# Prologue

## LIVES WORTH SUPPORTING

In 2015, two statements were published about environmental health crises. One was written by a group of twenty-two experts from global power centers including London, New York, New Delhi, and Beijing. The other was written by the representatives of a fledgling grassroots community movement in rural Nicaragua. One uses the crisp technical languages of economics, public health, and ecology. The other oscillates between the stilted prose of international law and the morally charged poetry of social suffering. One contains page after page, footnote after footnote, and graph after graph, illustrating the planetary-scale dangers posed by climate change. The other contains modest testimony to environmental and bodily harm in one particular place. Both statements contain lots of bullet points. One list of bullet points outlines a comprehensive strategy for sustaining life on a planet soon to be home to nine billion people. Another list outlines a set of politely worded suggestions about how those in corporate and political power might begin to consider the lives of a few hundred people.

The first of these statements was a blockbuster, at least in global public health terms. Published in November 2015, "Safeguarding Human Health in the Anthropocene Epoch," the report of the Rockefeller Foundation–*Lancet* Commission on Planetary Health, has been cited more than two thousand times. The Rockefeller-*Lancet* report is the result of a painstaking meta-analysis of environmental and epidemiological research. Among other things, it blames unchecked agricultural intensification for the loss of human and animal habitats, the erosion of soils, toxic chemical exposure, and (even though agricultural

intensification was meant to produce more food) a rise in food insecurity worldwide.[1] Action must be taken, the report's coauthors suggest, to reimagine global health as *planetary health*, an approach premised on "the understanding that human health and human civilization depend on flourishing natural systems and the wise stewardship of those systems." Though it is written in the sober and apolitical language of sustainability and economics, the Rockefeller-*Lancet* report acknowledges that poverty and inequality remain serious impediments to both human and environmental flourishing. It advocates policies that create a "safe and just operating space for humanity."[2]

The other statement is decidedly more obscure. Its title, "Complaint of CFI Project 32253," doesn't help. It was published in August 2015, just three months prior to the release of the Rockefeller-*Lancet* report, on the website of a little-known office of the World Bank called the Compliance Advisor Ombudsman (CAO). The complaint was filed in the name of a group of around seven hundred rural Nicaraguan people who identified as "workers, former works [*sic*], residents and members of the communities belonging to the Montelimar Sugar Mill." Project 32253 was the title of a loan given to the Montelimar Corporation by the International Finance Corporation (IFC), the private lending arm of the World Bank Group.[3]

The Montelimar complaint is not a sprawling document. It runs to just seven pages, but it specifies how the unchecked push for agriculturally fueled economic growth damages lives and landscapes, causing a loss of water and forest resources, deterioration of soils, and chronic exposure to toxic chemical pesticides. For the Nicaraguan people who filed the complaint, the most distressing consequence of sugarcane production was the onset of an epidemic of chronic kidney disease. While chronic kidney disease is normally associated with diabetes or hypertension, by 2015, thousands of workers and residents living around the Montelimar sugar mill had become sick or died of what became known as chronic kidney disease of nontraditional causes (CKDnt). They were neither diabetic nor hypertensive. They suspected that the CKDnt epidemic was a result of their proximity to the industrial sugarcane industry. Based on this suspicion, residents formed a community association "to respond to the crisis of health and environment, and to develop viable measures to restrict it." "All of us," the complaint states, "have the right to a dignified life in a healthy environment."[4]

To me, that last turn of phrase is more satisfying than the Rockefeller-*Lancet* report's call for "a safe and just operating space for humanity," but whichever you prefer, I hope you can see the overlap in sentiments. Divergent as they are in length, audience, and style, the Rockefeller-*Lancet* report and the Montelimar

complaint each ask their audiences to consider which lives are worthy of economic, political, legal, and technical support.

On Nicaragua's Pacific coast, one particular form of life has been supremely well supported over the past twenty-five years: industrial sugarcane. Nicaragua is a small country, and while its sugar production accounts for just a fraction of global supply, the country's sugar businesses began expanding at an unprecedented rate around the turn of the twenty-first century. According to an estimate by the Nicaraguan Investment Promotion Agency, by 2013–14, sugarcane exports were growing faster than those of any other agricultural product. Those in political power during the first two decades of the twenty-first century, whether they hailed from the left or the right of the political spectrum, had come to view supporting the life of sugarcane as a means of supporting human life. And, significantly, climate crisis was on their minds. For the Nicaraguan government and its supporters at the IFC and the World Bank, more investment in sugarcane might not only perpetuate the country's gains in food export but also develop its capacity to produce biofuels, including ethanol and energy generated from sugarcane pulp, or bagasse. This alternative energy strategy has been a key policy tenet of Nicaragua's current government, which, since the 2007 accession of Daniel Ortega and the left-leaning Sandinista National Liberation Front to power, has touted its commitment to reducing fossil fuel consumption.[5]

Since 2005, the country's two largest sugarcane firms, Nicaragua Sugar Estates Limited, a privately held Nicaraguan company, and Monte Rosa, a subsidiary of Central America's largest sugar producer, the Guatemalan corporation Pantaleon, have received over US$100 million in loans from the IFC to develop cogeneration facilities that burn bagasse to power sugar mills and the national electrical grid, and to expand ethanol production. The IFC's $15 million loan to Montelimar, the country's smallest sugarcane firm, would help the company launch a third biofuel plant. The Montelimar project also promised to increase the company's annual sugar production from thirty-three kilotons to sixty-seven kilotons, to increase its landholdings by some 25 percent, and to divert more water toward irrigation.[6]

Though the spike in investment in industrial sugarcane in places like Nicaragua is somewhat recent, it is best understood as part of a longer history. Efforts to make improvements in commercial agriculture that would simultaneously improve human well-being are the calling card of what Raj Patel calls "The Long Green Revolution."[7] During the Green Revolution's first phase in the 1960s, its proponents—including the Rockefeller Foundation—justified the consolidation of smallholdings for commercial crop production with an appeal to

global health. They argued that increased agro-export capacity was the only way to provide abundant food and thus stave off famine.[8] The World Bank's more recent turn to investment in energy indicates a continued belief in the linkage between agro-industrial growth and human health. One argument in favor of biofuel, in fact, is that a reduction of dependence on fossil fuels could lower fuel prices and thus reduce overall food costs.[9]

What transpired after the IFC made its loans to Nicaraguan sugarcane plantations highlights the weakness of such arguments. For a start, the expansion of sugarcane has intensified an already steady deterioration of Nicaraguan forests. Starting in the 1950s, the World Bank, the US government, and a variety of agricultural corporations, including US-based pesticide firms, supported the conversion of Nicaragua's Pacific region into a cotton-producing belt. The result was the destruction of thousands of hectares of old-growth forest.[10] Even after the cotton boom faded, the damage continued. According to the environmental watchdog World Rainforests, between 1990 and 2010, Nicaragua lost 31 percent of its remaining forest cover, as sugarcane operations started to expand, alongside peanut farming and cattle ranching.[11] There is now nearly no forest left on the country's Pacific coast. Loss of forests means increased carbon in the atmosphere and increased annual temperatures. Instead of creating more salubrious environments, investments by private capital, states, and supranational organizations in cotton and sugarcane monoculture in Nicaragua and elsewhere have created even more extreme environments, marked by decreased biodiversity, increased presence of toxic agrochemicals in air and water, and more intense heat. These points are all highlighted in the 2015 report of the Rockefeller-*Lancet* Commission on Planetary Health, and they are echoed in climate modeling studies that place Central America among the regions at highest risk for catastrophic heat waves.[12]

Though the stories to come all take place in the context of the Long Green Revolution, this book is not an indictment of the IFC's policy regarding Nicaraguan sugarcane. The IFC's repeated investment in Nicaragua's sugarcane zone did not, by itself, cause deforestation, the overuse of agrochemicals, or steadily increasing mean annual temperatures. Nor did the IFC's investment cause the CKDnt epidemic that was the primary concern of the group that filed the 2015 complaint to the CAO. What the conversion of the sugarcane zone into an investment hot spot did do was make an ecological and medical disaster more visible.[13] The recent wave of investor interest in Nicaraguan sugar underscores how the global drive for agro-export-driven growth has reached what one group of CKDnt researchers calls "a physiological limit . . . at which

acclimatization and behavioral modifications can no longer overcome the biologic stressors of unsafe working conditions and environmental exposures."[14]

What happens socially and politically when bodies and places reach these kinds of limits? This is the central question for the anthropology of planetary health, and late industrial disaster more broadly. As this abbreviated history of Nicaragua's sugarcane boom shows, supporting the life of sugarcane requires extreme measures, and it requires sacrificing the viability of some species and some ecological systems for the viability of others. Supporting compromised bodies (like, say, supporting the bodies of people with kidney failure through dialysis) and supporting artificial monocultures (like, say, maintaining hundreds of thousands of hectares of sugarcane) is a matter of working along the edges of life and death.[15]

For all its bullet-pointed policy recommendations, the Rockefeller-*Lancet* report is not particularly inspirational reading. My favorite part is panel 14, on page 2014, an inset box titled "Why the grassroots matter." It tells the story of how the movement for HIV treatment access led by African, Asian, and Latin American HIV patients and allies took on pharmaceutical corporations and governments to demand lifesaving drugs. In doing so, panel 14 tells us, these grassroots activists turned the tide of the AIDS pandemic. This is a story I tell my medical anthropology undergraduates every year. It is a story that finds a group of disenfranchised and marginalized people, many of them very sick, asking those with more power and influence if their lives were worth supporting.

As much as I was heartened as a medical anthropologist that panel 14 made it into the Rockefeller-*Lancet* report, it remains troubling that a scholarly paper with 432 references and twenty-two named authors contains no example of a grassroots effort to actually address what the report's executive summary calls "the degradation of nature's life support systems."[16] Instead, panel 14 says, "Better evidence is needed for the importance of planetary health than exists at present." There are plenty of possible ways to provide such evidence, but none of them, including the one in this book, has the satisfying narrative arc of the HIV treatment access story.[17] Attempting to foreground such stories in the context of an emerging epidemic remains risky, since so much of contemporary science, including climate change science, agricultural sustainability science, and global health science, depends not on the telling of relatable, human stories but on the collection of replicable, hard data.[18]

While the term *planetary health* is never used in the Montelimar complaint, that obscure document opens a window onto what planetary health might look like in practice, and why it is important. This book approaches the question

of planetary health—for planetary health is still a question, rather than a paradigm—from the vantage point of a particular group of people in a specific place, over a relatively short time. Like many stories told by anthropologists, it works from the edges. It recounts lives lived and lost not just on the margins of the global health industry represented by the Rockefeller Foundation and top-flight journals like the *Lancet*, but on the margins of the global sugarcane industry.

To take a cue from the wording of the Rockefeller-*Lancet* report, the stories in this book are about "life support systems." In colloquial medical English, the term *life support* indexes a technological achievement (think of respirators and breathing tubes). Used more broadly, the term reminds us that to be alive is to be in relation to things and beings that cooperate with us, like technologies and drugs and foods and caregivers, and even to things that do not do such a good job cooperating, such as sugarcane and the tools large companies use to cultivate it, from water to harvesting equipment to toxic pesticides. But the thing about life support is that it is always temporary. In every individual case, life support will eventually fail. At some point, agrochemicals stop helping produce crops and start damaging soil and water to such a degree that industries are no longer viable (just google "Nicaraguan cotton" and find out). At some point, hemodialysis stops keeping end-stage kidney disease patients alive. Life support is what happens when the possibility of a full resolution is no longer available. An appropriate term to describe a variety of projects aimed at addressing the crisis of the Anthropocene, life support is the project of ensuring collective endurance amid the certainty of individual loss.[19]

This book is about how people grapple with life support systems, from legal frameworks like the CAO, to irrigation works, to pesticide application regimes, to state-sponsored social security programs, to occupational health measures, to dialysis treatment itself. It explores how these systems are stabilized and destabilized by one another. It suggests that a close look at what happens along the unstable edges where life support systems meet might provide insights into the possibilities and limitations of planetary health.