but also investigates other subjects such as urban history, the role of NGOs and private corporations, transportation, mining, animals, human health, and disease. Not only do we have a new approach to the history of development—focusing on environmental dimensions—but we also investigate topics that have not yet been covered within this field of study.

THE DEVELOPMENT OF DEVELOPMENT HISTORY

The history of international development in the twentieth century owes a significant debt to scholarship that has focused on earlier (pre-twentieth-century) histories of colonization and their relationship to racially motivated modernization and civilizing missions.¹⁵ The idea of modernization evolved dramatically from its origins in the eighteenth and nineteenth centuries, but colonial modernizers shared a faith in progress and a bias to the values of western European societies. Colonial modernization projects, such as British projects to modify existing canals and reservoirs in northern India to mitigate monsoon flooding or the Dutch modernization of land tenure in Java, functioned in many ways as smaller-scale and more modestly funded projects that would arrive a century or more later in these same lands.¹⁶

Some of the earliest development histories were written by historians of foreign relations and focused heavily on development as a tool of diplomacy or geopolitical strategy.¹⁷ It has only been in the past decade that historians of development have focused more seriously on the social, cultural, and economic impacts of development. These more recent works have enriched the field with a multitude of perspectives that move away from more traditional forms

of diplomatic history.¹⁸ These histories of international development have also departed from Eurocentric and purely military-diplomacy-oriented analyses to more on-the-ground narratives that analyze multiple perspectives and draw on sources from a variety of archives and interlocutors.

Few of these studies, however, have probed the fundamental environmental transformations that are at the heart of many development programs. Scholars have not completely ignored the environmental aspects of development projects, but these concerns are often secondary, even though environmental control and modification were typically the main focus of development projects and often brought dramatic consequences for human societies.¹⁹

Indeed, from development's first big wave in the years after World War II, criticism of environmental consequences emerged, mostly from scientists and conservationists. Although adopting a form of technological fatalism that oversimplified matters, these early criticisms helped lay a foundation for the environmental movement of the 1960s.²⁰ In a 1949 *Saturday Evening Post* article, for example, William Vogt warned about the "destructive exploitation" that might accompany President Truman's Point Four development program: "If Point Four results in speeding up soil erosion, raiding forests and land fertility, destroying watersheds, forcing down water tables, filling reservoirs . . . and wiping out wildlife and other natural beauties, we shall be known not as beneficent collaborators, but as technological Vandals."²¹ At the influential 1955 conference "Man's Role in Changing the Face of the Earth," geographer Carl Sauer also drew attention to development's environmental flaws: "We present and recommend to the world a blueprint of what works well with us at the moment, heedless that we may be destroying wise and durable native systems of living with the land." Lynton Caldwell, the intellectual architect of the 1970 National Environmental Policy Act, developed many of his core ideas while working for US development programs in the Middle East and Asia in the late 1950s, which he thought were environmentally irresponsible.²²

Development also worried key activists in the American environmental movement in the late 1960s. Paul Ehrlich's 1968 best seller *The Population Bomb* was a primer on the failures of modernization in India, the great development laboratory of the postwar decades. International planners, Ehrlich argued, had to start paying attention to ecological factors such as population imbalances, resource scarcities, and especially environmental degradation—a problem that was "almost universally ignored." The dramatic increase in the use of synthetic pesticides in "Green Revolution" hybrid-seed programs particularly alarmed Ehrlich. Drawing from Rachel Carson's *Silent Spring*, Ehrlich warned about the chemical pesticides such as DDT that international seed programs pushed: "It is difficult to predict the results of another 25 years

of application of DDT and similar compounds,” he wrote, “especially if those years are to be filled with frantic attempts to feed more and more people.”²³

That year also saw the Conference on the Ecological Aspects of International Development, which brought together development practitioners and scientists from around the world to analyze the ecological aspects of four areas of development: health, irrigation and other water projects, chemical pesticides and fertilizers, and animal productivity programs. The president of the Conservation Foundation, Russell Train, argued that modern society’s environmental problems were most visible in environmental development projects: “The adverse environmental consequences of much well-accepted technological progress is perhaps most readily and dramatically seen in international development programs where alien technology and alien goals interact with traditional cultures and values.”²⁴ Train and other participants pushed for “the inclusion of ecology in the development planning and decision-making process.”²⁵ Summing up the conference, biologist and activist Barry Commoner lamented how modern technology’s “powerful intrusions” into natural systems always brought “unforeseen events” and inevitable “ecological backlash.”²⁶ The conference papers were published in 1972 under the title “Careless Technology.”

During the 1980s anthropologists and geographers contributing to the growing field of development studies occasionally grounded their work in the environmental legacy of colonization and decolonization. For example, Paul Richards’s *Indigenous Agricultural Revolution* (1985), examined the fundamental flaws of the colonial system in West Africa that had presumed European agricultural technology was more advanced and therefore more successful at producing more food in the challenging West African landscape than so-called primitive traditional practices. Colonists restructured native farms based on these assumptions, but the Sahelian droughts of the 1970s exposed the environmental vulnerabilities of their practices. Environmental limits and intercultural misunderstandings are also implicit in James Ferguson’s classic critique of development in Lesotho, *The Anti-Politics Machine* (1990). Ferguson focuses specifically on a failed NGO effort to “improve” cattle in the region that completely misread the function or future of these cows for citizens of the country.²⁷

The new field of political ecology, which emerged in the 1980s and 1990s, took issue with the Malthusian emphasis on overpopulation in Vogt’s and Ehrlich’s early critiques of development, instead emphasizing the exploitative political structures that cause environmental problems and the hidden politics of many ecological critiques. Key works examined famine in Nigeria, deforestation in Brazil, and soil erosion in Nepal, showing that colonial and capitalist economies, not ordinary villagers, had caused environmental prob-

lems.²⁸ Drawing from the insights of political ecology, many of the chapters in *Transplanting Modernity?* focus on the destructive impacts colonial and postcolonial transformations brought to the so-called Third World, with a particular focus on the environmental responses within these landscapes of violence and loss. Although more historical in focus, our authors generally share political ecology's view of technology as a political force, with important social consequences.

Several decades after the environmental movement made environmental analysis more mainstream, two important new books covered the role of environment in development history, emphasizing the politics surrounding technological interventions. In *Dominance by Design* (2009), Michael Adas argued that American development programs derive their inspiration and justification from the presumed superiority of Western advances in science and technology. Using case studies from the early colonial period through the Persian Gulf wars, Adas writes that “perceptions of technology proficiency and material accomplishment . . . affected everyday social interaction and informed American ideologies of dominance.”²⁹ Dominance that arrived in the form of development programs often upended ecosystems. American programs were not the only perpetrators; development programs spearheaded by the Soviet Union and China were just as environmentally destructive, if not more so. Soviet development agreements often took over projects that had been abandoned or rejected by Western powers because they were expensive or seemed unlikely to succeed; often these obstacles were rooted in environmental barriers.³⁰ The Chinese model of development proved more labor-intensive than either the Soviet or American approaches but also, Adas writes, showed “contempt for indigenous methods of production and low-tech solutions as well as the mistaken assumption that local ecologies were both highly malleable and interchangeable.”³¹ This volume provides another opportunity to compare development programs from across the ideological spectrum.

James Scott's *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (1998) emphasizes how environmental manipulations associated with development contributed to the centralization of state power. Modern development projects such as the Green Revolution sought to simplify (or make “legible” in Scott's terminology) complicated landscapes and social relations in order to facilitate state intervention and control. Such misguided assumptions led agricultural specialists to favor monocultures over diversified cropping systems, permanent agriculture over shifting cultivation, and artificial fertilizers over the use of manure and compost. *Seeing Like a State* focuses on how experts and governments gained legitimacy and power from these simplifications at the expense of ordinary farmers, but Scott also notes their damaging ecological repercussions. “The necessarily simple ab-

stractions of large bureaucratic institutions,” he writes, “can never adequately represent the actual complexity of natural or social processes. The categories that they employ are too coarse, too static, and too stylized to do justice to the world that they purport to describe.”³² Echoing Ehrlich, he warns about the narrowing of genetic biodiversity that came with the Green Revolution. Some of the case studies in this volume build on Scott’s insights; some also critique his view and offer different interpretations of the relationship between states and development projects.

More recently, scholars drawing from the insights of environmental history—including authors in this volume—have focused on themes of environmental agency, hybrids, negotiation, and implementation.³³ One example of this work is David Biggs’s history of development in Vietnam, *Quagmire*. Biggs describes US aid programs during the 1950s and early 1960s in the Mekong Delta of Vietnam, historically a frontier space of ethnically mixed immigrants and state-led economic and political expansion, as a struggle with natural forces, limited state capacity, and unintended consequences. In this contested zone, the United States combined canal building, land reclamation, and resettlement with attempts at more equitable distribution of land. In his innovative assessment, Biggs stresses not their ambitious hopes but their on-the-ground implementation and reception. Environmental analysis, he writes, can illuminate this ground-level reality: “By traveling beyond the high-flying world of Sai Gon politics to the water landscapes of the delta, it is possible to see how local people . . . and local nature also sometimes subverted or resisted American programs.” Biggs reminds us that the “quagmire” was not just political, but physical. He stresses the three-way interactions among private American companies, international NGOs, and above all, local actors such as the Republic of Vietnam’s president Ngo Diem and other South Vietnamese elites who shaped the programs. The South Vietnamese, Biggs stresses, had their own agendas for the delta, often informed by precolonial and colonial attempts to modify the area.³⁴

No place better illustrates the limitations of American efforts in South Vietnam than Dong Thap, eight hundred thousand hectares of swamps, marshes, sand hills, and scrub trees near the Cambodian border. Singling out the area for a special project in 1957, President Diem brought in two French consultants who devised a plan involving new canals and new settlements sheltered by a dike. The United States volunteered to provide dredges and other heavy equipment. The Republic Canal was designed for drainage and transportation and also for quick military access to the border. But the project quickly ran aground. US dredges proved too heavy for the canal’s shallow water, and 1958 floods inundated the area, undermining productivity and ultimately requiring food to be airlifted in. Not long afterward, rebel attacks be-

gan to escalate. Among their favorite targets: the tractors and heavy machinery that symbolized US nation building.³⁵ Nation-building programs, Biggs writes, “did not allow those living closest to the water landscape to determine the direction of reclamation and agricultural modernization in a manner that would have solved some of the underlying causes of the agricultural crisis.”³⁶ Much like the example of Afghan dam building that opened this Introduction, Biggs persuasively establishes that enthusiastic, arrogant outside experts misread the landscape of southern Vietnam and created environmental and humanitarian problems much worse than the preexisting “backwards” conditions the project was intended to solve. Environment was at the center of international development, and the environmental consequences of development live on today.

ORGANIZATION AND ARGUMENTS OF THE VOLUME

Too often the impacts of development are simplistically categorized as either successes or failures, examples of progress or disaster. As this volume’s authors show, the legacy of development is far more mixed, with projects usually benefiting some people, landscapes, and economies at the cost of others. Some settings and environments easily accommodated development projects and were swiftly remade by the introduction of machines, labor, and capital. Other environments proved more stubborn, consistently frustrating virtually every effort at change. The essays collected here do not simply celebrate the international development efforts they examine as successful or dismiss them as failures; instead they explore the mixed legacies of progress and problems these projects possessed.

The title of this book—*Transplanting Modernity?*—comes from a National Science Foundation–sponsored workshop the editors organized in the summer of 2015 at Georgetown University. “Transplanting modernity” conveys the central idea of international development: to move so-called modern practices from a “developed” society into other far-off societies and distant soils. We added the question mark because many authors felt their research called into question whether or not modernity had actually taken hold in new environments, as well as whether or not such transfers were advisable or beneficial. The essays in this volume all seek to question standard stories of success or failure in the developing world by pointing out contradictions, complications, hidden benefits, and long-term unexpected costs of nurturing the ideals and expectations of modernization in new environments.

The Foreword by Daniel Immerwahr might challenge the assumptions of many readers that natural environments are always sacrificed for the sake of development. Immerwahr cautions against simplistic conventional narra-

tives that link development with environmental decline. While attempting to bring nature into the story, he writes, some accounts of development fall into an all-too-predictable and moralistic plotline of environmental devastation: development equals death for nature. This narrative may be accurate in some cases, but it runs the risk of re-creating a pristine-nature-spoiled-by-humanity-especially-Westerners story line that erases nuance and obscures complexity. In particular, such narratives erase the agency of the natural world and reinforce a framework that views nature as separate from society, instead of interwoven with human action. Some of the essays in this volume emphasize how development projects destroyed nature, while others tell a more mixed story, but all the authors were challenged to think past this simplistic de-ensoulment framework and to describe specific ways in which some groups benefited and other groups lost out when development projects altered the environment. Depending on one's perspective, not all changes to nature are destructive. In particular, as Immerwahr usefully reminds us, fighting poverty often requires changing and using large parts of the natural world.

Transplanting Modernity? is organized into four sections, thematic rather than chronological. Part I, "Developmental Landscapes and the Circulation of Knowledge," uses two richly detailed case studies about nature, nations, and knowledge to introduce the main theoretical questions that run throughout the volume. Linda Nash examines the misplaced hubris of American engineers in Afghanistan and their efforts to build dams in a landscape they had little experience with. She emphasizes how technologies travel as packages incorporating knowledge and practices created in their landscape of origin and thus do not always easily take root in other places. In the part's second chapter, "Point 4-H: Transplanting Rural Modernity through the International Farm Youth Exchange," Amrys Williams focuses on one "small start" for agricultural development in rural India. In the two decades after World War II, American 4-H organizations helped to sponsor an International Farm Youth Exchange Program (IFYE). With these exchanges 4-H planned to bring two American farming modernization concepts—demonstration and agricultural extension—to the Indian countryside in an effort to accelerate development and build grassroots-level support for new farming techniques. These projects were community oriented and small in scale, but Williams demonstrates that the IFYE exchanges helped create pipelines of agricultural expertise and momentum for change that continued to impact the Indian countryside long after the program had ended. In Williams's case study, rural American youth and their direct experiences with landscapes and rural people in India helped to pave the way for subsequent development projects.

Part II, "Development before and during World War II," steps further back in time to examine two precursors to the Cold War boom in interna-

tional development. In his chapter about colonial agrarian modernity in Zimbabwe, Admire Mseba compares development efforts during British rule and after independence in Zimbabwe, identifying continuities and differences across the decades. Stressing that the ultimate assessment of a project rests on the views of local people, he convincingly shows how ordinary Zimbabwean farmers actually preferred and trusted British colonial programs over the ideas of agriculturally inexperienced African nationalists. Mseba also highlights the role that local religious understandings of environment played in shaping regional farming patterns. Shifting to Latin America during World War II, Megan Black and Thomas Robertson examine the early foundations of development. Focusing on US programs that aimed at the development of strategic resources at first but eventually expanded into the realms of infrastructure and health improvements, they argue that the exigencies of war combined with new thinking about the interconnection of global economies to create what became known as international development. This new thinking became the intellectual and political architecture that supported the vast expansion of US development programs during the 1950s and 1960s.

Part III, “State Actors in the Development Era,” compares state-sponsored development projects during the early postwar decades in three different cases studies: a West German project fighting plant disease in India, a US cattle “improvement” program in Ethiopia, and a Soviet dam project in East Africa. Siddartha Krishnan examines a West German project in India to modernize potato farming—itsself the result of an earlier intervention by the British—by introducing another foreign element, chemical pesticides. While these chemicals undermined both environmental and human health, they produced “modern” (and therefore desirable) farming practices that continue into the present. While acknowledging their dependency on pesticides and other chemicals, contemporary farmers in India accept these imported practices as the price of admission for potato farming today. Amanda McVety investigates the introduction of American cattle in Ethiopia and the problems the United Nations and US organizations encountered trying to eliminate rinderpest from this population in an effort to make them available for export. The production of livestock, both meat and milk, was supposed to be a key step in Ethiopia’s development, but progress faltered over the course of the four decades it took to eliminate rinderpest within the country. Finally, a group of Russian historians, Elena Kochetkova, David Damtar, Polina Sliusarchuk, and Julia Lajus, analyzes the development aid flowing into Africa from a different Cold War power, that of the Soviet Union. In this analysis they describe what kinds of projects the Soviet Union sought to fund in Africa and how these projects were carried out. They argue persuasively that the Soviets, eager to upstage their Western counterparts, tended to fund showy,

technologically ambitious projects patterned after successful projects that the Soviet Union had completed domestically a generation earlier.

The final section, Part IV, “Non-state Actors after the Environmental Turn,” focuses on projects spearheaded by two very different nongovernmental organizations: the World Wildlife Fund and the World Bank. These global actors were atypical and experimented with both novel and outmoded development approaches. Stephen Macekura’s history of the World Wildlife Fund in the 1980s charts the frustrations and limitations the organization encountered as it implemented a Wildlife and Human Needs program aimed at helping both animals and people in developing countries at the same time. In her essay on the World Bank in Mumbai during the 1970s, Corinna Unger explores the ecological turn that urban hygiene and sanitation projects adopted, persuasively arguing that while it was presented as new and pioneering, actually this approach had much in common with the Indian rural hygiene programs organized by both colonial officials and the League of Nations in the early twentieth century. Readers can compare these rich case studies with each other but also with the case studies from the volume’s earlier chapters to decide what has and has not changed across the decades.

LESSONS

In their analysis of development projects, all of these case studies place the environment front and center. They emphasize nature’s important, varied, and long-term role and document how nature shaped development and how development shaped nature, and to whose benefit. We have identified eight lessons these case studies highlight:

1. Overlook the environment at your risk. Development projects all had important environmental dimensions that practitioners—and later, historians—overlooked at their peril. At times these environmental aspects were obvious, for example, when environmental changes formed the central mission of the project. Sometimes environmental impacts were less conspicuous, but still crucial. Because nature and humans were interconnected in many landscapes, altering nature often triggered unintended social ramifications, especially for groups that were already marginalized. Similarly, changes to social and economic patterns often brought unintended environmental problems.
2. Negotiation, not imposition. Although often optimistically (or naively) envisioned as the simple and straightforward implementation of a premade blueprint, development projects in reality added up to a complicated series of negotiations, including negotiating with nature. Programs might appear

one way on the drawing board in Washington or Moscow or New Delhi, but by the time they were tweaked by developed country officials, host country officials, on-the-ground implementers, and, crucially, local people, the program might look very different. In these back-and-forth negotiations, local ecosystems also proved to be stubborn and powerful “on-the-ground” actors.

3. Postwar intensification of environmental impact. Although post–World War II development shared ideological frameworks with prewar colonial development, in particular by privileging the role of experts, the two eras were also different in many ways. New technologies and Cold War urgency fueled more intense and far-reaching transformations of nature. Projects scaled up, and new, better-funded bilateral and multistate actors, as well as international NGOs, created plans to rework not just regional infrastructure or the impact of a single crop on a country, but national economies, agricultural mechanization at every level from field to factory, and entire urban infrastructures.
4. Profound economic and ecological impacts. Development programs created profound environmental legacies as they shaped urban and rural landscapes globally. Agrarian reforms pushed people off land, and those displaced farmers migrated into cities. These twin forces placed enormous pressure on developing countries to develop new ways to serve their citizens. For farmers who remained on the land, development programs encouraged them to invest in cash crops, large livestock, fertilizers, pesticides, loans, and production contracts. Financial impacts and environmental impacts were often bound together.
5. New and old actors. Scholars of development are increasingly interested in the role non-state actors and multistate agencies have played in development projects. Several of our authors pay attention to these emergent non-state entities, although the state reigns supreme. While governments have played an outsized role in international development, non-state and multistate actors have become more important over time and are likely to be an even more important factor in the future.
6. One Cold War, many fronts. Although different national actors invested in development, their programs shared similar traits. Soviet, West German, and American projects all involved the confident application of technology from one place to another without much regard for how a local biophysical context might impact the project. Projects initiated by capitalists and communists alike shared this shortsightedness.

7. Ground truthing. Most writing about development examines ideas and plans, not on-the-ground realities. “Ground truthing” focuses on the real impact of development and local-level negotiations. The chapters in this volume examine both plans and results, paying special attention to the material consequences of projects—the “changes in the land”—that occurred in situ, without losing sight of associated social or political consequences.
8. A long-term view is best. As several chapters suggest, while a project may have succeeded at first, its legacy can be more ambivalent. Political pressures and short-term project evaluation cycles can hide longer-term detrimental effects and more subtle legacies. When considered over a longer time horizon, some very expensive and extensive development projects actually show little significant impact.

Those are the eight major take-home lessons we hope that readers will glean from this volume. Without further ado, let’s turn to the long-term, ground-level perspectives that our case studies offer of development projects, and the environmental realities that shape the world in which we live.