9

A Degrowth Perspective on Environmental Violence

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Engaging Environmental Violence

We propose that researchers of environmental violence (EV) have much to gain by considering the relevance of degrowth critiques in characterizing and addressing EV. We argue that a more dynamic, intersectional, and less anthropocentric definition of EV reveals how pervasive forms of violence against the biosphere are still embedded in many contemporary strategies for sustainability. Recognizing these limits, as well as its overlaps with degrowth, can help us better identify assumptions and practices that address EV's sources and far-reaching consequences.

9.1 Introduction

The concept of EV brings into focus the human activities and processes that harm people. The term "violence" is abrupt. In its provocation, it centers the negative social and environmental costs of pollutants, destabilizing an ethically impartial reading of the consequences of human-produced pollution.

The concept of degrowth takes a similar confrontational approach. As a multivalent term, it is simultaneously a critique of present conditions and a vision of the future. Degrowth is not only a research paradigm, but a political project. In short, it calls for wealthy economies to abandon the goal of increasing gross domestic product; scale down material production to reduce extraction and energy use; and center economic activity around improving human well-being. Unlike recession, degrowth is a deliberate strategy to enable decarbonization and prevent further ecological breakdown, as well as to improve social outcomes.

Within the call for a smaller economy lies an implied ability to transform and reduce material lifecycles toward a way of life that is ecologically sustainable, as well as one that is socially equitable. What kinds of actions are needed to pursue a just and democratic transition that makes lives far less precarious and

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environmentally degrading? In this chapter, we introduce the degrowth movement – its history, tenets, and current activities – and identify important overlaps with the EV concept. In doing so, we also emphasize the importance of decolonizing contemporary frameworks for addressing/reversing environmental pollution and degradation, drawing on observations of the appropriate technology movement in the Arab world and rural women's collective governing strategies in Iran. From these, we suggest adjustments to the EV framework, so that it may point away from expansionist, hierarchical, and alienating human activities and systems. These adjustments center on the need to challenge assumptions about global ecological, economic, and political systems.

9.2 What Is Degrowth?

Degrowth is an umbrella term describing various movements and strategies advocating for a more ecologically sustainable way of life by strengthening social well-being and self-determination and by redesigning social institutions to not depend on continuous economic growth [1]. In challenging the hegemony of growth and centering social justice, degrowth deliberately conflicts with policies and frameworks commonly proposed as part of the sustainability agenda, such as green growth; triple-bottom line accounting; eco-modernism; efficiency; and productivism [2–4], investigating alternative pathways to these models. Here, we summarize the history, practices, and political progress related to degrowth, as well as its conflicts with many common sustainability narratives. Addressing EV on a global scale will require that such conflicts be reconciled.

9.2.1 Degrowth History

Degrowth builds on well-established concepts and critiques across disciplines, cultures, and lifestyles. Indigenous and community-based ontologies around the world help inform an extensive body of knowledge about cultivating "economies of happiness and the ideal of frugality" [5], that is, the ability to thrive as a society, while respecting biophysical limits. Critics of industrialization, like Friedrich Engels, the Luddites, and John Stuart Mill; of consumerism, like Simone Weil and Laura Conti; and of development, like Arturo Escobar, Ivan Illich, and Majid Rahnema, have articulated various aspects of degrowth ideas in their own fields of work, challenging economic growth beyond ecological debates to include topics, like political economy, democracy, social movements, technology, and well-being.

The term *décroissance*, translated into English as "degrowth," was first popularized as a term encompassing economic and environmental critiques of the pursuit of capital accumulation. Romanian-American economist and mathematician

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Nicholas Georgescu-Roegen was particularly influential in early degrowth discussion, integrating thermodynamics into economic theory in his own critique of growth [6]. Since the early 2000s, degrowth, a purposely disruptive term, has gained currency as a political project that opens conversation around systemic alternatives to a hegemony of "the growth paradigm" [7, 8] and development through capital accumulation.

In a review of over 157 peer-reviewed articles, Cosme et al. [9] identified three broad goals presented by the degrowth movement: "(1) reduce the environmental impact of human activities; (2) redistribute income and wealth both within and between countries; and (3) promote the transition from a materialistic to a convivial and participatory society." In increasing order, these goals point to fundamental challenges to the ways in which sustainability is popularly discussed and strategized.

9.2.2 Degrowth, Green Growth, and Sustainable Development

By confronting economic growth head-on, degrowth conflicts with several dominant concepts of sustainability discourse. Here, we trace some of these notions and their differences with degrowth. Sandberg et al. [10] find "green growth" to be an overarching theme of sustainability efforts worldwide. It is "the most widely accepted solution to stop the degradation of the natural environment," and is defined by a reliance on "technological and market innovations to improve the efficiency of production and thus, decouple the use of natural resources and environmental impacts from continued economic growth." By this definition, green growth has become the latest term for efficiency-based emissions-reduction strategies proposed by climate activists since the 1990s.

Consider, for example, the techno-proposals of Amory Lovins, co-founder of the Rocky Mountain Institute and energy adviser to major firms and governments around the world on efficiency and sustainability strategies. Throughout his body of work, Lovins argues for emissions reductions through an increase in product-level efficiency. In "*Hypercars: The Next Industrial Revolution*," he details how design changes, material choices, and energy management techniques – essentially aerodynamics, lightweighting, and electric drive – can greatly improve the fuel efficiency of personal vehicles. He argues that, by improving energy efficiency and moving toward electrification, hypercars can address "the one-third of CO_2 emissions from transportation and the further one-third from power-stations" [11]. While this claim has since been debunked by others – electrification has been shown to have driven increases in residential and industrial energy demand during the twentieth century [12] and vehicle efficiency improvements have reinforced both the speed-up and scale-up of personal

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vehicle usage [13–15] – it is still widely discussed in isolation as an adaptive measure to achieve large-scale emissions reductions.

Hypercar logic has remained the centerpiece of corporate and government sustainability strategies, which often promise "triple-bottom line" win-win-wins: economic growth, happier people, and less environmental impact, that is, profit, people, and planet [16]. While efforts to increase efficiency and use renewable energy and resources can seemingly soften the ecological impact of economic growth, the social metabolism of capital accumulation requires linear, non-circular flows of energy and material, making the biophysical consequences of economic growth inescapable. This means that, regardless of efficiency, energy and matter must be increasingly extracted, transformed, consumed, and discarded in an unceasing effort to reduce costs, maximize profits, and expand outputs while averting overproduction [1]. The social and ecological consequences of such a process include, among others, the inevitable depletion of natural resources and pollution of ecosystems; the displacement, endangerment, and exploitation of marginalized social groups; and the privatization and corporate control of land and water resources at an increasingly consequential rate [17]. Curbing the unending array of new activities, needs, and material-intensive cultural norms and values that production at this scale offers, even with enhanced efficiency, requires confronting the assumptions and redesigning the processes built around infinite capital growth [18, 19].

Degrowth opens an intellectual and political conversation for questioning the logic of other accepted tenets of sustainability, in addition to efficiency, including economic decoupling [20], renewable energy [21], and nature conservation [22, 23]. Furthermore, by relaxing the focus on technology, it gives light to the connection between growth and long-standing critiques of political, economic, and cultural colonial legacies. In the words of former Iranian diplomat Majid Rahnema: "[Our] concern … is not for 'progress,' 'productivity,' or any other achievement per se in the scientific, technological or economic fields. It is rather to find out whom these serve or exclude, and how they affect the human condition and the relational fabric of the society into which they are introduced" [24].

Such questions are indeed raised within the degrowth literature, which challenges the global equity implications of development frameworks, such as previous International Panel on Climate Change (IPCC) climate mitigation scenarios and the UN Sustainable Development Goals (SDGs). In the former, economic anthropologist Jason Hickel and ecological economist Aljoša Slameršak [25] found that IPCC mitigation scenarios aimed at keeping warming below 1.5°C or 2°C do little to remedy current energy access inequalities. On average, the 172 scenarios they analyzed "maintain the Global North's energy privilege at a per capita level 2–3 times higher than in the Global South." Hickel has also contrasted the realities of global inequality with the rhetoric and framing of the

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SDGs, particularly the SDG Index, which assigns each country an aggregate score based on progress toward the SDGs. According to Hickel's analysis, "all of the top-ranked countries in the SDG Index have significantly overshot their fair share of planetary boundaries, in consumption-based terms," [26] highlighting how different principles are applied for different countries in international development and environmental governance arenas.

9.3 The Limitations of Environmental Violence

In this section, we open a critical space to consider the interrelated goals of degrowth and the call to re-examine and address EV. The question of what EV is, however, raises several important issues on how we think about these goals and how they characterize the shared concern of violence on the biosphere. The editors of this anthology define EV as "direct and indirect harm experienced by humans due to toxic and non-toxic pollutants put into a local – and concurrently the global – ecosystem through human activities and processes" [27]. Before we consider the overlaps between EV and degrowth, we first challenge a definition of EV that is limited to human-induced pollution and its consequences on human health.

While the ability to measure and better assess the effects of toxic and non-toxic pollutants is an important factor in improving living conditions, researchers risk sidelining and erasing the actions and consequences of other critical forms of harm on the biosphere by solely focusing on human exposure to pollution. For example, the extinction of species and destruction of ecosystems and habitats, the forced displacement of human and non-human communities, the privatization of common resources, and the elimination of environmentally sustainable resource extraction and governance practices challenge a definition of violence that is only based on pollutant exposure. Yet, accounting for these forms of violence is important, not only to better capture the extent of destruction occurring because of human practices, but also to understand the interrelated effects of these events on the biosphere. For example, while the extinction of certain species may not directly or immediately affect human communities, a cascade effect, a series of secondary extinctions triggered by the extinction of a key species, can compromise an entire ecosystem and the dependencies humans have to it – without necessarily resulting in higher pollutant exposure. Recognizing other forms of human-induced harm on the environment can help us better consider the extent of violence occurring through certain human activities and processes as well as destabilize an anthropocentric perspective of well-being that isolates humans as the subject of harm from the ecological entanglements within which we are situated.

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Another limitation involves indexing pollution as a single indicator of violence, isolated from other social factors that exacerbate the harmful effects of human activities onto marginalized populations. For example, while air pollution may be high in a specific area, different social variables, from access to healthcare and public transport to affluence, can affect the extent of harm to residents and the strategies decision-makers take to address it. This is seen across American suburban spaces, where predominately white middle- to upper-class residents advocate for further social segregation under a guise of well-being and security, creating exclusive and privatized spaces, or an "inverted quarantine," that depend on a not-in-my-backyard politic, furthering infrastructure and amenity inequalities [28–30]. A multidimensional approach that uses a range of indicators, from monetary poverty to access to basic infrastructure services, for example, can better capture the scale of violence at different social intersections and point toward more suitable measures that address these inequalities. Otherwise, a single analytical approach can overlook the compounding effects of harmful human activities on the most vulnerable people and risk perpetuating economic and social practices that exploit people and environments upheld under a banner of environmentalism and safety [28].

9.4 Addressing Environmental Violence through Local Praxis of Degrowth

Understanding the direct and indirect relationships between industrialized market growth and the exploitation and destruction of certain people, resources, and ecosystems is critical in a degrowth approach. These relationships continue to reproduce themselves in the material and economic conditions within and between the Global North and South, as well as in the political norms and social practices that maintain these hierarchical and marginalizing dynamics. To degrow means to also challenge the hegemony of a way of life that is largely based on hierarchical and subjugating relationships within social and ecological systems. This means recognizing and rectifying the ongoing violence of practices and systems that prioritize capital accumulation benefiting a limited few over environmental sustainability and the well-being of many.

We further describe alternatives to this growth-based understanding through case studies in the Arab world and in Iran. Max Ajl's documentation of the rise and fall of appropriate technology in the agricultural sector of North Africa speaks to the promise of peasant ingenuity for sustainability, as well as its struggle against global development norms. And Mariam Abazeri's work with a women's artisan cooperative in Iran demonstrates opportunities for pursuing degrowth through a decolonial feminist praxis.

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9.4.1 Development and Technological Pathways: Arab World Critiques

The Arab interest in appropriate technology emerged in a multi-layered context: first, the manifest failures of technology transfer to deliver development, as distinct from high growth rates, during the 1970s, as export-oriented development meant a shift to increasing industrialization and adoption of Western consumption patterns; second, the increasing diffusion of knowledge in the Arab world about positive aspects of the Chinese development experience [31, 32]; third, greater awareness of French and US technology criticism, such as the work of Lewis Mumford, Ivan Illich, Andre Gorz, and Pierre Judet; fourth, a melding of Chinese thinking about technological self-reliance with a sharpened awareness of how much China had leaned on so-called "traditional" technology in its own endogenous agricultural development [33, 34]; fifth, an Arab iteration of the "return to the peasant," an epistemological phenomenon which was then occurring worldwide, as ethno-botanists, agronomists, anthropologists and agronomists turned to the long-standing practices of peasants as potential maps for rural development [35]; and sixth, a rising interest within the Arab region, certainly drawing on China, but likely inspired by the Arusha Declaration in Tanzania and spreading through European heterodox development circles, that self-reliance, as distinct from autarky, could offer a different path toward a better future [36, 37].

Within this context, several overlapping and intermingling tendencies took shape, above all in North Africa, including Egypt. The guiding framework was that technology should be braided into broader economic programs aimed at self-reliance. Overall, there was a rising embrace of the need to adopt and adapt "traditional" technologies, whether artisanal handcrafts, agriculture, or housing [38]. It was widely understood that they were the basis for existing lifeways for the great majority of the population, and they were also adapted to the ecological-physical context of North Africa. They used and transformed local materials and reflected the accreted experience of uncounted generations of humans living and making their lives and developing technologies suitable to given biomes, with their extremes of heat, cold, and humidity [39, 40]. Furthermore, from an early point, they developed this into an epistemological rupture with the specific kinds of technology in the Western developmental toolkit, being aware that a different development required a different kind of knowledge, one which builds from existing strengths [41].

Within the agricultural sector, an embrace of traditional technologies brought with it an intense interest in existing forms of agriculture, not as antiquarian remnants, nor as exotic curios, but as a direct reflection of the deep knowledge of those who, for so long, had been the basis of economic life within the Maghreb arena – the peasantry. This meant extolling local landraces and

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rustic animals, including camels [42]. It also took the form of an engagement with existing technologies to gather water, the main limiting factor in semi-arid agriculture. In North Africa, this facet of appropriate agronomic technology took on a particularly urgent edge and became especially alluring as a technical path to popular development because of the tremendous quantities of money the state had spent on massive and massively inefficient dams: up to 50% of the state agricultural budget in some years [43]. In lieu of this "technostructure," agronomists and rural sociologists like Slaheddine el-Amami in Tunisia and Paul Pascon in Morocco proposed different technological paths in the irrigation sector, based on matching up unemployed labor with abundant physical materials like earth and stone, and reproducible inputs of production like human knowledge and ingenuity, in order to build a dazzling variety of artisanal water-collection technologies, bolstered by modern scientific investigation and experimentation but based on building up from existing technological bequests [44, 45]. Such investigation was carried out in the context of discussions with economists, planners, builders, and engineers: a rainbow of expertise arcing into the future, and seeking out an entirely new kind of destination, asking "which technologies" for "which development?" [46]

Such technology also developed in the context of a quiet resurrection or renaissance of traditional or vernacular building styles, emphasizing that, vis-à-vis architectural style and materials use, such buildings made far more sense than the modern housing stock cropping up in metropolises like Cairo and Tunis or smaller regional cities. In their stead, in Tunisia, but most notably in Egypt, architects like Hassan Fathy proposed "building with the people," using participatory construction methods to literally build up a new society [47]. In this way, across the entire spectrum of human works, the Arab region had its own efflorescence of interest in alternative and appropriate technologies, blooming at the same time as the movement flourished in the North and withering for not-unrelated reasons. The work from that period, in the Francophone and Arabophone spheres, constitutes a central archive for development planning and visionary futures, not merely as the crushed dreams of yesterday, but furthermore, for the plans for tomorrow.

What pathways lie ahead for addressing the structural, cultural, and technological aspects of EV? The rise and fall of appropriate technology in the Arab experience highlights the pitfalls of addressing EV through a colonial or capitalist lens, and through common "development" mechanisms. These approaches tend to be anti-participative and can be blind to homegrown innovation. If appropriate technology is a potential solution to the spread of EV, then it must be paired with a reimagining and restructuring of power dynamics found throughout the design, application, and governance of these interventions.

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9.4.2 Organizing Labor and Democratizing Resource Governance in Kerman, Iran

In a rural district in Southern Iran, a group of young women are at the forefront of reshaping livelihood and governance practices in their community by challenging and renegotiating labor conditions for many local women, as well as renovating traditional water management practices and infrastructure. Motivated by both social and environmental frustrations, the group has organized interventions with the help of community facilitators to improve the wages of needleworkers, all of whom are women, and exercise more collective authority over groundwater governance. Stemming from what originally began as a filmmaking project, the women have used participatory methods to highlight how local customary and environmentally sustainable practices and institutions can be reformed to better reflect participants' material and social needs [48].

As their first intervention, the group recruited and organized needleworkers into a cooperative to collectively manage the production and sale of their products, undermining brokers' control of wages and access to local markets. To do this, the women had to both convince other artisans to break relations with their agents, as well as challenge patriarchal conventions that disapproved of their organizing work along local gender norms. While developing the cooperative, the group also hosted training workshops for other residents, consulted with experienced handcrafters on sale and distribution needs, and participated in artisan fairs. The group also decided to create a communal fund from a percentage of needlework profits that they would then apply to addressing another local priority – groundwater extraction and allocation.

Agriculture is one of the main sources of income in this region. After the restructuring of agrarian society in the 1960s, farmers have struggled to manage a diminishing water supply in the face of climatic changes, centralized governance practices, increasing demand, and financial strain. Some of these concerns have been exacerbated by the ongoing deterioration of communal water channels and a rise in the privatization of groundwater resources. The cooperative decided to intervene by investing in the restoration and maintenance of traditional water infrastructure known as a *qanat*. A *qanat* is a hydrosocial system of water extraction and allocation that has been historically pivotal in the cultivation, organization, and sociality of this arid region [49–51]. In this system, water is sourced from aquifers and transported underground via gently sloping channels to nearby villages [52]. Although they extract water sustainably and uphold a cooperative system of water allocation, *qanats* have been gradually replaced by modern extractive methods, such as semi-deep and deep pumped wells that, while depleting and compromising the quality and allocation of groundwater, require less maintenance and

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offer residents a private supply [53]. The group decided to work on improving the *qanat* system over constructing more pumped wells to increase the sustainability of water extraction practices, highlight historic hydrosocial relations, strengthen collective governance, and integrate more women into decision-making structures. Their efforts have resulted in the creation of an extensive network of organized artisans and in women's direct involvement in local groundwater governance.

These interventions offer an example of a community-based, labor-empowering, and feminist approach of development that sustains degrowth principles [54]. By organizing artisans to further their rights and interests and integrating the cooperative into a historically collective water governance system, the women challenge gender norms and practices, address multiple livelihood concerns, and attempt to mitigate environmental challenges in their district. Prioritizing collective social infrastructure like an artisan cooperative, a communal fund, and the *qanat* system also enables other residents to participate in the governance of their community and resist dominant approaches of development based on hierarchical and exploitative relationships between people and their environments [55]. Instead, the group works within local narratives and institutions that reinforce a common sense of belonging, investing in the community's infrastructure while reforming it to further embed participative, collective, and environmentally sustainable relations in everyday life.

The practices outlined above are a few examples of people proposing alternatives that reinforce local technological ingenuity and horizontal interactions based on reciprocity, democracy, and collaboration. Together, they offer a localized antidote to the ways EV is mediated through hierarchical and exploitative socio-ecological relations. A decolonial feminist approach to degrowth examines how hierarchies of power along patriarchal, racialized, classed, and imperial structures help constitute contemporary political and economic systems, from the local to the global, creating and perpetuating multiple forms of EV. Such an approach calls for alternatives that dismantle these hierarchical and exploitative relations to create pathways toward more sustainable and equitable social arrangements.

9.5 Confronting Environmental Violence, Challenging Assumptions

The environmental violence concept brings forth the interconnectedness of global society and the multi-faceted threats that humans face from environmental harm. However, without challenging the exploitative and expansionist imaginary that perpetuates a framework of capital growth, our assumptions of and responses to EV will fall short of better characterizing, quantifying, and addressing the consequences of this model and its activities. In the modified EV diagram, we have included premises we argue need to be challenged and confronted when considering EV (Figure 9.1).

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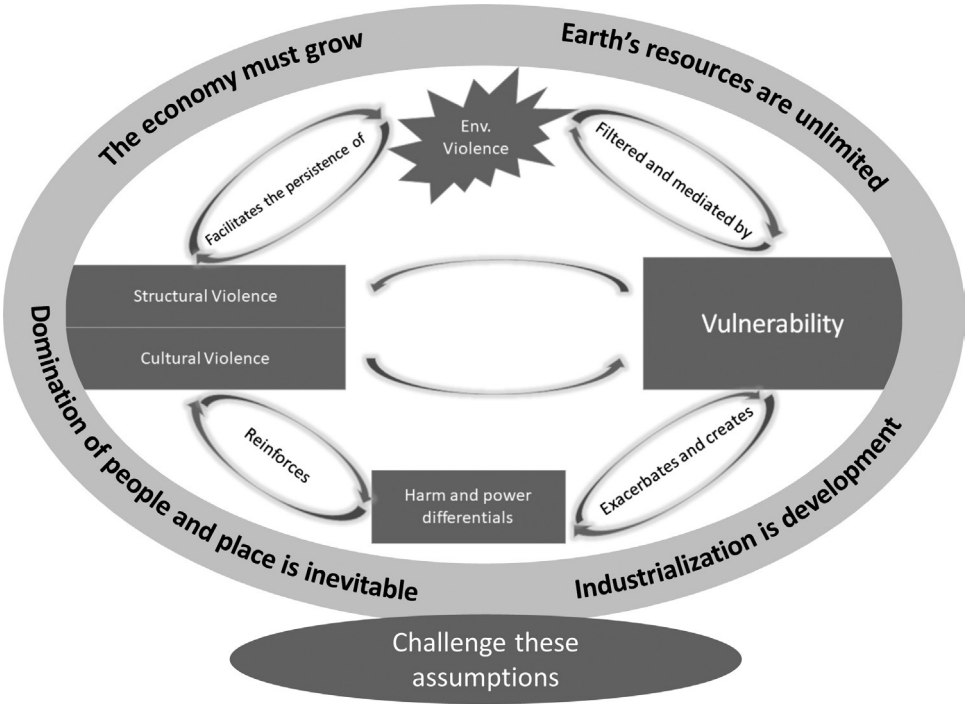


Figure 9.1 Growth-oriented and colonial assumptions that affect the EV framework

Earth's resources are unlimited. The Earth consists of a finite collection of resources, setting a limit on the amount, rate, and consequences of their extraction. This means that even if the distribution and design of products were done in a more equitable manner, the effects of a perpetually growing economy are an inevitable degradation and depletion of the Earth's limited resources. Key planetary boundaries, including species abundance and the quality, function, and distribution of land and water could still be compromised despite the tempering of pollution [56]. While phenomena such as climate change and biodiversity loss are mentioned in the EV framework, planetary boundaries must be centered as a critical element for consideration.

The economy must grow. Economic growth has dominated as a "solution" to environmental and socioeconomic problems because localized improvements are achieved by shifting costs to racialized and classed peripheries, maintaining neocolonial and wealth-based hierarchies and practices in place. A growth-dependent economy that views the Earth's resources and people as unlimited and dispensable will always find a new ecosystem and economy to grow into, even as some local environmental wins are achieved. Challenging a dependency on growth is the first step in addressing the human activities that perpetuate EV.

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Industrialization is development. What lifestyles, levels of comfort, or everyday practices and norms should we aim for to improve social conditions? In a world where development means further integration into a system of capital accumulation, it is no surprise we find ourselves amidst multiple and interrelated crises that highlight the consequences of prioritizing capital above social and ecological welfare. Industrialization as development places well-being outside planetary boundaries and perpetuates narratives of progress that prioritize this integration above other social indicators of a good life.

Domination of people and place is inevitable. Translating the above challenges into just and sustainable governance structures will require a dismantling of neocolonial and neoliberal notions of resource management and a reimagining of political structures and practices that prioritize sustainability and social well-being over subjugation for profit. It is in such a context that collective and participatory, feminist, decolonial, and labor-empowering practices to political economic arrangements can flourish.

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