



**MEDICINES
THAT
FEED US**

**STACEY A.
LANGWICK**

Plants, Healing,
and Sovereignty
in a Toxic World

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STACEY A. LANGWICK

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For my dearest
TSADIA
and Mama Helen's dearest
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Introduction *Healing (in) a Toxic World*

Medicines That Feed Us examines the relationship between toxicity and remedy in the face of the environmental and health crises shaping the twenty-first century. It locates its provocations alongside of, and in solidarity with, the innovative work of Tanzanians who are challenging the ways that “health” conceptualizes and governs the entanglement of bodies and ecologies. Together we ask: *What does it mean to heal in a toxic world?* How is that which counts as “therapeutic” shifting with the growing acknowledgment that the extractive relations fueling contemporary economies and animating modern life undermine possibilities for future survival? The double-bind defining our contemporary moment unsettles and disorients. It also has the potential to forge creative responses that reimagine the territorial and the corporeal, posing configurations of care that invite alternative forms of sovereignty in the service of both ecological and bodily healing.

This potential begins, I argue, with the recognition that modern modes of dwelling and the substantive changes that they have engendered in the matter of the earth and of the body have rendered nineteenth- and twentieth-century articulations of relations between toxicity and remedy inadequate. The narrow choice they seem to offer—either apocalypse or salvation—creates both intellectual and political claustrophobia. *Medicines That Feed Us* tells a story that reworks the pasts and the futures of the relationship between toxicity and remedy through healing in Tanzania. It is anchored in the hard work of both people and plants attending to the vitality of bodies and soils in the midst of the ongoing ecological and social violence wrought by the economization of life, labor, and land. It is dedicated to accounting for the radical potential of initiatives to redefine the times and spaces of healing both on and of the earth.

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One friend and mentor, Helen Tibandebage Nguya, who you will meet throughout the pages that follow, proposed that we call the set of social and entrepreneurial projects on which this book centers *dawa lishe*—medicines that feed us. Mama Nguya is the founder of Training, Research, Monitoring and Evaluation on Gender and AIDS (TRMEGA), an innovative nongovernmental organization (NGO) that addresses health issues through land relations. We were driving together in my car, returning from a long day visiting a garden that TRMEGA had helped to seed at an orphanage in the dry volcanic plains west of Arusha, the fourth largest city in Tanzania, when she proposed the phrase “*dawa lishe*.” Earlier in the day, as we drove out of the city increasingly farther from the forests of Mount Meru that stretch above it, the land flattened and vegetation became sparse. For many miles, the “road” was rather indistinguishable from the dry, sandy soil that stretched out on either side of it. Our path was less direct than it might have been, as we were forced to find ways around the huge erosion gullies that cut through the landscape. When we arrived at the orphanage, however, the garden was flourishing. During our visit, children bounded between the rows, showing us the plants and picking armfuls of greens for the kitchen. Mama Nguya and Jane Satiel Mwalyego, who worked with her, discussed with the gardener at the orphanage where they might best transplant the seedlings and cultivate the plant cuttings that we had brought from the TRMEGA gardens. Later, as we sat talking to staff, they drew our attention to the lemongrass Mama Nguya and Jane had previously brought, which was now flourishing under the window of the classroom and keeping the mosquitos at bay.

As we pushed to get ahead of the waning light on our way back to Maji ya Chai, we debriefed in the car. We three talked about the plants and the kids in the garden, as well as the politics behind the founding of the orphanage and the tensions around its leadership, before we turned to the conceptual questions about the work we were doing together that regularly shaped our discussions. In the midst of this, I confessed to them that I did not know what to call the sorts of projects TRMEGA and others were generating: projects that offered renewed relations between people and plants as an intervention into the prolonged depletion and ongoing injury of bodies and soils in postcolonial Tanzania. After a thoughtful moment, Mama Nguya suggested *dawa lishe*.

Dawa lishe, a phrase that merges the more official categories of medicine (*dawa*) and fortified or nutrient-dense foods (*chakula lishe*), was an offering, a proposition, and, as I have come to see, a theory. While it seemed to arise spontaneously in response to my grasping for language, it was animated by years of collective work with people and plants. As Dian Million, the Tanana



FIGURE 1.1 Jane Satiel Mwalyego carrying cuttings gathered from the gardens of Training, Research, Monitoring and Evaluation on Gender and AIDS (TRMEGA) and to be transplanted in the garden they support at an orphanage west of Arusha, Tanzania. Photo by author, 2015.

Athabaskan theorist of indigenous feminist activism, teaches, “Theory is always practical first, rather than abstract.”¹ Remembering this fact shifts the ground of our stories and the relations in which they emerge. It expands ideas of who is (already) theorizing, which conversations find traction in the academy, and how a vocabulary in service of decolonization is generated.

On that late afternoon, Mama Nguya and I were grappling with a sense that there is something worth distinguishing about an informal network of projects in northeastern Tanzania that live in the interstices of medicine and agriculture. In these projects, Tanzanians are simultaneously assessing the conditions under which contemporary life is attenuated, diminished, exhausted, or drained away, as well as experimenting with ways to intervene in these conditions. We saw the collective commitment drawing them together as something worth naming because it renders visible experiences of dispossession, assessments of healing and harming, and strategies for reckoning with the past in the service of a more

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caring, just, and equitable future. This book takes *dawa lishe* as a provocation. Every time the phrase *dawa lishe* appears in this book, it deserves a footnote to Mama Nguya; every reference embodies our relationship and her work. Yet, in generating new proximities, *dawa lishe* is also an invitation to think together with others, to invite *dawa lishe* to energize new lines along which to theorize, to build connections with projects well beyond the borders of Tanzania, and to find common cause.

The social-therapeutic-ecological projects that the phrase *dawa lishe* strives to draw together attend to bodies as effects of land relations. Plant(ing) remedies seek to intervene in the slow violence of colonial dispossession, land enclosure, extractive labor, and the insatiability of appetites for natural resources that drive them. Born of a moment in which Tanzanians are witnessing a dramatic rise in chronic disease, *dawa lishe* articulates these persistent illnesses not only as a consequence of irresponsible ecological practices but also as part and parcel of the derangement of the forces through which the physical capacities of bodies and lands come into being. Remedies work by feeding, fortifying, and strengthening bodies and soils. This book argues that in addition to describing a collection of remedies and a modality of care, *dawa lishe* proposes an imaginative and practical experiment in healing (in) a toxic world and fostering real possibilities for continuance.

The projects described in the chapters that follow share a kinship with the rise of various initiatives in Africa and throughout the Global South that combine local knowledge of how to support the flourishing of plants and people with a range of global ecological and health movements. The community organizers, NGO leaders, and entrepreneurs in Tanzania innovating these plant(ing) therapies share some concerns with those who work to “modernize” traditional medicine. At times, their initiatives draw on agroecological techniques and permaculture practices. At other times, they find resonance with environmental health efforts as they work to name the impacts of racialized capitalism. *Dawa lishe*, however, is an invitation to distinguish work that strives to address the limitations and erasures structuring even the most subtle and progressive work around traditional medicine, agroecology, and environmental health. It refuses the ontological division of bodies and lands that enables medicines to “work” without fundamentally attending to the histories of nature in which they are embedded and that enables agriculture to develop through technologies that describe negative consequences to human health as “secondary” effects. Remedies reorient the times and spaces of healing by attuning bodily senses. Addressing the lived relations of body and land provokes theoretical sensibilities that support alternative ways of living and dying,



FIGURE 1.2 *Mchaichai* (dried lemongrass) produced and packaged by Dorkia Enterprises, Moshi, Tanzania. Photo by author, 2016.

growing and decaying, composing and decomposing. *Dawa lishe* embodies what Michelle Murphy has called the “experimental otherwise.”²

Take, for instance, the *mchaichai* (Kiswahili: lemongrass) produced by Dorkia Enterprises, a small-scale entrepreneurial initiative in northern Tanzania. The colorful label on this carefully packaged tisane announces: “It removes toxins from the whole body—those [toxins] that come from the food whose growth we have cut short, aluminum pots, steel wire, chemical medicines [synthetic pharmaceuticals, as well as synthetic fertilizers, herbicides, and pesticides], mental stress, and nicotine, which is from cigarettes and their smoke [and] is the cause of lung cancer. It cleans the kidneys; it removes all the residue stopping urine/plugging up the bladder (especially in elders). It returns a quicker memory and it puts the body in a good and lively state after using.”

Here eating, drinking, cooking, healing, and breathing all pose threats as they regularly expose bodies to toxins. *Mchaichai* cleanses bodies that are stressed, clogged, and sluggish as a result of chronic exposure to substances that facilitate modern agriculture, medicine, and domesticity. *Mchaichai* offers a way to mediate the forms of contamination and complicity that are constitutive of twenty-first-century lives and bodies. It is not a targeted or singular

cure. Indeed, how could there be for the relentless, low-level assaults on bodies described here? It kindles appetites that might reorient human-plant relations. It proposes an alternative to the sweet (and when possible milky) black tea that has grown to structure both private and communal moments in Tanzania since German settlers planted the first experimental tea at the Amani Research Station in 1904. As the lighter flavors of lemongrass gently divert postcolonial appetites, they invite bodies into livelier economies of taste.

Mchaichai, like other remedies described in the chapters that follow, attends to the prolonged depletions and recurring injuries intrinsic to a world in which toxicity has become a condition of life. The double-bind that compels this story forward is not uniquely Tanzanian. A walk through the supplements aisle in a local grocery store in the United States will reveal a wide array of remedies for the ills of modern life that purify polluted bodies, build individual defenses, and promise increased energy. The investment in herbal remedies and nutraceuticals has catalyzed rapid growth over the past two decades. Industry analysts estimated in 2022 that the global market for herbal medicine was USD135 billion and projected that it would reach USD178.4 billion by 2026.³ The nutraceutical market is even larger, estimated to be USD317 billion in 2023 and expected to grow at a compound annual rate of 9.6 percent in the near term.⁴ While these global markets both shaped and were shaped by middle-class concerns with “lifestyle” diseases, the hunger to harness ever-greater consumer spending power has driven companies such as GlaxoSmithKline, PepsiCo, and Coca-Cola to target the rural poor burdened by micronutrient deficiency.⁵

Dawa lishe is born of the frictions of this moment in which the therapeutic properties of plants are being rendered profitable as both middle-class health obsessions and humanitarian technologies. It seeks to name initiatives that disrupt the logics of these expanding international markets even while, at times, commercializing plant-based remedies and therapeutic foods. The social and entrepreneurial projects described in this book creatively navigate intellectual property regimes and trade agreements in part by moving between regulatory tracks for drugs and food. They find common cause through their efforts to undo the scalar forms of organization central to Big Pharma and Big Food. In aggregate, I argue, they open a space to redefine the efficacy of individual remedies in relation to their ability to hold the historical tensions over the properties of therapeutic plants rather than to resolve them through the magic of commodity relations.

Such provocations are not easy to sustain. Science, capital, and law are entangled in ways that incentivize mobilizing plants and plant knowledge as a resource for navigating life and countering harms. *Dawa lishe*, in contrast, is

an invitation to work collectively toward a radical revisioning of health and a redefinition of care. It is in this sense aspirational. *Medicines That Feed Us* trains attention on efforts that are drawn together by this aspiration. This does not mean that the projects that follow are always able to live up to these aspirations by creatively reimagining the world in which they live. Nor does it mean that all individuals remain unwavering in their commitments to undo the scar projects through which the accumulation of knowledge, capital, and credibility is generated. *Dawa lishe* as a theoretical proposition is refined through collective reflection on specific projects and reaction to individual products, as well as collaboration between producers emerging in response to the dramatic rise in chronic diseases, including diabetes, cardiovascular disease, rheumatism, and cancer, as well as the persistence of AIDS.

The edges of *dawa lishe* take form in eyebrows raised over a business owner who is taken in by an American dietary supplement and vitamin company, allowing his attention to be diverted from their more radical work as they redesign their clinical space to facilitate gatherings to promote the multinational's pyramid scheme. They are shaped in the subtle distancing from colleagues who, as their projects expand, slide into modes of production that treat land and labor as disposable or whose business practices come to more cleanly sever commodities from the assemblage of relations through which they are made. *Dawa lishe* is also distinguished by the more explicit critiques of a Kenyan man who rents space from a popular upscale bar owner, moving aside tables that gather festive groups in the evening to create a pop-up clinic in the morning. He buys plant products such as aloe juice and rosella in bulk in Nairobi and repackages it in small bottles with well-designed labels announcing his brand of Ideal Health. His consultations inevitably result in recommendations to buy these products and bills that frequently reached TZS100,000 or more (approximately USD50, a sum that exceeds half of the government's minimum monthly wage). Anxieties of ecological, economic, and social exploitation are folded into fears of the substances that circulate on streets, in buses, and in small shops in every town. No one suggests that all plant-based remedies are good or safe. Demanding that remedies be nourishing is an effort to recast how benefits *and* risks are evaluated and to hold medicine accountable to the slow violence of extractive ecological and economic relations organizing modern life.

Whether developed through a nongovernmental organization or a small business, *dawa lishe* marks projects committed to organic crop-management practices, composting, and seed sharing. Producers find alliances with food sovereignty movements to be more generative than biomedical collaborations driven by arguments about access to medicines. Products skip back and forth

across regulatory tracks for drugs, food, and, separately in Tanzania, traditional medicine. In so doing, they trouble the institutional practices that fix objects of government control and work to expand the intellectually and politically cramped ontics policed by the state.

Anchoring an analysis in Tanzania broadens the space for political critiques and the options for decolonial work, as healing and sovereignty have been linked in this region long before the rise of the modern nation-state. Precolonial vocabularies articulate how harm accumulates in bodies and lands and reveal older practices to navigate the ways that harming and healing are entangled.⁶ They provide analytical leverage in approaching twentieth-century struggles over healing. Colonial and postcolonial attempts to control healers reveal the mobilization of what David Arnold has called the “imperial pharmakon” as a technology of governance.⁷ Modern notions of toxicity and the relations with remedy that inhere in it emerged through the effort to control people and plants and to harness their energies for empire. It has taken form materially and conceptually within the slow violence of global, racial capitalism—the same relations that gave rise to the modern nation-state. Therefore, problematizing toxicity and its relationship with remedy from Tanzania enables an account that takes the nation-state seriously without making it the foundational subject of the analysis, either implicitly or explicitly.

The social-ecological-therapeutic projects at the core of this book are not faithful to the epistemological and ontological commitments of Eurocentric philosophical and scientific practice, which offer biological bodies as the primary sites of healing, botanical plants as resources for innovation and therapy, and the environment as externalized context. Rather, by directing therapeutic attention to the ways bodies and land move through each other, *dawa lishe* articulates healing as a practice of dwelling. This focus on the relations that give rise to bodies, plants, and soils (re)spatializes concerns about health and sites of healing.

Refusals to forget the ways that colonialism, slavery, missionization, international development, and the extractive industries they privilege have drained—and continue to drain—the capacities of people, plants, pollinators, and other creatures expose toxicity’s investment in a liberal form of bodily and territorial sovereignty. Remembering is facilitated by the vocabularies with which Tanzanians reflect on the violence that has “disabled ecologies,” as well as deeply embodied practices that shape the ways sickness and struggle are lived and the ways that assistance, accommodation, and care are cultivated.⁸ Insofar as precolonial vocabularies remain alive in everyday life, the leverage they provide is not reserved for scholars but also exploited by Tanzanians as they work toward healing in a toxic world. *Dawa lishe* is a product of these histories; it

works across their differences to trouble the rhythms and forms of existence that frame modern health.

As *dawa lishe* names projects that apprehend sickness and debility by addressing disabling relations between people, plants, and soils, it also captures a felt sense of the limitations of the bodily and territorial forms of sovereignty that ground modern politics. Producers and users are beginning to build a lexicon (words, objects, practices, relations) through which to consider and (re)define the epistemic objects of healing and their connections to collective governance. They are beginning to articulate a space to debate, dismantle, and reinvent the forms of *therapeutic sovereignty* that have been central to national and international governance.⁹ *Dawa lishe* offers an accounting of (post)colonial “struggles for control” through acts of care for people and plants—healing for communities and soils—that strive to nourish alternative forms of sovereignty through a redefinition of the therapeutic.¹⁰

Medicines That Feed Us examines social-ecological-therapeutic projects in Tanzania as they are reworking the scales, times, and spaces of “health.”¹¹ These projects, at their most potent, reimagine the body through its incorporations and excorporations in order to raise critical questions about power and justice. They are, at their most radical, a reinvention of the forms of political sovereignty that have defined possibilities of independence and autonomy (through the nation-state and the body) in the past century.

The Ground for Argument and Action

In 2018, I attended Slow Food International’s biennial Terra Madre gathering in Turin, Italy, with several Tanzanian friends and colleagues. I sat with them during a moving conversation between Amitav Ghosh and the Indian environmental activist Sunita Narain on “Climate Change: How to Face the Biggest Challenges of the Coming Decades.” I watched my friends’ faces when a Kenyan man at the end of our row of seats stood up and asked the speakers, “Should we conclude that a country needs to become a powerful polluter in order to get a seat at the table discussing climate change?” The irony in the question and the frustration its dark humor released point to the frictions and fissures in the public sphere. There may be agreement that these are toxic times, but even in these progressive conversations, there is tension over whose histories and imaginations will shape global articulations of toxicity, remedy, and their relations.

Many of the solutions “at the table” are conceptualized through the language and logics of the imperial pharmakon—that is, of the particular notion of toxicity and its relationship with remedy that emerged through colonialism

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and became important to colonial governance. The identification and circulation of “poisons” through colonial networks fostered the development of the twin sciences of toxicology and pharmacology. Scientific practices of recognition in these fields came to reformulate relations between toxicity and remedy. As these fields displaced precolonial lexicons of harming and healing, they also displaced ways of articulating agency, framing problems, assigning responsibility, and designing solutions.

As toxicology and pharmacology have come to provide the epistemic grounding for medico-juridical regimes of governance, they have also come to shape the lexicon in which they can be resisted. For instance, these sciences implicitly authorize public health studies of environmental exposure. Such studies have proven important in illustrating the uneven distribution of harm by mapping disease prevalence data alongside the location of industrial contaminants and toxic waste. The data generated has supported the development of environmental regulations, a conceptualization of a truer cost of industrial production, the monitoring of industries, and (in the best of cases) the ability to hold them accountable to the people they affect. Effective resistance then becomes a question of scientific capacity and, by extension, political economy. The uneven production of knowledge about the harmful substances being released into the air, water, and soils creates spaces where resistance is possible and where it is rendered mute.

Air pollution provides a particularly telling, if singular, example of the toxicity of global racial capitalism that late liberalism obscures through a politics of substances resting on practices of scientific recognition.¹² The World Health Organization (WHO) acknowledges that pollution is the most significant environmental cause of disease and premature death in the world, and yet, as Gabrielle Hecht points out in her essay on “The African Anthropocene,” it has no monitoring station in Africa.¹³ South Africa is the only country in sub-Saharan Africa that has been able to consistently support an air-quality monitoring program.¹⁴ Ghana has worked tirelessly to piece together a monitoring system from different shorter-term research grants.¹⁵ The resulting gaps shape the invisibility of pollution in Africa, as do the gaps in other forms of monitoring lamented by the toxicologists striving to investigate and remediate the presence of poisons in Senegal described in Noémi Tousignant’s *Edges of Exposure*.¹⁶ The processes of chemical recognition and the institutions that lead to the global and state politics of security have been largely impossible to mobilize in much of Africa. This structural lack is obscured by the portrayal of Africa as a material instantiation of the world’s preindustrial past and therefore essentially free of pollution and industrial waste. In fact, in some circles, this as-

sertion has been used to argue that Africa's value is in its ability to absorb more toxicity.¹⁷ This perverse addendum to the extractive logics of racial capitalism twists representations of Africa as a site of raw materials, in order to bolster new claims that its "nature" is perfectly positioned to absorb the toxic waste of the Global North.¹⁸ These comments are not merely in bad taste; they also illustrate the cunning ways that rooting claims to environmental and health justice in a politics of recognition can be manipulated to reinforce structural inequities and keep Africans from having a "seat at the table."

Arguments about regulatory invisibilities can at times lead to a sense that more knowledge is all that is needed to manage the line between toxic and nontoxic substances, between unsafe and safe use, dangerous and acceptable exposure. The image of individuals free of specific chemical compounds provides both a ground for normative legal intervention and benchmarks for measuring success. In the process, it seems to suggest there is a *we* that can be held separate, and thereby safe, from the toxic matter of the world. A growing scholarship on toxicity and chemical exposure is challenging philosophical investments in the possibility of discrete, bounded objects and subjects that undergird the ideal of bodies that can be whole, independent, authentic, and pure, as well as their versions of politics, both progressive and conservative.¹⁹ Expanding Bruno Latour's argument about the practices of purification that have been central to the project of modernity, Alexis Shotwell captures this argument in her assertion that *we* have never been pure.²⁰ The processes of purification built into scientific and juridical knowledge-making practices structure our forgetting of this fact. Recognizing toxicity as a condition of modern life means remembering. It means remembering that the work it takes to purify human bodies and synthetic chemicals is embedded in the work it takes to solidify a long chain of ontological distinctions between us and them, subjects and objects, and science and culture. It means remembering that this work has proven critical to the formation of contemporary hierarchy and privilege as well as the notions of contamination, corruption, and contagion that justify their maintenance.²¹ Such remembering challenges any easy recognition of a *we* who has a right to live uncontaminated, of a toxin separate from and threatening this *we*, and of a neutral position from which to adjudicate this separation.²²

Shotwell's research clarifies why purity politics offers only deeply fraught spaces from which to argue and act in Africa and beyond.²³ The forms of forgetting developed through practices of purification have justified violence and dispossession through colonialism, nationalism, postcolonial development, and humanitarianism. How we grapple with toxicity is thus a question of how we remember and whose remembering matters.²⁴ Postcolonial memories shape

how Tanzanian publics hear both official news stories and circulating rumors about the continued spraying of DDT,²⁵ the large graveyards of e-waste from the United States and Europe,²⁶ the international trade in radioactive waste,²⁷ the use of cyanide and mercury in mining,²⁸ and chemical fertilizers, pesticides, and herbicides in large-scale agriculture.²⁹ Public debates highlight the ways in which the lack of regulations on known toxins is exploited as an asset throughout the continent. Capital's strategic use of regulation is accompanied by a strategic nonchalance to the leakage of toxins into informal markets, such as when the surplus pesticides used by the large-scale flower farms in Arusha made their way into small agricultural shops and were picked up as a cheaper way of protecting tomatoes in local kitchen gardens.³⁰ In this space, a politics of purity, an ideal of an uncontaminated body, is unthinkable both practically and politically. More evocative is the *mchaichai* that "returns a quicker memory and . . . puts the body in a good and lively state after using." More evocative is the invitation to take in a plant and attune to its transformative potential. This is not a nostalgia for tradition but a call for memory, for a remembering that relations between plants, people, and place have not always been as they are; that they were reorganized through colonialism and continue to be stabilized through large-scale (plantation) agriculture. As a result, liveliness might be found by inserting the body into alternative economies of people and plants. Another particularly powerful site for this memory work is *kitarasa*, an indigenous banana, whose orange sap animates efforts to rescale the therapeutic. In Kilimanjaro, bananas are more than a staple food; they are embodiments of long histories of human-plant collaborations in the making of home, lineage, and health.

For Tanzanians, such remembering also means that everyday toxicities are not only the result of capitalism's offloading of its harmful waste to Africa but also the social-material effect of efforts designed to address insecurity, poverty, and disease. The pesticides and herbicides in food, the growth hormones fed to "modern" chickens, tissue cultures injected into banana plants, the aluminum pots used in everyday cooking, the hybrid (at times, genetically modified)³¹ corn whose reproductive strength decreases over generations, and the pharmaceuticals required to address chronic diseases (whether HIV, hypertension, or diabetes) and provide birth control are all held responsible for forcing modern bodies to bear complicated toxic loads. Approaching toxicity as a condition of life rather than an anomaly, however, does not mean accepting sickness, pollution, injustice, poverty, and death. It *does* mean that interventions focused narrowly on modes of recognition (and management) are not sufficient.

The absence of specific voices in conversations about climate change, national discrepancies in contributions to the production of harmful pollutants,

uneven community exposure to the harms of toxins globally, and lopsided production of knowledge about the burden of these toxins on the bodies and lands are all co-produced. Together, these asymmetries trace the history of the dispossessions, both fueling racial capitalism and universalizing the European, imperial forms of reason that justified it. Liberal multiculturalism's call for more diversity at the table is at best an anemic response. Identity politics does not necessarily challenge the "epistemic line" that divides the rational from the irrational, the true from the false, the scientific from the mythical. In fact, it is often used to hold the line. This was the dark humor of our Kenyan colleague. His provocation lay not in why an African was not on the stage with Ghosh or Narain, or even how a similar conversation might happen with African intellectuals and activists, but his provocation lay in the bold assertion that polluted landscapes and bodies-at-the-table are of a piece.

Healing in the Anthropocene

The growing recognition that the very processes through which modern life has developed are also the processes that threaten human and nonhuman survival has animated a search for ways to speak about and apprehend pollution and toxicity as processual relations, not just matters out of place.³² One particularly charismatic space has been the flurry of articles, books, conferences, and art projects generated over the past two decades in the name of the "Anthropocene."³³ The ecologist Eugene Stoermer and the atmospheric chemist Paul Crutzen first proposed the "Anthropocene" in key publications in 2000 as one way of temporalizing how humans have altered the matter of the world.³⁴ They drew together diverse scientific work and consolidated a range of other terms that emerged over the late twentieth century, in an effort to argue that the biological dynamics of what has been referred to as the Holocene no longer accurately describe Earth's systems today. The changes in Earth's atmosphere (warmer), flora and fauna (less diverse), sea levels (higher), as well as carbon and nitrogen cycles (more rapid) and phosphorus cycles (downregulated) are, scientists tell us, irreversible and defining. Yet, locating change in geological sciences centers attention on markers visible in the rock strata. Debates over whether these markers signal an end to the Holocene or an event within it privilege geological time. Proposals to declare a new epoch demand a disciplinarily legible origin story.

Many have highlighted the political implications of any given geological marker indicating the beginning of an era in which humans fundamentally altered the composition of the world. What does it mean to identify the

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mid-twentieth century with the acceleration of industrial production, the rise of the chemical industry, and the testing of the first atomic bomb, versus the beginning of the Atlantic slave trade and the violence of turning both life and land into property, versus the European “discovery” of the New World and beginnings of settler colonialism, versus the first evidence of human agriculture that changed the course of life and nonlife on the planet? Origin points are never neutral. Furthermore, as others have demonstrated, all proposed origins of the Anthropocene, with their emphasis on the *anthropos*, manifest an ideological vision.³⁵ The Anthropocene is compelled by commitments to humanism, embedded in racialized and racializing economies of knowledge, and circumscribes notions of justice. As a proposed name for an era only beginning to be lived, the “Anthropocene” consolidates these ideological commitments in articulations of a future described through their impacts for millennia to come. In so doing, it also shapes the ground on which global justice might be articulated.³⁶ In response to these critiques, other terms, other starting points, other ways through this moment have rushed forth: the Plantationocene, the Capitalocene, the Chthulucene, the Ravenocene.³⁷ Each calls us to re-temporalize and re-spatialize accounts of the moment in ways that might enable us to imagine and work toward more just, habitable relations. Most continue to hold separate the biopolitical work of environment and health.

The inextricability of ecological and human health, however, is growing less possible to ignore as the harmful waste of human industry changes the matter of rock, soil, water, and air and as the products of human ingenuity transform plants, bacteria, fungi, and animals. Previously siloed experts in both the environmental and medical sciences have been driven to think together. They grapple with how to address their twinned challenges: as biodiversity and health,³⁸ as climate change and human survival,³⁹ as capitalism and newly innovated renewable economies, as One Health,⁴⁰ or Planetary Health,⁴¹ or Sustainable Futures. All of these initiatives point to concerns about the ways that widespread environmental change is shaping both human health and the landscapes in which health is possible. All mobilize techniques for articulating “the problem” and strategies for intervening in “it,” which are themselves relations of power. Most remain tied to Euro-American historical notions of what Donna Haraway has called nature-cultures and their commitments to the centrality of human needs.⁴² Both the framing of, and increasingly the solutions to, the challenges humans face as a result of rising temperatures, increased carbon in the atmosphere, rising sea levels, salination of the oceans, widespread microplastics, emergence of new infectious diseases, and increasing rates of chronic disease are dominated by economizing logics that articulate the greatest threat

as failing ecosystem services. The choice of grammar we use to describe this moment, the economies of knowledge we mobilize, and the histories we create promise to reinforce or destabilize the inequalities and erasures that have been critical to modern world-making practices.

In *The Great Derangement*, Amitav Ghosh argues that “the climate crisis is also a crisis of culture, and thus of imagination.”⁴³ It remains unthinkable within the circumscribed forms of knowledge and politics born of the marriage of imperialism and capitalism. When imaginations are stuck maneuvering stiffly within consumption-driven logics, salvation from ecological and health crises leans heavily on dreams of spectacular technological solutions.⁴⁴ As Ghosh turns for inspiration to premodern forms of storytelling and poetry in South Asia for apprehending the exceptional and the catastrophic, the historian of public health and medicine Julie Livingston is one of few who offer narratives of our global moment that start with Africa. In *Self-Devouring Growth*, a parable set in contemporary Botswana, she entreats her readers to consider what rain-making might look like on a planetary scale. She asks what structures might create “the forms of collective self-agreement necessary to coax the climate.” Her planetary parable suggests that contemplating ways of knowing deemed irrational, superstitious, and marginal by colonialism and enlightenment reason might “contribute to the unlocking of our collective imagination.”⁴⁵

I am interested in how the realities that shape ways of being, qualities of living, and possibilities of healing in Tanzania might re-situate our analytics of ecological and health crises and open up spaces for collective action. The languages and logics through which Tanzanians confront toxicity and remedy recognize the extractive relations that shape our contemporary geologies and sociologies yet exceed their imaginaries. *Medicines That Feed Us* argues that *dawa lishe* is a way of problematizing the present and shaping the space in which solutions might be formulated. It is a way of making a proposition about what is happening and why. That is, *dawa lishe* is a mode of theorizing, as well as a modality of care. It is a way of accounting for the relations of power that bear down on the present, burdening some bodies with toxins more than others, driving up rates of hypertension, diabetes, and other “chronic diseases” unevenly. In the pages that follow, I describe this accounting as it is emerging through the work of Tanzanians, several of whom were sitting with me listening to Ghosh and Narain at the Terra Madre gathering in Turin, Italy. They nodded affirmatively, supporting the Kenyan provocateur at the end of the row. After all, they do not offer *dawa lishe* as a celebration of Tanzanian (or African) specificity, or as a salve for postcolonial ills. Rather, they offer it, I argue, as a program for the dislocation of the imperial pharmakon and a reinvention

of relations between toxicity and remedy through innovative work rooted in alternative relations between healing and sovereignty.

The Politics of the Imperial Pharmakon

In *Toxic Histories*, David Arnold defines the “imperial pharmakon” as the specific configuration of science, law, and economy through which colonial administrators managed the constitutive ambivalence of the *pharmakon*—that remedies are also poisons and vice versa—in the service of empire. The term glosses the techniques through which contemporary notions of toxicity were forged as a solution to problems of knowledge, politics, and economy at the intersection of colonialism and capitalism. While toxicity is in this sense a “global” concept, universalized through the sciences, Arnold argues that it embeds itself differently in different places as it navigates the layered histories of local poison cultures. His interest lies in the place-based specificities of the rise of toxicity as a site of biopolitical governance. Ultimately, *Toxic Histories* excavates the place of science in the making of the modern state. Arnold situates his history in India and points to the diverse and layered poison cultures British colonial administrators sought to control. Poisons have a similarly complex history in East Africa. British colonial efforts to manage these histories were central to tactics of governing bodies and populations in colonial Tanganyika. In fact, techniques were shared across the empire as administrators (and plants) moved between territories in South Asia, Africa, and elsewhere.

Arnold makes a powerful argument that the imperial pharmakon produced “toxicity” as a solution to colonial problems of knowledge and politics and masked the violence of colonialism itself. In colonial Tanganyika, like in India, poison cultures attracted the attention of the colonial state insofar as poisons threatened to resist, complicate, or disrupt colonial rule. Scientific techniques for identifying the “toxic” in poisons facilitated strategies to contain or offload it, as well as efforts to (re)mediate and direct its effects. Medical and juridical infrastructures consolidated “toxicity” through forms of proof and kinds of evidence that located the problem and potential of the toxic in substance, thereby obscuring the dispossessing relations through which racial capitalism systematically depleted and disabled bodies and lands. Other ways of organizing and of being in the world—ways that enable people to articulate power and sovereignty otherwise—were rendered illogical, mythical, and ignorant. The silences built into this marginalization continue as the imperial pharmakon shapes postcolonial infrastructures, grounding both state control and resistance to it.

Arnold's recognition of diverse poison cultures frames his argument that the centering of the imperial pharmakon required the decentering of other ways of healing and harming. His historicization of the imperial pharmakon as a technology through which self-identical substances ground biopolitical governance, however, stops short of questioning the metaphysics of poison. Asserting "India"—the emerging nation-state—as the historical subject that grounds his account leads him to narrow his focus around colonial and post-colonial knowledges and institutions that articulate toxicity as frozen in substance. Poison is apprehended through the articulations that developed with the rise of toxicology, and these then organize a reading back into precolonial South Asian history. Toxicity as a modern concept and the nation-state as the legitimate form of modern political sovereignty not only arise together but also reinforce each other, making both seem inevitable: Toxicity is an intrinsic component of evolutionary change, and the state is the universal conclusion in the evolutionary development of complex societies.

While I have learned from Arnold's careful attention to the forms of inclusion and exclusion through which participation in the state is organized in the name of toxicity, *Medicines That Feed Us* stays attentive to the erasures of other ways of knowing and insists on "provincializing" European configurations of bodily and territorial sovereignty. I explore the imperial pharmakon as an "epistemology of unknowing," in the sense that Vimalassery, Pegues, and Goldstein articulate in their essay "On Colonial Unknowing."⁴⁶ Practices of "unknowing" render slow violence and dispossession invisible. In the service of these occlusions, they obscure forms of sovereignty that are not rooted in the nation-state and its concept of citizenry. This obfuscation can feel ironic, such as when the politics of the imperial pharmakon is pushed into the future through the category of "traditional medicine" and projects of "integration."

Through my work in Tanzanian clinics and hospitals since the mid-1990s, I have been confronted regularly by biomedical and public health specialists (Tanzanian and not) who assert that traditional medicines poison people. Public health initiatives strive to convince traditional midwives and healers to stop administering medicines, and trainings continue to develop healers and midwives as a referral network for the clinic. The rhetoric advancing "integration" suggests that traditional healers and midwives are uniquely valuable because people trust them, not because they know things. They offer a solution to the labor shortage insofar as they limit their work to convincing the sick and the pregnant to attend the local clinic or health center sooner than they otherwise might. As trainers repeatedly emphasized, however, healers and midwives were *not* to administer medicines; they were not to do the work of

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healing. Chapter 3 traces the infrastructure through which healers' integration systematically dismantles their power to manage tensions between healing and harming.

In *Epistemic Freedom in Africa*, the historian and theorist Sabelo J. Ndlovu-Gatsheni identifies the recognition of infrastructures that support practices of unknowing as the first step to what he calls "epistemological decolonization." A second is the recognition that while other ways of knowing, modes of attention, and techniques of world-making were marginalized, they did not disappear. The forms of knowledge and politics rendered unspeakable through the imperial pharmakon receded from the working of formal state institutions, but they are alive in other spaces. Today, the frictions generated by layered histories of knowing and forms of embodiment shape the ways that Tanzanians approach healing in (and of) a toxic world and how they are reimagining sovereignty when toxicity is a condition of everyday life.

Given that toxicity as a modern concept has been co-constituted with particular notions of sovereignty, a rigorous engagement with questions of justice demands rethinking toxicity. *Medicines That Feed Us* joins a rapidly growing body of work emerging at the intersection of science, humanities, and art that is committed to rendering visible toxicity's relations and its entanglements with dispossession.⁴⁷ In such work, toxicity is recognized as a quality of relations rather than limited to a quality of substances. This work defines the toxic as that which is beyond remediation, that which has been forcibly torn from its place, unearthed and alienated, and that which must be mediated through exposure and dosage.⁴⁸ In the process of formulating *dawa lishe*, my colleagues in Tanzania extend this conversation as they recast the toxic as depleting, injurious, dissociative, dismembering, attenuating, barren, infertile, and exhausting. Focusing on toxicity as a quality of relations sedimented in the making of substances reveals it as the accumulation of deeply unequal and unjust racialized economies.⁴⁹ The complex and shifting notions of consumption and growth driving these economies have transformed landscapes, or in the words of those advocating for the "Anthropocene," they have transformed the substance of the planet. Yet, while toxic spaces are debilitating and sometimes deadly, others have argued that they can also open a (compromised) space for forms of existence that had been rendered impossible. When toxicity names not only the poisons in the land and water as the result of extractive industries but also capitalism's hunger for new frontiers once the desired resources have been exhausted, these toxic spaces hold out the possibility of creative alterlives, if not freedom.⁵⁰ As Elizabeth Povinelli has argued, toxicity may in these instances forge a space for limited survival and the development of new sovereignties.⁵¹

The anxieties and potentials that animate the “toxic” fuel (alternative) medicine, agriculture, and cultural life. Some of the most provocative interventions in art and activism, as well as in scholarship, suggest that the toxic demands new forms of sensing and sensibilities and perhaps alter(ed) bodies.⁵²

This conversation across disciplines and publics points to a theoretical proposition structuring this book: Toxicity has become the “ethical substance” of our epoch-in-transition (whether we label that with an -ocene or not). This proposition draws on Foucault and his articulation of “ethical substance” in the second volume of the *History of Sexuality (Uses of Pleasure)*, as the matter that raises the most impactful moral questions of a historical moment.⁵³ He develops this ontological argument through his genealogies of Greek and Roman sexual ethics, and he concludes that bodily pleasure is the ethical substance that came to define the ethics of modernity. If reflection and labor over the aphrodisia generated the dynamics through which bodies and selves came into being in the nineteenth century, then, I argue, reflection on and labor over toxicity are dismantling and reinventing the ontics of the body and self in the twenty-first century.

Toxicity in Translation

Confronting the overrepresentation of the imperial pharmakon clears a space to see other locations for thinking and acting in response to the moral problematic posed by modern toxicity. Ndlovu-Gatsheni argues that while such efforts toward “provincializing” Europe are necessary, they are wholly insufficient. Epistemological decolonization also requires what he refers to as “deprovincializing Africa.”⁵⁴ I take Ndlovu-Gatsheni’s call as an invitation not only to attend to the ways that the pharmakon has been thought (and its ambivalence managed) otherwise in Africa but also to take them as legitimate locations from which to interpret modern notions of toxicity and remedy. Such efforts, he notes, push beyond work to develop “theory from the South,” as they refuse to be restricted to the forms of speech and ways of thinking recognized as “theory” by the Global North.⁵⁵

One way to theorize while expanding the limits of theory is through the frictions and fissures of translation. Souleymane Bachir Diagne argues that all thought is generated in translation, that thinking is the process of working across languages and the ideas, practices, styles of comportment, landscapes of relating, and possibilities for being in which they are entwined.⁵⁶ Tanzanians work across English, Kiswahili, and a range of local languages every day. Among the people who animate the following chapters, these include multiple dialects of KiChagga as well as KiMeru, KiPare, KiArusha, KiKagera, and KiMaasai.

Communication in the region is layered with explicit and implicit translations. Reducing these translations to better or worse—innocent or noninnocent—efforts at drawing equivalence misses their power. Translating dissolves some, and surfaces other, modes of existence. It stages interruption and invites invention in the “in-betweens” created through the forms of difference-making that structure postcolonial modernity.⁵⁷

Dawa, a word that will appear often in this text, illustrates the ways that translation composes and decomposes worlds. As the dictionary from the Institute of Kiswahili Research (TUKI) at the University of Dar es Salaam identifies, the dominant English terms used to translate *dawa* are medicine, medication, medicant, or drug. Yet, *dawa* as it lives in everyday life is never only medicine and never only material. *Dawa* refers to healing plants and pharmaceuticals, as well as to rat poison, fertilizers, pesticides, herbicides, holy water, Qur’anic verses, Christian prayers, and evil looks. *Dawa* is swallowed, rubbed on skin, showered over bodies, worn bound in amulets, whispered to people, spoken over plants, sprinkled on dirt or in food, buried at the crossroads, or tucked above door frames. *Dawa* is a liveliness that intervenes in the forces that body forth humans and nonhumans, the vital and the elemental. *Dawa* has brought rain and stopped it; injured and turned the forces of injury back on the one who initiated them; brought wealth, love, and fertility; and depleted bodies, lands, patience, and fortitude. *Dawa* may be experienced as *kali* (fierce, impactful) or *baridi* (cool, gentle), but its capacity to be therapeutic or injurious is not (primarily, at least) a quality intrinsic to it. The effects, a *dawa*’s efficacy, are a product of the relations that it mobilizes and that mobilize it.

Connoting relations far more expansive than those of the English “medication” or “drug,” *dawa* might be more faithfully translated as pharmakonic substance, yet only if the metaphysics of substance itself is taken as a field of inquiry. *Dawa* in Kiswahili captures the constitutive ambivalence of the pharmakon while holding together the qualities rendered incommensurable through the materialism of the imperial pharmakon (e.g., the mythic, religious, or fraudulent). For this reason, it has generated and continues to generate friction in medical and juridical infrastructures. That which is referred to as *dawa* is regulated through laws concerning medicine, agriculture, religion, and witchcraft. As *dawa* ranges across the categories of modern governance, it threatens to destabilize them. It troubled colonial—and continues to trouble postcolonial—efforts to manage substances through the epistemic and ontological settlements of the imperial pharmakon.

The relations of *dawa* are more thoroughly grasped within the complex philosophical relations of healing and harming that inhere in *uganga* and *uchawi*,

terms often translated as medicine and witchcraft, respectively. These common translations are themselves, however, acts of decomposing precolonial worlds and composing colonial ones. Colonial officials advocated for “witchcraft ordinances” to control healers (*waganga*) whose work destabilized colonial authority. Officers had neither the resources nor the inclination to use the witchcraft ordinances to join together with communities to address the harms of those accused of *uchawi*. Rather, these ordinances provided a legal mechanism through which to reshape healing in allegiance with the colonial state.⁵⁸ As colonial scientists formulated the imperial pharmakon (in no small part) through botanical studies of local plants, they interrupted the ways that *dawa*’s constitutive ambivalence was managed through the lexicon of *uganga* and *uchawi*. Investigations in field stations and laboratories, such as the Amani Research Station in northeastern Tanzania, elucidated plants’ potency through the materialism of the sciences. Colonial ethnobotanical field studies, botanical gardens, and later postcolonial phytochemical efforts internalized the efficacy of plants, whether for medicine, food, pesticides, building, or other uses. Such ways of knowing and mobilizing plants were effective in conceptualizing them as botanical resources critical to the wealth of the state and the livelihoods of its citizens. In part, because scientific articulations of plants-as-botanical were linked to state projects in medicine and agriculture, they threatened to overwhelm other ways of working with and living through plants in this region.

Yet scientific articulations of plant potency have never been exclusive. East African healing traditions do not take a plant itself to be intrinsically medicinal; rather, the relations into which plants are called can invite healing (or harming) effects. As others and I have argued, herbal remedies in Tanzania and Kenya do not locate efficacy inside the internal matter of the plant—for instance, in secondary metabolites produced through the plant’s stress responses, which phytochemists often identify as active. Rather, a plant comes to engender effects that might be deemed therapeutic when taken up through a set of relations that include a healer, their ancestors or spirits, the patient (and their ancestors or spirits), the forces causing illness or debility, and the dynamics that influence the plant growth (and their relations). A plant heals, in other words, through its work of relating and in being related to, its ability to gather and disperse, and its movements that bind together or bypass and leave alone. Whether or not an individual says that they “believe” in traditional healing, these alternative ways of approaching plants contribute to the rich vocabularies through which Kiswahili speakers continue to access diverse historicities of plants.⁵⁹ Descriptions of healing and harming in Tanzania are not limited by a vocabulary that fixes self-abiding substances inside fields of social and

institutional power. Accounts of healing are accounts of bringing into being that which has capacity, agency, and endurance. Accounts of harming are accounts of bringing into being that which is depleted, disabled, and infertile.

References in Kiswahili to something as *uganga* or *uchawi*, then, are *not* assertions of fixed categories of practice or expertise available for government regulation (medicine and witchcraft, respectively). Rather, these speech acts are mobilized as a judgment on the ethics of the dynamic relations that give rise to the subjects (bodies) and substances (medicines, poisons, written words, etc.) at hand. Through *uganga* and *uchawi*, Kiswahili (and other Bantu language) speakers maintain a lexicon that does not forget, that cannot forget; that matter itself is a relation of power. By dissolving substances back into the relations through which they emerge, this lexicon holds out a space for articulating an alternative metaphysics of substance as actionable. In so doing, it works against the scientific and juridical practices that render dispossession invisible by freezing the toxic in discrete substance (whether at the scale of the botanical or the chemical).

This book tells the story of Tanzanians who are rethinking modern problems of toxicity through the rich, multiple histories of *dawa* alive in Tanzania today and reflecting on the practices through which *dawa*'s constitutive ambivalence is negotiated. *Dawa lishe* strives to name their efforts to navigate the incommensurabilities built into the lexicons of healing and harming in Tanzania. As producers work with the research institutes, regulatory bodies, and clinics, they shape their interventions by troubling tensions between the "traditional healer" and the "scientist" (alternately: the ethnobotanist, phytochemist, and pharmacologist). When engaged as contemporaries, the healer and the scientist each consolidate a different set of discourses, affects, and tactics used in shaping the relationship between remedy and toxicity, healing and harming. In so doing, these figures render visible continuities in precolonial and colonial relations of power. The healer is not marginalized as an anachronism or engaged as a living archive of primitive traditions that might be exploited by the botanist or their scientific colleagues. Rather, the healer's co-presence with the scientist denaturalizes any one depiction of relations between bodies and environments, as well as any one way of linking substance and sovereignty. By "staying with the trouble," as Donna Haraway would say, *dawa lishe* providers cultivate their access to the different modes of existence that each of these figures proposes and the human-plant-soil arrangements through which they emerge.⁶⁰ They illustrate that refusing to explain away epistemological and ontological difference, through a social evolutionary logic captured in bioprospecting's assertion that healers point to plants most likely to evidence phytochemical activity, does not necessarily mean a descent into relativism. Rather,

by maintaining the incommensurabilities that the “healer” and the “scientist” index, they strive to conceive and intervene in the inequity that sediments in bodies and lands over time.

This book also illustrates the ways that some Tanzanians are exploiting the unruliness of *dawa*, as well as the frictions in everyday translations of healing and harming, in order to (re)formulate and (de)compose the version of toxicity produced through the imperial pharmakon. The argument that follows, then, is not limited to the ways that the modern concept of “toxicity” is localized. I am suggesting that *dawa lishe* responds to the inadequacy of nineteenth- and twentieth-century notions of toxicity by turning toxicity itself inside out. It is a way of intervening in thinking that has been overwhelmed by the imperial pharmakon, of dislocating colonial ontics, and of experimenting with ways of being otherwise.

Toxicity, as it is remade through *dawa lishe*, undoes the scales through which we understand agency and reorients the boundaries of life. What this means practically is that when toxicity is not (only) a material quality essential to the identity of a substance, it cannot be effectively managed by mediating the thresholds of acceptable exposure to substances (whether considered active ingredients or poisons). Theoretically, this means that remedies are not another strategy for reasserting bodily sovereignty against capitalism’s stealthy trespasses through the air, water, food, and medicine (i.e., they are not mobilizing indigenous plant knowledge for postcolonial ills). Rather, *dawa lishe* names efforts through which sovereignty itself becomes a site of creative reinvention. What this means for the writing of the stories that follow is that bodies and plants, institutions and land, fade in and out of view. A sense of unevenness can emerge from this effort to unsettle the forms of vision and corresponding aesthetics of storytelling that require ontological solidity to naturalize the scalar logics of modern scientific, legal, and bureaucratic regimes. Toxicity and its relations with remedy and memory become a site to experiment with collective action that disrupts objects of analysis and politics. In order to surface the multidimensional, heterotemporal harms attenuating the strength of bodies and depleting the capacities of land in Tanzania today, these stories seek to surface intimate land relations that have been rendered invisible through analyses that hold tightly to botanical plants and forms of justice possible in their wake.

By attending to the interpenetrations of people and plants, and their (de)composition into soil, Tanzanians explore “the enmeshment of flesh with place” and its implications for modes of healing that recognize our ontological inseparability from the world.⁶¹ This starting point was brought home to me by a woman working at one of the herbal clinics where I have been conducting research since 2013. Through our many hours together in the face of the pain

of those seeking help at the clinic, in the camaraderie and joys of collective efforts to support them, in the rush of multiple demands, and in the boredom of long hot afternoons, Romana and I had grown very fond of one another. One afternoon, she shared her concern about the toll my trips back and forth between Tanzania and the United States would inevitably take on me. The dis-ease of my body, as it had to adjust and readjust to these different environments, would benefit from some attention. To cultivate this dual orientation, she recommended a strategy that she had learned from a German missionary in the area. When I traveled back to the United States, my friend told me, I should take a little dirt from Tanzania. On arrival, I should mix it with a little water from the United States and drink it. On my return to Tanzania, I should do the opposite: bring US dirt, mix it with Tanzanian water, and consume it. This way, my body would be constituted in the interstices of these two lands; it would be of both places and could make the corporeal translations and shifts necessary to my constant returns.

The vulnerability of a body is implicated not only in exposure to toxic substances but also in the very movements that give rise to the conditions and labors through which strength is constituted. In his effort to account for the toxic in North America, Nicholas Shapiro has argued that “bodies are sites of both actively absorbing the world and being put into motion by its constituent medley of human and nonhumans.”⁶² *Dawa lische* resonates with such efforts to rethink toxicity and extends them. Healing is not necessarily limited to managing what the body absorbs. The phrase offers a way to call out the times and ways that producers and providers heal by intervening in human–nonhuman relations to affect how specific bodies are put into motion, how they dwell. *Dawa lische* retheorizes the entanglements of bodies and ecologies by reorienting what it means to heal in a toxic world. Remedies are less dedicated to harnessing the internal properties of self-referential objects (body or plant) and more focused on cultivating ways of dwelling, which might make it possible to respond to ongoing disruptions of the possibility of being well together. Justice is less restricted by efforts to manage the boundaries of ontologically stable entities (institutions or land) and more concerned with mediating the knot of relations they hold in place.

Note on Method of Un/knowning

Although anthropologists talk more than many others of the importance of relationships and building rapport, too often this “rapport” is in the service of extractable data and authorial economies. Within the genre of the monograph,

a claim that this book is a product of my ethnographic work between 2008 and 2018 in Tanzania could slide by relatively uncontroversially. Yet, a commitment to co-create accounts in the service of decolonization means working against the grammar of such a claim. The reference to my agency and to disciplinary labor directs attention to the techniques of data collection, to the data itself, and to the distribution of property rights. Even the dates belie anthropology's constitutive ties to an economy of knowledge that locates author as producer and owner of knowledge based on extractable data as the decade highlighted refers to the time frame of the grants that funded me for the travel and for the research that is officially connected to this book (rather than the previous one or the next one, or someone else's). During the research that animates this book, "data" was not the goal, and in the analysis, "property" is being explicitly troubled. Recognition of the fact that the "ethnographic work" in any book is neither solely the author's, nor exactly "work," is too often relegated to the acknowledgments section rather than encountered as a methodological (and writerly) challenge.⁶³ For this reason, while I have many to acknowledge and much for which to be grateful, these final sections of the introduction draw the people and plants who made this work possible beyond the acknowledgments into the body of the text in order to think our co-laboring as method and the resulting text as relation.

Medicines That Feed Us is the product of a series of invitations offered in the midst of friendships, collaborations, a few explicit disagreements, and more subtle refusals. They were often incremental, emerging during everyday tasks, small collaborative projects, strolls along the road between events, and lunch or tea together as we fortified ourselves for more work as well as through the work itself. Each invitation came as part of a process of confronting the ways that my own expertise is embedded in histories of colonial unknowing and defined through practices of seeing, sensing, speaking, and writing that have supported positioning Africa as a resource for first colonial expansion and then postcolonial development. Each invited me (sometimes together with the one who offered the invitation) to push against the categories and practices—dispositions, vocabularies, and styles of engagement—that render the violence of dispossession invisible. As the research has been an unfolding of invitations (rather than discovery), writing has been a process of recollecting the thinking and acting possible in the wake of the invitations (rather than my findings or data). *Medicines That Feed Us* is offered in the service of our ongoing work together and what my colleague Mama Mtwewe calls our "coevolution."

The invitations that mattered started in the late 1990s, when Binti Dadi took me under her wing, a full decade earlier than any grant through which I conducted formal research for what has become this book. As a graduate

student, whose Kiswahili was then nascent and whose articulation of a research project was still hazy, Fatma Dadi, or Binti (daughter of) Dadi, as she was known throughout southeastern Tanzania, invited me into her home and family and became my teacher and my mentor. My indebtedness to her still grounds all my relations in Tanzania and many well beyond. What I understand of Tanzania as a place, how I engage with people and plants, how I imagine the possibilities and impossibilities of these relations, and how I sort through my own complicity in structures of global inequality have been and I imagine always will be shaped by Binti Dadi and her family. Binti Dadi once told me that her *majani* (those familiars that guide her life and healing) may find me one day. I do not yet know if they will, but her spirit presses upon me, my work, and all I do. As I write, my WhatsApp is ringing with incoming self-portraits of Binti Dadi's youngest grandchild, who was born only a few weeks after I began my doctoral work and is now grown and accomplished in her own right, having recently finished teachers' training college. My first book, *Bodies, Politics and African Healing*, which was dedicated to this grandchild, shares what I understood at the time to be my learnings in my most intense years of research with Binti Dadi. To the government, Binti Dadi was known as a traditional birth attendant. During the years that I regularly spent long days in her home, she attended only a few births, and it is unclear if in this part of southern Tanzania on the Makonde Plateau, there was ever a tradition of all births being attended by such "experts." For Binti Dadi, healing involved listening through Islamic forms, attending to plants, remaining sensitive to relations with ancestors, being climbed on by spirits, and learning to engage bodies already shaped by biomedicine. Her days focused on farming as well as what health professionals might call "reproductive health." She worked to help others conceive, maintain pregnancies, give birth, and welcome energetic newborns, as well as navigate threats to connection, reproduction, and vitality. Her therapies also focused on feeding and nourishing these newborns, securing them to body and land so they would not slip away too early. While registered with the state, she felt that district-level efforts to integrate traditional healers and birth attendants into the health care system were rather anemic. She did not waste energy shunning them or stretch to participate in them. She did, however, wonder out loud about the possibilities of collaborating with scientists. So, this book might be said to have been kindled by Binti Dadi's curiosity.

Wanting to explore the spaces where Binti Dadi saw possible collaborations, I spent six months in Dar es Salaam in 2008 investigating the "modernization of traditional medicine." I located myself within networks of scientific work at the University of Dar es Salaam, Muhimbili Medical Center, and the National

Institute of Medical Research. Dr. Ken Hosea's microbiology laboratory, investigating traditional knowledge, offered the most dynamic site. At the time, he and his graduate students were particularly interested in the antiviral and antibacterial properties of two traditionally fermented "foods": *idundu*, a moldy banana cultivated by the WaPare in northeastern Tanzania for postpartum women, and the stirring sticks Chagga on Mount Kilimanjaro traditionally used for brewing banana beer. I hung out and made myself as useful as possible in the lab, learning to handle Petri dishes and cultivate bacterial and viral growth, as well as developing an eye discerning enough to count different kinds of growth by shape and color. I read drafts of grant proposals and thesis chapters. I spent long hours talking about the wide range of pressures shaping the kinds of work Ken could do and strategizing ways to overcome the obstacles with him. He shared some of his efforts to offer his expertise on questions around genetically modified organisms as an active member of the President's Biosafety Commission. Through his work and the kinds of close ties built through elite secondary schools in Tanzania, he knew many in government and generously introduced me to colleagues who were grappling with questions of public health, scientific ethics, and legal technologies from a range of professional positions. Only in retrospect did I appreciate that it was Ken who first illustrated the power in dissolving the hard boundary between food and medicine, even as his vocabulary differs from my own. He used *idundi* and the beer stirring stick to open up ways of asking what sorts of food might be understood as therapeutic and how. Interestingly, Ken identifies as Chagga himself. When he wanted to investigate if genetically modified organisms (GMOs) had entered Tanzania illegally, he went to the seed shops in Kilimanjaro over Christmas break to ask for the best seeds to buy as a gift for his mother. At that time, I did not know that I would come to spend many years in Kilimanjaro and come to feel the impact of the affective force that pulls so many Chagga back in December. Ken's subtle sense of the relations through which knowledge is generated and through which matter could be therapeutic or harmful made him brilliant to some and dangerous to others. His struggle to generate rigorous scientific research and thoughtful public debate needed to address pressing questions in science, policy, and law was inspiring. It also highlighted the narrowness of the space in which scientists might articulate their work.

Binti Dadi and Ken Hosea both pointed the way. They shape this book's scope, even if much of my work with them falls outside of the main through-line that drives *Medicines That Feed Us*. They taught me where to look and how to frame questions when I got there. During this time in Dar es Salaam in 2008, I also met John Ogonidek and Victor Wiketye as well as their Head

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of Department (the late) Gloria Mbogo, in the Traditional Medicine Research Unit of the National Institute of Medical Research (NIMR). John and Victor became good friends and trusted colleagues of mine over the years. You will come to know them in the pages that follow as their scientific knowledge, curiosity, and compassion gave shape to this project, and their friendship has long grounded me. In the time that this research unfolded, Victor married. We all had children. John named his youngest Stacey, and he affectionately referred to her as “the professor.” In the early days in Dar es Salaam, they helped me to understand the layout of the state’s scientific interest and increasing investment in traditional medicine. The negotiation around NIMR’s acquisition of a research station for traditional medicine developed by an Italian nongovernmental organization was already underway. John and Victor not only worked to facilitate this transfer but also soon found themselves reassigned to Arusha in order to manage and direct the new research station. Their move proved a major factor pulling me north. In addition to the infrastructure of the research station, NIMR inherited collaborative relations with five healers. I saw John and Victor’s vision of good science most clearly through their drive to generate good relations with these healers and the collective work they sustained with three of them. The ways John and Victor opened up new horizons of what it might mean for healers and scientists to produce knowledge together, as well as their interest and care in the professional and life trajectories of these healers and their incorporation of the healers’ treatments into their own lives, suggest ways that traditional medicine might be developed as a decolonial science. Yet, most of this was not, perhaps could not be, the official work of the NIMR research station—even though these were often the most substantial, generative engagements happening there—given the political battles and jealous fighting over resources that left the research station’s phytochemistry lab understaffed and underfunded.

As I moved to the northeast, I hoped to work with John and Victor as well as with an interested group at the major teaching-research hospital in the region, Kilimanjaro Christian Medical Center (KCMC). I was compelled by questions of how property itself might be innovated within research methodologies concerning therapeutic plants through the dynamics of carefully built collaborations. While I was welcomed into both lab and clinic, the funding for research in both settings was driven by development projects with goals around specific public health or clinical interventions. The limited efforts generated from evening or weekend work and leftover resources did not constitute the conditions under which my colleagues at the research station or in the hospital could sustain projects with therapeutic plants that expanded property relations. Yet, they

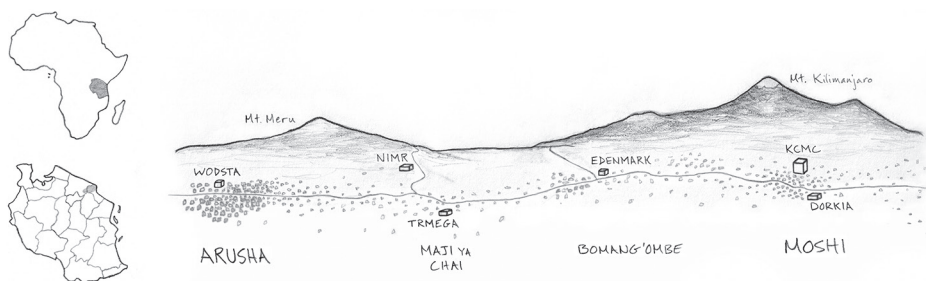


FIGURE 1.3 *Upper left:* Map of the African continent showing Tanzania. *Lower left:* Map of Tanzania showing research area. *Horizontal map:* Valley between Mount Kilimanjaro and Mount Meru, where the stories in this book unfold. Drawn by Margot Lystra and Stacey Langwick, 2025.

folded me into the work they did, and I examined how traditional medicine emerged and moved through both settings. I also began (sometimes with John and Victor, sometimes following up on a reference made by a patient in a clinic interview) investigating what at the time I called the emerging herbals industry.

In 2013, I followed a vague recommendation from an outpatient at KCMC to see an herbal clinic at the main intersection in Bomang’ombe, a town halfway between Moshi (where KCMC is located) and Arusha, where John and Victor’s research station is located. I grew curious, realizing I must have passed it many times over the previous months. EdenMark was in a strip of shops tucked behind a row of fruit and vegetable sellers at this busy crossroads. Yet, EdenMark’s brightly colored van and sandwich board inviting people in for acupuncture, among other treatments, jumped out at me once I was looking. The storefront sat adjacent to a more traditional pharmacy. In many ways, they looked interchangeable, with their glass doors opening onto glass counters filled with boxes and canisters of “medicines” and staffed by women in white coats. Indeed, as I came to see, it was not uncommon for someone to descend from a *daladala* (minibus) across the street and mistakenly walk into EdenMark asking to fill a prescription they had just received from the hospital.

Alex Uroki, the driving force behind EdenMark, wants to work at scale. His knowledge of plants grew from conversing with elders on the mountain, reading international research into therapeutic plants and functional foods, attending permaculture workshops, participating in pranic healing gatherings, studying acupressure books, and making connections among peers in Kenya, South Africa, and elsewhere. He travels widely, maintains diverse relations, cultivates eclectic interests, and exudes boundless energy. Plants, people, and

machines moved in and out of EdenMark. An intensely curious, lateral thinker (and doer!), Uroki's interest was piqued by an American affiliated with the hospital interested in plants. Our relationship began slowly as he drew me into his activities and relations. He tested my knowledge of plants along the roadside. He gifted me remedies to try, inviting me to make my body a site in collaboration and experimentation, as well as sharing how he approached his own body this way. We would talk as he assessed the large burlap bags in his storage room filled with dried bark, leaves, or tubers; as he examined the plant matter in his large industrial dryer; or as we drove into Moshi together after I had spent a day at the clinic. He wanted to know what I knew and if it would be helpful for him to know. While he came to introduce me to his network of relations, he was not interested in being a traditional research subject. He pressed to be introduced to my network in exchange, expressing interest in people he could work with, or through, or alongside. I brought John and Victor to EdenMark, and they developed their independent relations with Uroki. We traveled to India together with others for a Cornell "partnership" meeting. Uroki's generosity and energy not only opened up a world of activity to me but also reshaped how I might be invited into that world as he sometimes patiently, sometimes impatiently, worked with me to orient my engagement toward building common projects.

The relations central to *Medicines That Feed Us* and the trajectories along which this story is told all unfolded from and/or were folded into EdenMark. I spent many hundreds of hours in EdenMark facilities over the years. The two women who worked in Uroki's main clinic, Romana and Jenipha, drew me into the intimacies and rhythms of healing with "modern traditional medicines." It was from EdenMark that I originally followed plants (e.g., green bananas to Dorcas Kibona, chapter 5), addresses on canisters of medicine (e.g., a remedy called *imarisha yako* to TRMEGA and Mama Nguya and her network of people, chapter 1), and phone numbers on posters (e.g., the glossy poster *Dawa za Asili katika Nchi za Joto*, Traditional Medicines in Tropical Countries, with its sixty colorful thumbnail photos of therapeutic plants, to anamed, the international NGO that produced it). It was Uroki's engagement with the government offices—his registration as a healer and efforts to register others—that first rendered visible frictions with the state. In addition, it was in his office that I met the Slow Food Vice President Edie Mukiibi, who played a pivotal role in the development of the 10,000 Gardens in Africa project and from whom I learned of Mama Nguya's leadership in food sovereignty projects in the region. Uroki embodies one way of working within the postcolonial, postsocialist, and neoliberal pressures shaping the possibilities of action in Tanzania today: the entrepreneur. His work, however, was always in relationship with the other

subject position from which Tanzanians can find political leverage in the first quarter of this century: the NGO. The entrepreneur and the NGO director are deeply entangled subject positions. NGOs in Tanzania support entrepreneurship, and entrepreneurs tap into the organizing and work of NGOs. Neither are outside the state, or the market, or each other. In fact, it was a canister of one of TRMEGA's remedies on EdenMark's shelves—an herbal formula that Romana and Jenipha sold to those with symptoms that indicated immune disorders—that drew Mama Nguya and Uroki together. He had first picked it up at a national agricultural fair. This is the same remedy that drew me to Mama Nguya, who not only conceived of, founded, and directed TRMEGA, as mentioned above, but also served on a range of NGO boards (some for decades) and was appointed the Slow Food coordinator for northeastern Tanzania.

Mama Nguya has a gift for elevating others. She fostered the leadership of Rose Machange and Jane Satiel Mwalyego, and she invited me into relation with them. Both Rose and Jane are skilled community organizers, although they originally found their footing in different spheres. Rose came up through Women Development for Science and Technology (WODSTA), an NGO started in 1990 as the issue of gender drove international development agendas. This women's membership organization recognizes farming as the basis of many women's livelihoods and has come to focus on sustainable agricultural practices that will support women and their environment. Early on, the more elite women who founded the organization enlisted Rose as a "grassroots woman." Over the past twenty-five years, she has come to be a primary animating force for WODSTA's social projects. Mama Nguya has long served on WODSTA's advisory board. Admiring Rose's intelligence, honesty, and hard work, she has advocated for her to be recognized not only as an exemplary "grassroots woman" but also as a leader in the organization. Rose now holds the professional title of WODSTA "community mobilizer." When Mama Nguya founded TRMEGA, she pulled Rose and her women's groups into their work. Rose's agricultural skill and knowledge of therapeutic plants, as well as her strong connections to women's cooperative organizations, have shaped the agenda and impact of TRMEGA's projects. Jane began developing her community organization skills in the early 2000s, several years after Rose, first through participation in and then through the mobilization of support groups for people with AIDS. Her combination of charisma and compassion continues to incite generative connections and sustain collective work, even as the health development funding for social infrastructure around AIDS has attenuated with greater access to pharmaceuticals.

Many others helped me understand efforts to (re)kindle relations with plants in order to redefine health and the forms of governance that might be promoted

in the name of health: healers, herbal producers, shop owners, governmental officials, women's cooperatives, intellectual property lawyers, and food sovereignty advocates. John, Victor, Uroki, Dorcas, Mama Nguya, Rose, and Jane, however, form the loose collective at the heart of *Medicines That Feed Us*. They were working in relation to each other before my research but came to engage each other more deeply through it. Each recognized in the other's work an effort not only to respond to individuals seeking help with discrete illnesses but also to the slow violence and everyday disruptions that worked against the possibility of being well together in northeastern Tanzania (and beyond). *Dawa lishe*, the phrase offered by Mama Nguya, seeks to name this recognition. Such efforts were not something I could see or speak of during my time in Newala in the late 1990s and early 2000s, nor was *dawa lishe* as such visible to me in Dar es Salaam in the mid-2000s in the laboratories of the University or the Medical College or the offices of the National Institute of Medical Research. The experiments to which Mama Nguya gave language likely did not exist as a collective effort in the late 1990s. The abandoned social and material infrastructure of the AIDS support groups on which *dawa lishe* later came to lean were then only coming into being, and their articulation of these support groups with older peasant rights organizations was only just being organized. Slowly, after I shifted to the Kilimanjaro-Arusha area in 2010, the practices and projects that define *dawa lishe* started to be pulled into my view. The process of moving toward *dawa lishe* as a therapeutic modality, as a theoretical proposition, and as the central organizing principle of the book was a kind of ethnographic practice—being invited into the story and into the collective work through progressive invitations to see outside of the categories of knowledge that marked the original questions.

The relations that animated these invitations also gradually remade my own body and environment. Plants moved into the garden around our home in Moshi, joining the growing grove of avocado trees that our daughter tirelessly sprouted from seeds and planted in the backyard. I was regularly gifted cuttings and seeds, which drew my deepening relations into a dense green circle around me and my family. Friends and collaborators thinning their own gardens piled us with various plants to transplant at home. When we first rented our home in Moshi in a residential neighborhood near our daughter's school and walking distance from the hospital, the flat uniform lawn was broken up only by an occasional ornamental plant. Over the years, it grew lush and active. We composted along the back fence, behind the banana trees, in an open pit, sharing with the animals (but at a distance). We snacked on the moringa leaves from a tree gifted by Mama Nguya, as well as other fruits and vegetables that

came to flourish in the garden plot near it. Lemongrass was planted under the window to fend off mosquitoes, and a neem tree sent out branches over the gate that were fragrant with purple flowers in season. A dear friend who kept bees lent us a hive and valiantly tried to teach us to attract a wild colony. Coming to see *dawa lishe* was also a process of coming to be in place and of coming to understand healing as a quality of lushness in everyday life.

Plant(ing) Reproductive Justice

When I started to think about writing this book, I imagined that I would write narratives around individual plants. Several specific plants have come to signal that producers or users may be invested in the sort of commitments that *dawa lishe* glosses, such as banana (especially *kitarasa*), avocado, lemongrass, moringa, ginger, and pumpkin. Some or all of these plants scaffold the gardens I trace. Between them, people cultivate their favorite greens, tomatoes, taro, rosella, and orange sweet potatoes, as well as beans less commonly found in the market and often some fruit trees. Medicinal herbs sprout between these foods—sometimes intentionally cultivated, having been gifted from kin and neighbors, and sometimes as “spontaneous” offerings that are afforded space to grow during weeding. Each plant signaling a possible engagement with the commitments of *dawa lishe* has a complex history within colonial and postcolonial agriculture. They troubled plantation logics through indigeneity (*kitarasa*), difficulty in harvesting (moringa), wildness (ginger), or waste (seeds of the pumpkin and of “traditional” avocados), and their therapeutic potential seemed rooted in this capacity to hold space for more-than-economic relations. Yet, as I began to organize my notes and recordings, storying through individual plants started to feel inadequate. Too much was falling between or outside of the imagined chapters. As described above, being invited into the proposition that *dawa lishe* poses was also an invitation into ways of evaluating agency that cannot be articulated through the internal workings of plants, and ways of evaluating efficacy exceed engagement with individual plants. That is, the material substance of the plant was not the only or even primary unit through which producers and users were experimenting with ways of supporting nourishment and flourishing.

Dawa lishe attends to the forces generated between and among plants, people, animals, soil, and other elements as they co-labor. The efficacy of interventions rests in planting as well as in plants. This involves, but also exceeds, what agricultural experts refer to as “intercropping.” As chapter 1 illustrates in detail, these gardens are about not only strategically staging discrete interactions but also nurturing a density of relations that offer rich possibilities for

surprise and a broad platform for future response. Even producers who source their plant material from elsewhere talk extensively about the style of planting and care by those growing the plants they are purchasing. In producing remedies, they take the sourcing of plant material as an opportunity to self-consciously foster protection and strength through proximity with human and nonhuman others. Many gather their material through community-based collectives. All eschew synthetic pesticides, herbicides, and other products used for maintenance and turn attention to the co-laboring of people and plants.

Those who are extending their plant(ing) remedies through the sharing of seeds and cuttings recognize that land relations are explicitly multispecies affairs. Many of the gardens cultivated through these networks of people and plants include beekeeping, especially the keeping of African stingless bees (*nyuki wa dogo*, literally small bees). Local beekeepers identify eight different types of stingless bees. All prefer to build their hives in the hollowed-out logs passed down through generations. These ancestral logs used to be hung in the forest, and those with the knowledge worked to attract bees to their hives. As the forest has shrunk from deforestation, and the national park has excluded people from such activities within its boundaries, the hives have moved into home gardens. The honey they produce (Kiswahili: *nyori*), with its distinctive notes of lemon, can be found on the shelves of herbal shops. A women's cooperative that Rose leads has trademarked their brand of stingless bee honey, and it has been elevated to a food worth saving in the Slow Food Arc of Taste.⁶⁴

Nyori does not lend itself to large-scale industrial production. The ancestral hives of stingless bees require reclaiming an intimate knowledge of dwelling well with others through everyday practices. The therapeutic value of their honey is not only attributed to its chemical content but also generated as beekeepers afford space for the hives, care for the bees, and tend to the relations with the past they foster. This honey intervenes in forces that have rendered particular bodily vulnerabilities durable and injuries chronic by (re)kindling alternative land relations. Similarly, *dawa lishe* producers, like many other Tanzanians, have a deep commitment to, and taste for, the sinewy meat of traditional chickens (*kuku wa kienyeji*): those raised without medicines or hormones, among the household, eating corn, scraps, and bugs in the courtyard, fertilizing the soil with their waste and producing eggs for human consumption until they pass their reproductive prime. Home gardens envelop pens for goats, pigs, and cows, and their manure is used to enrich the soil. For community gardens, manure is brought in, usually from members' own animals.

Many in the pages that follow have found common cause with global others through this attentiveness to multispecies relations. They have, for instance,

participated in permaculture workshops and drawn on skills they learned while there. Yet, their gardens are not designed to mimic discrete ecosystems, nor are these gardeners interested in fidelity to the closed loop of a particular plot. This is at least in part because the temporalities of *dawa lishe* reach beyond the temporalities of such an ecosystem economy. Ancestors do not figure in permaculture theory, even if goats and bees have a role. *Dawa lishe*, however, takes the ways that past relations are alive in the present as a primary site of therapeutic work.

Chapter 4 explores *dawa lishe* as a search for the times and temporalities needed to address the durability of bodily vulnerabilities and weaknesses glossed as chronic disease and seen as a symptom (if not also an index) of modernity. Together with my interlocutors, I push back against dominant biomedical notions of “the chronic,” suggesting that such notions limit the spaces through which persistent diseases might be addressed. Sustaining in the midst of chronic injury, they assert, is not healing. Rather, healing requires the hard work of addressing the slow violence of dispossession and toxicity by dismantling the pasts alive in, and continuing to undermine the liveliness of, bodies in present-day relations.

Medicine That Feed Us describes social-ecological-therapeutic projects that mobilize plant(ing) remedies. Drawing attention to planting emphasizes the practices and relations that put plants in motion with each other and with multispecies others. It surfaces these movements as the forces defining their therapeutic properties (rather than internalizing their agency through phytochemical elucidation). In Kilimanjaro, the *kihamba*, the “Chagga home garden,” offers a lexicon for healing (*uganga*) as an assessment of efforts to interrupt forces attenuating life and to nourish those extending it. The *kihamba* feeds those who grow from its soil; on average, half of the bananas produced are consumed by the household, and half go to market.⁶⁵ Yet, the description of it as a “globally important heritage agricultural system” by the Food and Agriculture Organization of the United Nations does not fully capture its dynamism.⁶⁶ Tending to the *kihamba* as a space of everyday healing (not only as an ecological form or an agricultural strategy) illustrates how people apprehend the therapeutic capacity of plants through assessments of the relations that put them in motion. As a mode of dwelling, of attuning senses and cultivating sensibilities, of orienting to the co-laboring of plants and people and others, the *kihamba* gives rise to genealogical or reproductive temporalities that define notions of healing being brought forward by *dawa lishe*.

I saw this when I returned to Tanzania in the summer of 2023, for the first time after the COVID-19 pandemic. The story of COVID-19—of how people coped, survived, and grieved during the pandemic—was carried in these home

gardens. Although the impact of the virus was greatest in 2021, two years later, the stunted growth of many lemon trees still bore stories of the demand for a tea made from their leaves and the networks among kin and neighbors that their circulation sustained. Plants used for respiratory ailments and immune boosting continued to be afforded more space. Young people who had returned home from the cities talked enthusiastically of the uses of weedy herbs as they toured me through parents' and grandparents' *vihamba* (Kiswahili: plural of *kihamba*, more than one Chagga home garden). The graves of those who passed away during the early 2020s were covered with plants used to ease the distress of their last days and months. While hospital statistics—and debates over them—tell a story of global politics, national tensions, insufficient resources, and inadequate health care service infrastructure, the *vihamba* tell stories of rekindling relations with land and with others, of the people who were tied together in loose networks of support, and of the flow of plants and care through households, communities, and broader kin. They mark passings in the soil and hold space for the pasts that still animate the present.

Below, I offer a brief sketch of the *kihamba* as a lexicon for meaningfully grounded understandings of reproductive justice located in the long arc of plant relations that define living well in the region.

Home Gardens on Kilimanjaro

Literature in the environmental sciences defines the *kihamba* as a banana/coffee home garden. This agroforestry system, however, preceded the introduction of coffee by German colonists.⁶⁷ Bananas defined the precolonial *kihamba* not only as a dominant species of flora but also for their intimate co-laboring with people to generate more life.

Knut Christian Myhre's evocative ethnography among the Chagga on the eastern side of the mountain that borders Kenya (Rombo district, where Romana is from) excavates the precolonial relations animated by the *kihamba* in this area of Kilimanjaro.⁶⁸ He argues that in the nineteenth century, when land was more abundant and coffee not yet central to livelihoods, *vihamba* moved between women along patriarchal lines. A mother gifted her *kihamba* to a son's (first) wife upon marriage. The older woman moved herself and her children to a new *kihamba* above the one her son's wife then occupied. The young wife would therefore inherit a fully functioning *kihamba*. In this area where polygamy was common, men would cycle between their wives' *vihamba*. Although a *kihamba* extended a husband's lineage, it was the space of a wife's power and authority. Her presence invited its flourishing. Her labor channeled the forces of reproduction and continuance. Youngest sons' wives inherited the

parents' final *kihamba*, and when these elders passed away, they were buried in the *kihamba*. The son's children grew up with grandparents' and sometimes great-grandparents' graves holding down the courtyard. The *kihamba* was, and was more than, a plot and a style of planting; it was the cultivation of a dense node of reproductive energy that potentiated lineage and land. It engendered a particular kind of lushness marked by a density of relations—human and non-human, animate and inanimate—that supports the possibility of children and harvests, that is, of ongoingness.

Coffee slowly entered these home gardens during the first half of the twentieth century. Not until the 1950s, with the rise of global coffee prices and the successful political organization of the Chagga through coffee cooperatives, did the relationship between bananas and coffee come to thoroughly redefine the composition of the *kihamba*. The mid-twentieth-century *kihamba*, as a banana/coffee home garden, both indexed and animated changes in social organization, modes of dwelling, and forms of trade. Coffee as a cash crop offered a way to respond to economic pressures and shifting social priorities, from colonial taxes to mission school fees. It also fueled Chagga political organization, as growers petitioned colonial administrators to resist pressure from white settlers who wanted to limit African coffee production to boost their own claims to land.⁶⁹ The history of the emergence of the banana/coffee “home garden” tells a story of the incorporation of coffee into the reproductive energies of the household and the broader community. This contemporary formation is also a manifestation of the broader changes in land relations in response to colonial enclosure and the forms of sovereignty through which it was levied.

The coffee bush facilitated, and its extension was facilitated by, the forces that destabilized precolonial social, ecological, and economic organization. Settler farms and mission compounds alienated land from those whose continuance had long been tied to the mountain. As churches advocated for the end of polygamy and the schooling of children, they shifted the allocation of labor within the household. Fathers came to live with one wife permanently rather than moving between wives' homes. Their authority grew as they consolidated their lives and livelihoods in a singular *kihamba*. This focus settled in the land through the planting of coffee bushes to which men claimed ownership. Gendered imaginings of the “family” propagated by the church reinforced models of patriarchal ownership.⁷⁰ Children were simultaneously less available for labor on and off the *kihamba* as missions established schools.⁷¹ The styles of homes changed as modern aesthetics discouraged drawing cows into the house at night to sleep.⁷² The desire for more permanent houses increased

the investment made in the home space, and parents grew less willing to gift their *kihamba* to the son's new wife. Upon marriage, fathers began giving sons a piece of land on which to begin cultivating a *kihamba* (rather than mothers gifting sons' wives a fully functioning *kihamba*). These plots might be a section of the parents' *kihamba*, former grazing land, or area in the lowlands. Colonialism disrupted the intimate relations through which plants and people tended forces generating life in myriad ways.

Demographic pressures continued to drive more land under permanent cultivation. As uncultivated land grew scarcer, young men's access to land grew scarcer. Grazing land next to *vihamba* for pregnant cows and those with calves shrank. Cattle had to be taken farther for grazing or provided fodder. Plots grew increasingly fragmented, encouraging the further intensification and diversification of the *kihamba*.⁷³ Long histories of irrigation, manuring, and terracing supported farmers' ability to cultivate the steeper and more inaccessible areas and to plant continually through three growing seasons while still attending to the fertility and capacity of the soil.⁷⁴ The contemporary banana/coffee "home garden" not only captures the incorporation of coffee into the reproductive energies of the household but also holds the tension of these shifting land relations and the reconfiguration of gendered power, modes of production, and practices of dwelling.

The twenty-first-century *kihamba* is shaped by, even if not fully defined by, both colonial and postcolonial dispossession. Land continues to be alienated from smallholder farmers through commercial farms (often foreign-owned), forest plantations, conservation areas, and rapid urbanization. Today, smallholder parcels average .5 ha on Kilimanjaro, and access to additional land for cereal crops and grazing is much more difficult. Fewer people have access to even small parcels, and this land scarcity reinforces existing inequities and vulnerabilities. As the advocacy of women's rights groups such as the Kilimanjaro Women's Information Exchange and Consultancy Organization (KWIECO) teaches, customary and colonial law systematically supported men's rights to land over women's claims. More recent land reforms have been inadequate to ensure equity, even as the urgency of land rights has been exacerbated in the wake of AIDS.⁷⁵ The *kihamba*, then, is a site of both inspiration and struggle in efforts to keep alive a mode of staying close to soil, plants, and ancestors.

While environmental historians describe the *kihamba* as a form of early agricultural intensification, ecologists celebrate the biodiversity that inheres in the *kihamba*.⁷⁶ In a 2006 study, Andreas Hemp found that each *kihamba* consisted of over 500 vascular plant species, including 400 noncultivated plants; that is, approximately 80 percent of the plants identified had taken and/or were

afforded space, but they had not been intentionally cultivated by humans for a specific or immediate use.⁷⁷ The *kihamba* entwines histories of agricultural intensification with stories of human cultivation that foster the distribution of indigenous species by increasing habitat diversity, but it cannot be fully captured in these narratives. Both perspectives engage land and plants in the *kihamba* as resource, one to fuel economic systems and the other to animate ecological systems. In so doing, they obscure the logics and labor that reveal the therapeutic potential of land as relation and the densification of these relations as a rich space of response.

The density and diversity of the *kihamba* resonate more with the generative space-making that Isabelle Stengers describes in *Capitalist Sorcery* as “casting the circle” than with the logics of resource extraction and industrial production.⁷⁸ Stengers draws on the ancient European traditions of sorcerers and healers who gather the forces of change by creating “the protective space necessary to the practice of that which exposes, of what puts at risk in order to transform.” The boundaries of the *kihamba* are delineated less by keeping out than they are by pulling in; its strength grows through an intensification of relations and its power through the transformative potential of new exposures.

Healing (as) Land Relations

Vihamba are dense gatherings of plants and people working together to amplify reproductive potential. Through and amid the tensions that compose the contemporary *kihamba* and its exclusivities, *dawa lishe* providers explore the kinds of land relations that might be experienced as healing. They do not offer the *kihamba* up wholesale as a model garden, but rather, by working within its layered histories, incommensurable economies, and unexpected proximities, they offer a space to reimagine what it means to engage healing as an act of working for reproductive justice in the broadest sense. But it is not the only one.

The *kihamba* has never been the sole site for cultivating reproductive energies. It is one of a diverse array of interlocking configurations of more-than-human relations. The specificity of the land relations engendered in the *kihamba* was forged in coordination with other areas: grazing land for cows and goats, low-land fields for cereals and beans, highland fields for growing fodder, and forests for wood, wildlife, and foraging.⁷⁹ Precolonial mountain communities took advantage of the different ecological zones and microclimates in the region to enhance reproductive possibilities and generate sufficient food. They dedicated labor to accumulating excess across these spaces in order to foster exchange and negotiate continuance with others through village markets.⁸⁰ The *kihamba* emerged through, and continues to exist in, complex relations to the field and

to the market. The multiple ways of being and being with plants in and beyond the *kihamba* have long afforded farmers dexterity as they assess and engage regional and global economic forces and care for the health and well-being of those that grow from its soil.

Furthermore, today in contemporary northeastern Tanzania, the *kihamba* has been joined by other configurations of multispecies liveliness. The desirability of the volcanic soils, the growth of the urban centers, and the quality of secondary schools in this region have drawn many to the area since independence. Those who hail from further afield bring different histories of planting and land tenure. They are pressed by differently gendered responsibilities to human and nonhuman kin and rights to access land (as well as obligations to that which they can access). Mama Nguya, for instance, was born and raised in Kagera, a region in the northwestern corner of Tanzania running between Lake Victoria (to the east) and Rwanda and Burundi (to the west). Among the Bahaya in Kagera, life, land, and lineage are similarly interwoven with bananas. The ecologies and the social movements that shaped land relations in this region, however, have been quite different. Trade has moved most easily around Lake Victoria, building connections across what is now Uganda and Kenya. In Kagera, men traditionally owned the banana trees surrounding homes, and this ownership determined property relations, whereas women planted seasonal gardens in the grasslands. The diversity of ways that garden plots have enacted and continue to enact relations across Tanzania has become a source of creativity for those striving to heal contemporary bodies and lands. The differences serve to highlight the garden as a complex form of enclosure and of ecological choreography.

Dawa lishe plays with all these differences as it moves in and out of home gardens, through collective gardens, opening to the sorts of fields that would allow for increased cultivation. This multiplicity offers frictions through which to dismantle and reinvent these gardens and the social relations of which they are part. Plant(ing) remedies remember that colonial land tenure was set up to manage global capital for empire. Postcolonial land tenure was set up to manage national resources for national (and after the 1990s and the fall of socialism, increasingly corporate) development.⁸¹ Modern medicine and agriculture emerged in relation to the formation of land tenure invested in the vitality of productive citizens and productive ecologies. Neither colonial nor postcolonial land tenure was designed to maintain ancestral graves and sacred groves. Neither were compelled to generate forms of growing, eating, and healing that foster the viability of lineage and land.

Those innovating *dawa lishe* recognize that precolonial, colonial, and postcolonial land tenure systems have *all* been sites of inequality and violence, as

well as constant struggle over responsibilities and obligations to others (human and nonhuman, animate and elemental). Powerful forces external and internal to households and to communities have striven to accumulate wealth and have often resisted the distribution of resources. For the past four decades, Tanzanian activists have fought for women's ability to own, control, and manage land, and they have highlighted the urgency of land rights as AIDS has loosened the bonds through which land and lineage form.⁸² Female-headed households have increased; sisters and grandmothers find themselves taking in children from kin. Widows are dispossessed of land, or their rights to use land are increasingly challenged. Many find themselves displaced to periurban areas, in small rented houses or rooms.

The plant(ing) remedies in *Medicines That Feed Us* do not offer a magic bullet but rather something more modest: invitations into, and strategies for building up, a density of relations as a powerful social-ecological place from which to respond to persistent injury and chronic depletion. I write to extend the work of Tanzanians who are exploring new, hybrid vocabularies for reflecting on how harms accumulate in bodies, lineages, and lands, and who are developing practices to intervene on those harms. Their efforts to formulate remedies through current legal and medical regimes are fraught. The avenues for intervention are narrow. The pressures for their work to be absorbed into the economy are intense. Yet, by drawing attention to the co-laboring of plants and people, they teach us how we might attune (and continually reattune) to relations that offer times and spaces for decolonial reinvention of health and new possibilities for healing.

Therapeutic Sovereignty

The next chapter explores how plant(ing) remedies reach out to those increasingly marginalized and abandoned through histories of alienation from land and labor. Neither I nor my colleagues elevate one style of planting or one historical moment as a solution in and of itself. Nor do those experimenting with *dawa lishé* as medicine and theory romanticize the fact that African healing has long recognized land relations as central to both sickness and health, depletion and restoration, for healing has been a site of power as well as resistance and therefore entangled in these inequities. There is no pure place to stand. No innocent ground for argument. But there are more and less subtle, elaborate, and impactful ways of thinking relations between bodies and environments. There are modes of healing that render visible and those that render invisible the ways that violence, dispossession, and economism exhaust some bodies

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more than others. And there are efforts to intervene—through both argument and action—in the relentless depletion and chronic exhaustion that have left people and land worn down, more vulnerable, and less fertile. *Dawa lishe* seeks to recognize and, by doing so, draw together those people and plants in Tanzania that are innovating plant(ing) remedies to address such body-land injuries.

Dawa lishe emerged as a proposition linking the work of farmers' collectives, women's cooperatives, imaginative entrepreneurs, and resourceful AIDS support groups in Tanzania that are experimenting with ways to care for depleted bodies and disabled ecologies through innovative projects that (re)kindle relations with plants and (re)formulate ways of dwelling together. Their efforts insist on remembering the ways that toxicity has become a condition of modern life. In an effort to expand the scope of how to address the urgency of the environmental and health crises defining the twenty-first century, I offer a story of *dawa lishe* as a provocation for collaboration among projects experimenting with ways to dislocate the imperial pharmakon and reinvent relations between toxicity, remedy, and memory. Drawing on African healing, these projects open a space to articulate therapeutic sovereignty as the power to determine the terms through which reproductive justice is articulated in a toxic world.

The projects described in the pages that follow invite people and plants into the collective labor that might create times and spaces for healing and repair. They are creative gestures in the face of environmental and health crises that have a momentum of their own. Recognizing the extent to which dispossession has exhausted some bodies and lands, draining them of the relations that enable response to injury and loss, these plant(ing) remedies start small: a canister of herbal medicine given to a woman confined to her bed with AIDS and hunger, abandoned by family and tormented by the pain of not being able to care for her children; a bag of dandelion greens to stimulate a taste for bitterness and awaken the knowledge that plants which fortify can be found along the road and in abandoned lots; seeds shared for a container garden near the door of a small room rented by one pushed to a periurban area by poverty; cuttings and saplings brought to schools and orphanages in a refusal to abandon those rendered hungry, weak, or unproductive. These projects locate remedy in reparative, transformative acts that challenge claims to environment and health justice rooted in ownership. They insist on kindling other ways of being close to land and to each other.

Some take the garden itself as an intervention, highlighting that healing is about land relations. *Dawa lishe* gardens extend from one to the other through the exchange of seeds, cuttings, and knowledge. In so doing, they work directly against the continued alienation of plants from small-scale farmers, as Tanza-

nia has bent to increasing international pressure to comply with strict interpretations of plant breeders' rights.⁸³ They also trouble deeper commitments to plant–people relations rooted in long histories of the economization of life, labor, and land and their enclosures. Remedies rekindle relations with, and appetites for, plants in an effort to remind people of body-land relations that are otherwise. The innovative projects that describe *dawa lisbe* strive to render visible the slow violence and accumulated burdens of environmental degradation and economic exploitation, by cultivating appetites for alternative times and spaces for going on through (and with) plants.

Therapeutic possibilities are generated in the dynamics of growing and eating, gathering and composting, drying and burying. Attending to the dynamics of composition and decomposition, *dawa lisbe* focuses on not only the powers that determine life and death but also those that animate the ways that life and nonlife move through each other. It shares a kinship with concerns over how to read, name, and act on changes in the substances that make up our planet, both the lively and the inert, and how to evaluate the ways that these substances move through each other, pooling in bodies and earth, finding new lives and life cycles, and changing the compositions of humans, animals, plants, soils, waters, and air. Producers and users locate the therapeutic in reproductive capacities that animate forces of continuance that exceed human lifetimes, as well as forms of agency and animacy that refuse the ontological separation of body and land (a separation critical to apprehending soils, plants, and animals as economic resources). In the process of reimagining the times and spaces of the therapeutic, they hold our notions of corporeal and territorial sovereignty accountable to the work of healing. *Medicines That Feed Us* strives to capture the provocation that interrupting the rise of chronic illness in Tanzania requires revisioning the times, spaces, and scales through which harm is articulated, responsibility is delineated, and obligations to the bodies and lands that are harmed are held.

This book comprises five substantive chapters through which I propose *dawa lisbe* as a mode of collectively moving toward an answer to the question: What does it mean to heal in a toxic world? Each chapter is both an ethnographic examination of practices and a theoretical provocation inviting collaborative possibilities in developing modes of attention, techniques of observation, ways of storytelling, and forms of active engagement that hold therapies accountable to nourishing the life force through which lineage and land are bodied forth. I offer a notion of “lushness” to conceptually capture the way that the innovative projects described in the pages that follow are reorienting notions of health and healing. In the process, I argue that they draw out and

innovate on versions of sovereignty that support healing and continuance through rich ecological relations. Chapter 1 roots this argument in the work of TRMEGA. I account for this NGO's co-laboring with plants and the extension of gardens as interventions into the persistent injury and chronic vulnerability that define periurban spaces. Forms of care and composting draw people closer to the soil and to each other in ways that intervene in the ongoing depletions and slow violence of extractive economies of land and labor.

Chapter 2, "Efficacy of Appetites," takes up appetites as desires that drive body-land relations and that energize lively response. In Tanzania, as elsewhere today, appetites are under scrutiny and have become the focus of national and international public health efforts. Plant(ing) remedies—as well as the large social projects of which they are part—challenge the forms of knowledge that authorize therapeutic efficacy and elevate interventions into the palate as a ground for politics.

In chapter 3, "Registers of Knowledge," I take a short detour to elucidate why *dawa lishe* cannot be faithfully engaged or managed as traditional medicine. This argument requires tracing the institutionalization of traditional medicine and identifying its origin in the epistemological and ontological settlements forged by colonial policies that separated African therapeutics into herbalism and witchcraft. *Dawa lishe*, as an invitation to collective labor and an incitement to contemporary theory, troubles the settlements made through the forging of traditional medicine as a modern category of knowledge and practice. Plant(ing) remedies denaturalize now well-institutionalized answers to the questions: "What are plants?" "Who can know them?" and "What counts as knowing and knowledge?"

Chapter 4, "Work of Time," is inspired by how the Senegalese philosopher Souleymane Bachir Diagne mobilizes his work on time as that which is conceived in action. I ask what times or temporalities are needed in the face of the toxicities shaping the African Anthropocene. For many Tanzanians with and without an HIV diagnosis, antiretroviral therapies have become a generative object around which to contemplate what it means to live in toxic times—that is, to reflect on this historical moment in which life (individual and communal) is only possible through the "toxicity" of such pharmaceutical regimes. *Dawa lishe* strives to enroll bodies in rhythms that respond to, but also expand beyond, the pharmaceutical logics and the tempos of biomedical institutions.

The banana offers a generative example of the rhythms created in the plant(ing) remedies. Chapter 5, "Properties of Healing," looks most closely at *kitarasa*, a banana said to be indigenous to the Kilimanjaro region and a particularly charismatic actor in the rise of the social-ecological-therapeutic projects

indexed by *dawa lishe*. The temporal and spatial horizons toward which *kitarasa* strives to orient care challenge global health's current ways of formulating relations between bodies and their environments. The interscalar capacity of *kitarasa* incites the theorizing of relations among toxicity, healing, and memory in ways that challenge the properties of therapeutic and economic value that drive the pharmaceuticalization of health.

I conclude the book with a meditation on how *dawa lishe*, as a practice of fostering real possibilities for continuance in a toxic world, begins to compose forms of political and therapeutic sovereignty that support a dispersed ecological body, broad notions of reproductive justice, and innovative notions of property rooted in an ethics of hospitality. In so doing, these practices decenter the imperial pharmakon and reinvent toxicity and its relation with remedy through vocabularies forged in African histories of healing.

These efforts to re-story chronic illness within the persistent depletion, injury, and loss of postcolonial Tanzania find connections beyond the country's borders. I invite you to trace them in the service of ongoing work. What modes of attention, forms of care, spaces for repletion, and times for regeneration will support reflection on and labor over toxicity in the service of healing? What relations will hold us responsible for the kinds of lushness that support the ability to accommodate injury, attend to loss, and move through illness?

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Notes

INTRODUCTION: HEALING (IN) A TOXIC WORLD

Ideas that continued to evolve in the introduction and other chapters of this volume developed through the writing of “Healing in the Anthropocene,” in *The World Multiple: Politics of Knowing and Generating Entangled Worlds*, ed. Keiichi Omura, Atsuro Morita, Shiho Satsuka, and Grant Jun Otsuki (Routledge, 2018), 155–72.

1. Million, “There Is a River in Me,” 33. In fact, assertions that some languages are “naturally” abstract are a way of privileging some locations for thinking and the voices that are most often found there. See also Diagne, *The Ink of the Scholars*.
2. Murphy, “The Experimental Otherwise,” 105–9.
3. Research and Markets, “Herbal Medicines—Global Market Trajectory and Analytics,” and Bareetseng, “The Worldwide Herbal Market: Trends and Opportunities,” 575–84. Bareetseng works in the South African Council for Scientific and Industrial Research, in the Advanced Agriculture and Food Cluster.
4. Grand View Research, “Nutraceuticals Market Size, Share and Trends Analysis Report.”
5. Street, “Food as Pharma,” 361–72.
6. For precolonial Africa, see Schoenbrun, *A Green Place, a Good Place*; Kodesh, *Beyond the Royal Gaze*; Tantala, “The Early History of Kitara in Western Uganda”; Janzen, *Ngoma*. The review essay by Feierman, “Struggles for Control,” and his book, *Peasant Intellectuals*, exemplify work on the colonial period. Also see Livingston’s work on cancer, *Improvising Medicine*, and development, *Self-Devouring Growth*.
7. See Arnold, *Toxic Histories*, which examines poison and poisoning in India, another anglophone postcolony.
8. Taylor, “Age of Disability.”
9. Nguyen first developed the concept of “therapeutic sovereignty” in the context of HIV/AIDS programs in West Africa. His deeply committed ethnographic and clinical work enabled him to account for the complex ways in which individuals and collectives sought treatment beyond the state when national health care systems were insufficient. He captured the practical pressure of triaging resources when the need for antiretroviral therapies far outstripped local capacity and described the resulting mobilization of “confessional technolo-

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gies” to shape moral economies of care. His concept has since aided me and many others in gaining leverage on how dominant versions of sovereignty are lived—phenomenologically, biopolitically, and ethically—amid the complex configurations of national and international power in the late twentieth and early twenty-first centuries. And yet, as indigenous scholars, among others, have taught us, alternative sovereignties have been and are being thought and lived in the fissures of colonial, racial capitalism. Provincializing the ways in which modern medicine has come to consolidate specific concepts of bodily and territorial sovereignty that were originally forged in the juridico-political regimes of early liberalism opens a space to render visible the alternative versions of sovereignty embodied in different articulations of that which is therapeutic. I offer an approach to therapeutic sovereignty that conceives it as a space of debate, struggle, reimagining, and reinvention.

10. Feierman, “Struggles for Control.”

11. Through a philosophy of mathematics in Africa, others have also explored how scale and length are thought and enacted in various parts of Africa. See Eglash, *African Fractals*; Gerdes, *Geometry from Africa*; and Verran, *Science and an African Logic*. In particular, I find myself wondering over Eglash’s statement: “There is no way to connect fractals to the idea of dimension without using infinity, and for many mathematicians that is their crucial role” (18). Does it follow, then, that the ways that fractals are lived in Africa require actions informed by a particular notion of indefinite ongoingness? Might this be a way to inspire more practical work animated by commitments to continuance neither salvific nor apocalyptic?

12. Povinelli, “Toxic Late Liberalism,” and Ahmann, *Futures After Progress*. On uneven, gendered invisibility of toxicity in sub-Saharan Africa, see Stein and Luna, “Toxic Sensorium.”

13. Hecht, “The African Anthropocene.”

14. Wetsman, “Air-Pollution Trackers Seek to Fill Africa’s Data Gap.”

15. Some of the results of which are contributed to WHO’s publication by Mudu, *Ambient Air Pollution and Health in Accra, Ghana*.

16. Tousignant, *Edges of Exposure*. In relation to history of agriculture specifically, see also Tousignant, “Toxic Residues of Senegal’s Peanut Economy,” 5–8.

17. Stein and Luna, “Toxic Sensorium.”

18. Nixon opens his book *Slow Violence and the Environmentalism of the Poor* with Lawrence Summers’s now infamous confidential memo to staff during his tenure as chief economist of the World Bank (1991–93), in which he asserts that “countries in Africa are vastly under polluted.” Summers then goes on to blithely explain the “impeccable” economic logic “behind dumping a load of toxic waste in the lowest wage country” (18–19).

19. Much of this literature is inspired by feminist, queer, critical race, and postcolonial theory. See Krupar, *Hot Spotter’s Report*, in which she reminds us that the impossibility of purity is not an issue of the so-called developing world. Yet other ways of articulating boundaries (and managing the flow of substances as they constitute insides and outsides) remain important. For instance, see Roberts, “What Gets Inside,” 592–619. The impossibility of purity does not mean that all entanglements are welcome.

20. Shotwell, *Against Purity*. For Latour’s argument, see Latour, *We Have Never Been Modern*.

21. One might argue that at the heart of the interest in alternative modernities lies an attraction to the creative maneuvers of people outside of the United States and Europe to

reject forms of purification that would marginalize them from discourse while simultaneously translating the institutions of modernity.

22. Fortun, *Advocacy After Bhopal*; Petryna, *Life Exposed*.

23. For examples of such efforts at argument and of actions taken in such deeply fraught spaces, see Tilley, “Ecologies of Complexity”; White, “Poisoned Food, Poisoned Uniforms, and Anthrax,” 220–33; Hecht, *Being Nuclear*; and Stein and Luna, “Toxic Sensorium.”

24. Agard-Jones, “Chemical Kin/Esthesia.”

25. Cone, “Should DDT Be Used to Combat Malaria?”

26. See Schmidt, “Unfair Trade E-Waste in Africa”; Redfern, “EU, US Dumping Toxic Waste in Africa”; and Minter, “The Burning Truth Behind an E-Waste Dump in Africa.”

27. Clapp, “The Toxic Waste Trade with Less-Industrialised Countries,” 505–18; Ntapananta, “Polarized Cityscapes,” 227–43; Ntapananta, “Lifescaping’ Toxicants,” 7–10.

28. Campbell, Dixon, and Hecky, “A Review of Mercury in Lake Victoria, East Africa,” 325–56; Belem, “Mining, Poverty Reduction, the Protection of the Environment, and the Role of the World Bank Group in Mali,” 119–49.

29. Tilman et al., “Forecasting Agriculturally Driven Global Environmental Change,” 281–84; Mwegoha and Kihampa, “Heavy Metal Contamination in Agricultural Soils and Water,” 763–69.

30. While pesticide and herbicide use is prevalent on small holdings, many report feeling ill after application. See Ngowi et al., “Smallholder Vegetable Farmers in Northern Tanzania,” 1617–24.

31. Mwita, Hosea, and Muruke, “Assessment of Genetic Modification.” The Tanzanian government’s 2006 National Biosafety Framework requires the monitoring of genetically modified organisms. This study to assess GMO contamination in both imported maize stocks and processed soybeans in the country was conducted to support the development of policies consistent with this framework.

32. Fisher et al., “Pollution and Toxicity,” 1–4.

33. Malhi, “The Concept of the Anthropocene,” 77–104.

34. Crutzen and Stoermer, “The Anthropocene,” 17–18; Crutzen, “Geology of Mankind,” 23.

35. Baskin, “Paradigm Dressed as Epoch,” 9–29.

36. If the impact of a flat, rather homogeneous “humanity’s” growing impact on “nature” leads us only to strategize about the nature that “we” see ourselves as creating, then the Anthropocene supports a regrouping around the status quo. The environmental crisis is seen as a great equalizer (Latour and Porter, *Facing Gaia*). Yet, while the Anthropocene continually inscribes itself in all our bodies—we *all* have endocrine disruptors, microplastics, and other toxic things chugging through our metabolisms—it manifests differently in different bodies. Those differences, along with the histories that generated them, matter a great deal—both in relation to inequities of the burden and to humanity’s relationship with the planet (Yusoff, *A Billion Black Anthropocenes or None*).

37. For Plantationocene, see Mitman, “Reflections on the Plantationocene.” For Capitalocene and Chthulucene, see Haraway, “Tentacular Thinking.” For Ravenocene, see Thornton and Thornton, “The Mutable, the Mythical, and the Managerial.”

38. The United Nations has called for “connecting global priorities” by recognizing the links between biodiversity and health.

39. The effects of climate on health are myriad. Of relevance to the issues at the core of this book is recent research on the effect of increased carbon dioxide on the nutrient value of food crops. This early-stage research is beginning to raise alarms that environmental changes may lead to the “great nutrient collapse.” Evich, “The Great Nutrient Collapse.”

40. The One Health concept that emerged as the World Health Organization, the Food and Agriculture Organization, and the World Organization for Animal Health (OIE) collaborated after the highly pathogenic H₅N₁ avian influenza in the early 2000s directs sustained attention to the interaction of humans, animals, and ecosystems. Schools of public health are linking with veterinary colleges, but in places like my home institution, Cornell University, they are also being created from the center of the veterinary college.

41. Horton and Lo, “Planetary Health,” 1921–22. Calls for a program on planetary health, addressing the ways that human impacts on Earth’s system have created health challenges for (and between) human and natural systems, have been taken up by a range of universities, nongovernmental organizations, and governmental research groups.

42. Haraway, *The Companion Species Manifesto*.

43. Ghosh, *The Great Derangement*.

44. Livingston, *Self-Devouring Growth*.

45. Livingston, *Self-Devouring Growth*, 9. See also Chao and Enari, “Decolonising Climate Change,” 32–54.

46. Vimalassery, Pegues, and Goldstein, “On Colonial Unknowing.”

47. Nading, “Living in a Toxic World,” 209–24.

48. Hoffman, “Toxicity”; Todd, “Fish, Kin and Hope,” 102–7; Jain, *Malignant*; Livingston, *Improvising Medicine*; and Langston, *Toxic Bodies*.

49. For examples in Africa, see Hecht, *Being Nuclear*; Thomas, “Beauty”; and Hoffman, “Toxicity.”

50. Murphy, “Alterlife and Decolonial Chemical Relations,” 494–503.

51. Povinelli, *Geontologies*.

52. See Alaimo, *Exposed*; Chen, *Animacies*; and Shotwell, *Against Purity*.

53. Foucault, *The History of Sexuality*.

54. Ndlovu-Gatsheni, *Epistemic Freedom in Africa*.

55. Comaroff and Comaroff, *Theory from the South*.

56. Diagne, *The Ink of Scholars*.

57. For more on the in-between as a place from which to think postcoloniality, see Bhabha, *The Location of Culture*.

58. Langwick, “Witchcraft, Oracles, and Native Medicine,” 39–57.

59. For more on thinking through “belief,” see Pigg, “The Credible and the Credulous,” 160–201. See also Good, *Medicine, Rationality, and Experience*.

60. Haraway, *Staying with the Trouble*.

61. For more on “the enmeshment of flesh with place,” see Alaimo, *Exposed*.

62. Shapiro, “Attuning to the Chemosphere,” 372. In the interpretive social sciences, the demands of grappling with toxicity have incited the theorization of exposure. Mitman, Murphy, and Sellers, eds., “Landscapes of Exposure: Knowledge and Illness in Modern Environments”; Fortun, *Advocacy After Bhopal*; Petryna, *Life Exposed*; Fortun

and Fortun, “Scientific Imaginaries and Ethical Plateaus in Contemporary U.S. Toxicology,” 43–54; Murphy, *Sick Building*; Choy, *Ecologies of Comparison*; Alaimo, *Exposed*; and Haraway, *Staying with the Trouble*. In addition, see Hecht and Gupta, “Toxicity, Waste, Detritus.”

63. For an extended argument on relations as method, see Liboiron, *Pollution Is Colonialism*. Also within this text, see particularly insightful articulations from a graduate student, Edward Allen, through his doctoral work, especially pages 21–22, 126–27.

64. “Arusha Stingless Bee Honey.”

65. Soini, “Land Use Change Patterns.”

66. For reference to the FAO’s program recognizing “globally important heritage agricultural systems” and for the inclusion of the *kibamba* in particular, see <https://www.fao.org/giahs/giahsaroundtheworld/designated-sites/africa/shimbwe-juu-kihamba-agro-forestry-heritage-site/en/>. Last viewed April 2, 2024.

67. Maghimbi identifies early reports indicating small coffee exports from German East Africa as early as 1899. Maghimbi, “Recent Changes in Crop Patterns in the Kilimanjaro,” 73–83.

68. Myhre, *Returning Life*.

69. Rogers, “The Kilimanjaro Native Planters Association,” 94–114; Mhando, “Conflict as Motivation for Change,” 137–54.

70. Hunt, *A Colonial Lexicon*.

71. For more on schooling in Kilimanjaro, see Stambach, *Lessons from Mount Kilimanjaro*.

72. For a link between houses and the commodification of beef, as well as the corresponding shift in the ontology of cows, see Livingston, “In the Time of Beef,” 35–60.

73. Maro, “Agricultural Land Management Under Population Pressure,” 273–82; Soini, “Land Use Change Patterns and Livelihood Dynamics on the Slopes of Mt. Kilimanjaro,” 306–23.

74. Tagseth, “Oral History and the Development of Indigenous Irrigation,” 9–22.

75. Minde, “Law Reform and Land Rights for Women in Tanzania,” 64–66.

76. O’kting’ati et al., “Plant Species in the Kilimanjaro Agroforestry System,” 177–86; Hemp, “The Chagga Home Gardens,” 203–9.

77. Hemp, “The Banana Forests of Kilimanjaro,” 1193–217.

78. Pignarre and Stengers, *Capitalist Sorcery*.

79. Scholarship inspired by Sylvia Wynter’s distinction between the plantation and provision grounds is provocative to think with in relation to the *kibamba* in that it poses critical questions about the co-constitution of complex human-plant configurations. But the plantation and the provision ground are also formations unique to the economics of land caught up and transformed through the Atlantic slave trade. The *kibamba* formation and transformation bear witness to different pressures. See both DeLoughrey, “Yam, Roots, and Rot: Allegories of the Provision Grounds,” 58–75; and Castellano, “Provision Grounds Against the Plantation,” 15–27.

80. Kimambo, “Environmental Control and Hunger,” 71–95; Hakansson, “Politics, Cattle and Ivory,” 141–54.

81. Giblin, “Land Tenure, Traditions of Thought About Land, and Their Environmental Implications in Tanzania,” 1–56.

82. Manji, “The Case for Women’s Rights to Land in Tanzania,” 11–38.
 83. Oguamanam, “Plant Breeders’ Rights, Farmers’ Rights and Food Security,” 240–68.

I. FUTURES OF LUSHNESS

A much earlier version of this chapter was published in “A Politics of Habitability: Plants, Healing and Sovereignty in a Toxic World,” *Cultural Anthropology* 33, no. 3 (2018): 415–43.

1. I thank Steve Feierman for this point. Villages in this region comprise a cluster of household-based farms dominated by banana (the staple food crop) and coffee (the primary cash crop). For more, see Weiss, *The Making and Unmaking of the Haya Lived World*.

2. Mama Nguya’s grandmother would have been unlikely to have access to farmland defined by the cultivation of bananas by men. Mama Nguya’s establishment of TRMEGA echoes long-standing strategies by women in Kagera to generate possibilities within the frictions of patriarchal systems of land ownership. See Weiss, *The Making and Unmaking of the Haya Lived World*.

3. For more on multispecies ethnography and archeology of ethnic formation in Africa, see Schoenbrun and Johnson, “Ethnic Formation with Other-Than-Human Beings.” In relation to the *kihamba* and Chagga identity specifically, see Fisher, “Chagga Elites and the Politics of Ethnicity in Kilimanjaro, Tanzania.” For more on the consolidation of Chagga political identity on Mount Kilimanjaro in the 1940s and 1950s, see Bender, “Being ‘Chagga.’”

4. Van Der Plas et al., “Climate-Human-Landscape Interaction in the Eastern Foothills of Mt. Kilimanjaro.”

5. Spear, *Mountain Farmers*.

6. Based on her observation of members’ success, Mama Nguya has hypothesized that *imarisha* works against the development of drug resistance, allowing people with HIV/AIDS to continue with one drug regimen for longer than otherwise might be possible.

7. Anwar et al., “*Moringa Oleifera*.”

8. Rockwood, Anderson, and Casamatta, “Potential Uses of *Moringa Oleifera*”; Gopalakrishnan, Doriya, and Kumar, “*Moringa Oleifera*.”

9. Strathern, *Partial Connections*.

10. For ways that the toxicity of pharmaceuticals is problematized elsewhere in Africa, see Hamdy, *Our Bodies Belong to God*, and Livingston, *Improvising Medicine*.

11. I am inspired in *The Use of Pleasure* by Foucault’s ontological claim for ethical substance as the matter of the self on which ethical and moral discourse reflects. Ethical substance, he argues, is that which demands reflection and work. Attending to this substance is what makes ethical subjects. In ancient Greece, reflection on and labor over the substance of bodily pleasure forged ethical subjects. Today, in Tanzania, the potency of *dawa lishe* resides in the way that it captures an active material-social space to work on an alternative ethical substance: toxicity.

12. Crane, “Lush Aftermath.”

13. The power of Crane’s articulation of the forms of lushness that are fostered by colonialism, violence, and dispossession rests in part in the ways that it pulls together the discovery of the plantation, the greenhouse, and the lawn. See, for example, Zarate, “Maintenance,” and Majumdar, “Recalcitrant Life Worlds.” The former focuses on those