

TOWARDS AN ENVIRONMENTAL HISTORY OF THE SOMALILANDS

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I. Introduction

Our readers know only too well that politics usually takes center stage in discussions of Somalia's recent past and uncertain future. There is no question that ongoing efforts to restore faith in the country's political institutions, to negotiate a proper balance between central and regional governance, and to manage free and fair elections are critical to ensuring that Somalis can meet the many challenges they face going forward. But it often appears that our preoccupation with politics and personalities can distract us from other crucial issues that continue to impact Somali lives. Among these, none is as pervasive as the fate of the region's natural environment, where changes over the past century have affected livelihoods, social relations, and yes, even the practice of politics. While Somali Studies specialists have always been aware of the critical importance of land, water, and natural resources in the Horn of Africa, the history of the Somali environment has rather surprisingly never been the subject of a comprehensive study of its own. One reason may be that a history of environmental change requires at least some familiarity with the scientific literature in disciplines like climatology, geology, ecology, and human and animal geography; and most of us—the present author included—are not experts in these specialized fields. Nonetheless, I thought it might be useful to use the occasion of *Bildhaan's* twentieth anniversary to survey this diverse literature as a starting point for thinking about Somalia's environmental history. The detailed work of writing that history belongs to the next generation of Somali scholars.

This partial and quite preliminary overview starts with a summary of what the natural sciences tell us about the longer trajectories of climate change and human adaptation in the lowland Horn. It is followed by a brief look at the rich environmental knowledge found in

Somali folk tradition, oral poetry, and customary practices of resource management, asking if this indigenous knowledge still has a role to play in an era of global climate change. A third section explores some of the environmental changes which colonialism and globalization brought to the Somali territories over the past century. The final section briefly examines some of the forces and trends that are likely to shape Somalia's environmental future.

II. A Natural History of the Somali Environment

There is a substantial literature on the long-term climate history of the Horn of Africa, though much of it draws on limited meteorological data or on predictive modeling which is necessarily speculative. While this author is not in a position to assess the reliability of all the scientific evidence, there appears to be a general consensus among the experts that the lowland Horn of Africa—like other semi-arid regions of the African continent, including the Sahara— has experienced an overall drying trend since the end of the so-called Humid Phase of the Middle Holocene era (c. 6000-5000 years ago). Since that time, human communities across the African continent have continually adapted to the effects of climate change by domesticating food crops and animals suitable to the diverse micro-environments they inhabit. Despite the overall trend toward aridity over the past 5000 years, pollen and sedimentary evidence indicate that there were decades (and even centuries) when precipitation was above the norm for the overall period.

Archaeological evidence from the lowland Horn—although scanty by comparison with data collected for the Nile Valley or highland Ethiopia—suggests that residents there were using cattle and harvesting seasonal grain crops by the 3rd millennium BCE, and probably adopted camel husbandry sometime after 2000 BCE. Archaeologists have documented the existence of Neolithic cultures— defined by some combination of fixed settlements, animal husbandry, agriculture, and pottery production—going back to this era. Unfortunately, the material evidence cannot tell us anything about the ethnicity of the people who produced those Neolithic cultures, so we should not automatically assume that the earliest herders and farmers in the Somali Peninsula were the direct ancestors of today's Somalis. Evidence from historical linguistic research indicates that the earliest Somali speakers (i.e., speakers of some form of proto-Somali) began migrating into the

Peninsula from their ancient homeland in the upper Jubba River basin some 2000 years ago, and over the course of the past two millennia became the dominant population in the lowland Horn. Preliminary investigations of the famous Las Geel cave paintings in modern-day Somaliland (which have been dated to the second millennium BCE) suggest that the inhabitants of the region practiced a mixed herding and hunting economy, engaged in long-distance trade, and deployed artistic techniques similar to those found at ancient sites throughout the Ethio-Sabaeen world. In all likelihood, prior to the start of the Common Era, the lowland Horn hosted a mosaic of peoples whose technological and environmental knowledge was steadily incorporated into the Somali cultures which we know today.

Given the paucity of sources, it may never be possible to reconstruct the details of ecological adaptation nor to identify with precision the major turning points in the earlier environmental history of the region. Nonetheless, there are bits and pieces of evidence which can give historians clues about how ancient Somalis utilized local resources while importing others from the wider Indian Ocean and Red Sea worlds. In addition to adopting the dromedary camel (probably from Arabia) and turning it into their most prized asset, Somali breeders of sheep and goats transformed the semi-deserts of northern and central Somalia into perhaps the most productive arid-land livestock economy in the world, to the point where they were able—by the nineteenth-century and probably much earlier—to produce a surplus of animals for export to Arabia and eventually to the early British colonial garrison at Aden. We also know that sweet bananas arriving from Southeast Asia in the third century CE were adopted by the riverine farmers of southern Somalia as one of their staple crops, and by the twentieth century were exporting the Somali banana to Europe.

Even if many details are irrecoverable, it is apparent that the ancestors of today's Somalis—wherever they moved in the Horn—succeeded in turning the available resources into productive assets by carefully studying the local flora and fauna, experimenting with plants for fodder and fuel, harvesting wood for homesteads and enclosures, digging shallow wells and seasonal pools (*war*) for water, and developing techniques to protect their herds and seeds from epidemics or insect pests. In other words, they practiced “enviroming,” a term used by environmental historians to emphasize the constant remaking and

restoring of the “environmental infrastructure” in the face of natural and human hazards over long periods of time. These concepts enable us to talk about the dynamic interaction between human societies and their environments, and to bridge the gap between ‘Nature’ (and natural resources) on the one hand and “Culture” (and human technology) on the other. The new environmental history emphasizes how “human societies and the natural world have reciprocally constructed each other.” That is, humans have always been a key determining factor in Africa’s environmental history. Human actions, beliefs, and technologies have played a critical role in managing the challenges which nature poses, as well as in modifying the environments in which they live.

For Somalia’s pastoralists, the making of sustainable environments required annual transhumant movements to access rainy season pastures and then to return the herds to the home wells where they could survive the long dry seasons. While these movements might vary slightly from year to year, they operated within what I have previously described as a series of “regional resource systems,” which comprised all the natural resources and social networks which were required to sustain the pastoral enterprise over the long haul, through good years and bad. Along with a variety of seasonal pastures and fixed home wells, each regional system included market centers and sets of arrangements or alliances with neighboring clans upon which the herding groups might have to rely for food or security in times of scarcity. Such linkages developed over the course of multiple generations, or even centuries, in response to the long-term experience of local herding communities who knew that rainfall and vegetation patterns could be unpredictable. The multiple ecologies and social grids which evolved over the course of centuries also helped create distinctive regional identities, something to keep in mind when we look at the strong attachments to their “home” regions which many Somalis have demonstrated in the decades since the collapse of the national state.

For the period from CE 800 to 1800, scholars of eastern Africa’s climate history—using lake-level measurements, geological stratigraphy, and archaeological evidence of human settlement— have identified broad fluctuations in secular weather patterns. For example, the period 800–1300 was relatively wet, followed by a drier spell in 1300–1450, and again by a wetter period, including the so-called “Little

Ice Age" of 1500-1850, when observers reported snow-capped peaks on Mount Kilimanjaro in Tanzania and Ras Dashan in Ethiopia. The historian is tempted to link these meteorological trends to the periodic pulses of north to south migrations by Somali pastoral groups which have been evident over the past 500 years. It is possible, for example, that decades of above-average rainfall over several decades supported larger herds which prompted the quest to occupy new pastures; at other times, multiple decades of below average rainfall may have put stresses on pastoral livelihoods and compelled vulnerable groups to seek refuge in districts with more abundant resources, often as "guests" or "clients" of their new host communities (as is evidenced in the formation of multi-clan communities in the interriverine region). At this point we can only speculate about whether climatically-driven fluctuations in demographic growth—of both people and domestic livestock—may have pulled or pushed herding groups out of their "home" regional resource systems and prompted them to migrate southward in search of "greener pastures." What is clear is that the overall dynamics of climate may provide environmental historians with a framework for helping reconstruct Somalia's human history in both the distant and the more recent past.

While most of the ancient and early modern history of settlement and environmental adaptation in the Horn remains speculative, we are on much firmer ground when we come to the nineteenth century, where written sources enable us to track some of the human-environment interactions which have become familiar to us in more recent times. This is partly because European explorers and travelers to the Horn often brought their interests in the natural world (often as big-game hunters) to the continent. Their observations on the local flora and fauna provide us with a base-line for tracing more recent twentieth-century changes in the natural environment. For example, in his study of the changing vegetation patterns of Somaliland, Hemming (1966) reviewed multiple travel accounts written by European explorers who visited the region around the turn of the 20th century. It is worth quoting at length from his findings:

The dominant impression that one obtains from all these books is of a country with relatively sparse vegetation but teeming with game. To anyone who knows the country today it is clear that there has been an enormous reduction in the number of game animals since the turn of the century. Swayne (1895) who travelled extensively gives much interesting information. In 1884 elephant were still plentiful on the Waggar Mountains and on the Golis Range and one was shot on the subcoastal plain at Mandera, but by 1887 no elephant was to be found east of Hargeisa. In 1892 rhinoceros could be found hiding in the *Andropogon* clumps on Ban Tuyu; today the rhinoceros have gone and the *Andropogon* has been replaced by smaller grasses. Herds of wild ass were common, particularly on the coastal plain to the east of Berbera, but today only one or two very small herds survive in the Nogal valley.... Swayne also reported that the plains around Berbera had been stripped of firewood since 1885.

.To summarize, it is clear that the vegetation of Somaliland was showing obvious signs of overgrazing by the end of the nineteenth century. The advent of the hunter rapidly reduced the natural game population to a fraction of its former size. The extension of ordered government produced both an increase in the numbers of grazing stock and an extension of the grazed area. As this increase started at the same time as a reduction in rainfall the vegetation cover continued to decline rapidly.

In other words, by the start of the twentieth century, and probably much earlier, the balance between wildlife and domestic stock had tipped in favor of the latter. The growing demand for Somali sheep and goats for export contributed to the expansion of domestic animal herds at the expense of wildlife, while hunting by Europeans simultaneously reduced the number of big-game animals throughout the Horn. More recent surveys by zoologists report that many large mammals which once roamed the country—like elephants, black rhinos, leopards, lions, giraffe, and various species of antelopes-- can no longer be found in districts where they once abounded, and some species unique to Somalia undoubtedly became critically endangered or extinct. While Osman Gedow suggests that “the Somali fauna has been suffering ever since the pastoral society settled in the Horn of Africa, from the competition for food and water with livestock animals,” he also contends that “lately, the wildlife has suffered much more from habitat destruction and poaching than from the competition for pasture.”

Traces of the earlier biodiversity of the land may also be found in Somali place names which refer to animals that no longer exist in those areas: e.g., Tug Maroodi-jeex, Gacan Libaah, etc. While many predatory species have disappeared from the Somali ecosystem, the hyena has not. In an unusual and entertaining study, Gade (2006) uses multiple historical sources to document the long history of human-hyena interaction in the Horn. While hyenas have always posed a threat to domestic livestock and vulnerable humans (young children, the elderly and handicapped), Gade infers that the scavengers also played an important role in disposing of urban waste and of carcasses (both human and animal) left behind after famines, epidemics, and war. Popular tradition certainly seems to acknowledge both the danger and the necessity of the hyena's presence. And while this example may seem trivial, it suggests that environmental historians might readily find other examples of significant human-animal interactions reflected in Somali poetry and local folklore.

Nineteenth-century sources also tell us something about animal epidemics which certainly have been a periodic scourge across the Horn. The famous panzootic rinderpest epidemic of 1888-1897, which killed up to ninety percent of the cattle herds in parts of eastern Africa, was most likely introduced by Indian cows imported into Eritrea to feed Italian troops preparing to invade Ethiopia. Its subsequent rapid spread throughout the Horn was facilitated by a succession of droughts which brought susceptible animals (both wildlife and domestic cattle) close together at watering points or pastures. Wherever rinderpest appeared, it seems to have intensified cattle raiding against neighbors who still had healthy animals. Interestingly, camels were much less affected by the bovine plague, so camel-herding clans could readily expand into districts where cows were dying. One is tempted to ask if the late-nineteenth Somali movements into northeastern Kenya, at the expense of cattle-keeping Borana communities, was partly enabled by the differential impact of the plague on various livestock species. We can only raise the possibility here, as an example of how epidemics, interacting with incidences of drought, may have influenced patterns of migration and resettlement in the Horn.

With the start of meteorological record keeping in the colonial period, climatologists can show that some parts of the Somali region continued to experience severe droughts every decade or so, while

localized districts could experience them more intermittently. The most impactful droughts in the past century are typically remembered with specific Somali names that characterize their effects on local communities. The overall incidence of drought in the twentieth century—on average, a severe drought in some part of the country every ten years or so—may not have been very different from earlier cycles of drought and recovery in the past. But as we shall see below, local perceptions convey the impression that recent droughts have been more severe and harder to recover from, especially for the more vulnerable segments of the rural population.

III. Indigenous Knowledge, Poetry, and the Changing of the Landscape

While images of Africa in Western literature and development discourse have often stressed the harsh and unforgiving nature of the African environment, and recent debates over global warming convey the sense that climate change poses an existential threat to the environment, Africans' own images—reflected in popular lore and indigenous knowledge—suggest a more balanced and pragmatic view of the natural world. Somalis, along with most other Africans, have found their traditional environments to be full of challenges, but also full of possibilities for creating well-being and even prosperity if their elements are properly understood and ordered.

More than fifty years ago, the poet and educator Musa Haji Ismail Galaal produced a manuscript titled *Stars, seasons and weather in Somali pastoral traditions*. It drew upon the insights and wisdom of traditional weather-lore “experts”—sixty-nine of them are listed in Galaal’s appendix—who were typically consulted when pastoral communities had to make decisions about when to begin breeding their livestock, moving the herds in anticipation of rain, preparing to defend their pastures from predatory neighbors, and the like. Galaal assembled a wealth of indigenous lore about the natural environment and the techniques used by pastoralists to anticipate the start of the rains or to cope with their periodic failure. The author and most of the experts he consulted have now returned to Allah, and the mobile phone has brought modern weather forecasting and early warning information to the remotest reaches of the country. But for the environmental historian, the information remains as a testimony to the wealth of knowl-

edge—both empirical and speculative—which traditional Somali weather-lore experts gathered and transmitted to the members of their communities.

While Galaal's aim was not to document environmental change, his study can serve as a baseline to illustrate several points about the impact of nature on political culture and popular belief. For example, he cites the proverb "Nin waliba wuxuu qabo Qardho la imandoonee" ("All grievances will eventually be brought to Qardho"), which "refers to the annual movement of the former Sultan of Majeerteenia from the coast [where he oversaw trade and foreign diplomacy] to the cooler climate of Qardho, both to escape the spring heat and to dispense justice in the courts." It appears that even sultans had to adapt their governance practices to seasonal weather patterns, which may explain how they were able to exercise authority over their widely dispersed and highly mobile kinsmen and subjects.

Galaal was keenly aware of the Western tendency to disparage indigenous knowledge as unscientific and even superstitious. Thus he seeks to explain many indigenous metaphysical concepts like *nabsi* (fate, destiny), *nuro* (life-giving nourishment), and *baraakiin* (healing power), the latter two of which animals can sense but people cannot unless they carefully observe the behavior of their livestock. For example, lost animals are expected always to travel in the direction of pasture with *nuro*. Of *nuro*, Galaal further writes:

If, for instance, the land is very green, if there is plenty of water, if every other sign is favourable, but the animals are still unhealthy and undernourished or give little milk, the [weather lore] expert knows there is no *nuro* in the area. Conversely, if drought occurs and pasturage is sparse, but the animals are healthy, then it is present. Acting in his role as record keeper, the weather expert observes and mentally notes the place and time of its occurrence. (8)

The implications of these ideas can be profound. Galaal found that northern Somali pastoralists recognize the healing power of certain plants, such as the tree called *cawtal-gasiir* (whose nourishment is believed to enhance the sexual prowess of rams), which are particularly abundant in the Hawd. Even during the *jilaal* (long dry season), "the richness of the Hawd in *baraakiin*-bearing plants helps to

explain the very deep attachment that Somalis have for this area of what is now Ethiopia." While of course we cannot ignore the political reasons for Somalia's historical commitment to recovering the Hawd, the almost mystical attachment of herders themselves to its life-giving plants and pastures makes the imperative appear to be as much ecological as it was nationalistic.

Finally, Galaal's seminal study demonstrates that there are significant variations in astronomical and meteorological terminology depending on where one collects the data. He divides Somalia into seven distinct "weather districts," each with its own weather-lore experts knowledgeable about the local soils, flora, and annual rainfall patterns (30-ff). If one looks at the sketch map of the weather districts he identifies (Appendix 6), one cannot help but be struck by the extent to which they closely correspond with the contemporary political map of Somalia's regional states. The coincidence reminded me again of the multiple "regional resource systems" discussed in Section 1 above, and of the various ecological sub-systems (*deegan*) described by the Somali botanist Ahmed M. I. Barkhadle, who produced a remarkable dictionary (134 pages) of Somali plant names. The notion that there are distinctive physical environments inhabited by various clusters of clans or communities who consider them as their "home territories" suggests that environmental historians may need to look more closely at specific sub-regional ecologies, which produced their own distinct histories of resource sharing and environmental knowledge production. As Somalia's current regional states continue to assert their claims to the natural resources in their territories—which nowadays may include potential oil and natural gas reserves—and to the ports which connect those resources to the wider global economy, one cannot help but wonder if the impulse to decentralization to some extent reflects the longer history of sub-regional resource management in the lowland Horn.

In addition to the knowledge of the Horn's multiple weather lore experts, we find frequent references to the natural environment in Somali oral poetry. Aficionados of that poetry know very well how much of its imagery relates to the natural world in which the poets lived and worked, and how the behavior of animals and the vicissi-

tudes of nature often serve as metaphors for human actions and emotions. Somali poetic literature on nature provides us with glimpses of how local communities saw the world around them, and sometimes links changes in the landscape to the harmful intervention of human actors, both Somali and foreign. A famous example is the poem "A Hoopoe Rebuked" by Ismaaciil Mireh (d. 1951), who in his early years served as an advisor to the famous dervish leader Maxamad Cabdille Xasan and later was imprisoned by the British for his ardent anti-colonial verses. The aging Ismaaciil returned to the herding life where he reflected upon the changes brought to his country by European rule and modern economic exchange. In the course of a major drought (probably that of 1930-33), he composed his poem to the hoopoe bird, whose cries typically forecast the spring rains which in this instance had failed. It provides one of the most poignant descriptions of drought in any literature, oral or written. Extensive excerpts are worth quoting:

O Hoopoe, when you shed those tears,
Crying for the rains of spring...
Do you imagine that you, and you alone
Are scorched by this dry season of *jilaal*?
No, a great disaster has befallen
All God's servants, every one of them –
A drought is come that leaves nothing in its wake...
There are camels, once the strongest of the herd,
That now look spare and gaunt –
There are men, once rich with milch-beasts,
Who are now too weak to rise at the assembly ground.
Young men drift to the village, loitering, looking about –
In the shops there are dates, and guard must be kept
For they would take those dates and run
But for the fear of the tin-roofed jail.
The ostrich hen no longer stirs,
Nor half the asses of the wilderness...
The kudu is slaughtered, his flesh cut up for meat
Even by nobly-born men and soldiers in full array....
And the leopards that once were killers of goats
Have perished themselves at the hand of hunters –
Their cubs now maul no more from their cavern lairs,
For the men who buy skins have brought disaster on them.

Gone are the burden camels, gone are all the short-horned cattle
Sheep and goats, fattened for slaughter, are scarcely to be seen.
The skin flask from which the ghee was served
Is shriveled and musty from disuse...
Look, O Hoopoe, at those shining shapes
You see around you on the ground –
They are the bones of hyenas, bones of vultures, even...
Thirst-stricken folk are dying in Garoowe and Bookh,
Exhausted, their bodies pricked by *gocondho* thorns,
They have no grain, but what would it avail them?
The water to boil it is nowhere to be found,...
See, a band of men has been dispatched
Against the locusts that live here in this land.
Soldiers in trucks appear from every side,
Poison is scattered on the grass
And there is death abounding.
But had those locusts done anything
To bring this fate upon themselves?
No, a decision was made one day to kill them, that was all.
So, Hoopoe, stop your wailing and your moaning
Or you may soon be hunted in your turn –
Stay quiet, speak softly, and you may yet escape arrest!

In suggesting that natural conditions and human actions like big game hunting and locust control efforts had conspired to devastate the environment, the poem anticipates many of today's concerns with the decline of biodiversity. Ismaaciil's verses not only identify the wide range of domestic and wild animals afflicted by the drought, but also note how both rich and poor pastoralists suffered the same fate, just as animal predators and their prey did. It is a powerful commentary on the changes the poet observed going on around him in both the natural and the human environment.

Nostalgia for a disappearing pastoral way of life is also a theme in the poetry of Abdirahman Mirreh (1936-2000). For literary critic Helmi Ben Meriem, Abdirahman's poetry "is characterized by a deep commitment to save nature from human over-exploitation; his poetry is essentially in the pastoral tradition, in that, it 'describes the country with an implicit or explicit contrast to the urban [with] a delight in the natural.'" Meriem adds that the poet's observations of native trees like the

Galool and Gob, of animals, and even of “the bees [that] diligently // buzzed in the air // kissing the flowers” and the “three eagles” roaming the sky and “flying home” show his connection to a world that was increasingly being ignored in modern life. In “Thoughts of a Dying Man,” Abdirahman urges humanity to save “the rhino,” “the seal,” “the bear,” “the elephant,” “the ostrich,” “the reindeer,” among others, thus revealing a shared sensibility with conservationist movements well beyond his Somali world.

Such poetic laments on the disappearing natural environment are often dramatic and emotional; but the perceptions of the poets find corroboration in the contemporary observations of scientists who study the changing landscape. Somali naturalist and environmental advocate Ahmed Ibrahim Awale has produced several valuable texts, in both Somali and English, drawing on his own observations and on insights from local pastoralists and farmers. Awale’s essays touch on the effects of environmental change in a wide range of local economic life: he reports on contamination of Hargeysa’s Ayaha Valley from toxic pesticides which remained in storage or in the soil from the days of the international Desert Local Control Organization (21-25); on deforestation of the hills around the Sheikh pass due to demand for charcoal (49-52); and on the vanishing bee population—recall the poetry of Abdirahman Mirreh—which he attributes to ongoing deforestation, the use of pesticides, and the practice by nomads of destroying hives to harvest the honey for short term nourishment (and before others might find them) (85-87). Awale cites rural community leaders who are aware of the deteriorating bio, including the disappearance of many traditional sources of forage and medicinal plants. While such local observations are often anecdotal, they do reflect the experiences of long lifetimes of coping with periodic natural disasters. They need to be taken seriously as indicators that contemporaries *perceive* recent environmental changes as unprecedented and potentially irreversible, and so call into question locals’ faith in the capacity of their traditional strategies to meet the challenges that lie ahead.

One problem with relying heavily on local explanations of environmental change is the common tendency of Somalis (and they are not alone in this) to attribute natural disasters to political actors or foreign agents. Sometimes popular explanations differ from “scientific” ones. Awale gives us an example. In the 1980s, many locals claimed that the

deaths of hundreds of young acacia trees on the outskirts of Berbera were the result of toxic wastes leaked from surface to air missiles left behind by the Soviet Union in the 1970s. In contrast, Awale the scientist observed that humans and animals did not seem to be affected by the toxins and that the same phenomenon of dying trees could be found elsewhere along the northern coastline, and so contends that climate change was the culprit. Insufficient rainfall in recent decades along the coastal belt had stressed the trees and made them increasingly vulnerable to plant diseases and insect pests (64-66).

In concluding this section on Somali representations of the environment, we must be careful not to over-romanticize the pre-colonial past and assume that indigenous knowledge and traditional environmental management practices were invariably more beneficial than modern-day scientific ones. To appreciate Somalis' rich traditional knowledge of how best to protect their natural resources is not to ignore observable evidence of overgrazing, land degradation, and practices which harmed rather than promoted bio-diversity. Still, there is little doubt that global economic forces and interventions by national and international actors over the past fifty years have worked to diminish the relative importance of indigenous strategies—for better or worse—of environmental management. The next section considers some of those larger forces.

IV. Themes in Somalia's Modern Environmental History

One of the recurring questions in the literature on Africa's environmental history—and so one which any Somali environmental history must address—revolves around the extent to which the colonial partition of Africa, which transformed the political map of Africa, may also have marked a major turning point in the continent's environmental history. Historians of the colonial era frequently emphasize how the drawing of fixed boundaries, the prioritization of commodity export production, and various colonial schemes to "conserve" the environment may have actually undermined traditional African ecosystems. By alienating or enclosing such key natural resources as land, woodlots, wildlife habitats, and water sources, colonial policies may have increased the risks of food insecurity and obstructed traditional strategies of coping with epidemic diseases (both endogenous and imported). In the Somali case, two significant colonial-era interventions which affected

the environment were Italian efforts to turn the riverine areas into plantation economies for the production of bananas, cotton, and sugar cane; and the restrictions on pastoral movements by both British and Italian colonial regimes in efforts to reduce local conflicts over natural resources. Colonial interventions in Somalia, as almost everywhere in Africa, were typically justified by the argument that subsistence agriculture and traditional pastoralism were unproductive and harmful to the environment and thus needed Western scientific intervention to progress.

Beyond specific colonial-era policies and practices, the last 150 years have also witnessed the growing incorporation of the Somali regions into the wider global economy, a long-term process which tended to subordinate local forms of production and resource management to the imperatives of global capitalism. Abdi Ismail Samatar has most fully addressed this process for Somalia's pastoral economies, both theoretically and empirically, by showing how the transition from a pre-capitalist mode of production (where use value of animals predominated) to a capitalist mode (where exchange value dominates production and social relations) gave rise to a local merchant class whose interests—in complicity with those of both colonial and post-colonial state actors—diverged from those of the rural majority. While Samatar does not speak directly to the environmental consequences of the transition, his research makes it clear that Somalia's urban-based ruling classes prioritized accumulation over the preservation of rural livelihoods.

Other scholars have linked the early livestock export trade to increasing environmental stress in Somalia's rangelands. Using European accounts of the 1868 and 1880 famines, Wayne Durill argues that the Majeerteen sultan's decision to collect and sell livestock to foreign buyers at Aden and the Red Sea ports made their subjects more vulnerable to drought-induced famine. For Durill

The origins of famine in northern Somalia lay not in active imperial exploitation but in the sultanate's hasty commitment to capitalism. For a time, Majeerteen leaders created an uneasy partnership of two political and economic systems, one aiming toward subsistence and another pursuing profit, one organized around kinship and another structured by ties between patrons and their clients. This was a political economy at war with itself. Herders required flexibility in managing the size of their herds, but

British buyers and Majeerteen merchants demanded continuous production and trade regardless of the ecological consequences. As a result, the pursuit of profits by "Ismaan leaders undermined their clients" ability first to subsist and then to allocate by peaceful means political power among themselves. In doing so, the sultanate rendered Majeerteen clansmen and their families vulnerable to famine and "made them easy prey to internal dissension" and external enemies--an enduring legacy, indeed, of "atrocious misery."

Durill's provocative argument implies that Somalia's growing engagement with the world economy, while benefitting urban merchants and large livestock dealers, disturbed the ecological balance in the fragile and drought-prone rangelands and made Somali pastoralists less able to cope with recurring natural disasters. Other scholars have advanced similar arguments.

In stressing the impact of external political and economic forces on local Somalis' capacity to manage their environment, the political economy approach suggests that struggles for control over the distribution of and access to resources have had a greater impact on the quality of life than the vagaries of climate and rainfall. Such political struggles were certainly evident in the colonial era, and they have only intensified with the competition amongst Somali clans and political factions for control over land and natural resources since the collapse of the state in 1990. While some studies have attempted to correlate the increase in resource-driven conflicts over the past thirty years with periods of environmental stress, it is more likely that natural disasters simply serve to intensify uncertainty and fuel perceptions that resources are a zero-sum game. Such perceptions are fueled by political entrepreneurs, both nationally and locally, who hope to rally political support among their constituencies, rather than by environmental concerns per se. The focus in the post-colonial literature on the "politics" of power as a major driver of change and conflict has tended to downplay the role of natural forces as direct causes of communal conflict and environmental scarcity. Only in the past twenty years, with rising debates about "global climate change," has Nature again emerged as an "agent" in Somalia's environmental history. Nonetheless, local perceptions often continue to see political actors as the major culprits, either for mismanaging the country's environmental resources or neglecting them altogether. Whatever one's political affil-

iations, however, most would acknowledge the effects of a weak and contested state on the country's capacity to respond to natural disasters in recent decades.

As noted in Section Two, African environmental historians have sought to restore local agency in accounts of environmental change, notably by documenting popular responses to external interventions aimed at "saving" African societies from environmental decline. One of the few Somali examples of such an approach is Mohamed Jama's illuminating account of the Somali protests against the British Somaliland Protectorate's anti-locust campaign in 1945. The protests started in Bura'o with a demonstration against the use of bait (in the form of treated bran to poison the young locusts before they could breed), which locals claimed was "poisoning stock and infecting pastures and water supplies." As the unrest spread to Berbera and Hargeisa, British authorities charged that popular fears were being fanned through "very wild and exaggerated rumours" and that religious leaders were preaching about the joint evils of "locust bait and prostitution." Officials reported that "the rumours have gone so far as to suggest that it is the government's policy to destock the country in the interests of soil conservation, by deliberately spreading bait to kill stock." Jama's research relied not only on colonial records, which reflected British views of the incidents, but also on poetry composed at the time to show how deeply colonial policies resonated with local suspicions about the overall intentions of the foreigners. He quotes a 1945 poem from the activist Haji Adan Afqalooc which asserted that the colonial government intended to "hand over the place where you pasture (*daawad*) to a man who owns a car and an aeroplane" (referring to the British settlers of East Africa whom Somalis were familiar with through their service in the Somaliland Camel Corps). While the British attributed the agitation to "ignorant religious leaders"—whom they attempted to counterbalance with religious authorities of their own to reassure the people of their good intentions—one is struck by how the protests against the anti-locust campaign were embedded in larger critiques of colonialism's impact on the Somalis' way of life. (One is reminded here again of the aforementioned verses of Ismaaciil Mire.) As Jama notes, the rumours made a direct connection between soil conservation and destocking, "which expressed, above all else, an undercurrent of fear and apprehension about the viability of traditional life. As everyday life in the rural areas deteriorated, and as develop-

ment policies became more interventionist, the fears of the pastoralists became increasingly apocalyptic. For them the decline of traditional life signified the end of time, but the administration ignored the deeper frustrations and fears of the pastoralists and instead blamed religious agitators for the widespread protests.”

Somali suspicion of outsiders—and specifically of their intentions and motives—is a well know theme in the literature on Somalia. That suspicion was particularly noticeable when colonial rulers or other agents of the state sought to intervene in matters related to local environmental management. Whatever the “good intentions” of foreign “experts” who claimed that they knew best about livestock development, range management, disease control, or resource conservation, local communities knew all too well that outside interventions could challenge the expertise and authority of local decision makers. When one adds the mistrust that many Muslim clerics had toward Western schooling and Western consumerism, the likelihood of resistance was even greater. In more recent times, we have witnessed al-Shabaab’s claims that Western actors and aid programs pose a threat to local autonomy and self-reliance and so need to be opposed.

While many Somalis may continue to see external interventions as undermining their ways of life, their own survival strategies can often do serious damage to the environment. Perhaps the best example is the harvesting of trees to make charcoal for sale, which has long been a famine-response strategy to provide alternative incomes for subsistence farmers and herders whose crops have failed or herds been depleted. In recent decades, the demand for charcoal has grown not only from the growing domestic market in Somalia’s expanding towns and peri-urban areas, but also from Arabia and the Gulf states. We know that al-Shabaab for a time earned substantial income by monopolizing the charcoal export trade through Kismayu, with drastic costs to the woodlands of the lower Juba and Shabeelle valleys. The FAO reported in 2009 that the annual rate of deforestation for Somalia (1.03%) was three times that of neighboring Kenya (0.3%) and almost twice the average rate of loss for Africa as a whole (0.62%), while a 2013 government report claimed that indiscriminate charcoal harvesting was the single largest contributor to environmental degradation in southern Somalia. In Somaliland, in addition to reducing tree cover which hastens erosion of the soil beneath, charcoal producers

themselves noted a discernible reduction in honey output because of the disturbance associated with felling trees, smoke and fire outbreak. Medicinal plants that grow in association with the acacia trees have also been affected by the decrease in tree populations.

In an excellent piece of environmental ethnography, a team of natural and social scientists in 2009 conducted surveys and interviews with several dozen pastoral households in the districts of Salaxley and Balli-Gubadle in southwest Somaliland. The aim of the micro-level study was to understand the effects of environmental change from the perspective of local pastoralists. Apart from the gradual decline in certain types of vegetation and grasses and the erosion of soils caused by cutting of trees for charcoal and fencing, local informants offered their own assessments of the recent changes they had observed. The rich wet-season pastures of the area to which the herders used to bring their animals during the two rainy seasons had diminished, with the result that the herd sizes were declining below the level necessary to sustain a family of seven. For families with limited assets, this meant destitution and sometimes a decision to migrate to Hargeisa, where they could more readily access international relief aid and risk becoming permanent “environmental refugees.” The team also heard testimony that seems to corroborate some of the more dire predictions of climate change activists: pastoralists reported that the “Dambasame” (the day in late November when rams traditionally were released to mate with the ewes to ensure that lambs would be born 5 in the Gu rainy season, 5 months later) had in recent years been delayed by 30 days or more because of observations that the Gu rains seemed to be starting later every year, often not till late May or early June. These local observations are reinforced in studies of other communities in the Horn and suggest that local herders and farmers are more concerned than ever about the sustainability of their traditional livelihoods.

Whether 21st-century environmental changes are in fact irreversible, or whether they are simply part of a cyclical pattern of drought and recovery, remains in question. Environmental scholars will need to consider both scientific evidence and indigenous perceptions to determine if recent developments mark a significant turning point in Somalia’s environmental history.

V. Environmental and Political Futures for Somalia

Efforts to predict the future climate of the Horn are notoriously uncertain, as they are based on extrapolations from long-term climate data and on projections based on untestable models of future rainfall and temperature variations. While climatologists differ in their long-range forecasts, most seem to agree that average maximum and minimum temperatures in the Horn of Africa are likely to increase by up to 3 degrees C over the next century (a pattern of global warming projected for most parts of the globe); and while some models predict that the warming trend may result in an overall annual increase in rainfall over the eastern Horn during that period, that increase will be highly variable from year to year and district to district, and most of increase will be seen during the short rainy season (*dayr*) rather than in the longer and more critical *gu* season, when rainfall may diminish substantially. All seem to agree that the Horn of Africa (along with the rest of the world) will experience more extreme weather events (droughts, floods, cyclones, etc.) which will be more disruptive to seasonal livelihoods and likely to produce distress responses which can be more damaging to the environment than past adaptive strategies which were based on more predictable seasons and natural events.

While no one can be certain of what nature will deliver to Somalia in the future, students and scholars of the environment will need to consider the social and political contexts within which these extreme events may happen and out of which any effective mitigating measures will have to come. Here we cannot avoid bringing politics back in to the picture—the need for political vision and leadership, for national commitment to environmental education, to regional cooperation with Somalia’s neighbors in the Horn, to government which sees nature as something to be conserved for the collective and not exploited for individual gain. Several current trends are likely to shape collective discussions about the future of the Somali environment. Readers will likely find others to add to the list.

1. In the last 25 years, Somalia’s rate of urbanization has been one of the fastest in the world. Urban residents disproportionately absorb energy, water and food, while producing waste (including electronic waste) which pollutes the local environment and typically overwhelms existing infrastructures for waste disposal. With the concentration of

policy and decision-making in urban areas, there is likely to be pressure on leaders to prioritize urban environmental improvements over rural ones, even though rural livelihoods are more affected by extreme climate events.

2. A related trend which could have a substantial impact on environmental planning is the increasing youth of the Somali population. That population is increasingly urban in its experience and in its aspirations, which means it is likely to lose or be disinterested in traditional knowledge about agriculture, animal husbandry, and land and natural resource management. In this sense, traditional environmental knowledge has become one of the victims of climate change. On the other hand, a recent study has shown that educated youth have a greater awareness of environmental issues and are more likely to have a 'biocentric value orientation', which shows up, for example, in the expressed willingness of younger Somalis to advocate forestation as a strategy to mitigate climate.

3. The likelihood that some type of decentralized governance system for Somalia will emerge from ongoing political negotiations raises critical questions about the cohesion and co-ordination of environmental policies going forward. While the Federal Government, Puntland, and Somaliland currently have their own ministries and think tanks targeted to environmental issues—which may mean greater attention to the particular environmental concerns of their regional constituencies—it remains to be seen if decentralization will hamper efforts to develop more effective and forward-looking environmental strategies across regional state and even transnational boundaries. In addition, one has to ask if international and African regional organizations can effectively prioritize a national environmental strategy in the context of multiple semi-autonomous regional states.

4. Long-standing suspicions between Somalia and Ethiopia extend to Somali fears about future Ethiopian interference in the watersheds of the Shabeelle and Juba rivers, whose management is essential to Ethiopia's own growing needs for energy and food security. Despite the significance of water access to both countries, there has never been a bilateral agreement between them, or to my knowledge even serious negotiations over the sharing of the rivers' waters. While the issue is beyond the scope of this paper, it seems clear that a trans-bound-

ary water cooperation agreement could be a major component of any future comprehensive Horn of Africa environmental plan, which many studies call for but which has seen scant progress at the institutional level.

5. Finally, we need to consider how the continuous displacement of hundreds of thousands of people in the Horn—the victims of conflict, impoverishment, or natural disaster—has and will continue to impact the environment. People forced to live in temporary quarters as refugees or IDPs do not relate to their natural surroundings in the same way that established communities of farmers and pastoralists do. They depend on international relief aid, and their communities frequently act as a magnet for terrorist recruiters or child traffickers, none of whom prioritize the care of the landscape or the preservation of natural resources. Solutions to the problems of displacement are essential to conserving the environment, but once again these require political will more than technical fixes.

VI. Conclusion

This brief and limited overview is simply intended to highlight some aspects of Somali environmental history and to help start a discussion around critical environmental issues going forward. That discussion will hopefully involve dialogue between natural and social scientists, not to mention traditional keepers of environmental lore. Lack of space (and expertise) mean that we have not even touched on other important issues related to the subject, such as the dumping of toxic wastes or the exploitation of maritime resources off the Somali coast, which involve international actors over which Somalis currently have little control. We also have not considered the future of environmental education at all levels of Somali school curricula, which might include greater attention to the work of Somalia's own environmentalists and activists, include prominent female pioneers like Fatima Jibrell and Deka Dirie. One hopes that a new generation of Somali Studies students and scholars will take up some of these issues in their own education and research. And while we cannot expect our readers to abandon their lively debates over the politics of power sharing, perhaps we can encourage new discussions about ways of sharing the environmental challenges which face the country and the wider Horn

of Africa in the coming decades. Surely the environment is a space where we might find some common ground.

Notes

1. In this essay, I use the terms 'Somalia' and 'Somaliland' simply to indicate geographical spaces and not to make political statements.
2. Tierney and deMenocal. 2013; Gatto and Zerboni, 2015
3. Lesur et al, 2014
4. Nuuh Ali, 1982.
5. For a provisional overview, see Saada Mire, "Mapping the Archaeology of Somaliland: Religion, Art, Script, Time, Urbanism, Trade and Empire," *African Archaeological Revue* (2015), 32:111–136.
6. These terms are discussed and elaborated in Kreike 2018.
7. Maddox, 1999.
8. Cassanelli (1982): ch. 2
9. Specific patterns of pastoral transhumance, conflict resolution mechanisms (including cross-clan marriages), and xeer contracts testify to the uniqueness of each 'regional' system, as do the configurations of wet and dry season pastures, local ports and market centers, and rights to the use of natural resources. As we know, following the collapse of the national state, many Somalis returned to their natal 'home' regions, where they found security in these older established networks of kin and customary law.
10. McCann 2013. Over the course of the twentieth century, however, Kilimanjaro's ice cap has receded dramatically, while Ras Dashan's has now completely disappeared.
11. Paleoclimate data from the past millennium suggest that easternmost Africa was much wetter than present only 300 years ago (40), attesting to the dynamic nature of the hydrological cycle in this region. Identifying the mechanisms driving these dramatic and rapid shifts in East African hydroclimate would greatly improve our understanding of the region's climatology, as well as future predictions of food and water security. (Tierney and de Menocal 2013).
12. Hemming (1966): 193
13. Osman Gedow Amir 2001; Fagotto 1985.
14. Gade 2006.
15. Sunseri 2018. In all likelihood, Ethiopian Emperor Menelik's expansion into the Ogaden, where his armies raided Oromo and Somali cattle, also served to spread the virus.
16. While Galaal's mss was duplicated and circulated in educational circles, it was never officially published and so is not as well known to young Somali scholars as it ought to be.
17. While most of Galaal's examples come from the pastoral tradition in which he was raised, he does devote a chapter of his study to the environmental knowledge of the farming communities in southern Somalia.
18. He writes: 'While much of the data is based on astrological interpretations [how alignments of moon and stars affect the fortunes of those born under them, or predict the coming months or years' weather'], and so needed to be treated with some skepticism, there is little question that these systems (and their regional variations) indicate that Somalis have always been astute observers and recorders (orally) of recurrent natural phenomena on which they base recommendations for livestock management. There is an empirical tradition here which seems no less useful than the calculations and models of western climatologists.'

19. Galaal 1969 :10
- 20., Barkhadle (1993) notes that about 4500 plant names and 1000 animal names have been recorded in the Somali region; even if some reflect different regional terms for the same species, the number attests to the remarkable observational and classificatory knowledge systems of the environment.
21. The English translation is from Andrzejewski & Andrzejewski 1993.
22. See also Kapchits 2012.
23. No relation to the previously discussed Ismaaciil Mirreh.
24. Ben Meriem, 2019 and 2020.
25. Awale (2016)
26. The theoretical argument is fully elaborated in Samatar 1992, where the author reviews the comparative literature on the marginalization of pastoral societies in the emerging global order. But see also his detailed account of the transformation of northern Somalia's political economy (Samatar 1989).
27. See, e.g., Mohamed 2004; Mohamoud Ibrahim 2004; Wisner 1994; Swift 1976.
28. Besteman and Cassanelli 2003, 1996; Cassanelli 2015.
29. Solomon et al, 2018; Bretthauer 2016; Farah et al, 2002.
30. Mohamed 2002. We know from historical records that locust invasions have occurred periodically for thousands of years. For northeast Africa, there have been seven major outbreaks since 1912, the most recent in 2020, which is reportedly the worst in nearly half a century. Large-scale swarming appears closely related to long-term droughts and warm winters followed by unusually high precipitation in spring and summer, a combination which climatologists suggest may occur more frequently with global warming. See Oba 2020.
31. For Jama, the anti-locust campaign was added proof to the people that the British intended to reduce livestock, as evidence by previous legislation to encourage livestock exports to the Saudi market (which Somalis had already embraced) and to create restricted areas as grazing reserves to conserve the soil (which effectively took some grazing management out of Somali hands.)
32. In an amusing anecdote recorded in the colonial archives, one British official, confronted with a hostile Somali audience whom he feared might kill him, improvised by scooping up a handful of the poisoned bran and eating it himself. When he showed no ill effects, the Somalis—apparently convinced that the poisoned bit would not harm their livestock—dispersed and subsequently agreed to cooperate with the anti-locust campaign. (Mohamed 2002: 196)
33. For an interesting commentary on al-Shabaab's appropriation of Islamic eco-theology, see Bodetti 2019.
34. Charcoal from Somalia is highly valued because of its slow burn and aromatic smoke
35. Reported in USAID Environmental and Natural Resource Management Assessment (2014). The UN Monitoring Group on Somalia and Eritrea estimates the total trade volume of charcoal exports from southern Somalia to be in the range of 3.5-4.5 million 25 kg sacks per year representing revenues for Al-Shabaab in excess of \$15 million a year [which is probably a conservative estimate]. See also Ogallo et al, 2018(b).
36. Hartmann and Sugule 2009.
37. In traditional practice, the Dambasame was calculated as precisely 120 days after the Somali New Year (around August 1), when the moon was in conjunction with the constellation Pleiades, called by Somalis Urur or Laxo (the latter also means 'sheep'. This is another example of how astronomical knowledge was used to guide husbandry.
38. For example, Firebrace 2016, 2017

39. Tierney et al (2015) predict that 'decreased rainfall in the long rains and dry seasons overwhelms any increases in the short rains, resulting in 20th century drying' just as the 'paleoclimate record indicates a close association between globally warm conditions and drying in the eastern Horn of Africa during the past 2000 years.'
40. Marthews et al, 2019; Ogallo et al, 2018(a); Ogallo and Jama 2020.
41. This environmental knowledge gap is discussed in McCann 2013.
42. Jama et al, 2020.
43. Krampe et al, 2020
- 44 As we know from the often rancorous discussions among the countries that are part of the Nile River basin, the difficulties of reaching an agreement persist even when negotiations are long-standing.

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