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Chapter 7

Kenya's Green Belt Movement
Contributions, Conflict, Contradictions, and Complications in a Prominent Environmental Non-Governmental Organization (ENGO)

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Introduction

Kenya's Green Belt Movement became internationally famous in 2004 when its founder, Wangari Maathai, was awarded the Nobel Peace Prize.[2] Since 1977, in Kenya and other parts of Africa, the movement has planted millions of trees in an effort to restore ecosystems, promote sustainable livelihoods, empower women, and promote democracy. Increasingly, Maathai has drawn a close connection between all these objectives and the quest for a peaceful society. As a result, Maathai and the movement she inspired are now well known internationally. A more complete picture, however, reveals not only contributions, but also complications and challenges that seriously undermine the movement's objectives. Given the importance of this movement, and because it shares many traits with grassroots environmental and social movements in the developing world, valuable lessons can be gleaned by bringing this important civil society actor into sharper focus.

My hope is that a fresh look at the movement, that is both appreciative and willing to be critical, will give insight into the movement's strengths and weaknesses, thereby positively contributing to the praxis of civil society, which is composed of diverse individuals and groups, outside of governments, who generally promote social justice, environmental health,

and democracy. My belief is that by turning to the epistemological and ethical issues that are raised through this case study, we will eventually be able to see more clearly the ways in which environmental knowledge can be integrated within cultures to promote the flourishing of both human beings and the natural communities to which they belong.

In addition to my longstanding interest in the Green Belt Movement and archival research focused on it, my analyses are based on research conducted in Kenya in July 2009. This research included interviews with academic foresters and ecologists, other professors, professional foresters, high officials of Kenya's Environmental Ministry and Forest Service, grassroots activists with the Green Belt Movement, and Maasai villagers near Masi Mara National Park in Southern Kenya. My perspective is informed by decades of close scrutiny of grassroots environmental movements around the world.[3]

The Prize and the Vision

For generations, the Nobel Peace Prize committee and the Norwegian government, which facilitates the process (and in earlier years controlled its selections), has used the prize to not only celebrate visionaries promoting peace, but also empower them and inspire others. Usually, the committee has sought to promote peace between conflicting human groups. On rare occasions, some of the Nobel prizes (not only the Peace Prize but also for literature, for example) have implied that peace depends on healthy natural environments and equitable distribution of natural resources. Still at other times, there have been intimations through these awards that people should pursue peace with other forms of life and with the entire natural world, in other words, that peace is not only about relationships among human beings and their interests.

Early examples of this broader vision of peace include Selma Lagerlöf, the Swedish author who was awarded the Nobel Prize in Literature in 1909, whose writings and acceptance speech expressed her deep love of nature and remarkable intimacy with its creatures.[4] Albert Schweitzer, the famous humanitarian, may have been given the 1952 Nobel Peace Prize in part for his "reverence for life" ethics, which was certainly innovative in its time. By awarding the Peace Prize to Wangari Maathai in 2004, however, the Nobel committee made its most powerful and explicit connection between peace, equity, human rights, and the flourishing of nature. This connection was reinforced just three years later when in 2007, Al Gore (the former Vice President of the United States) and the United Nation's Intergovernmental Panel on Climate Change,

shared the Peace Prize in recognition of their efforts to alert the global community to the dangers posed by accelerating global environmental deterioration linked to anthropogenic climate warming.

The case of Maathai and the Green Belt Movement (GBM) she founded is worth special attention. Although some criticized the awarding of the Peace Prize to Maathai, viewing her efforts as tangential to the prize's purpose, through this award the Nobel Committee averred that grassroots organizations like the GBM promote peace, if often indirectly. Viewed holistically, acts of ecological restoration such as planting trees, the defense of ecosystems from destructive forms of logging, and challenges to corrupt governments that do not actively support environmental protection can all contribute to the environmental and social conditions upon which peace depends. Such activities can directly reduce the competition among groups for land, food, and water—competition that has often led to or exacerbated violence among individuals and groups. But is the Green Belt Movement story as unambiguously positive as its activists and admirers have portrayed it? Does it offer comprehensive solutions to the eco-social predicaments widely found in recently independent developing countries? Maathai and the GBM have faced much criticism; does it have merit? Or rather, as movement activists and sympathizers contend, does the criticism actually amount to the mere machinations of politicians—whose power base is often established and maintained by promoting tribal animosities—and greedy profiteers, both of which are indifferent to environmental destruction and the way it harms human communities?

Context & Contributions

Before addressing such questions, the prevalent narrative about Maathai and the GBM should be well in mind. A precocious young woman, born in 1940 and from the Kikuyu ethnic group, Maathai grew up in rural Kenya and easily developed a love of nature. She attended Catholic schools in Kenya, eventually gaining scholarships to study in the United States. By 1966, she had earned a B.A. and M.A. in biology (in Kansas and Pittsburgh, respectively). This sojourn in the United States was during the early and mid 1960s, where she observed the growing environmental movement and experienced the struggle for civil and women's rights. These experiences reinforced and decisively shaped her assertive nature and future focus on gender equity, social justice, and environmental health. As she wrote later:

> The United States prepared me to … critique what was happening at home, including what women were experiencing. My years in the United States overlapped with the beginnings of the women's movement and even though many women were still bound to traditional ideas about themselves at the time, I came to see that as an African woman I was perhaps even more constrained.… It is fair to say that America transformed me: it made me into the person I am today … The spirit of freedom and possibility that America nurtured in me made me want to foster the same in Kenya, and it was in this spirit that I returned home.[5]

These experiences, combined with Kenyan independence in 1963, made Maathai optimistic about the future when she returned to Kenya. But they also led to challenges for Maathai, as her newfound ideals, including feminism, were considered by many Kenyans as alien to African values and contrary to the best interests of African women.

Upon her return to Kenya, Maathai worked as a research assistant at Nairobi University, before continuing her studies in Germany. By 1971, she had earned a Ph.D. in anatomy, again, at Nairobi University. She continued her work there, while becoming a prominent advocate for women's rights, and in 1977 gained a promotion to Associate Professor.[6] Her feminist work, however, contributed to her marginalization by male colleagues at the university, leading to her departure from academia to found the GBM in 1977. In this risky move, she took up the idea of a tree-planting movement, which had occurred to her the previous year. She built up the movement, drawing prominently from the women's organizations with which she had been engaged, although men were also involved from the outset. By 1986, with the movement well established in Kenya, she began to spread the model to other African countries. Along the way, Maathai married a politician—with whom she had three children—who later abandoned her, claiming she had become uncontrollable and did not act like a proper African woman. The fissure was likely as much because she had become more prominent than he was. Her divorce, given these same gender-related mores, subjected her to the suspicion that she was not a good African woman and that her values were foreign. This was one way her political adversaries denigrated her and the GBM.

Initially, the GBM was not politically controversial; it focused on tree planting on school grounds and private farmlands. But it entered into an adversarial relationship with the state, partly because of the autocratic rule of Daniel Arap Moi, Kenya's President from 1978–2002.[7] As part of his strategy for retaining power, Moi rewarded his cronies with public forestland, precipitating even more rapid deforestation and the

intensifying hardships that naturally follow—such as difficulty obtaining water, food, fuel, and forage—which especially impact rural and semi-urban populations. (Estimates of deforestation found in Forestry Ministry publications indicate that about 98 percent of Kenya's original primary forests have been destroyed or converted to agro-ecosystems, human settlements, and commercial zones.) Here the GBM was indeed fulfilling a monitory role—as discussed by John Keane—by exposing the regime's corruption and lack of transparency.

Although Moi authorized multiparty elections in 1991 (a concession to the intense domestic and international pressure that was precipitated by civil society actors), his regime nevertheless often responded brutally to their demands for democracy and environmental conservation. As Maathai and her movement added the protection of public parks and forests to their cause (first related to a large public park in Nairobi in the early 1990s and later in response to Moi's efforts to privatize public forests), Moi's regime began to repress them. Greenbelt activists were among those who suffered violence and incarceration; Maathai herself was jailed several times and badly beaten by police and hospitalized in 1992. This led to the reputation for courage that Maathai and her movement enjoy, both domestically and internationally. The GBM thus played an important role in early efforts to promote uncorrupt, democratic governance in post-colonial Kenya, a struggle that continues to this day.

The GBM thus provides an important example of an environmental organization that deeply connected human rights, democracy, and environmental protection with the quest for a socially just and peaceful society. Combined with the visibility brought at the same time by the struggle for democracy in Kenya and enhanced by the eloquence and courage of its leader, the GBM gained widespread, positive international attention. Long before she was awarded the Nobel Peace Prize in 1991, she received the Goldman Environmental Prize, the Hunger Project's Africa Leadership Prize, and was featured on the cable news network CNN. In 1992, she played a major civil society role at the United Nations sponsored Earth Summit in Rio de Janeiro. She also drew significant financial support from Western environmental foundations and some European nations.[8] But it was the victory in the battle to save Nairobi's Uhuru National Park from development from 1989–1992 that guaranteed Maathai and the GBM's connection to the quest for poverty reduction, democracy, human rights, and the protection of nature.[9]

In 2002, the year Moi left office, Maathai was elected to Parliament and appointed by the new president as an Assistant Minister for Environment and Natural Resources. Many thought, however, she should have been appointed the head of this agency. Nevertheless, in her new

role working with civil society allies, she helped shape Kenya's Forest Act of 2005. This was a very progressive policy—compared with other environmental laws around the world—which was designed to promote environmental sustainability, reduce greenhouse gasses, preserve biodiversity, and meet human needs.[10] The strength of this bill, and even its passage, was likely due in part to the enhanced political strength enjoyed by Maathai and her allies after winning the Nobel Peace Prize.

Even given this concrete legislative accomplishment, it may well be that the greatest contribution of Maathai and the GBM has been, and will be, in the area of consciousness-raising. In my extensive experience with the study of deforestation, I have never seen as much concern, recognition of associated problems (declining water resources, biodiversity, and food insecurity, for example), or meaningful action to reverse it, as what I saw in Kenya in 2009. This heightened awareness was nearly omnipresent—in newspapers, television, and radio broadcasts; the agenda of the environmental ministry and Kenyan officials I spoke with; as well as among many other Kenyans that I encountered during my visit.[11] It was also visible in a truly remarkable way in and around Nairobi, Kenya's densely populated urban center, where individual entrepreneurs tended mile after mile of roadside nurseries. This demonstrated the non-subsidized market within that urban center for shrub and tree planting. It is inconceivable that this amount of consciousness and action could have occurred without the work of Maathai and the GBM. This transformation of consciousness, then, has not only made new forest laws possible in Kenya, it has helped to inspire a broad sustainability movement everywhere its accomplishments have become known.

Conflicts

Despite the GBM's accomplishments, the movement has often been criticized, and not only by Moi and his cronies. Some of her constituents, for example, felt let down when she resigned from her position as Assistant Minister for Environment and Natural Resources. They felt this weakened her position as their elected representative and was an insult to President Mwai Kibaki, who had appointed her.[12] This was one reason that, despite her international stature and strong base among social and environmental activists, Maathai lost her seat in parliament by a wide margin in 2007. GBM activists argue the defeat was because she refused to engage in the same corrupt electoral practices as her opponent, such as vote buying in various forms. However, during more detailed questioning, I learned that her opposition also gained traction by claiming that she cared only for

the environment and not for human welfare, a common and sometimes effective charge against environmentalists around the world.

During these same elections, the closely-fought battle for the presidency also led to charges of electoral fraud, which precipitated severe post-election violence that took at least 1,300 lives, displaced 600,000 people from their homes, and involved the widespread rape of women, property theft, and the destruction of forests as opportunists took advantage of the lawlessness to cut trees for profit.[13] Despite increasing international pressure, including a demand by the International Criminal Court (empowered to prosecute violations of human rights and war crimes wherever they occur) that Kenya establish a tribunal by October 2009 to investigate and prosecute those responsible for the violence, the Kenyan government had not established a tribunal to prosecute the instigators and perpetrators of the violence, even by spring 2010.[14] It is commonly believed this reluctance has been because high governmental officials and some members of the parliament fomented or were otherwise responsible for the violence. Maathai, by then no longer in the government, while not denying that the court's intervention might be necessary, urged Kenyans to form their own independent commission to prosecute those responsible for the violence. She argued convincingly that Kenya could not develop a democracy in which human rights are respected and violence overcome (let alone restore the environmental systems upon which everyone's well being depends) if it would not end the era of impunity and corruption in which politicians inflame ethnic hatreds as a means to economic and political power.[15] Major newspapers editorialized similarly.

Those who pay attention to Kenyan politics know most if not all of this history. Obviously, this has been a difficult period in which civil society has faced daunting challenges. A closer look reveals additional conflicts. Some officials and business people in the Kenyan Forest Service and the country's forest products industry have criticized Maathai and the GBM for misleading the public and advocating counterproductive forest policies due to the GBM's advocating of a complete logging ban on public lands, urging elimination of exotic tree plantations, and rejecting the use of genetically modified trees. The same critics believe that these practices exacerbate the destruction of the country's remaining indigenous forests by increasing the value and cost of all wood products, along with the incentive to cut down native forests, both legally and illegally. Moreover, they aver that GBM's prescriptions damage the Kenyan economy and put more people in desperate straits, a situation which ironically increases the invasion of forestlands by squatters,

who have damaged the country's forest ecosystems. Some social justice advocates—including advocates for certain tribal or other community groups—have articulated similar criticisms of the GBM and other environmental organizations.

Whatever the merits of such charges and the strength of the rejoinders from the GBM architects and activists, it is clear they are all increasingly voicing alarm based on an intensifying eco-social calamity unfolding throughout the country. Indeed, Kenya is growing to be an exemplar of the Club of Rome's thesis in Limits to Growth, which in 1972 predicted widespread eco-social collapse would occur around the world during the twenty-first century, "if present trends continue."[16] Although sometimes criticized as unduly apocalyptic, recent empirical evaluation of the benchmarks modeled in the report indicate that it was remarkably prescient.[17] Meanwhile, a growing body of analysis, spearheaded by Thomas Homer-Dixon, has been illuminating the role of environmental scarcity in precipitating and exacerbating social conflict, violence, and even genocide.[18] Much of this analysis is based on case studies where, unlike in Kenya, there is no obvious evidence that climate change has been an exacerbating factor. In Kenya, however, there is evidence that intensifying environmental stresses, including those brought on or worsened by climate changes, is causing social instability and violence.

There is little doubt, for example, that struggles to gain or retain land played a role in the post-election violence in 2007, which was related to both Kenya's complicated colonial history and long-standing tribal conflicts among Kenya's forty-two ethnic groups. By the time I visited Kenya in July 2009, and afterward as I continued to follow developments there closely, the major news stories were of the ongoing desiccation of rivers and dams; the consequent decline of hydropower as a resource; the beginning of electricity rationing; and the ways in which the drought was directly causing the death of many domestic animals by reducing both water and food supplies, as well as indirectly starving wild predators such as lions and baboons that then preyed upon domesticated animals. This predation, in turn, led to a violent reaction by people who depend directly on domestic animals for their own livelihoods and survival. Indeed, some of these people starved to death as a result of the potent mix of shrinking per-capita land availability (due to rapid population growth), and long-term environmental degradation exacerbated by drought, which reduces the caloric productivity of the land. This drought, in a vicious feedback loop, is almost certainly related to global warming which climate models indicate will hit many areas of Africa, including Kenya, particularly hard.[19]

Critique and Culture

Given Kenya's critical situation, it is important to get accurate diagnoses of the roots of these problems and create effective solutions to—or at least ways of mitigating—the environmental and climate crisis. Far less well known than the main outline of the story of Maathai and the GBM is their assessment of the roots of the problem and what, apart from promoting women's rights, democracy, and environmental restoration, might address them. The deeper diagnosis and prescription Maathai and the movement offer is significantly more radical than most people know.

The GBM's basic historical and analytical chronology runs as follows: Colonial powers dominated African countries militarily and used what they considered to be their superior religion to denigrate and suppress African respect for indigenous cultural and religious traditions. Inexorable changes in land distribution and use accompanied this martial and cultural attack and together led to devastating environmental and social decline. Reversing these trends requires a revival of respect for and practice of native traditions, including African traditional religions, which more than the colonial religions and traditions, according to GBM, tend to promote environmentally sustainable behavior. Over the years, Maathai has escalated her criticism of colonial Western religions and epistemologies, which, in her view, lead to a commodification and desacralization of life, and ultimately, to people treating nature only as means to their own material ends. In contrast to her view of the colonial influences, Maathai's teaching and writing have promoted an organicist and holistic worldview—in which all of nature is understood as interrelated and sacred—as well as a sense of belonging, a connection to nature, and an animistic and biocentric kinship ethics.

This kind of spirituality I have labeled dark green religion, which involves pantheistic or quasi-pantheistic worldviews that embrace scientific understandings of ecological interdependence, as well as animist perceptions in which communication and even communion with non-human organisms is possible.[20] Such spirituality may—but need not—involve beliefs in non-material divine spirits or beings. But it always includes the belief that all life has value, apart from its usefulness to human beings, and the concomitant belief that all life is interrelated, which is in turn usually grounded in an understanding that all life shares a common ancestor and came to be the way it is through the evolutionary process. This evolutionary understanding is the basis for kinship ethics; the belief that humans have moral duties to their diverse earthly relatives. These beliefs often evoke feelings of belonging to the earth's living systems and even to the entire universe. Such spirituality is increasingly common among

diverse environment-focused civil society actors around the world (as well as among some politicians and business leaders) and it is evident in Maathai's lifework, including in her Nobel Prize acceptance speech:

> Today we are faced with a challenge that calls for a shift in our thinking, so that humanity stops threatening its life-support system. We are called to assist the Earth to heal her wounds and in the process heal our own—indeed, to embrace the whole creation in all its diversity, beauty, and wonder. This will happen if we see the need to revive our sense of belonging to a larger family of life, with which we have shared our evolutionary process. In the course of history, there comes a time when humanity is called to shift to a new level of consciousness, to reach a higher moral ground.... That time is now.[21]

Maathai wrote a more detailed exposition of her views about culture and religion shortly before this speech, after she was elected to Parliament in 2002. It shows that for her, the necessary transformation to a new level of moral consciousness requires the revitalization of traditional cultures and a rejection of many Western beliefs and values:[22]

> As I tried to encourage women and the African people in general to understand the need to conserve the environment, I discovered how crucial it is to return constantly to our cultural heritage. Mount Kenya used to be a holy mountain for my people, the Kikuyus. They believed that their God dwelled on the mountain and that everything good—the rains, clean drinking water—flowed from it.... Then the missionaries came [who] ... said, "God does not dwell on Mount Kenya. God dwells in heaven." [But] Heaven is not above us: it is right here, right now. So the Kikuyu people were not wrong when they said that God dwelled on the mountain.... If people still believed this, they would not have allowed illegal logging or clear-cutting of the forests.
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> After working with different Kenyan communities for more than two decades, the [GBM] ... also concluded that culture should be incorporated into any development paradigm.... Cultural revival might be the only thing that stands between the conservation or destruction of the environment, the only way to perpetuate the knowledge and wisdom inherited from the past. Until the arrival of the Europeans, communities had looked to nature for inspiration, food, beauty, and spirituality. They pursued a lifestyle that was sustainable and that gave them a good quality of life.... Communities that have not yet undergone industrialization have a close connection with the physical environment, which they often treat with reverence.... Their habitats are rich with local biological diversity, both plant and animal. However, these are the very habitats that are most at threat from globalization, commercialization, privatization, and the piracy of biological materials found in them. This global threat is causing communities to lose their rights to the resources they have preserved throughout the ages as part of their cultural heritage. These communities are persuaded to consider their relationship with nature primitive,

> worthless, and an obstacle to development and progress in an age of advanced technology and information flow.
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> During the long, dark decades of imperialism and colonialism [European] governments told African societies that they were backward. They told us that our religious systems were sinful; our agricultural practices inefficient; our tribal systems of governing irrelevant; and our cultural norms barbaric, irreligious, and savage.… Of course, some of what happened, and continues to happen, in Africa was bad and remains so. Africans were involved in the slave trade; women are still genitally mutilated; Africans are still killing Africans because they belong to different religions or ethnic groups. Nonetheless, I for one am not content to thank God for the arrival of "civilization" from Europe because I know from what my grandparents told me that much of what went on in Africa before colonialism was good.
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> There was some degree of accountability to people from their leaders. People were able to feed themselves. They carried their history, their cultural practices, their stories, and their sense of the world around them in their oral traditions, and that tradition was rich and meaningful. Above all, they lived with other creatures and the natural environment in harmony, and they protected that world.

Maathai thus contended that to overcome the pernicious impact of European cultures and colonial violence, Africans must revitalize their own cultures, including the use of indigenous pastoral and agricultural practices (by using native plants, for example, rather than the supposedly superior non-native species introduced by Europeans, let alone genetically modified organisms). They must also recognize that their colonizers, by viewing African traditional agricultural practices and food production processes as primitive, actually "contributed to food insecurity at the household level and diminishment of local biological diversity."

Here, Maathai was reflecting an increasingly influential school of thought among ecological anthropologists and ethno-biologists who have found that "traditional ecological knowledge"—namely, knowledge embedded in the cultural and religious mores of many indigenous and traditional peoples—generally promotes environmentally beneficent behavior.[23] Their perspective has become common within the global environmental milieu including grassroots organizations, international development experts, and social and natural scientists, some of which are affiliated with the United Nations Environmental Programme (UNEP).[24]

I know from interviews with GBM movement activists in 2002 and 2009 that many of them share Maathai's ideas. During the 2002 United Nations Summit on Sustainable Development (in Johannesburg, South Africa), for example, I interviewed two leaders of the GBM. One of them, Gathuru Mburu, like Maathai, emphasized the need to develop an environmental strategy that respects and draws on African culture and

indigenous knowledge. In 2009, when I met him again in Kenya, he had established his own organization, the Institute for Culture and Ecology, to focus especially on this part of the environmental cause, while also coordinating the African Biodiversity Network.[25]

At the 2002 United Nations Summit on Sustainable Development in Johannesburg, South Africa, I met with Nanga Tiango, who was an attorney for the GBM at that time. Tiango expounded on the philosophy animating the GBM and much of grassroots African environmentalism, articulating a strong biocentric kinship ethics. Tiango stressed that we must "reconnect" to nature and recognize that: "we are all part of the universe, that man is not superior to the other animals.… We are all part of the earth and we should preserve it, both for use by other species, and for future generations."[26] Then he explained how he and other Africans were blending traditional African religion, Christianity, and environmentalism. "Christians are for the protection of the Universe.… Christians want to be linked with the ancestors [and to] preserve nature for future generations."

Especially noteworthy in this conversation was Tiango's musing about how colonizers once suppressed African traditional religions but now champion their value. Like Maathai, Tiango stressed that Africa's native religions contained positive environmental values and ecological knowledge about how to protect the environment. He even said that these traditional religions teach "how to communicate with the mountains," while also expressing surprise that some Europeans had come to respect traditional African beliefs and practices. Tiango was delighted that it was becoming acceptable to fuse beliefs traditional in African culture with his ecological concern as well as with Christianity.

Complications

Tiango, like Maathai, was in sync with the trend toward looking to traditional knowledge systems for insight into ways to think about and relate to nature. But their examples raise a critical question: On what basis does one arbitrate between incompatible aspects of the world's diverse cultures? This is a difficult conundrum for Maathai and others who feel torn between their respect for traditional cultures and Western cultural streams that have promoted democracy and universal human rights, including gender equality.[27] She tends to emphasize the positive in world cultures: "Humanity needs to find beauty in its diversity of cultures and accept that there will be many languages, religions, attires, dances, songs, symbols, festivals, and traditions. This diversity should be seen as a uni-

versal heritage of humankind."[28] So, despite her harsh critique of European civilization and its destructive role in Africa, and given her long, positive relationships with many Western organizations, governments, and individuals, it is clear that she believes that all societies have positive dimensions. But what does she think about the negative aspects of certain human cultures?

After repeating in her Nobel Prize speech the idea that "culture may be the missing link in the development of Africa," she added that over time, it is self-corrective. "Culture is dynamic and evolves over time, consciously discarding retrogressive traditions, like female genital mutilation (FGM), and embracing aspects that are good and useful." Then, she added: "Africans, especially, should rediscover positive aspects of their culture. In accepting them, they would give themselves a sense of belonging, identity, and self-confidence."

This begs two sorts of questions; the first one empirical: When, to what extent, and why is culture self-corrective? The second one is both epistemological and ethical: How do we identify the positive and negative streams? To my knowledge, Maathai has not addressed the first and seems to assume that the good and bad dimensions of a culture should be obvious. The case of female genital mutilation suggests these assumptions may not have merit. Although most Westerners and many Africans today condemn the practice—the Kenyan government outlawed it, but only for minors, in 2001 and the African Union's 2005 Maputo Protocol required member states to ban the practice—it is still commonplace.[29] Indeed, in Kenya and other African countries, it is defended on cultural, religious, and moral grounds, especially in culturally traditional (usually more rural) places. It remains a common cultural and religious practice in part because it is considered important for community cohesion and well-being. It is, moreover, "widely believed to increase a girl's chances of marriage, prevent promiscuity, and promote easy childbirth," and the endurance of the practice is in part because of the belief that "women who do not circumcise their daughters run the risk of being seen as irresponsible, immoral imitators of Western culture."[30]

Maathai's clear condemnation of this cultural practice, which is most prevalent in West and East Africa, complicates her belief that to promote the well-being of people and nature, Africans must revitalize their traditions. The complication may be due, in part, to the understandable desire to not only achieve political independence, but also to shed a colonial mindset that devalues Africa and Africans. Maathai states: "Cultural liberation will only come when the minds of the people are set free and they can protect themselves from colonialism of the mind. Only that type of freedom will allow them to reclaim their identity, self-respect,

and destiny. Only when communities recapture the positive aspects of their culture will people relearn how to love themselves and what is theirs. Only then will they really appreciate their country and the need to protect its natural beauty and wealth. And only then will they have an understanding of the future and of generations to come.[31]

Ironically, some defenders of genital cutting blame imperialists, colonialist Christians, for denigrating and seeking to abolish what they consider an authentic and positive African tradition.[32] Maathai has been unpersuaded by this anti-colonial critique, but in another important and in some ways analogous case, she may have been persuaded by such critique. In 2004, as she was about to receive the Nobel Prize, a controversy erupted over comments attributed to her about HIV/AIDS in a Kenyan newspaper.

> News media in Africa—including the [East Africa] *Standard* … reported that Maathai has claimed Western scientists, to decimate the African population, deliberately created HIV/AIDS. Maathai denied making such allegations. In a statement issued by the Nobel Committee, she stated that she does not believe the virus was developed by white people to destroy Africans. Such views, she wrote, "are wicked and destructive." She also expressed hope that scientists will find conclusive evidence about the source of AIDS in order to dispel the belief that the disease was the result of a laboratory accident.[33]

In the same year, however, Maathai responded to questions in an interview published in *Time* magazine in a way that cast doubt about the strong scientific evidence present at the time, which became even stronger in the subsequent five years, that HIV/AIDS originated in simian populations and crossed over into human populations, probably in the early twentieth century.[34]

> Time: You've said AIDS is a biological weapon manufactured by the developing world to wipe out the black race. Do you still believe that?
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> Maathai: I have no idea who created AIDS and whether it is a biological agent or not. But I do know things like that don't come from the moon. I have always thought that it is important to tell people the truth, but I guess there is some truth that must not be too exposed.
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> Time: What are you referring to?
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> Maathai: I'm referring to AIDS. I am sure people know where it came from. And I'm quite sure it did not come from the monkeys. Why can't we be encouraged to ask ourselves these questions?[35]

By doubting the disease came from another species, and attributing it to an as yet unknown human creator, Maathai leant credence to the idea that Western scientists may have been responsible for the pandemic.[36]

The fundamental question posed by these two cases—of genital mutilation and the origin of AIDS—is what to do about Western values and science when there are many cogent critiques of the ways in which both have harmed African people and the environment. The result has been that both Western values and science have been brought under suspicion. Although suspicion is common among grassroots civil society actors and some scholars, it risks the construction and reification of a new kind of dualism, this time between the values (and ways of knowing) characterized as Western and non-Western, with the latter considered superior to the former. This dynamic can hinder the appropriation of Western knowledge, such as from the environmental sciences, which are important to current efforts to manage social and environmental systems. In seeking to revitalize the environmental knowledge in non-Western contexts—knowledge that has been accumulated through careful human observation and experimentation often over long time periods and integrated into everyday cultural practices—it is possible to denigrate the value of knowledge gained by people in Western contexts.[37] While techniques may differ, what can be generalized as Western and non-Western ecological knowledge both depends on the human capacity to observe and theorize the world, and subsequently, to test whether the impressions gained are replicable.

Other issues with which the GBM has been involved amplify this concern. Maathai has contended that Europeans should not denigrate traditional pastoralism and the ways many people in Africa equate wealth with cattle possession. Indeed, the Maasai, the best known and most culturally intact of these pastoral groups, had co-evolved with wildlife in a way that had, more so than many other groups around the world, promoted biological diversity and provided for their needs. Yet both in the past and present there have been dimensions of these lifeways that have been unsustainable, including overgrazing, a reality worsened in recent years by drought and the shrinking pastoral land base, which is due to increasing human numbers throughout East Africa, including the Maasai population.[38] So, while there is much to admire in Maasai culture, given the rapidly changing environmental and social conditions in the habitats they depend upon, it is clear that the Maasai need to understand that the drier climate and declining soil moisture and productivity is likely to endure and intensify, as predicted by the IPCC's climate scientists.[39] It would exacerbate an already tragic situation if suspicion of Western science and scientists hindered such a realization.

The declining productivity of East Africa's grassland is far from the only threat to Maasai well-being, which some longstanding cultural practices now worsen. Their rites of manhood, for example, involve a collec-

tive lion hunt by male adolescents. The one responsible for the kill gains great respect from the community, and welcome attention from young women. Although this does not lead to the death of many lions, it does contribute to the rapid decline in lion populations. The participation of Maasai pastoralists in the poisoning of lions and other predators that kill their cattle is a far bigger threat.[40] Yet the Maasai also rely on income from the tourists who come to see the animals and visit their villages to learn about Maasai culture, often purchasing Maasai arts and crafts during the visit. Ironically, their contributory role to wildlife depreciation, while protecting cattle, likely harms the long-term viability of their society's economic base.

The best outcome for the Maasai—and the non-human organisms who share their landscapes—would happen if all stakeholders, the Maasai themselves and regionally or nationally based land managers and politicians, were fully informed about the challenges they face. This means the Maasai should both preserve the most useful aspects of their unique cultural knowledge of how to survive in their eco-region and merge their own understandings with relevant knowledge from outsiders, including scientists, development experts, or governmental officials. If suspicion prevents a full vetting of facts and ideas about what might be done in these regions, however, many opportunities to ameliorate the calamity will be lost. This calls for an approach capable of reducing historical suspicions of one another, which are difficult to forget or forgive. Here, democratic political processes, across diverse regional and cultural divides, are both a worthy goal and useful tool for moving toward what some call integrative adaptive management.[41]

The same types of issues that are found on Kenya's grasslands exist in the tensions between GBM activists and professional foresters and resource managers. The limited perspectives and narrow knowledge of the professional experts were roundly and properly criticized by the GBM activists I spoke with during my visit in 2009. These activists faulted foresters and agency personnel for not taking a holistic, ecosystem centered approach when assessing forest health and devising forest-related policies. Instead, in the view of these activists, the misguided priority has been to increase the "sustained yield" of forest products. Some of these foresters, in turn, harshly criticize GBM activists for advocating logging bans and other measures that, they believe, fail to recognize that plantation forestry takes pressure off the native forests, thereby helping native forests to flourish (or recover) and thus provide the ecosystem services that the activists contend plantation forests destroy. I believe that both the activists and the agency professionals have important points to consider. The present danger, however, is insularity between two fac-

tions—activists and their allies (including some scientists), on the one side, and professional foresters and agency officials (and the scientists and disciplines they typically draw upon), on another. These groups do not seriously consider and incorporate the knowledge of their adversaries as they develop their understandings of how best to proceed. The result of the mutual suspicion and antagonism—often rooted in valid criticisms from both sides—leads to epistemological myopia and unnecessary social tension. Africans schooled in Western approaches to forest management are often criticized for selling out to former colonial masters, while grassroots activists are considered naïve, anti-scientific, anti-development, and even misanthropic.

Perhaps the most alarming example of the danger of not integrating all relevant data sets into a holistic view of humans in nature, a dynamic to which grassroots civil society groups sometimes contribute, is the failure to integrate an understanding of carrying capacity and population dynamics into a comprehensive analysis. This pattern can be seen nearly everywhere government officials and civil society actors intersect to address environmental and social problems. The conflict is due to the combination of very strong taboos against such integration in both highly developed and less developed countries.[42]

Specifically, these taboos are rooted in two problems. The first is a failure to understand human beings as part of nature, whose existence and survival is the result of the same evolutionary processes as other organisms, and thus subject to nature's laws. These under-appreciated laws include the idea of carrying capacity and population dynamics: when populations grow and consume the available calories or produce too much waste, their populations will decline (through a decreasing birth rate, increasing death rate, or both).[43] On the contrary, many believe there are few if any limits to the growth of human numbers, and that if the people get their practices right, populations can increase without an eventual reduction. Often reinforcing the first problem is a second problem, the belief that the roots of social and environmental problems are inequities between affluent and non-affluent individuals and cultures; this is often linked to the belief that affluence is the result of exploitation by the affluent of the poor (through colonialism, capitalism, or some other reviled system). Whether this exploitation is believed to have resulted from the activities of currently affluent individuals does not matter so much as the prescription: that affluent groups and individuals should provide assistance to those who are not. Since, from this perspective, the root of environmental degradation and poverty is overconsumption by the affluent, it is considered wrongheaded if not pernicious to assert that population growth increases environmental and social suffering. Those

who do pose the population issue are often accused of being Malthusians or social Darwinists. This strategy has been effective in reducing attention to the role of increasing human numbers, who increasingly consume natural resources and precipitate a concomitant decline in the resources that the world's ecosystems provide to all forms of life.[44]

I saw this longstanding failure to understand the importance of carrying capacity and population growth, and a corresponding belief that the solution to environmental and social ills is a redistribution of resources, in Kenya first hand when interviewing top officials in Kenyan environmental ministries and in ENGOs there, including prominent individuals currently and formerly in the GBM. On the one hand, the Environmental Ministers and other governmental officials I spoke with were promoting an ambitious reforestation campaign, and they were deeply involved in and committed to significant and important reforms within the Kenyan Forest Service under the 2005 Forest Act, including measures to reduce corruption and deforestation. On the other hand, they spoke of Africa as a resource rich continent and did not believe that population growth was a problem or that carrying capacity was a barrier to it. I (gently) expressed incredulity at this to one high Kenyan government official, mentioning this was difficult to believe when, for example, it is so difficult to get anywhere in Nairobi due to the terrible traffic. In response I was told that if the government gets the environmental practices right, there could be a repopulation of the rural areas, and traffic in urban centers would abate. This was similar to what I heard from some (but not all) GBM activists.

Having had the opportunity to visit their projects and read about the ways in which tree planting can halt deforestation and enable repopulation of devastated land, it was easy to see that the human carrying capacity of the land can be increased in some areas due to the reformed practices. This is one of the wonderful things about the model the GBM has promoted—they are demonstrating how rich life can be when tree planting is integrated in an intelligent way with native food crops. They have shown that even watercourses can return when watersheds are restored. This demonstrates that it is possible to develop sustainable practices that are informed by traditional agronomy and pastoral knowledge in a way that is judiciously supplemented by more recently acquired knowledge. It also illustrates that cultural transformation, including respect for traditional lifeways and cultures, can be critical to the success of such sustainable models. It is, nevertheless, telling and tragic that important members of Kenya's intelligentsia minimize the contributing role that increasing human numbers play in creating and worsening their eco-social predicaments. Consequently, they are doing little to prioritize population stabilization at levels consistent with environmental sustain-

ability. It is, moreover, discouraging that those most focused on addressing Kenya's environmental predicaments base their prescriptions on the idea that best environmental practices can be comprehensively and perfectly implemented.[45] This is a hope that finds no exemplars, anywhere.

It is beyond the scope of this analysis to provide detailed evidence for the contributing role of increasing numbers in the increasingly desperate situation of people and other living things in Kenya and beyond. Here I will simply note several pertinent facts: It is true that by some measures Africa and Kenya are both resource rich. The amount of photosynthetic productivity of the continent its people use, for example, is low compared to Asia, Europe, and America.[46] Yet Kenya has one of the highest human fertility rates in the world and its people are experiencing increasing food and water shortages and consequent social unrest.[47] Although land redistribution could reduce the numbers who are landless or land poor, this is unlikely to occur. Seldom have social movements secured significant land reform and even if it were to occur this would only temporarily mitigate the problem. Moreover, the common prescription from environmentalists, that everyone should live simply, is widely ignored despite a growing awareness that the human consumption of nature is eroding the planet's life support systems.

With the population issue, as with so many others, the needed holism is rarely incorporated comprehensively into eco-social diagnoses and prescriptions. While the contributions of ENGOs, including the GBM, are many, they are not enough. By not prioritizing a broader educational and cultural agenda, they ignore a number of critically important variables.

Conclusions

The preceding analysis of the difficulties and complications faced by the GBM suggests that the movement might be able to be even more effective if it were able to overturn some of the patterns and myths that lead to inadequate diagnoses and prescriptions in response to the unfolding, global environmental crisis, which is also deeply related to the world's intensifying economic and social strains. While I have merely introduced some critical perspectives on the GBM and kindred movements, my hope is that such analysis can be helpful to those involved in these struggles. My critical comments are not intended to distract from appreciation for the intellectual and practical accomplishments of Maathai and her compatriots, and no one should overlook their resolute courage when facing repression and violence. Few individuals or movements have done as much to demonstrate to the world the close connections between a

healthy environment and the hope for a socially just world where conflicts are ameliorated nonviolently.

More specifically, the most important of GBM's contentions have been vindicated. It is now widely understood in Kenya that healthy forests are exceptionally important for the well being of people and the wider community of life. This is a growing realization around the world, also recognized by the very professions, like forestry, which have often contributed powerfully to deforestation. This realization was nearly inevitable, and would be well underway even in the absence of groups like the GBM. Yet it is inconceivable that without Maathai and the GBM, this shift in thinking would have occurred as rapidly as it has. The same could be said of the role of forest activists in many regions of the world.[48] Moreover, where such groups have struggled to protect and restore forests, generally speaking, forest health is much better than it would have been the case in their absence. If the government had been persuaded a generation ago, there would now be more forest, food, and water available today, and significantly less suffering by humans and other sentient creatures.

Wangari Maathai and the GBM have been adept at changing their strategies from education to ecological restoration and from cooperation with governmental sectors—when such opportunities arise—to uncompromising resistance. The international stature that came with the Nobel Prize increased the power of the GBM, and the movement became all the more effective, by both maintaining pressure for reform and supporting the implementation of official policies they considered salutary. They could have never achieved their objectives without winning over many in the government and thus securing greater resources than they could get from outside donors or income generating activities. One of their major accomplishments is that, despite the obstacles posed by the country's trenchant corruption, they have still significantly influenced forest policy.

The tragic reality is, however, that these positive contributions appear small in scale and importance compared to the overwhelming destructive inertia of an increasingly globalized market society with its ever-growing number of producers and consumers. Little time remains to make the comprehensive changes that are needed. What then is the most critical role for civil society ENGOs such as the GBM? Very possibly, it is the role of visionary. Perhaps the most important contribution of Maathai and the GBM, and their allies in the global environmentalist view, will be the work of cultural transformation. Maybe a change is needed in the way people think and feel about their place on earth; about what living well means, about what a rich life involves. The increasingly obvious crisis might help precipitate the needed change—in consciousness, policies, and behaviors—that many in the environmentalist milieu have been

promoting: spiritualities and ethics that value all life and recognize ecological interdependence. If the transition from crisis to sustainability is to occur in the most humane possible way, it may be that the civil society ENGOs will lead the way by modeling this transformation in consciousness and practices.

The quest for sustainability in a world characterized by multiple crises, most of which are exacerbated if not precipitated by environmental decline, has the greatest chance when people remain open to rethinking everything. To do this, strides must be made to include all points of view, and then to integrate and hybridize them in the most intelligent fashion possible. The genetic fallacy must be avoided: the value of an idea is independent of the place it first took root, whether it is understood as Western or otherwise.

It is difficult to reconsider long cherished assumptions and beliefs. But this does not mean we must be cast adrift on seas of uncertainty. Although epistemological and ethical guideposts may be difficult to obtain, given the diversity of perspectives around the world, we can find them. There is, for example, a gold standard when it comes to sustainability that can provide epistemological and ethical principles—and it comes from nature herself. All organisms must properly seek to adapt to their habitats if they are to flourish and survive. The ideas and practices that should be retained are those that promote the resilience and fecundity of ecosystems, and thus respect the evolutionary process and the life prospects of all species. Other beliefs and practices should be jettisoned through an ongoing pragmatic process of careful observation and the testing of the resulting hypotheses.

In my view, this is a type of natural law—focused on natural processes rather than immutable, static facts—that is compelling and defensible.[49] This is a process to which civil society actors have made significant positive contributions. They will do so all the more effectively as they become more reflexive about the process and the epistemological principles that are best for arbitrating between competing perceptions, diagnoses, values, and prescriptions. They will do so all the more easily when they recognize that the task now is to hybridize the best of human experience, knowledge, and practice, without regard to where it first emerged.

Notes

1. I am grateful for Daniel Keeter (in Florida) and Leah Junge (in Kenya) for diverse forms of research and logistical assistance during this research, and for financial support from the Centre for Environment and Development at the University

of Oslo, the University of Florida's College of Liberal Arts and Sciences, and the Center for African Studies at the University of Florida. Events in Kenya are unfolding rapidly. I am also grateful to Junge as well as Drs. Celia Nyamweru and Koi Muchira-Tirima, for their insightful and helpful critiques. I am sure there are points where I have not been able to respond adequately to their suggestions, some due to space constraints, and others due to my limited expertise with regard to Kenya's complicated history. I nevertheless hope that my observations and reflections, which are informed by long observation of grassroots eco-social movements globally, will be of some value in thinking about the Kenyan context and the challenges facing people and other living things there.

2. Maathai died on 25 September 2011, well after this article was written in August and September of 2009 and was finalized after copy editing. The movement she founded was originally known as the "Kenya Green Belt Movement," but it expanded to support similar efforts in many African countries and so the name was shortened.
3. See, for example, Bron Taylor, *Ecological Resistance Movements: The Global Emergence of Radical and Popular Environmentalism* (Albany, N.Y.: State University of New York Press, 1995). Among the Greenbelt activists I spoke with were David Mutinda, Julius Githaiga, and Lydia Gathii. I also drew on conversations with many other people I met and talked with during the month-long visit. For two reasons I have elected not to quote individuals: (1) there is insufficient space for my contribution to this volume to quote from these interviews in a more ethnographic genre and (2) the political situation is fragile enough that, until I gain approval to quote specific passages from them, I will not do so, so as to not precipitate reprisals for their speaking freely with me. Even while revising this article in the spring of 2010, the Kenyan government had not moved to prosecute the offenders.
4. Of the books that led to the award perhaps the best exemplar is Selma Lagerlöf, *The Wonderful Adventures of Nils*, trans. Velma Swanston Howard (New York: Doubleday, Page & Company, 1907). For its influence on a contemporary photographer and naturalist, see Frans Lanting, *Eye to Eye: Intimate Encounters with the Animal World* (Köln, Germany: Taschen, 1997): 14–15; and further analysis in Bron Taylor, *Dark Green Religion: Nature Spirituality and the Planetary Future* (Berkeley, C.A.: University of California Press, 2010): 169. (See also the revealing praise in the award speech by Claes Annerstedt, *http://nobelprize.org/nobel_prizes/literature/laureates/1909/index.html*.)
5. Wangari Maathai, *Unbowed: A Memoir* (New York: Knopf, 2006): 96, 97.
6. See the United Nations Convention to Combat Desertification for a short biography, at *http://www.unccd.int/IYDD/documents/iydd_docs/WANGARIMAATHAICV.pdf*.
7. Moi followed Jomo Kenyatta, who led the nation from independence.
8. Major funders have included the Rockefeller Brothers Foundation, the Gaia Foundation, many European government agencies, and other major funders. By 2004, the organization's budget exceeded two million U.S. dollars per year.
9. Although, as one Kenya specialist who read a draft of this article pointed out, Kenyan schools have taught about environmental degradation and conservation for many decades, this has not prevented the steady erosion of forest cover in Kenya since independence, and other forms of severe environmental degradation.

10. See *http://www.kenyaforestservice.org/*, for the text of the act, located at the Kenya Forest Service website.
11. Most of those I spoke with were urban, relatively well educated, and not a part of the perpetual, unemployed, underclass.
12. This perception was based on conversations Celia Nyamweru had with constituents in Maathai's district, which she related to me when reviewing a draft of this paper.
13. These figures are the ones typically reported in Kenyan news sources in 2009, as for example, in an article describing President Obama's pressure on Kenyan officials (and the Kenyan President's negative reaction to it) to move forward with anti-corruption efforts and prosecution of those responsible for political violence; see Anthony Kariuki, "Kibaki Protests Obama letters," (Kenya) *Nation*, 26 September 2009, online at *http://www.nation.co.ke/News/-/1056/663684/-/item/0/-/ochtdlz/-/index.html*
14. The court was created by a 1998 United Nations Treaty, which went into force in 2002 and is located at The Hague in the Netherlands; see *http://untreaty.un.org/cod/icc/index.html*.
15. Wangari Maathai, "Ending Impunity: Why I Support Special Tribunal," *Daily Nation* (Kenya), 6 September 2009, at *http://www.nation.co.ke/oped/Opinion/-/440808/653760/-/4nr3ae/-/index.html/*. The conclusion to this opinion well summarizes her argument and underscores how difficult it is to overturn decades of intertribal violence and build national unity: "The only effective deterrent is to call those who have committed the crimes to account. The rule of law must be restored. The special tribunal will help us get justice. It will encourage us to have confidence in our judicial system, believe in our country again, and develop the courage to deal with our own demons."
16. Donella Meadows, Jørgen Randers, and Dennis L. Meadows, *Limits to Growth: a Report for the Club of Rome's Project on the Predicament of Mankind* (New York: Universe, 1972).
17. Graham M. Turner, "A Comparison of the Limits to Growth with Thirty Years of Reality," in *Global Environmental Change*, vol. 18 (2008): 397–411. See also Donella Meadows, Jørgen Randers, and Dennis L. Meadows, *The Limits to Growth: The Thirty Year Update* (White River Junction, V.T.: Chelsea Green, 2004).
18. Thomas Homer-Dixon, "Across the Threshold: Empirical Evidence on Environmental Scarcities as Causes of Violent Conflict," *International Security* vol. 19, no. 1 (1994): 5–40; Thomas Homer-Dixon, "On the Threshold: Environmental Changes as Causes of Acute Conflict." *International Security* vol.16, no. 2 (1991): 76–116; Thomas Homer-Dixon and J. H. Boutwell, et al., "Environmental Change and Violent Conflict," *Scientific American* vol. 268, no. 2 (1993): 38–45; Thomas Homer-Dixon and J. Blitt, eds., *Ecoviolence: Links among Environment, Population, and Security*, (Lanham, M.D.: Roman & Littlefield, 1998). See also Robert D. Kaplan, *The Coming Anarchy: Shattering the Dreams of the Post–Cold War* (New York: Random House, 2000).
19. See the 2008 special technical report by the IPCC, "Climate Change and Water," *http://www.ipcc.ch/*, especially chapter two and its chart on p. 27, which focuses on precipitation, soil moisture, and runoff. This research indicates that East Africa is one of many places only now beginning a long period of protracted warming and drought.

20. For more on such religion and an argument that it is growing rapidly, increasingly influential, and may decisively and positively shape the future of religion and nature on earth, see Taylor, *Dark Green Religion*.
21. For the entire speech see: *http://nobelprize.org/nobel_prizes/peace/laureates/2004/maathai-lecture-text.html*
22. The extended quotes beginning here are among the most revealing of Maathai's views of the cultural dimensions of her work and how she positions it against the West. I first found this article, entitled "Nature, Nurture, and Culture," at AlterNet's environmental news website, *http://www.alternet.org/story/20492*, with the subtitle, "A Nobel Peace Laureate Says Cultural Revival May be the Only Thing that Stands between the Conservation or Destruction of the Environment" (which I put in italics for emphasis). The GBM posted the article on its own website with a different title, "The Cracked Mirror" on 11 November 2004; see *http://www.greenbeltmovement.org/a.php?id=28*. Both places attribute the article to the spiritual-environmentalist magazine *Resurgence*, *http://www.resurgence.org/*, although in 2009 I could not locate the article on its website.
23. Traditional peoples, in this way of thinking, are those on the periphery of the global market system or who, at least, have not been entirely overwhelmed by it and subsumed into it. Key sources include Fikret Berkes, *Sacred Ecology: Traditional Ecological Knowledge and Resource Management* (New York, Routledge, (2008 [1999]). Gerrardo Reichel-Dolmatoff, "Cosmology as Ecological Analysis: A View from the Rainforest," *Man* vol. 2, no. 3, (1976): 307–18. Roy Ellen, Peter Parkes, and Alan Bicker, eds., *Indigenous Environmental Knowledge and its Transformations* (Amsterdam: Harwood Academic Publishers, 2000). Stephen S. Lansing, *Priests and Programmers: Technologies of Power in the Engineered Landscape of Bali* (Princeton, N.J.: Princeton University Press (1991); Gerrardo Reichel-Dolmatoff, *Amazonian Cosmos* (Chicago, I.L.: University of Chicago Press, 1971); R. E. Schultes, "Reasons for Ethnobotanical Conservation," in *Traditional Ecological Knowledge: A Collection of Essays,* ed. R.E. Johannes, (Geneva: International Union for the Conservation of Nature, 1989).
24. For example, UNESCO, *Man belongs to the Earth: International Cooperation in Environmental Research* (Paris: UNESCO-MAB 1988); Darrell A. Posey, *Cultural and Spiritual Values of Biodiversity* (Nairobi, Kenya: United Nations Environmental Programme, 1999).
25. Also in our conversation was Gathuru Mburu, who later wrote in a similar way, see Gathuru Mburu, "Kenya Greenbelt Movement," in *Encyclopedia of Religion and Nature,* ed. Bron Taylor (London and New York: Continuum International, 2005). See also the interview, "Agriculture-Africa: Bring Back a Culture of Sharing; Terna Gyuse Interviews Gathuru Mburu, Coordinator of the African Biodiversity Network," *Interpress News Service,* 3 March 2009, *http://ipsnews.net/africa/nota.asp?idnews=46015*
26. Also worth noting, Tiango spoke in a way similar to that of other activists at a "Decade of Commitment" session held earlier at People's Earth Summit, a conclave of grassroots environmental, anti-poverty, human rights, and anti-globalization campaigners, who had gathered near the UN Summit in order to put pressure on those politicians to respond aggressively to the environmental crisis and all the ways in which it contributes to human misery and social injustices. Excerpts from this interview are now available at *www.brontaylor.com*, and under the supple-

mentary materials for Chapter 8, in Taylor, *Dark Green Religion*. For more about the People's Earth Summit, see pp. 182–88.

27. In the final paragraphs of her reflection, Maathi focused on the positive, "Of course, no one culture is applicable to all human beings who wish to retain their self-respect and dignity; none can satisfy all communities."
28. Maathai, "Nature, Nurture, and Culture."
29. Background and quotes in this paragraph about female genital mutilation are from Ochieng' Ogodo, "FGM in Kenya: Outlawed, Not Eradicated," *WeNews* (Women's ENews), 2 August 2005, *http://www.womensenews.org/article.cfm/dyn/aid/2177*.
30. When commenting on the practice when reading the manuscript, Dr. Koi Muchira-Tirima argued that the persistence of the practice is in part because most policies banning the practice "did not provide room for the social/cultural training" that takes place during the process surrounding the rite. The lack of an alternative rite of passage, she seemed to be suggesting, accounts for some of the resistance to change. Interestingly, some young Maasai I spoke with in July 2009 at a village near Masi Mara National Park, well understood this. Although their culture had long practiced the genital cutting that Maathai condemned, some of those (with external education and encounters), are now are seeking to convince their elders to eliminate the practice and to develop alternative rites of passage to adulthood. This approach could apply to other environmental practices that today need to be left behind, such as lion killing as a rite of passage to manhood, which is soon discussed in text.
31. Maathai, "Nature, Nurture, and Culture." In this, Maathai was likely influenced by Thiongo Ngugi Wa, *Decolonising the Mind* (London: Heinemann, 1986).
32. Theodore Natsoulas, "The Politicization of the Ban of Female Circumcision and the Rise of the Independent School Movement in Kenya. The KCA, the Missions, and Government, 1929–1932," *Journal of African Studies* vol. 33, no. 2 (1998): 137–158.
33. See Daisy Sindelar, "World: Africa's First Female Nobel Peace Laureate Accepts Award amid Controversy Over AIDS Remarks," Radio Free Europe/Liberty (online, 10 December 2004), *http://www.rferl.org/articleprintview/1056339.html*.
34. See, for example, Michael Worobey, et al., "Direct Evidence of Extensive Diversity of HIV-1 in Kinshasa by 1960," *Nature* vol. 455, 2 October 2008: 661–664, DOI:10.1038/nature07390; Brandon F. Keele, et al., "Chimpanzee Reservoirs of Pandemic and Nonpandemic HIV-1," *Science* vol. 313, 28 July 2006: 523–526, DOI: 10.1126/science.1126531; and the earlier studies Tuofu. Zhu, et al., "An African HIV-1 Sequence from 1959 and Implications for the Origin of the Epidemic," *Nature* vol. 391, 5 February 1998: 594–597, DOI:10.1038/nature35400; Bette Korber, et al., "Timing the Ancestor of the HIV-1 Pandemic Strains," *Science* vol. 288, 9 June 2000: 1789–1796, DOI:10.1126/science.288.5472.1789.
35. See "10 Questions: Wangari Maathai," Sunday, 10 October 2004, *Time Magazine*, at *http://www.time.com/time/magazine/article/0,9171,901041018-713166,00.html*. AIDS-related conspiracy theories are alive and well on the Internet; for a journalistic overview and example, see "AIDS Conspiracy" at *SourceWatch*, *http://www.sourcewatch.org/index.php?title=AIDS_conspiracy*.
36. Many conspiracy theorists specifically blame pentagon biowarfare specialists for the disease, a view that may have been propagated by Soviet propagandists, but

for which no credible evidence has emerged. An Internet search reveals a wide variety of speculation about devilish Western plots leading to HIV/AIDS.

37. This is highly ironic since, as Dr. Koi Muchira-Tirima noted in her comments to this manuscript, as the world shrinks through globalization processes, "the distinction between western and non-western is becoming blurred and harder to identify."
38. That the Maasai lost land to the Kikuyu on independence I learned from Celia Nyamweru.
39. See the 2008 special technical report by the IPCC, "Climate Change and Water," *http://www.ipcc.ch/*.
40. CBS *60 minutes*, "Poison Takes Toll on Africa's Lions."
41. Such approaches can be found where indigenous peoples are involved in co-management of ecosystems with scientists and government land managers. The possibilities are exemplified by the notion of integrative adaptive management, wherein western scientists work hand in hand with local people to fuse knowledges in the quest for sustainable livelihoods. See, for example, Lance Gunderson, and C. S. Holling, *Panarchy: Understanding Transformations in Systems of Humans and Nature* (Covelo, C.A.: Island Press, 2002). Also in this vein is Berkes, *Sacred Ecology*.
42. Without an evolutionary/ecological worldview it is much easier to maintain the fiction that *Homo sapiens* are not subject to nature's laws and thus, that there are no carrying capacity limits to the their numbers. Peter M. Vitousek, Jane L. Mooney, and Jerry M. Melillo, "Human Domination of Ecosystems," *Science* vol. 277 no. 5325, (1997): 494–499; Peter M. Vitousek, Paul R. Ehrlich, Anne H. Ehrlich, and Pamela A. Matson, "Human Appropriation of the Products of Photosynthesis," *Bioscience* vol. 36, (1986): 368–73.
43. Critically important texts include: William Catton, *Overshoot: The Ecological Basis of Revolutionary Change* (Urbana and Chicago I.L.: University of Illinois Press, 1980); Garrett Hardin, *Living within Limits* (New York: Oxford University Press, 1993); Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Viking, 2005). See also Mathais Wackernagel, et al., "Tracking the Ecological Overshoot of the Human Economy," *Proc Natl Acad Sci* vol. 99, no. 14, (2002): 9266–9271. Wakernagel is a leading scholar promoting what is known as ecological footprint analysis, which has an accessible website, *http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/*. As put simply there:

    > "Today humanity uses the equivalent of 1.3 planets to provide the resources we use and absorb our waste. This means it now takes the Earth one year and four months to regenerate what we use in a year. Moderate UN scenarios suggest that if current population and consumption trends continue, by the mid 2030s we will need the equivalent of two Earths to support us. And of course, we only have one. Turning resources into waste faster than waste can be turned back into resources puts us in global ecological overshoot, depleting the very resources on which human life and biodiversity depend."

    It may be true that population growth need not lead to deforestation, as argued by Paul E. Waggoner and Jesse H. Ausubel, in "How Much Will Feeding More and Wealthier People Encroach on Forests?" *Population and Development Review* vol. 27, no. 2, (2001): 239–257. They accurately note that forests have expanded in many countries simultaneously with population increases, in part because of im-

proved crop yields. They conclude that with best practices up to a third of today's cropland could revert to forest. Although true, as is so often the case with technological improvements, this would at most only halt or delay deforestation, while the human population grows, fueled by the calories from the touted innovation.

44. Garrett Hardin, *Stalking the Wild Taboo,* third ed. (Petoskey, M.I.: Social Contract Press 1996); David Nicholson-Lord, "The Silence of the Greens: Why Do Environmentalists Choose to Ignore the Undeniable Connections between the Food Crisis and Over-population of the Human Species?" *Resurgence* (2008) *http://www.resurgence.org/magazine/article2651-The-Silence-of-the-Greens.html*.
45. Another comment from Dr. Koi Muchira-Tirima helps to make my case: "I don't understand what this idea is as you have described it, or why you are so surprised by this belief. It seems to me like best practices are always being developed and implemented in all fields. What is so utopian about finding a good way of doing something and implementing it?" It is, of course, good to spread and keep refining "best practices" in all fields. But my point was that to *expect* widespread success of the kind of social engineering that the Kenyan officials were assuming was possible is not a rational expectation, given the weight of evidence. At best, even when some people have a good idea of what best practices are, these are rarely perfectly implemented. I think the reviewer's comment was grounded in an imprudent and unfounded optimism about human beings accurately accessing and ameliorating environment-related risks.
46. Vitousek, Mooney, and Melillo, "Human Domination of Ecosystems," 494–499; Vitousek, Ehrlich, Ehrlich, and Matson, "Human Appropriation of the Products of Photosynthesis," 368–73.
47. In 2009, UNICEF estimated Kenya's population at 37.538 million, see *http://data.un.org/Data.aspx?q=kenya+population&d=SOWC&f=inID percent3a105 percent3bcrID percent3a75*, while the U.S.'s Central Intelligence Agency estimated 39,002,772. The CIA also estimated annual population growth rate at 2.8 percent (24th highest in the world), and the fertility rate at 4.56 children born per woman (38th highest) of 224 countries analyzed; *see https://www.cia.gov/library/publications/the-world-factbook/rankorder/2054rank.html?countryName=Kenya&countryCode=ke&regionCode=af&rank=31#ke.* Kenya is surrounded by countries with some of the highest rates of birth and population growth in the world, which provides its populations, and that of the nearby countries, no place to go as ecosystems become more stressed. Meanwhile, United Nations data estimated that in 2004, 30 percent of the Kenyan population was undernourished, a figure that was no doubt higher by 2009; see *http://data.un.org/Data.aspx?q=kenya+population&d=MDG&f=seriesRowID percent3a566 percent3bcountryID percent3a404*. The UN's latest, posted growth rate for Kenya, 3.9 percent, is also from 2004, see *http://data.un.org/Data.aspx?q=kenya+population&d=SOWC&f=inID percent3a78 percent3bcrID percent3a75*. Another daunting projection is that Kenya's population will rise to 51,261,167 by 2025 and 65,175,864 by 2050. Even potentially worse if one compares the high versus the low variants in the United Nations table provided at: *http://data.un.org/Data.aspx?q=kenya+population&d=PopDiv&f=variableID percent3a12 percent3bcrID percent3a404*. With ecosystems already strained, these projections appear cataclysmic in a country already characterized by high unemployment and over 30 percent of the population undernourished.

48. For examples see Taylor, *Ecological Resistance Movements.*
49. Most helpful in this respect is H.L.A. Hart, *The Concept of Law* (Oxford: Clarendon, 1961). I began developing my thoughts on natural law in Bron Taylor, "On Sacred or Secular Ground? Callicott and Environmental Ethics," *Worldviews* vol. 1, no. 2, (1997): 99–112.