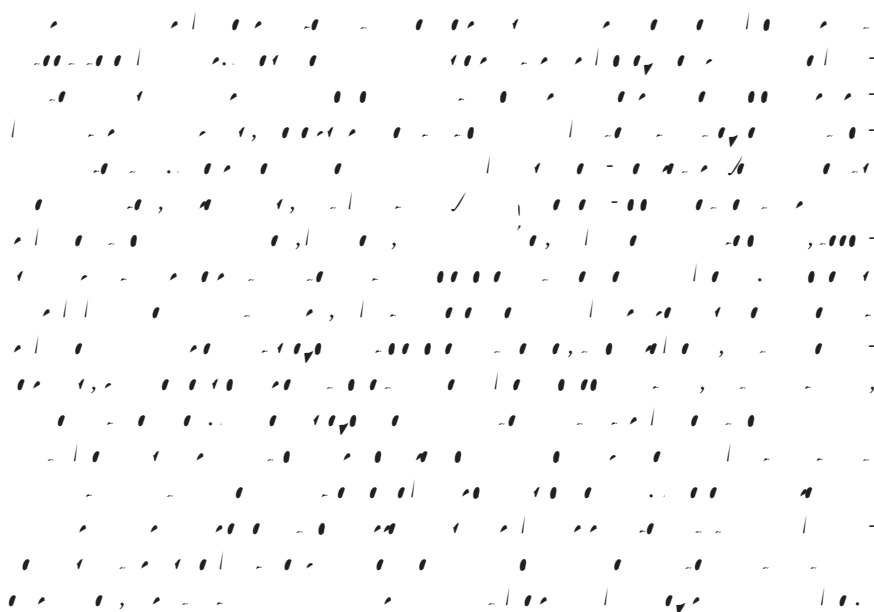


Climate & Water in a Changing Africa: Uncertainty, Adaptation & the Social Construction of Fragile Environments

Harry Verhoeven



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 *Water*, 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

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)¹¹ 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.¹² 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.¹³ 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.¹⁴

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 *climate change*, including reframing what the *climate change*, 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.¹⁵ 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.¹⁶ They rested on dubious suppositions then and still often do so today.

in this collection. Nonetheless, its proponents maintain that Africa's fundamen-

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.”³³ 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 security³⁴— 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.³⁵ 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.³⁶ 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.³⁷

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)³⁸ and neoliberal fantasies (“smart cities” that prevent urban anarchy and environmental hazards)³⁹ 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.⁴⁰ 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.⁴¹ 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.⁴² 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

change in all countries, from the world's richest to its poorest.⁴⁷ 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"⁴⁸ and the growing usurpation of state functions by the market, local civil society, international NGOs, and multilateral organizations.⁴⁹ 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.⁵⁰ 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.⁵¹ 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:⁵² 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.⁵³ 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.⁵⁴ 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.⁵⁵ 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.⁵⁶ 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.⁵⁷ 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.⁵⁸

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.⁶² 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.⁶³ 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 climate crisis will once more have those same disempowering effects. Political and economic elites are

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