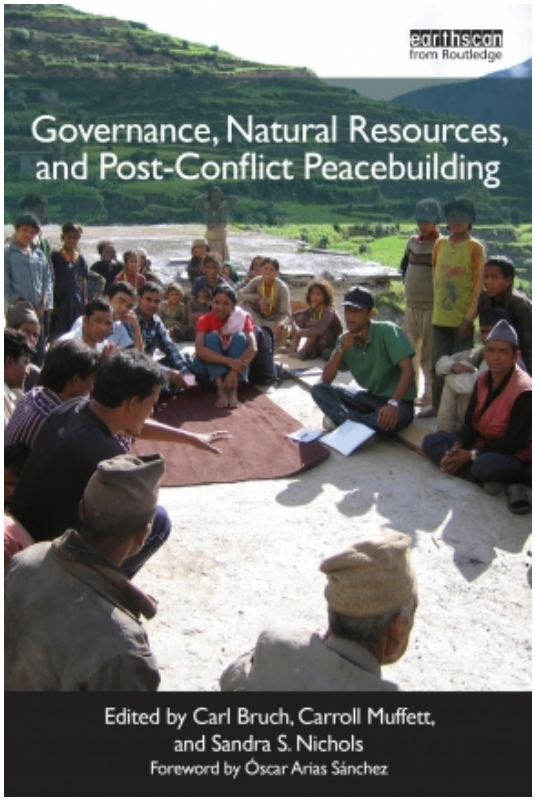


Environmental Governance in Post-Conflict Situations: Lessons from Rwanda

Roy Brooke and Richard Matthew[a]
[a] *University of California - Irvine*

Online publication date: 30 November 2016

Suggested citation: R. Brooke and R. Matthew. 2016. Environmental Governance in Post-Conflict Situations: Lessons from Rwanda, *Governance, Natural Resources, and Post-Conflict Peacebuilding,* ed. C. Bruch, C. Muffett, and S. S. Nichols. London: Earthscan.

Environmental governance in post-conflict situations: Lessons from Rwanda

Roy Brooke and Richard Matthew

The 2009 United Nations Environment Programme (UNEP) report *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment* offers a brief but empirically grounded overview of the environment and natural resources as they relate to conflict and peace. Specifically, the report examines their role in contributing to conflict; the ways in which conflict impacts them; and the ways in which they can support—or, if neglected, undermine—peacebuilding (UNEP 2009). A subsequent report by the UN Department of Economic and Social Affairs' Division for Sustainable Development identifies "[e]xploitation of natural resources, poor environmental security and deterioration" as one of sixteen challenges and impediments to peacebuilding (UNDESA n.d., 5).

Rwanda has managed, despite extreme challenges, to develop a strong environmental governance regime. This chapter explores the relevance of the issues raised by the two reports, and the challenges of establishing strong environmental governance in the context of post-conflict Rwanda. The lessons of this case should be explored more deeply and applied wherever relevant to strengthen environmental protection, development, and peacebuilding. The first section provides an overview of the general environmental and political context in Rwanda. The second section describes the main environmental impacts of violent conflict in Rwanda from 1990–1994, and outlines the principal elements of the country's environmental governance regime before, during, and after the genocide. The third

---

Roy Brooke has a consulting practice focused on maximizing the resilience and sustainability of organizations and communities. He has extensive municipal, national, and international experience and is the former United Nations Environment Programme coordinator in Rwanda. Richard Matthew is a professor of political science and planning, policy, and design at the University of California, Irvine. He is also the founding director of the Center for Unconventional Security Affairs, the inaugural director of the Blum Center for Global Engagement, coprincipal investigator of the FloodRISE project, and a senior fellow at the International Institute for Sustainable Development. Elements of this chapter are based on material in Roy Brooke, "Environmental Governance in Post-Conflict Situations: Lessons from Rwanda," in *International Environmental Law-making and Diplomacy Review 2009*, ed. T. Honkonen and E. Couzens (Joensuu, Finland: University of Eastern Finland / United Nations Environment Programme, 2009).

and fourth sections examine some of the direct and indirect factors, respectively, that have contributed to the country's current environmental governance regime. The fifth section illustrates the links between environmental governance and peacebuilding in Rwanda. Finally, the chapter concludes with lessons learned from Rwanda's experience.

Environmental governance is not a single, finite theory or field of practice with universally accepted boundaries and definitions. For this chapter, it is defined as the sum of organizations, mechanisms, rules, procedures, and norms that regulate the process of environmental protection (Najam, Papa, and Taiyab 2006). Conflict frequently erodes institutions, particularly weak ones, as well as government authority, accountability, and transparency. Weakened environmental governance can result in unregulated natural resource exploitation; modified or uncertain property rights; diminished environmental monitoring, protection, and enforcement; and the diversion of funds for military purposes and away from environmental sectors such as energy, waste, and water (UNEP 2009).

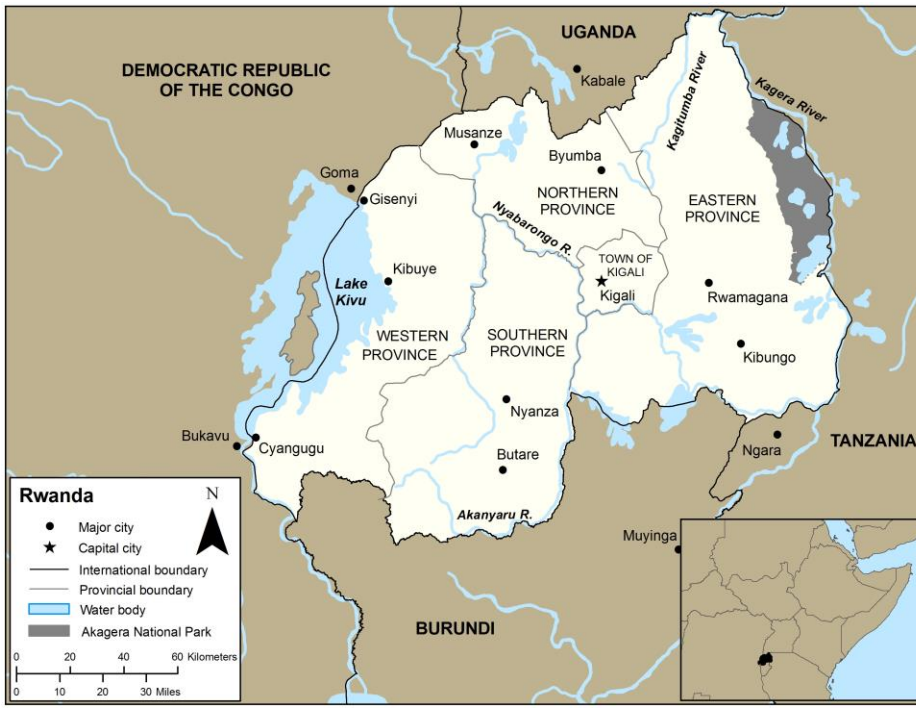
ENVIRONMENTAL AND POLITICAL CONTEXTS

Rwanda is a small, mountainous, and landlocked country in Africa's Great Lakes region. The government of Rwanda estimated the population, in 2008, at 9.83 million (ROR 2009a). Rwanda's population density is the highest in Africa, and its natural population growth rate stands at 2.8 per 100 people per year.

The tragic events of the 1994 genocide resulted in close to 1 million Tutsis and moderate Hutus being killed in one hundred days. It is difficult to overstate the social, political, and economic effects of the genocide. Gross domestic product was halved in a year, leaving the country the poorest on the planet. The majority of the population was plunged into extreme poverty, a generation of professionals was lost, and many preexisting development challenges were exacerbated (ROR 2000).

Twenty years later, Rwanda is resurgent. Annual GDP growth rate averages 5.8 percent, making Rwanda one of the continent's top performers. The poverty rate dropped from 70 percent at the end of the civil war to 56.9 percent in 2006 (UNDP 2007). The country is considered stable and safe, and appears to be on a development rather than post-conflict footing. In 2005, the country reached the completion point of the Heavily Indebted Poor Countries (HIPC) Initiative,[1] which provides debt relief and loans to countries that meet a range of economic performance targets. Rwanda also has a clear development vision for the year 2020 and many of the institutions in place to achieve it.

[1] The HIPC Initiative was launched by the International Monetary Fund and the World Bank in 1996 with the object of "ensuring that no poor country faces a debt burden it cannot manage" by reducing external debt burdens of the poorest countries to sustainable levels (IMF 2014, 1).



Rwanda's environmental challenges

Rwanda's environmental situation is complex. The country has inherent challenges, including its small size in relation to its population (it is approximately one-half the size of Switzerland); steep slopes, which are difficult to cultivate without erosion; and soil that is, in many places, weathered and acidic. Rwanda's population puts considerable pressure on the environment. This is a function of population density and high growth rate, as well as inefficient land use. Ninety percent of the population relies on subsistence agriculture, most of which is on terraced land plots. These plots diminish in size when they are passed down and divided among successive farming generations. This pressure results in severe soil degradation and erosion, widespread deforestation, wetland degradation, and water contamination (Twagiramungu 2006). Inadequate water management and drought are negatively impacting the country's energy production, and it is likely that climate change will compound these effects by intensifying both droughts and flooding. Climate change, to which Rwanda is highly vulnerable due to factors such as deforestation and the contours of its terrain, may add considerable uncertainty to the agricultural sector by modifying historic precipitation and temperature patterns, thus making it difficult to optimize production.

Further complicating matters, many environmental problems are interrelated in Rwanda. For example, ecosystem degradation has severe negative impacts on the effectiveness of the country's hydroelectric facilities. This, in turn, can

undermine electricity generation, and thus reduce the flow of electricity available to Rwandans. Reductions in the flow of electricity can create incentives that maintain or even exacerbate the existing high levels of deforestation, which in turn can contribute to further soil erosion (ROR 2000). The net result is that in very tangible ways, negative changes in environmental quality have far-reaching and multiple impacts on the country's development.

Overview of violent conflict in Rwanda

Violent conflict has been a recurrent feature of Rwanda's modern history, with roots extending back to, and perhaps beyond, colonial rule. According to conventional analysis,[2] the 1990–1994 conflict and genocide was largely a socio-political and identity conflict emanating from Rwanda's turbulent history over the twentieth century.

Colonization left a legacy of ethnic differentiation, weak political institutions, poverty, and exclusion. In the 1920s, Belgian colonial rulers reinforced ethnic rivalry between the country's three main groups—the Hutu, Tutsi, and Twa. Under Belgian rule, the Tutsi elite enjoyed political and economic privileges, further embedding inequity and social polarization (Pottier 2002). When the Belgians withdrew and the country achieved independence in 1962, considerable political power and control of the military were abruptly handed over to the Hutu majority, resulting in the political and economic exclusion of the Tutsi.

Violence framed along ethnic lines ensued and recurred periodically, causing significant population displacement and movements into neighboring countries. In 1986, Rwandan exiles living in Uganda who were campaigning for regime change in Rwanda created the Rwandan Patriotic Front (RPF). In response to the increasing hostility toward the Tutsi population, the RPF invaded Rwanda in 1990 with the support of Uganda, which led to the negotiation of a peace agreement on August 4, 1993—the Arusha Peace Agreement.[3] The implementation of these accords collapsed in April 1994 following the death of President Juvenal Habyarimana and, in response to the ensuing genocide, the RPF eventually took control of the country in July 1994 (Pottier 2002).

While identity politics played a major role in Rwanda's recurrent conflicts, other factors also contributed. These included falling coffee prices, which had dramatically adverse economic impacts; an ill-conceived structural adjustment program; poorly managed multiparty elections; and post-independence political and economic institutions that were weak and ill-prepared to address and peacefully mediate deepening social rifts (Kamola 2007; Hauschildt 2012). Growing poverty and underdevelopment further exacerbated social and political grievances.

---

[2] See, for example, Adelman and Suhrke (1999), Des Forges (1999), Gourevitch (1998), Hintjens (1999), Pottier (2002), Shyaka (n.d.), Uvin (1998), and Waller (1993).

[3] For the text of the Arusha Peace Agreement, see www.gov.rw/ THE-ARUSHA-PEACE -AGREEMENT.

Violence in Rwanda: The role of land, environment, and population

There are, not surprisingly, differing views on the role of land and the environment as contributing factors leading to the genocide. The government of Rwanda rejects the notion that the causes of the genocide were anything other than politically and ethnically motivated: its official website notes that "the genocide of the Tutsi in 1994 was a carefully planned and executed exercise to annihilate Rwanda's Tutsi population and Hutus who did not agree with the prevailing extremist politics of the Habyarimana regime" (ROR n.d.). The introduction of any perspectives on the genocide that stray from this point of view are generally unwelcome by the government; indeed, article 13 of Rwanda's 2003 constitution states: "Revisionism, negationism and trivialisation of genocide are punishable by the Law."[4]

Social, ethnic, and political factors undoubtedly played a pivotal role in Rwanda's history of violent conflict. Nonetheless, there is evidence to suggest that both the consequences of environmental degradation and the political and social elements of land use (for example, land capture by elites) contributed to the tensions that led to the genocide (Gasana 2002). Scholars broadly acknowledge that natural resource scarcities combined with environmental degradation may have made an indirect but important contribution to the occurrence of violent conflict in Rwanda since its independence.[5]

As an agrarian country, Rwanda has faced constant demographic pressures on its limited natural resource base, specifically arable land, pasture, fuel, wood, and water. Growing populations, land scarcity, and declining agricultural productivity, due in part to environmental degradation, have combined to increase rural poverty and repeatedly trigger sociopolitical unrest. For instance, when an extended drought caused famine and world coffee prices collapsed in the late 1980s, there was widespread discontent with the government, leading to violent suppression of civil unrest.

Rural poverty combined with these pressures and contributed to migrations and internal displacement, accentuating pressures on a shrinking land and natural resource base. Heightened environmental pressures in an agrarian country, in which rapid population growth was outstripping the creation of new livelihoods, intersected with social and political grievances that persisted until the outbreak of the 1990 conflict. According to the social anthropologist Johan Pottier:

> Despite regular out-migrations before and during European colonialism, Rwanda's history of land occupation became a catalogue of dwindling entitlements due to population pressure. Throughout the twentieth century, family farms in Rwanda decreased, a process accompanied by deepening poverty (Pottier 2002, 20).

---

[4] For the Constitution of the Republic of Rwanda, see www.parliament.gov.rw/fileadmin/Images2013/Rwandan_Constitution.pdf.

[5] See, for example, Homer-Dixon and Percival (1998), Gasana (2002), Ohlsson (1999), and Shyaka (n.d.)

Pottier argues that land scarcity intensified class and regional frictions, and that some political elites responded by shifting attention to the realm of identity politics, casting Tutsis as less authentic Rwandans with less entitlement to land.

Hence, while it is important not to overstress the role of environmental and population pressures in explaining the proximate causes of Rwanda's conflict, it is important to recognize that environmental factors merged with the complex network of social forces driving the long history of violent conflict in Rwanda.

Conflict-inducing environmental stresses remain potent underlying forces in present-day Rwanda and constitute an important continuum with the past. These factors include rapid population growth, projected to reach 16 million by 2030; declining per capita access to arable land, pasture, fuel, wood, and water; chronic population displacement, including transboundary movements; pollution and deteriorating living conditions in rapidly sprawling slums; strained governance institutions; and growing vulnerability to natural hazards (UNEP 2011).

CONFLICT AND ENVIRONMENTAL GOVERNANCE IN RWANDA

Due to the combination of environmental issues noted above, Rwanda faced environmental and natural resource challenges well before the genocide. Further exacerbating the situation, the conflict itself had devastating impacts on the environment, including some direct impacts from landmines and pollution, and far-reaching indirect impacts from the vast movements of millions of displaced people (UNDP 2007). UNEP's comprehensive post-conflict environmental assessment of Rwanda noted that impacts include: enormous loss of forests, which were cut unsustainably for fuel and agriculture; the loss of the majority of the savanna in eastern Rwanda, as Akagera National Park was used for resettlement; the deterioration of key sectors such as agriculture, which lost staff, data, and infrastructure such as meteorological stations; the rapid and unregulated expansion of Kigali (the capital), which has generated significant waste management challenges; and the loss of major ecosystems to resettlement and uncontrolled farming (UNEP 2011). Issues such as the deterioration of forests and protected areas as a result of the conflict are well documented.[6]

Direct impacts

The direct military impacts on the environment of the 1990–1994 conflict were relatively minor and appear to have been largely remedied. Sixteen years following the conflict, direct impacts related to defensive works, as well as unintended and targeted destruction of natural resources, were not found to have left an enduring footprint (UNEP 2011).

One notable lasting impact is that of landmines and unexploded ordnance (UXO), which affect an estimated 900 square kilometers of agricultural land,

[6] See, for example, Plumptre (2001).

equivalent to 3.5 percent of Rwanda's surface area. The environmental repercussions are perceived as minor; in fact, landmines and UXO can actually cause mined areas to flourish by reducing human activity. However, the human impacts of landmines and UXO are great because they further diminish Rwanda's already limited land base. In particular, soil erosion and flooding can shift the location of landmines and UXO, spreading the contamination over wider areas and reducing land access to farmers and herders (UNEP 2011).

Indirect impacts

While the overall direct military impacts on the environment have been low, the indirect environmental consequences of the conflict have been of a much greater magnitude. Indeed, most of the adverse environmental impacts experienced in Rwanda as well as in bordering regions occurred after June 1994, as more than 2 million people moved in and out of the country. The most significant indirect and secondary environmental consequences of the 1990–1994 conflict include: (1) extensive deforestation and encroachment on national parks and wetlands, and (2) disruption of environmental governance and monitoring programs.

Deforestation and encroachment on national parks and wetlands

The displacement of more than 2 million people and resettlement of approximately 1 million people have had major environmental impacts on land cover and land use throughout Rwanda. The most affected areas are the savanna landscapes in Eastern Province and the Afromontane forests in the Congo-Nile highlands. Major physical impacts include: extensive deforestation, particularly of Gishwati and Mukura forests as well as tree plantations throughout the country; considerable encroachment on Akagera National Park and elimination of Mutara Game Reserve; and widespread wetland reclamation. Ensuing reduction in vegetation cover and cultivation on steep slopes and marginal lands by returnees further amplified Rwanda's chronic problem of land degradation and soil erosion.

At the regional level, fleeing and displaced Rwandans caused extensive deforestation in and around refugee camps, especially the five camps located in the Democratic Republic of the Congo (DRC), where they had uncontrolled access to the natural resources of Virunga National Park.[7] As many as 80,000 refugees a day entered the park to collect firewood. According to one source, the

[7] By the end of 1994, approximately 700,000 to 800,000 Rwandan refugees were living in the five camps (Katale, Kahindo, Kibumba, Mugunga, and Lac Vert) in the DRC. This figure excludes the wave of Rwandan refugees who fled immediately after the 1994 genocide, since the majority returned to Rwanda and eventually regained their homes. For a fuller discussion of these issues, see Jim Jarvie, "Natural Resource Management and Post-Conflict Settings: Programmatic Evolution in a Humanitarian and Development Agency," in this book.

deforestation rate caused by those five camps in 1994 was equivalent to ten hectares per day (Kalpers 2001). The illegal charcoal industry, as well as illegal fishing and poaching of wildlife, became deeply entrenched following the 1994 events, and continue to this day.

In addition, rapid and unplanned post-1994 urbanization, particularly in Kigali, due largely to the influx of returnees has resulted in sprawling slums, swamp farming, and an increase in industrial waste, further aggravating poor sanitation and public health problems.

Disruption of environmental governance and monitoring programs

Across all natural resource sectors, the conflict and genocide has had a devastating impact on both Rwanda's human and institutional capital. These include losses of professional and skilled labor and destruction of long-term environmental data sets, scientific research facilities, and environmental monitoring stations.

The resulting shortfall in human resources and information vacuum have seriously strained the country's capacity for environmental governance. Although Rwanda has made rapid and impressive progress in rebuilding its human and institutional capacity for environmental governance, major gaps in scientific knowledge generation, strategic policy formulation and implementation, and systematic environmental monitoring remain.[8]

That some environmental governance capacity shortfalls exist is not surprising, given the devastation wrought by the genocide. What is striking about environmental governance in Rwanda is that the country has moved from a pre-conflict situation of having little in the way of organizations, mechanisms, rules, procedures, and norms that regulate the process of environmental protection, through a catastrophic conflict that eroded further even that limited environmental governance, to a point where there is not merely a semblance of governance but, rather, a strong and effective regime for environmental management and sustainable development is now emerging.

Environmental governance before and during the genocide

Environmental governance before the genocide can be characterized as having been generally weak. Protected areas have existed since the 1950s, but these were gradually encroached upon through the 1950s and subsequently, up to and including the time of the genocide. National parks were managed by the Rwanda Office of Tourism and National Parks (Office Rwandais pour Tourisme et Parcs Nationaux); while other protected areas such as Gishwati Forest were managed by the General Directorate of Forestry (Direction Generale des Forêts) in the Ministry of Agriculture and Forest Management (Plumptre 2001). Environmental

[8] Based on information gathered during the 2008 UNEP post-conflict assessment mission to Rwanda.

issues more generally were managed by the Ministry of Agriculture and Forestry Management, which led to a focus on extraction, rather than on conservation and sustainable development. Taking a broader view of environmental governance, there were also substantial issues of injustice and inequity before the genocide. As an example, a study undertaken by the Food and Agriculture Organization of the United Nations noted that by the mid-1980s a majority of land was held by urban elites, and that 50 percent of productive land was contained on a minority of farms (FAO 2006). This situation led to substantial numbers of post-genocide land disputes.

During the genocide, the number of tourists visiting the country dropped drastically, with a corresponding loss of revenue for use in governance. For example, Volcanoes National Park received sixty-one visitors in 1994, down from 1,111 the year before and far below the 10,641 visitors received in 2005 (UNDP, REMA, and UNEP 2006). Numerous foreign assistance projects related to protected areas also ended during the genocide.

Environmental governance following the genocide

In the immediate aftermath of the genocide, the institutional focus was on security and humanitarian issues and on dealing with vast influxes of returning refugees. As such, environmental governance was weak and eclipsed by other priorities. For example, it was during this time that substantial parts of Akagera National Park lost park status in order to accommodate returning refugees. By 1998, parts of the park had been regazetted, but this only increased the park to approximately 30 percent of its original size. Gishwati Forest (which had never had the same level of protection as Akagera National Park, even prior to the conflict) lost the remainder of its area for resettlement purposes, following 1994, such that now there are few stands of trees greater than one hectare. Donor assistance focused almost exclusively on humanitarian rather than on developmental assistance; in 2000, the German and Dutch governments became the sole funders of limited conservation initiatives (Plumptre 2001).

During the last decade—starting almost ten years after the genocide—there has been a turnaround in environmental governance; this turnaround is striking in comparison both to the situation during and after the genocide, and even to the situations of other developing countries that have not experienced the type of devastating conflict that beset Rwanda. For example, many visitors to the country note its striking cleanliness due, in part, to a law strictly prohibiting the use of plastic bags. This initiative is one that, until recently, only a few far-sighted cities in developed countries have adopted.[9] At a policy and planning

[9] To illustrate, San Francisco was the first U.S. city to ban plastic bags: in 2007 for large grocery stores, 2012 for all stores, and 2013 for restaurants (Save the Bay n.d.). Since then, other U.S. cities have followed suit but the initiative is still uncommon.

level, the environment is clearly recognized as a stand-alone sector and as a crosscutting issue in the country's national vision document—*Rwanda Vision 2020*—and in the *Economic Development and Poverty Reduction Strategy* (EDPRS) paper (ROR 2000, 2007). In 2003, the same year that Rwanda's constitution was signed, the government passed the National Environmental Policy and the Organic Law on Conservation and Protection of Environment in Rwanda that spell out the obligations to protect the environment and to manage natural resources sustainably. The guiding strategies for economic sectors such as agriculture clearly also recognize the need for sustainable development.

Institutionally, the Rwanda Environment Management Authority (REMA), the creation of which is provided for in the National Environmental Policy,[10] is fully operational and charged with making governmental environmental priorities effective. In 2009, the government launched an initiative to develop a sector-wide approach (SWAP) for the environment and natural resource sector, with the objective of aligning the programming and spending of all development partners in the country with a single strategic plan, and to ensure that environmental priorities are integrated fully into the planning and processes of other sectors (ROR 2009a). At the level of environmental projects, there is a striking amount of activity, ranging from the largest solar installation on the continent to a wide array of ecosystem restoration and climate change–adaptation projects (Asiimwe 2007).[11]

Also important to environmental governance are broader governance changes in the country that impact the way in which land is shared and managed. For example, in 2004, Rwanda adopted a National Land Policy to replace the previous customary tenure system. This policy and the subsequent 2005 Land Law enshrine principles such as the right of all Rwandans to access land without discrimination, and aim to guarantee tenure security and ensure that women are not marginalized (ROR 2004).[12] These principles are being put into operation through organizations such as the National Land Centre, which is charged with administering an equitable land management system, and in so doing, implicitly addresses the issue of land capture by urban elites, noted above. These governance changes are of fundamental importance in a country where the majority of people derive their living directly from the land. On a separate but related note, the agriculture sector is also undergoing substantial transformation and seeks to reduce poverty through changes in the sector such as increasing productivity, competitiveness, professionalism, and environmental sustainability (ROR 2009c).

---

[10] For text of the National Environmental Policy, see http://minirena.gov.rw/fileadmin/Environment_Subsector/Laws__Policies_and_Programmes/Policies/POLITIQUE_ENVIRON- Anglais.pdf.

[11] Many details about these projects can be found on the REMA website: www.rema.gov.rw.

[12] The 2005 Land Law was replaced by the 2013 Land Law, Law No. 43/2013 of 16/06/2013.

Remaining challenges to environmental governance

The above is not to suggest that environmental governance in Rwanda is perfect. Challenges clearly remain. As noted, there are major gaps in scientific knowledge generation, strategic policy formulation and implementation, and systematic environmental monitoring. Furthermore, because environmental governance lacks both implementation capacity and coordination, it fails to meet the country's enormous challenges. For example, environmental sustainability policy prescriptions in agricultural sector strategy documents are not yet routinely translated into concrete activities, simply because there are insufficient human resources to do so. This means that much of Rwanda's agricultural transformation is occurring with a primary emphasis on productivity optimization and limited emphasis on environmental sustainability. To illustrate, during a joint sector review of the agriculture division in 2009, one of the authors of this chapter visited a number of rice cultivation sites that were being developed and was informed by ministry staff that there were no environmental experts available to provide inputs at any of the critical decision-making junctures. This raises the question of whether the agricultural transformation strategy will indeed be able to achieve fully its overarching objectives of poverty reduction over the longer term. As another example, one of the reasons a SWAP was developed in Rwanda is because environmental programming is fragmented. Also, there is a marked absence of robust environmental nongovernmental organizations.

Beyond these challenges, it is still far from clear that the environment has become a central development issue in Rwanda. Some public officials still regard the environment as a non-core issue when compared to agriculture, health, governance, and education. The reality is that notwithstanding senior-level commitments and the existence of institutions, it is more difficult to understand the connections between environment and development than between schools and education or doctors and health. Moreover, the environment is a crosscutting issue that is most relevant when seen in the context of other sectors, whereas almost all bureaucracies are organized around stand-alone sectors. Additionally, while Rwanda's numerous bilateral and multilateral donors do fund environmental projects in the country, there is no clear lead or champion donor for this sector that particularly drives and encourages change. Evidence of this is the fact that it took considerable time to identify donors to take a leading role in the development of a SWAP (Twagiramungu 2006). The lack of a strong donor champion may hinder the extent to which the environment is a central development issue in the country.

The development of a SWAP may help to address some of these issues. In essence, it should help to engage a broad range of stakeholders and align the programming of all development partners, not only those involved in the environment narrowly defined, behind a single strategic plan for the sector. Furthermore, by virtue of being a cross-sectoral mechanism, a SWAP should force greater institutional linkages between agriculture, energy, environment,

tourism, and other sectors. The development and implementation of a SWAP is still evolving, but initial indications are positive. The environmental governance policy implication is that specific mechanisms for integrating the environment across sectors at operational and policy levels could be important to consider in a variety of fora to enhance the role of environmental sustainability in core national planning and processes.

POSSIBLE EXPLANATIONS FOR THE EMERGENCE OF RWANDA'S ENVIRONMENTAL GOVERNANCE REGIME

Although environmental governance challenges remain, the previous section suggests that in Rwanda the environment is not generally viewed as an add-on to more essential development challenges, as is the case in many countries; rather, it is an essential element of successful development (UNDP et al. 2005). Additionally, there is the beginning of a solid policy, legislative, and institutional basis with which to tackle the country's pressing environmental concerns. This is all the more striking when considering how recent the devastation of the genocide was, and how weak the initial environmental governance starting point was in Rwanda. An issue requiring investigation is why and how this promising environmental governance regime has begun to emerge in Rwanda. A full answer that could support environmental governance efforts in other post-conflict countries requires substantial further research. However, a number of interviews (Mulisa et al. 2009), combined with the authors' own observations in Rwanda, suggest that there are four key factors in the emergence of Rwanda's environmental governance regime: the immediacy of environmental challenges, leadership, making the environment matter, and using the environment and natural resources as a competitive advantage.

The immediacy of environmental challenges

All countries and people rely on the environment for life, health, and livelihoods. In Rwanda, however, the dependency is much more evident, the alternatives and options are fewer than in many other countries, and the environmental base is particularly fragile. Further, Rwandans have very limited ability to move elsewhere within the country to avoid their environmental mistakes, unlike the situation in many other countries. These characteristics magnify the challenges to the environment.

The impacts of climate change illustrate the challenges particular to Rwanda. Although climate change is increasingly understood as a global strategic challenge, many people still appear to have the sense that the majority of effects will be felt further in the future, and that humans can still mitigate and adapt to the worst of the challenges. In Rwanda, by contrast, many climate change impacts very much affect the present—and the consequences of inaction are both potentially immediate and dire—given that 90 percent of the population relies directly

on land for livelihoods (ROR 2000). The loss of a number of hectares of topsoil in Europe would be unlikely to cause immediate concern; but in Rwanda, it would, by virtue of its population and already limited land area, have immediate livelihood implications. The environmental governance policy implication is not that all post-conflict countries should or must wait until the environmental situation is particularly acute before taking action. Rather, it is that national policy makers must clearly understand the nature and relevance of the environmental challenges that a particular country faces, and their connection to key economic challenges. Statements from President Paul Kagame, who has publicly noted that climate change can undermine and even reverse socioeconomic development gains, underscore the clarity of this understanding in Rwanda (Kagame 2008). This realization is evident also in the national vision document, *Rwanda Vision 2020*, which underscores that the achievability of all development aspirations is affected by crosscutting issues such as environmental and natural resource management (ROR 2004).

Leadership

One of the people interviewed for this chapter stated that in developing environmental governance structures in post-conflict societies, "character matters" (Mulisa et al. 2009). The general perception is that, as noted above, the president of the Republic of Rwanda and other senior leaders understand clearly the environmental problems the country faces, and the linkages of the environment to all other development goals. Moreover, these leaders are acting on their knowledge and convictions, ensuring that appropriate institutions are developed.

Neither the fact that Rwanda's leadership has ensured that the environment is well reflected in national vision documents nor the existence of an accompanying institutional framework necessarily guarantees good environmental governance. However, informed leadership can create the basis and the enabling conditions for such governance. The environmental governance policy implication is that in addition to understanding the nature of the environmental challenges that their country faces, a country's leaders must be prepared to respond.

The extent to which national leaders can translate conviction into results varies greatly. For example, Rwanda has made progress toward becoming a multiparty democracy, but various limitations on political freedom persist (Freedom House 2013; HRW 2014); the Economist Intelligence Unit lists it as an "authoritarian regime" (*Economist* 2013). This political environment may have created conditions that contributed to the ability of the country's leadership to act on its convictions and bring about rapid environmental governance changes. To recognize this is not to endorse an authoritarian approach to governance. In the opinion of the authors of this chapter, it is simply to acknowledge that it may have taken far longer in a pluralistic and fully democratic country to achieve the same developments, particularly if those adversely affected by a strong environmental regime were able to effectively oppose change.

Making the environment matter

Committed leaders and pressing environmental problems do not by themselves lead to solutions. Senior decision makers, including ministers, permanent secretaries, and heads of departments, as well as donors, civil society actors, private investors, and many others, must still be convinced to act on environmental issues and to translate top-level commitment into action in the face of competing priorities. This is less likely to happen if the environment is narrowly understood as an issue of parks, wildlife, and clean streets; and more likely to happen if it is understood in broader and practical terms as being vital to agriculture, energy, tourism, livelihoods, security, and other sectors. This, in turn, means that environmental benefits must be understood and communicated in terms that are relevant to the key areas that drive development.

In Rwanda, a substantial effort was made several years ago by the government, UNEP, and the United Nations Development Programme (UNDP) through the Poverty-Environment Initiative (PEI) to calculate the costs of environmental action and degradation and communicate this to economic sectors.[13] This, and related efforts, led to oft-quoted figures on the costs associated with soil erosion and fuel consumption, and the value of services provided by various ecosystems. These estimations help put environmental protection in a central place on the agenda of the powerful ministries concerned with the country's development. For example, UNDP, REMA, and UNEP indicated that soil erosion may cost up to 1.9 percent of Rwanda's gross domestic product and that soil conservation could increase productivity by 25 to 33 percent (UNDP, REMA, and UNEP 2006). These analyses, in turn, provided a basis for REMA and others to engage the government's economic ministries using economic arguments rather than strictly environmental ones. The environmental governance implication is that to gain momentum and support, the real costs and benefits of environmental protection and degradation to a range of development sectors must be understood and acted on.

Environment and sustainable development as a source of competitive advantage

Rwanda has set its sights on a number of high-end economic niches. For example, the country's gorilla tourism is clearly focused on wealthy clients rather than mass tourism, with some hotels for gorilla tourism costing many hundreds of

---

[13] The PEI is a joint UNDP-UNEP program to provide countries with financial and technical support in order to build capacity for the "mainstreaming of poverty-environment [linkages] into budget processes, sector programmes and sub-national planning" (UNDP and UNEP n.d.). For an analysis of the PEI in Rwanda, see Louise Wrist Sorensen, "The Power of Economic Data: A Case Study from Rwanda," in this book.

dollars per night and the park entrance fee priced at US$500 per person.[14] Similarly, Rwandan companies have tried to distinguish its coffee as a premium variety. For example, Bourbon Coffee—a company founded and based in Rwanda—utilizes state-of-the-art packaging and merchandising, and has a new store in Washington, D.C. In a landlocked country without a myriad of economic options, environmental sustainability arguably offers a competitive advantage, and plays a role in national branding. For example, Rwanda hosted the World Environment Day (WED) in 2010, which gave the country an opportunity to market its environmental bona fides. Moreover, Rwanda has started to position itself as a "green economy nation," as noted in, for example, promotional material for WED.[15] In various addresses and speeches, President Kagame has also noted the importance of green economic growth.[16] This suggests that over time, environmental sustainability may emerge as an increasingly important part of the country's marketing value proposition.

INDIRECT DRIVERS FOR ENVIRONMENTAL GOVERNANCE

Other factors may indirectly help to drive the development of a rigorous environmental governance regime in Rwanda, as they represent potential future sources of risk and vulnerability and ensure that environmental issues remain topical. These include climate change and heightened vulnerability to natural disasters, volatility in the Virunga border region, and precarious living conditions in refugee camps.

Climate change and heightened vulnerability to natural disasters

Following publication of the Fourth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC 2007), climate change received considerable attention as a phenomenon likely to have significant impacts on prospects for development and security around the world, but especially in parts of Africa and Asia. The German Advisory Council on Global Change contended that "climate change will overstretch many societies' adaptive capacities within the coming decades" (German Advisory Council on Global Change 2008, 1), and described how water and food scarcity and an increase in natural disasters may "further undermine the economic performance of weak and unstable states, thereby encouraging or exacerbating destabilization, the collapse of social systems, and violent conflicts" (German Advisory Council on Global Change 2008, 3).

---

[14] For further analysis of efforts to build mountain gorilla ecotourism in Rwanda, Uganda, and the DRC, see Maekawa et al. (2014).

[15] See, for example, UN News Centre (2010) for references to Rwanda's "pioneering transition to a 'green' economy."

[16] See, for example, Kagame (2009).

Taking this a step further, the CNA Corporation convened a group of retired U.S. military leaders who forecasted a future in which "climate change can act as a threat multiplier for instability in some of the most volatile regions of the world" (CNA Corporation 2007, 1), and adds "tensions even in stable regions of the world" (CNA Corporation 2007, 7). Dan Smith and Janani Vivekananda have started to quantify these vulnerabilities, claiming that there are "46 countries —home to 2.7 billion people—in which the effects of climate change interacting with economic, social and political problems will create a high risk of violent conflict" (Smith and Vivekananda 2007, 2–3).

Rwanda's high vulnerability to climate change is likely to intensify prevailing environmental degradation, amplify risk of natural disasters (for example, floods, droughts, and fire outbreaks), and modify historical weather patterns (Parry et al. 2007). Climate change in Rwanda is predicted to raise temperatures and bring about extreme rainfall patterns in different parts of the country. More frequent, severe rainfall events are expected particularly in the northwestern part of the country, which will increase vulnerability to flash floods and landslides, especially in heavily deforested areas. On the other hand, extended dry seasons and prolonged droughts are projected in the east and southeast, which can further weaken already degraded pasture areas and exacerbate water supply shortages.

Climate change will introduce considerable uncertainties into the agricultural, forestry, and energy sectors and pose challenges to long-term planning. Complex synergies between existing environmental stress, disasters, and climate change may increase the risk of surpassing environmental and social thresholds that help trigger conflict. Therefore, developing capacities to reduce disaster risks and adapt to climate change, including investing in climate change research, need to be recognized as priority areas from both an environmental and security perspective.

Volatility in the Virunga border region

A key environmental conflict hot spot is the volatile Virunga border region shared by Rwanda, the DRC, and Uganda. Following the 1994 conflict and genocide, there have been two major wars in the DRC that have seen turmoil and violent skirmishes in Nord Kivu and Sud Kivu, the two natural resource–rich Congolese provinces bordering Rwanda.

Heightened environmental stress in this border region, owing in large part to the presence of a huge refugee and internally displaced person (IDP) population in proximity to important revenue-generating national parks, increases the likelihood of conflict over natural resources. Rebel activities inside the DRC's Virunga National Park have also increased the risk of illegal activities. Environmental stress factors in this region include accentuated deforestation from illegal trading in high-value timber and charcoal production, unregulated mining, wildlife poaching, and protected area encroachment.

Environmental pressures due to natural resource competition and illegal natural resource extraction could generate acute local grievances that have the

potential to escalate into local and transboundary violence. Chronic violence in the region threatens tourism, especially gorilla tourism revenues from shared national parks that are crucially important to local economies. The great challenge for the region is how to conserve the protected areas and resolve the complicated refugee and IDP issues, especially in and along the edges of Virunga National Park in the DRC. Part of the solution involves finding a program of action that can be supported by all parties who live and work in a shared operational space, especially government authorities, local residents, and conservation and humanitarian organizations. Recognition of these issues has led to a variety of policy initiatives, including the signing of a tri-national ministerial declaration on gorilla conservation and related conservation initiatives.[17]

Precarious living conditions in refugee camps

Refugee camps in Rwanda for those displaced by conflicts in the DRC and Burundi may also become a potential source of localized frictions. Because of acute land scarcities in Rwanda, refugee camps are sited on marginal lands offering little prospects for cultivation, income generation, and water and firewood collection. While the overall environmental impact of refugee camps is low, deteriorating living conditions could spark localized conflicts with adjacent Rwandan communities. For instance, severe fuel and water shortages are forcing refugees, mainly women, to forage illegally outside of their camps over large distances. This could lead to increased social tensions between refugees and local communities, who themselves are experiencing resource shortages. In this context, political refugees from neighboring countries could eventually become environmental migrants.

ENVIRONMENTAL GOVERNANCE AND PEACEBUILDING

Peacebuilding is a loosely defined and evolving practice area that consists of a wide range of activities to address root causes of conflict and to create peace. Peacebuilding in Rwanda is generally understood in terms of justice, for example, through the system of traditional *gacaca* courts, demobilization and reintegration of excombatants, actions of the National Unity and Reconciliation Commission and the International Criminal Tribunal for Rwanda to hold accountable those

---

[17] The DRC, Rwandan, and Ugandan ministers responsible for protected areas signed the Tripartite Declaration on the Transboundary Natural Resources Management of the Transfrontier Protected Area Network of the Central Albertine Rift (also known as the 2005 Goma Declaration) in October 2005. For further discussion on transboundary conservation in the Virunga border region, see Johannes Refisch and Johann Jenson, "Transboundary Collaboration in the Greater Virunga Landscape: From Gorilla Conservation to Conflict-Sensitive Transboundary Landscape Management," in this book.

responsible for the genocide, and reconciliation efforts. As noted above, social, ethnic, and political factors played a pivotal role in Rwanda's conflict, with environmental degradation and natural resource scarcity possibly playing an indirect role. Without considerably more research, it would therefore be difficult to conclude that the current array of environmental governance institutions, narrowly defined as those concerned with environmental protection, is helping to address directly root causes of conflict, or has helped move the country toward the peace that it now enjoys. (The exception is those measures and institutions that address the distribution and use of land, which do address more fundamental issues of equity and can therefore be said to contribute to peacebuilding.)

What can be said with some confidence, however, is that environmental governance measures may play an important indirect role in peacebuilding. Ambitious development targets in *Rwanda Vision 2020* and the EDPRS to reduce extreme poverty, move the country away from subsistence agriculture, and ensure pro-poor growth logically contribute to peacebuilding insofar as they address land, land tenure, and poverty issues that may have contributed to the genocide. To the extent that environmental governance in Rwanda plays a role in supporting and ensuring economic growth and development, and preserving the land and natural resources on which the majority of the population continues to rely, then it, too, contributes indirectly to peacebuilding. By addressing environmental causes of conflict and helping to prevent the emergence of new tensions arising from environmental change, environmental recovery plans can substantively reinforce ongoing conflict resolution and national reconciliation efforts. Indeed, UNEP's post-conflict environmental assessment on Rwanda notes a number of environmental measures that could contribute to peacebuilding (UNEP 2011). These include:

- Encouraging community participation in the use and management of local natural resources through the ongoing decentralization process.
- Creating environmentally friendly off-farm sources of income generation for poor and rural people resettled in villages under the Imidugudu program.
- Rehabilitating montane forests.
- Promoting conservation agriculture and agroforestry.
- Developing alternative and affordable energy sources to reduce dependency on fuelwood, especially in rural areas.
- Strengthening environmental governance that is adaptive to emerging issues and threats.
- Promoting integrated water resource management in order to develop mechanisms for stakeholder collaboration and collective decision making regarding the allocation of water resources, especially at the local level.

Furthermore, an interesting and more direct linkage between environmental governance and peacebuilding involves the trinational technical collaboration between Rwanda, the DRC, and Uganda to protect gorilla populations in the

Virunga region through joint patrols, information sharing, and monitoring.[18] This cooperation led to the signing of a ministerial declaration in 2005 to pledge regional collaboration for gorilla protection, and stands in contrast to the otherwise troubled relationships between the three countries. As a conservation measure, this collaboration is clearly important given that the gorillas' range covers all three countries. As a peacebuilding measure, it is concrete but isolated and small in scale. Nevertheless, cumulatively, regional and transboundary initiatives could contribute substantially to advancing interstate dialogue and trust, and could reinforce regional integration and peacebuilding (UNEP 2011).

CONCLUSION

Essential and inescapable links between the environment, natural resources, and conflict are increasingly well understood. The imperative to identify appropriate policy responses is of growing importance. However, fitting institutional responses, or even a sound understanding of what these might be, are lagging. All post-conflict situations will be different and will teach their own lessons. Rwanda's experience suggests that it is possible to move from a situation of almost no environmental governance to an increasingly robust regime, under even the most challenging circumstances. In theory, then, far more should be achievable in countries with a less challenging starting point. The lessons of Rwanda should therefore be researched in more detail, understood, and shared. These lessons could, in turn, inform the development of mechanisms, norms, organizations, procedures, and rules that enhance protection and sustainable management of the environment for its own sake, for sustainable economic development, and for mitigation against potential future environment- and natural resource–based conflicts.

It is difficult to be precise about the links between strong environmental governance and peacebuilding in Rwanda without further, targeted research. It is highly likely, however, that strong environmental governance, as an essential component of development, which in turn reduces poverty and can create a peace dividend, will help to address some of the factors that may have contributed indirectly to the genocide. Therefore, current efforts to strengthen environmental governance should be maintained and researched for applicability elsewhere, for example, the development of an economic case for environmental protection and the development of a SWAP. Furthermore, additional, targeted environmental measures should be considered in Rwanda even without additional in-depth study (UNEP 2011).

Care should be taken, however, to note the overall political context in Rwanda. While the present regime is widely admired for putting the country back on a solid footing after devastating crises, concerns are frequently raised regarding a lack of democracy and the repressive rule in the country (Gettleman

[18] See Refisch and Jenson, in this book.

2010). President Kagame's substantial national and international stature also gives him immense influence in Rwanda. These factors should be considered to determine the extent to which they enabled the development of a strong environmental governance regime, and therefore the extent to which certain elements of Rwanda's case are unique, or applicable elsewhere.

REFERENCES

Adelman, H., and A. Suhrke. 1999. *The path of a genocide: The Rwanda crisis from Uganda to Zaire*. London: Transaction.

Asiimwe, A. 2007. Rwanda installs "Africa's biggest" solar plant. Reuters, June 8. www.reuters.com/article/idUSL0871691720070608.

CNA (Center for Naval Analyses) Corporation. 2007. *National security and the threat of climate change*. Alexandria, VA. www.cna.org/sites/default/files/National%20Security%20and%20the%20Threat%20of%20Climate%20Change%20-%20Print.pdf.

Des Forges, A. 1999. *Leave none to tell the story: Genocide in Rwanda*. New York: Human Rights Watch.

Economist. 2013. Democracy index 2012: Democracy at a standstill; Report from the Economist Intelligence Unit. www.academia.edu/3312471/The_Economist_Democracy_Index_2012.

FAO (Food and Agriculture Organization of the United Nations). 2006. Improving tenure security for the rural poor: Rwanda; A case study. Working Paper No. 7. Rome. www.fao.org/docrep/010/k0784e/k0784e00.htm.

Freedom House. 2013. Freedom in the world 2013: Democratic breakthroughs in the balance; Selected data from Freedom House's annual survey of political rights and civil liberties. www.freedomhouse.org/sites/default/files/FIW%202013%20Booklet.pdf.

Gasana, J. K. 2002. Natural resource scarcity and violence in Rwanda. In *Conserving the peace: Resources, livelihoods, and security*, ed. R. Matthew, M. Halle, and J. Switzer. Winnipeg, Canada: International Institute for Sustainable Development. www.iisd.org/pdf/2002/envsec_conserving_peace.pdf.

German Advisory Council on Global Change. 2008. *World in transition: Climate change as a security risk*. London: Earthscan.

Gettleman, J. 2010. Rwanda's mix: Order, tension, repressiveness. *New York Times*, May 1.

———. 2010. Divisionists beware: Progress and repression in Rwanda. *Economist*, May 4. www.economist.com/world/middle-east/displaystory.cfm?story_id=15622375.

Gourevitch, P. 1998. *We wish to inform you that tomorrow we will be killed with our families: Stories from Rwanda*. London: Picador.

Hauschildt, T. 2012. SAPs and the build up to the Rwandan genocide. *E-International Relations*, March 31. www.e-ir.info/2012/03/31/saps-and-the-build-up-to-the-rwandan-genocide/.

Hintjens, H. 1999. Explaining the 1994 genocide in Rwanda. *Journal of Modern African Studies* 37 (2): 241–286.

Homer-Dixon, T., and V. Percival. 1998. The case of Rwanda. In *Ecoviolence: Links among environment, population, and security*, ed. T. Homer-Dixon and J. Blitt. Lanham, MD: Rowman & Littlefield.

HRW (Human Rights Watch). 2014. Rwanda: Repression across borders. January 28. www.hrw.org/news/2014/01/28/rwanda-repression-across-borders.

IMF (International Monetary Fund). 2014. Factsheet: Debt relief under the Heavily Indebted Poor Countries (HIPC) Initiative. March. www.imf.org/external/np/exr/facts/pdf/hipc.pdf.

IPCC (Intergovernmental Panel on Climate Change). 2007. *Fourth Assessment Report: Climate Change 2007*. 4 vols. Cambridge, UK, and New York: Cambridge University Press. www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#l.

Kagame, P. 2008. Remarks by His Excellency Paul Kagame, President of the Republic of Rwanda at the African Climate Change Forum. September. www.lse.ac.uk/collections/africaClimateChangeForum/pdf/HE%20Paul%20Kagame.pdf.

———. 2009. Speech at the Third African Ministerial Conference on Financing for Development, Kigali, Rwanda, May 21. www.unep.org/Documents.Multilingual/Default.asp?ArticleID=6179&DocumentID=588&1=en.

Kalpers, J. 2001. *Volcanoes under siege: Impact of a decade of armed conflict in the Virungas*. Washington, D.C.: Biodiversity Support Program.

Kamola, I. A. 2007. The global coffee economy and the production of genocide in Rwanda. *Third World Quarterly* 28:571–592.

Maekawa, M., A. Lanjouw, E. Rutagarama, and D. Sharp. 2015. Mountain gorilla ecotourism: Supporting macroeconomic growth and providing local livelihoods. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Najam, A., M. Papa, and N. Taiyab. 2006. *Global environmental governance: A reform agenda*. Winnipeg, Canada: International Institute for Sustainable Development. www.iisd.org/publications/pub.aspx?id=797.

Ohlsson, L. 1999. *Environment scarcity and conflict: A study of Malthusian concerns*. Göteborg, Sweden: Department of Peace and Development Research, Göteborg University.

Parry, M. L., O. F. Canziani, J. P. Palutikof, P. J. van der Linden, and C. E. Hanson, eds. 2007. *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007*. Cambridge, UK, and New York: Cambridge University Press.

Plumptre, A. J. 2001. *The impact of civil war on the conservation of protected areas in Rwanda*. Washington, D.C.: World Wildlife Fund.

Pottier, J. 2002. *Re-imagining Rwanda: Conflict, survival, and disinformation in the late twentieth century*. Cambridge, UK: Cambridge University Press. http://catdir.loc.gov/catdir/samples/cam034/2002727289.pdf.

ROR (Republic of Rwanda). 2000. *Rwanda vision 2020*. Kigali: Ministry of Finance and Economic Planning. www.gesci.org/assets/files/Rwanda_Vision_2020.pdf.

———. 2004. National land policy. www.ektaparishad.com/Portals/0/Documents/National_land_policy_Rwanda.pdf.

———. 2007. *Economic development and poverty reduction strategy 2008–2012*. http://siteresources.worldbank.org/INTRWANDA/Resources/EDPRS-English.pdf.

———. 2009a. *Statistical yearbook 2009*. Kigali: National Institute of Statistics of Rwanda. http://statistics.gov.rw/publications/statistical-yearbook-2009.

———. 2009b. Environment and natural resources sector working group (SWG) terms of reference. July 23.

———. 2009c. Ministry of agriculture and animal resources: Strategic plan for the transformation of agriculture in Rwanda—Phase II (PSTA II); Final report. February.

———. n.d. Genocide. www.gov.rw/Genocide,19?lang=rw.

Save the Bay. n.d. Plastic bags are history in San Francisco. www.savesfbay.org/plastic-bags-are-history-san-francisco.

Shyaka, A. n.d. The Rwandan conflict: Origin, development, exit strategies. https://repositories.lib.utexas.edu/bitstream/handle/2152/4746/3833.pdf?sequence=1.

Smith, D., and J. Vivekananda. 2007. A climate of conflict: The links between climate change, peace and war. *International Alert*, November. www.international-alert.org/sites/default/files/ClimateChange_ClimateOfConflict_EN_2007_0.pdf.

Twagiramungu, F. 2006. *Environmental profile of Rwanda*. Kigali, Rwanda: European Commission / Republic of Rwanda. www.vub.ac.be/klimostoolkit/sites/default/files/documents/rwanda-environmental-profile.pdf.

UNDESA (United Nations Department of Economic and Social Affairs). n.d. Analysis of the challenges and capacity gaps in the area of comprehensive development planning in post-conflict context. http://sustainabledevelopment.un.org/content/documents/1499analysis.pdf.

UNDP (United Nations Development Programme). 2007. *Turning Vision 2020 into reality: From recovery to sustainable human development.* Kigali, Rwanda. http://planipolis.iiep.unesco.org/upload/Rwanda/Rwanda%20HDR%202007.pdf.

UNDP (United Nations Development Programme), REMA (Rwanda Environment Management Authority), and UNEP (United Nations Environment Programme). 2006. *Economic analysis of natural resource management in Rwanda*. www.unpei.org/sites/default/files/PDF/Rwanda-Economic-Analysis.pdf.

UNDP (United Nations Development Programme) and UNEP (United Nations Environment Programme). n.d. About the Poverty-Environment Initiative. www.unpei.org/about-the-poverty-environment-initiative.

UNDP (United Nations Development Programme), UNEP (United Nations Environment Programme), World Bank, and World Resources Institute. 2005. *World resources 2005: The wealth of the poor—Managing ecosystems to fight poverty*. New York: World Resources Institute.

UNEP (United Nations Environment Programme). 2009. *From conflict to peacebuilding: The role of natural resources and the environment*. Nairobi, Kenya. www.unep.org/pdf/pcdmb_policy_01.pdf.

———. 2011. *Rwanda: From post-conflict to environmentally sustainable development*. Nairobi, Kenya. http://postconflict.unep.ch/publications/UNEP_Rwanda.pdf.

UN (United Nations) News Centre. 2010. Rwanda to host World Environment Day celebrations. February 17. www.un.org/apps/news/story.asp?NewsID=33794#.U_-JdYBdXuc.

Uvin, P. 1998. *Aiding violence: The development enterprise in Rwanda*. West Hartford, CT: Kumarian Press.

Waller, D. 1993. *Rwanda: Which way now?* Oxford, UK: Oxfam.