

# Climate & Water in a Changing Africa: Uncertainty, Adaptation & the Social Construction of Fragile Environments

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*Discussions of climate change and water security in Africa are often simplistic and indeed deterministic. They overlook not only ecological complexities but also the multitude of ways in which various population groups across the continent approach climatological variability, thereby challenging positivist modeling and external adaptation agendas. The current state of affairs for many often-silenced citizens is already one of hunger, uncertainty, and marginalization; the self-appointed lead actors on climate adaptation – states, markets, NGOs – have, from their vantage point, deeply troubling track records of dealing with people and their environments. For plenty of communities around Africa, it might therefore not so much be only the worsening climate that is increasingly exposing people to disease, displacement, and water insecurity, but the very policies adopted in the name of preparing for, and living with, worsening weather. This essay explores how understanding climate adaptation as a fundamentally social and political process points to possibilities for imagining and working toward futures with greater emancipatory potential. There is no scenario in which African societies adapt successfully to climatic change and do not simultaneously radically reimagine both their relationship with the outside world and with each other, including institutions of control and mechanisms of exclusion at home.*

Africa is at the center of the global water predicament and climatic upheaval. Africa contains the greatest number of least-developed countries of any continent, the most woeful sanitation infrastructure, and the highest share of people in highly weather-dependent rural employment. It is here that, owing to global warming, crop yields are expected to decline most sharply; sea-level rises along the African littoral are already higher than planetary averages. Africa's pastoralist communities are the biggest on Earth and comprise about one-fifth of its population; weather variability defines the nomadic way of life, offering many rewards but, especially in an age of uncertainty, also existential risks. Increasingly erratic precipitation patterns are especially daunting considering no continent has less reservoir capacity for water storage. The continent remains the

most marginal emitter of greenhouse gases but has perhaps the greatest untapped potential for renewable energy sources: geothermal, wind, hydro, and, above all, solar power. This issue of *Dædalus*, with its broad, interdisciplinary focus, reflects the depth and breadth of these challenges and seeks to draw renewed attention to them.

Centering Africa in debates about climate and water and, conversely, centering water and climate in Africa-related discussions is a crucial but complex and fraught exercise. As this volume's essays from across scholarly disciplines underline, much conventional wisdom about these connections is ambiguous, nuanced, and, at times, simply wrong. Activist communications and historically embedded stereotypes frequently lead to misleading hyperbole, often of the alarmist type. The African Sahel, for instance, is often cited as the region of the world most vulnerable to climate change. Yet what simplistic tropes of a Malthusian crunch offer as *prima facie* evidence of the fragility of regional ecosystems and the communities that live and work in them reveals, on closer inspection, is a much more complex picture of dynamic intervention and resilience.<sup>1</sup> Many of the Sahel's peoples, like elsewhere on the continent, have extraordinary track records in managing the unpredictability of the seasons and have built a range of livelihood strategies that defy tropes of "fragile" societies "surviving" in environments considered "out of balance."<sup>2</sup> This is not to gainsay that the twenty-first-century extremes of the Anthropocene are posing unprecedented dangers to many of them. But it does imply that concepts, causal logics, and institutional responses need to be historically and spatially examined and situated in specific African contexts to a far greater extent than universalist conjectures and policy recipes usually allow – a message conveyed by all essays in this collection. Terms like vulnerability and resilience have become buzzwords, especially in discussions pertaining to African development, but are understood differently by very different people who relate often in unexpected ways to the models and mind maps that scientists and policy-makers operate with.<sup>3</sup> For instance, as Stephan Miescher's essay describes for Ghana's Akosombo Dam and Allen Isaacman's essay highlights regarding Mozambique's Cahora Bassa Dam, infrastructure built to try to smooth out extreme weather events and render economic processes more resilient and predictable<sup>4</sup> has in many places contributed to a greater exposure to the effects of climatic changes and paralyzing uncertainty, at the level of local communities and for macroeconomic growth strategies.

Generalizations about Africa, climate, and water frequently occlude as much as they clarify; cause-and-effect relations are often poorly evidenced and seldom put in context; and assumptions that are as ethically troubling as they are empirically faulty are rarely made explicit. Framings matter hugely. Climate change and water scarcity, in Africa and elsewhere, are not discrete phenomena that ac-

ademics (can) study in splendid isolation, but our understandings and representations of them are inextricably bound up with who we are and where we are.<sup>5</sup> They are neither self-explanatory nor unself-interested and, contrary to positivist assertions, certainly not experienced as such by Africans (or anyone else) either. As geographer Mike Hulme noted, the hegemonic institutional and intellectual architecture for thinking about and acting upon climate reflects a highly specific paradigm of knowledge and authority; it thereby prioritizes some policy options, partnerships, and forms of intervention over others: “The construction of narratives around global warming remain strongly tied to roots within the natural sciences, to expectations of improving ‘predictions’ and to a problem-solution policy framing which claims both global reach and universal authority.”<sup>6</sup>

Indeed, an emerging literature reconstructs how Cold War–era sponsorship by state bureaucracies helped distill the hegemonic representation of climate change through computer models that merged the insights of distinct research programs in atmospheric physics, meteorology, and oceanography into an overarching, single abstract entity: *the climate*.<sup>7</sup> The resulting determinist reading of the interactions between molecules and forces under Newtonian laws has given rise to ways of talking about and governing (the) climate that are singularly focused on mechanistically controlling tonnes of carbon dioxide equivalent. The “global regime complex for climate change”<sup>8</sup> thus concentrates on taxation and subsidy instruments, on (quantifiable) carbon sinks, and on forms of geoengineering that all promise to control the levels of greenhouse gases in the atmosphere. In doing so, alternative conceptions of climate – and therefore also alternative conceptions of governance (such as those that emphasize nonlinearity and choose precaution over control) and alternative practical and strategic responses (such as redefining mitigation and adaptation) – have been obfuscated or marginalized. This also implies that the hard-wired proclivity to think, write, and represent in the positivist paradigm, while often done with the best of intentions, risks disempowering the very people and communities who have been on the receiving end of real, human-induced environmental changes for such a long time already.

These insights are well-illustrated by the work of Jennifer Derr and Julie Livingston, whose essays in this collection highlight why the question of waterborne diseases in the context of a changing climate is much more than the study – and control – of viruses and other microbes in conducive biophysical conditions. Prevailing positivist methodologies have failed to make the promised headway in addressing the enduring “enormous gaps in knowledge about the scope and scale of urban water-related illness and injury,” Livingston notes.<sup>9</sup> They have been consistently baffled by the resilience and sometimes resurgence of pathogens and their devastating effects on different populations. Epidemiological models have been confounded, especially in diverse African milieus, precisely because they so often overlook the cultural, social, and political lives of epidemics and chronic suffering.<sup>10</sup>

These actual lived experiences of water insecurity and concomitant health hazards, as Leila Harris underlines in this volume in the Ghanaian context of Accra, are rarely investigated with the same vigor as bacterial or viral migrations. While rapid dissemination or the persistent lingering of viruses is often attributed to irresponsible cultural practices and troubling local habits (such as Ebola spreading as a result of burial rituals in Sierra Leone and Liberia)<sup>11</sup> or simply to the generic category of “abject poverty,” Livingston and Derr draw attention to the social relations and political-economic structures that explain how illness takes a multitude of forms and is distributed among different populations. This includes an awareness of how closely entwined the advancement of colonial authority and the monitoring and curing of the human body have historically been in Africa and how perceptions of science as the projection of state power and the capture of bodies still shapes an array of social groups’ perceptions of ills, medicine, and state institutions.<sup>12</sup> In her study of the Aswan High Dam and its role in Egypt’s twentieth-century schistosomiasis epidemic, Derr demonstrates how the human body bears witness to simultaneous experiences of lethal sickness and the political disposability of entire social classes: “when the state and your kidneys fail,” borrowing anthropologist Sherine Hamdy’s (in)famous phrase.<sup>13</sup> From this emerges a powerful warning about the ways in which political elites seek to cover their own failings or crimes, as Muchaparara Musemwa elaborates on in the context of Zimbabwe in this volume:

The water scarcity problems that the ordinary residents of Harare have experienced renders it an ideal exemplar of a city whose two-decades-old water crisis has much less to do with climate change than a range of anthropogenic factors that have undermined the successful provision of water by both the central government and the local urban authority.<sup>14</sup>

In Africa’s cities, it might not so much be only the worsening climate that is leading people to be increasingly exposed to a variety of new and old pathogens, but the very policies – cost recovery through water tariffs, new urban zoning laws, and resettlement schemes – adopted in the name of fighting water scarcity and preparing for bad weather.

The essays in this volume challenge the reader to think differently about the who, how, and why of the *problématique*, including reframing what the *problématique* itself is. It is vital to unpack the social construction of “climate change” and “water security” (and, for instance, their presumed linkages with disease), but of “Africa” as well, especially in relation to the former two. Grave worries about Africa’s climate and aridity – or, more correctly, rainfall variability – are not new, but have shaped external dispositions toward the social, economic, and political potential of the continent in the last three centuries.<sup>15</sup> Story-

lines regarding Africa's erratic geography and natural resource base were central in explaining the waning and waxing of imperialist ambitions on and for the continent.<sup>16</sup> They rested on dubious suppositions then and still often do so today. Contrary to what is suggested by the abundance of policy reports that evoke coming "climate conflicts" and "water wars" in Africa's drylands (without much empirical evidence or analytical cogency),<sup>17</sup> Africa is neither the driest continent on Earth, nor does it contain the highest number of water-stressed states. Its aquifers contain an extraordinary amount of underground water and much of the modeling on Central Africa and the Sahel is undercut by the paucity of data, current and historical, which would be required to substantiate (even within a positivist methodology) the doom-laden language about desertification, the shrinking of arable land, and the impossibility of farming or herding of animals.<sup>18</sup> Moreover, the preoccupation with absolute levels of rainfall or moisture content in African soils, important as these are, risk occluding the arguably even more crucial question of distribution of the water. Unlike the situation of many Middle Eastern countries where absolute water scarcity levels are far greater than in the vast majority of African states yet access is reliable and relatively broadly shared, hundreds of millions of Africans do not have access to clean drinking water. This is the case even when extant technologies and infrastructures are at hand to provide it: a distributional paradox that underlines the importance of unpacking the political-economic, historical, and social-ecological context in which the linkages between climate change and water security manifest themselves.

The long tradition of framing Africa through the lens of environmental determinism continues to lead much of the epistemic and policy community to approach the continent as a passive victim that may inadvertently be exacerbating its problems. While reference is usually made to how Africa's population is rapidly growing, average plot sizes in vulnerable regions are shrinking, and disease is spreading, the implicit assumption is one in which the numbers may change, but the trends (toward greater vulnerability) and the basic character of Africa – its weakness and fragility – do not. The essays in this issue provide a snapshot of why that characterization should be questioned. They make important suggestions for how to rethink the ways in which an Africa already in profound transformation might deal with soaring temperatures, rising sea levels, and increased rainfall variability.

Following the end of the era of decolonization and the Cold War, two key narratives, both of which heavily influence how climate change and water security futures on the continent are imagined, have dominated public discourse about Africa. The first storyline is resoundingly pessimistic and grounded in part in the postcolonial disappointments that were laid bare for all to see in the 1990s: in light of the Rwandan Genocide, the HIV pandemic, and state collapse in Somalia, Congo, and Sierra Leone, the possibility of liberal democracy and the Weberian

state itself in much of Africa was questioned;<sup>19</sup> “failure” has become a key prism for approaching modern Africa.<sup>20</sup> The exacerbation of environmental challenges against the backdrop of population growth, grinding poverty, and withering institutions has led to a resurgence of Malthusian thought, emphasizing scenarios in which overpopulated communities are driven from their homes by drought and in which marginal lands and dwindling water holes are overexploited so that conflict and anarchical urbanization ensue. Malthusian predictions underpin much of the global conversation about health, climate, land management, and security – and nowhere more than in Africa.<sup>21</sup>

The second salient narrative emerged in the late 2000s to counter the doom-and-gloom storylines that have molded so much of how Africa has been represented and intervened upon in the last four decades.<sup>22</sup> On the back of the continent recording one of its best economic growth performances between 2003 and 2011, “Africa Rising” has counterpoised that the continent is home to 900 million consumers and that it needs technology and foreign direct investment, rather than overseas development assistance or state intervention, to beat back the chaos.<sup>23</sup> New voices – many of them urban Nigerians, Kenyans, and Ghanaians, or diaspora returnees – emphasized Africa’s entrepreneurial instincts and the possibilities offered by digital advances to leapfrog crumbling infrastructure, a weak state, and resource scarcity by delivering transformational health, commercial, and environmental outcomes.<sup>24</sup> Capitalism and technology can create Africa anew – and for the better.

Despite the ostensible chasm between them, the two dominant narratives overlap considerably. Malthusian discourses that see Africa as a captive of demography and nature, and Africa Rising narratives that emphasize how technology makes capitalist modernity available to Africans share a preoccupation with a supply-side understanding of development and, indeed, climate. That is to say, they approach water, energy, and food security (and ultimately political stability) as predominantly determined by the total availability of resources in a particular social system. Supply constraints are the harbingers of dystopian crunches in the view of those who fear that biophysics and demography pose “limits to growth” (that is, a ceiling on how much can be produced), which we ignore at our peril in the face of escalating climatic changes.<sup>25</sup> Similarly fixated on the specter of chaos and dysfunctional institutions induced by scarcity, believers in a Schumpeterian Africa posit that technology transfer and the provision of foreign capital offer African entrepreneurs and African “smart cities,” such as Kigali and (parts of) Nairobi and Lagos, opportunities to escape the Malthusian trap by boosting aggregate availability of scant commodities: credit, housing, food, water, and so on.<sup>26</sup> The resultant prescriptions for policy are hence structured almost exclusively in function of shoring up (quantifiable) supply. This is a troubling nostrum with a woeful track record across the continent as Jackie King and Cate Brown remind us

in this collection. Nonetheless, its proponents maintain that Africa's fundamental problem is that there are too few resources.

In doing so, both these ways of imagining Africa neglect the vastly divergent historical experiences different people have with changing resource levels in their community and the differential meanings attached to scarcity by various social groups: the biophysical and the social are “coproduced”; one does not simply – as an independent variable – create the other.<sup>27</sup> Veteran observers of the ecosystems in which cultivators and pastoralists pursue their livelihoods have long warned that the simplistic preoccupation with availability masks complex and multilayered interactions between various communities and their surroundings. In the words of historian Sara Berry: “Generalizations about agricultural practices and performance in Africa are problematic not only because reliable quantitative evidence is scarce, but also because the data available rest on misleading or overtly restrictive assumptions about the social organization of rural economic activity.”<sup>28</sup> The fixation with dams, irrigation canals, pipes, and mobile apps as a *deus ex machina* to solve availability constraints – rather than seeking to understand how environmental changes reflect reorderings of social relations, and social relations, in turn, manifest themselves in grazing pastures, dryland harvests, and the biochemistry of rivers – comes at a great cost. Leila Harris notes in her essay that the disinterest of supply-centered approaches in the quotidian strategies communities deploy to deal with water insecurity is as damaging in urban milieus as it is in agrarian Africa: “Without familiarity with these day-to-day realities, we might miss opportunities to strengthen some beneficial social practices, or in turn might aggravate aspects of the contextual realities that contribute to lack of access to safe and affordable water for all.”<sup>29</sup>

Malthusian and Africa Rising narratives virtually ignore political participation and social relations as determinants of how climate change is affecting Africa – the centrality of accessibility as opposed to availability.<sup>30</sup> They omit the importance of dynamic adaptation by African actors not only to climatic processes but simultaneously to representations, reimaginings, and institutionalizations of those processes. A perspective that highlights the latter does not consider supply (of water, food, technology, and so on) as a self-explanatory, neutral fact created by nature, states, or markets. Instead, it understands supply as a social relationship that is endogenous to various political orders: constructed by some people for some people and, thus, often the object of contestation and an instrument of domination.<sup>31</sup> Doing so underlines the importance of distributional considerations and political struggle in the framing of “environmental” questions. Moreover, it draws attention to the array of nondeterministic and creative interactions African actors have among themselves and with their environments (“riskscapes”):<sup>32</sup> it reframes them as ingenious social agents, who actively rethink, reinterpret, resist, and reappropriate external forces that impact their relationship to water and cli-

mate locally. Shifting the focus to the lived experiences and ideas of African communities vis-à-vis their environments is thus crucial. As King and Brown state in their call for “living rivers” managed through intercommunitarian dialogue rather than scientifically objective decrees: “We understand that the choice of what that future condition [of how to deal with scarce water sources] should be is not a scientific one; there is no magic number that represents how much water to leave in a river in order to keep it healthy.”<sup>33</sup> The corollary then is that uncertainty and abandoning the myth of a positivist solution do not have to be negative but can instead lead to new forms of social living, shared meaning, and cooperation, especially at a time of seismic changes. The essays in this collection emphasize several of the profound transitions that disparate parts of Africa are wrestling with, but also the ways in which various communities, cities, and states make sense of a changing Africa and proactively situate themselves in a changing world.

One of the most important transformations underway in Africa – and of major importance to policy responses vis-à-vis climatic changes and water security<sup>34</sup> – is the urbanization of the continent, accelerating at a rate faster than anywhere else on the planet. Important swathes of East and Central Africa remain very rural but, especially in West and North Africa, most people now live in cities.<sup>35</sup> While some of that is attributable to the natural increase of the urban population, migration is driving much of the expansion, especially into burgeoning areas where housing is cramped and precarious and where adequate water and sanitation facilities are lacking: there is no continent where the percentage of citizens living in slums is higher than in Africa. This designation, as Livingston reminds us in her essay, has political repercussions. Compared to other city neighborhoods, informal urban settlements or “slums” receive demonstrably less investments and public services, which entrenches the tenuousness (or absence) of people’s basic rights; ironically but not coincidentally, the cost of purchasing water is higher in such settlements than it is in middle- and upper-class neighborhoods in most African cities. Africa’s expanding slums are not a transient phenomenon either produced by rapid urban economic growth (drawing in rural emigrants) or about to be transformed into safer, cleaner, and less precarious housing by market-driven development.<sup>36</sup> They are a structural and increasingly important feature of the political economy of the continent. The growth of vast informal urban settlements is occurring in parallel to accelerating levels of financial speculation, real-estate investment, and property booms that further accentuate the inequities of exclusionary growth models, whether in Lagos, Nairobi, or Kigali.<sup>37</sup>

Matthew Bender’s essay on Dar es Salaam helps historicize the trajectory of urban growth in postcolonial Africa, but also challenges many of the Malthusian storylines (“climate refugees” overwhelming cities)<sup>38</sup> and neoliberal fantasies (“smart cities” that prevent urban anarchy and environmental hazards)<sup>39</sup> that



prevail in an era of intensifying climate change and “Africa Rising.” Most African cities were constructed under colonial rule as spaces stratified by race, class, and ethnicity; various forms of apartheid have been built into the fabric of much of urban life.<sup>40</sup> Segregation and the denial of political rights and of public services (such as access to clean water and protection against floods and storms) in expanding cities have gone hand in hand.<sup>41</sup> Yet as Bender demonstrates for the continent’s fifth-largest metropole, Dar es Salaam offers not just a story of abysmal water governance and the rapid depletion of the aquifer under the city, but also one of extraordinary adaptation by urban dwellers to rapidly changing environmental, social, and economic circumstances: these experiences and forms of solidarity constitute an important reservoir of strategies to deal with twenty-first-century warming. This is a message at odds with the pessimistic tradition in political science that perceives of urbanization, especially in conjunction with health crises and environmental change, as a leading cause of political instability in the developing world, as famously propositioned by Samuel Huntington and still in vogue among political demographers.<sup>42</sup> Yet as Bender concludes:

Dar’s changing waterscape . . . indicates a need to rethink notions of “resilience” in a way that recognizes the long history of Africa’s urban populations adapting to difficult and changing circumstances. . . . Urban dwellers built a dynamic, thriving urban life without the benefit of the expansive, formal water infrastructures common in the cities of the Global North . . . [and] represent a capacity for local innovation that should be part of urban resilience strategies.<sup>43</sup>

Such insights align with scholarship that challenges the representation of the links between migration, urbanization, and climate as constituting an overwhelming crisis; instead it highlights mobility and participation in governance structures by residents of informal settlements as successful adaptation strategies.<sup>44</sup>

In his contribution to this volume, Heinz Klug too grapples with the long shadow cast by historically entrenched unequal citizenship on the consumption and governance of water. He does so in the context of South Africa, which threw off the shackles of apartheid and embraced universal suffrage in 1994, as part of a “wave of democratization” that inspired hopes of an overhaul of antagonistic state-society relations around the continent.<sup>45</sup> Newly empowered electorates and the growth of a host of civil society organizations with local networks and global partners have powerfully pushed for universal access to clean drinking water and sanitation.<sup>46</sup> They have nonetheless failed to make the vision of water as a human right – and “water security for all” – a material reality as African states have been forced to undergo structural adjustment, facilitating the commodification of water in the form of privatization and cost-recovery practices. For Klug, debates over access to water and the management of water resources reflect the tension of our age between neo-liberalism and human rights – a fault line that runs through the question of climate

change in all countries, from the world's richest to its poorest.<sup>47</sup> Extensive legal campaigns in which South African civil society invokes a set of powerful principles and rights to get the government to uphold water security for all are, in that sense, a precursor of struggles that will likely be waged across the continent to remind African states of their duties vis-à-vis their citizens as the world heats up further.

The state is, and will remain, central to climate change adaptation in Africa while, conversely, environmental questions will remain at the heart of postcolonial polities, as during colonialism and the first fifty years after independence. The social science literature of the late twentieth century was dominated by analyses that identified a potentially terminal crisis for Africa's "lame leviathans"<sup>48</sup> and the growing usurpation of state functions by the market, local civil society, international NGOs, and multilateral organizations.<sup>49</sup> In that interpretation, the provision of water to households and businesses, the drilling of boreholes, the running of desalination plants, and the drafting of national climate adaptation strategies would become increasingly the purview of GDF Suez, Oxfam, the World Bank, and WaterAid. Yet the African state has shown remarkable resilience in recent decades. It has found ways of taming various forms of external intervention and, by partnering with other actors, reasserting an important degree of sovereignty.<sup>50</sup> Developmental planning, schemes for rural transformation, and big infrastructure have been critical to that renewed prominence, as mounting empirical evidence, including the essay by Allen Isaacman in this volume, makes clear.<sup>51</sup> Mozambique's Cahora Bassa Dam is often approached as a relic of colonial hubris, but the ruling Frelimo party has given it pride of place in both its socialist (until 1987) and postrevolutionary period. Today, the party has prioritized another megaproject, the Mphanda Nkuwa Dam, which is deeply unpopular among communities that are touted as its supposed beneficiaries. But as Isaacman notes, hydro-infrastructure of this sort is not about building a more consensual society or a participatory understanding of water security or climate change; it is about asserting Mozambican sovereignty on the Zambezi.

The reassertion of African statehood has thus gone hand in hand with another somewhat unexpected comeback. After virulent criticism by civil society in the 1980s and 1990s of so-called white elephants, it appeared as if big dams would no longer receive funding from international financial institutions, bilateral donors, or cash-strapped governments. But in the last two decades, African states have once again embraced hydro-infrastructure and tabled projects even more ambitious than those at the highpoint of postcolonial state-building of the 1960s and 1970s (see Stephan Miescher's essay in this volume). A key factor in that high-modernist resurgence has been the role of Asia:<sup>52</sup> financially (the availability of development loans from Beijing, Delhi, and Tokyo, after Western funders began closing the spigots for dams); materially (the extensive know-how of Asian companies on how to

build and operate dams); and ideologically (the exemplar of East Asian state-led, centralized development instead of market-oriented *laissez-faire*). In her essay, Jyhjong Hwang zooms in on development finance through the lens of a Liberian case study. China's return to Africa after a hiatus of several decades and its scaling up of political and economic ties with almost all states on the continent has indeed provided African incumbents with options they simply did not have during the 1980s and 1990s.<sup>53</sup> Yet misperceptions continue to abound regarding exactly how Chinese actors seek to address Africa's infrastructure gap and how African elites leverage that interest strategically. Countering the oft-made assumption that Chinese companies can simply win ever bigger contracts by underbidding Western competitors and dropping all environmental and social safeguards, Hwang highlights that the decision-making of African governments around big hydro-infrastructure is much more complex than simple cost and conditionality considerations. Instead, she underlines how African decision-makers often perplex Chinese interlocutors by engaging in highly strategic management of different donors and development financiers for their own domestic political and international purposes.

Ethiopia, the state that has most often been associated with Chinese registries of development – from dams as anchors of water security over state-led investment to the indispensable role of the party-state – is a case in point.<sup>54</sup> Post-1991, Ethiopia has been a recipient of extensive Chinese loans, technical expertise, and party-to-party cooperation, which for fifteen years helped it to achieve extraordinary growth levels, a high degree of (apparent) political stability, and major progress on the Millennium Development Goals.<sup>55</sup> Simultaneously, Ethiopia has asserted itself as one of Africa's most vociferous voices in international climate governance, a reflection of its domestic track record in agricultural and water development and its advocacy of innovative proposals to mitigate global warming.<sup>56</sup> Harry Verhoeven's contribution to this issue rethinks the Grand Ethiopian Renaissance Dam (GERD), Africa's biggest contemporary infrastructure project. He argues that the interconnected challenges of water, energy, and food insecurity provided a new impetus for the articulation of ambitious state-building projects that rework regional political geographies and expand the ways in which the state can penetrate society, control its territory, and implement consequential policies. Yet while the post-1991 ruling Ethiopian People's Revolutionary Democratic Front (EPRDF) has indeed successfully expanded state infrastructural power, been internationally lauded for its climate diplomacy, and projected unprecedented regional influence, its use of the discourse of environmental justice to secure domestic and global support for the GERD had profoundly ambivalent effects. The language of justice and nation-building was seized upon by enemies from within the party-state and from without to expose the inequities produced by the state-building drive and to oust the incumbent vanguard. Opposition activists successfully mobilized around the expropriation of land, forests, and water that were part of the EPRDF developmen-

tal thrust. However, this mobilization and the dismantling of the ruling coalition further exacerbated fundamental and deadly antagonisms over the future of the country and its developmental model.<sup>57</sup> The Ethiopian case highlights the promise of articulating audacious political-economic reforms around water security and climate change adaptation as well as the perils of doing so.

What the impacts of human-induced climate change will be remains tentative in Ethiopia, as elsewhere in Africa. But that fundamental uncertainty often appears to be causing greater anxiety in extraregional actors – scientists, aid workers, corporate executives, geopolitical strategists – than it does among many Africans. It is important to recall that both from the standpoints of incumbent leaders and communities, the postcolonial condition has long been defined by the sense of being continuously unsettled.<sup>58</sup> That condition is informed not only by the particular subjectivities implanted by the colonial experience but also by endless fiscal, constitutional, environmental, territorial, and epidemiological crises competing for Africa’s attention and an unrelenting barrage of external narratives about the need to “develop” and “adapt” to a changing world. The challenges presented by twenty-first-century climate change might well be of a different order according to general circulation models. However, from the perspectives of many African actors, it is merely the latest addition to a long list of threats facing the continent, all of which are supposed to be addressed through a plethora of policies, programs, and projects implemented in partnership with anxious donors who perennially seem to be looking for the next problem. Precious little attention has been paid to the subjectivity of development – the expectations generated among people of not only material change but also of social relations reworked and the disappointments so often incurred along the way – and how social-psychological dynamics and social capital affect various forms of adaptation and mitigation, for instance in reducing emissions from deforestation and forest degradation.<sup>59</sup> This is of particular relevance because many old developmental priorities and instruments – anti-erosion measures, settlement of nomadic populations, dam-building – are currently being recycled under the umbrella of “climate change adaptation.”<sup>60</sup> As sociologist Andrea Nightingale has observed, “adaptation programs tend to co-opt well established development efforts (both programs and their specific interventions) and in the process, fail to promote transformative change.”<sup>61</sup> Development and adaptation have a history, no matter how much one insists that today’s challenges are qualitatively different. That baggage underpins what African futures are imaginable for those Africans who should be the agents of change but are still often treated as its objects.

**T**he essays assembled in this issue of *Dædalus* have enunciated the pathologies of adopting a view of water security and climate that is devoid of cultural context, history, and social relations. This is not to downplay the

extraordinary work done by natural scientists to make sense of complex atmospheric and hydrological processes. It is, however, to underscore the inadequacy of a positivist approach in confronting a set of challenges that is fundamentally about people's relationships not only with their natural environment but with each other.<sup>62</sup> The corollary of that conclusion is that such an awareness does not have to lead to paralysis, but instead can usher in a different and more empowering politics of possibility: no condition is permanent, as the famous West African dictum goes. This entails reappreciating the productive potential of uncertainty in Africa: uncertainty does not have to lead to anxious isolation but can generate new forms of social life and collective action that reimagine potential futures and work toward them.<sup>63</sup> Put differently: of course, more weather stations and satellite readings are welcome to foresee tropical storms and protracted droughts across the continent. It is, of course, important to share best agronomic practices and introduce heat-resistant crops, especially in the Sahel and Southern Africa. And, of course, extant modes of production, transportation, and consumption of goods and services need to be rendered more efficiently through a set of essential technical tweaks and innovations. But equally important as all of that, and arguably even more vital, is the need to listen to, critically engage with, and foreground African ideas about climate and water in all their diversity and multilayered complexity. There is no scenario in which African societies adapt successfully to climatic change and do not simultaneously radically reimagine both their relationship with the outside world and with each other, including the institutions of control and exclusion at home.

For decades, high levels of uncertainty about environmental change and the language of fragile intercommunitarian relations have been instrumentalized by colonial and postcolonial power-holders to stifle debate, to limit the extent of consensual decision-making, and to render laws more restrictive for ordinary citizens. There is a real risk, already manifesting itself in the Horn of Africa and other key regions, that the omnipresence of discourses about water scarcity and *the* climate crisis will once more have those same disempowering effects. Political and economic elites are beginning to defend their privileges and authority by weaponizing the language of adaptation and invoking *the* climate to justify disruptive and disempowering policies: centralizing water and energy systems; problematizing migration and mobility; criminalizing creative informality in urban milieus; neglecting "economically unfeasible" smallholder agriculture; and so on. The real challenge is therefore not whether dykes can be fortified, desalination can be made more affordable, or irrigation pumps can more effectively target crops. It is whether climate change adaptation will come to mean the transformation of Africa's political and economic systems and of their asymmetric, violent imbrication in the global political economy.

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