

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/334307602>

Imagining a Modern Rwanda: Sociotechnological Imaginaries, Information Technology, and the Post-genocide State

Chapter · July 2015

CITATIONS

10

READS

149

1 author:



Warigia Bowman

University of Tulsa

22 PUBLICATIONS 41 CITATIONS

SEE PROFILE

FOUR

Imagining a Modern Rwanda: Sociotechnological Imaginaries, Information Technology, and the Postgenocide State

WARIGIA BOWMAN

Introduction

The reopening of the Nyamata telecenter on August 17, 2007, was a grand affair. The Deputy Director of the Rwandan Information and Telecommunications Authority, Mr. Patrick Nyirishema, cut the red ribbon to much applause. In attendance were representatives from the national electric, gas, and water companies, development representatives, local government officials, and various businessmen. An audience of local citizens filled every folding chair in the room. Many of the women were attired in Rwanda's simple yet elegant national dress: a silk sleeveless top covered by a floor-length piece of patterned chiffon draped over one shoulder and belted at the waist.

In the manner of formal African celebrations, the eminent personages were seated at a high table on the side of the room. Speeches were delivered in Kinyarwanda and simultaneously translated into English. A representative of the Rwandan Development Gateway noted that the nation had a goal to build two hundred telecenters and told the assembled crowd that "telecenters will show that ICTs can benefit people of all walks of life, not just the very educated." Ten Rwandese schoolchildren sang a song in Kinyarwanda. Accompanied by cardboard props representing technology, the children then performed a humorous skit that they had written themselves about the ways in which their lives would be transformed by the ability to use computers.

Although Nyamata is close to Kigali, poor roads and limited access to

public transportation make the town more isolated than its distance from the capital would seem to indicate. Nevertheless, the Nyamata telecenter has grown from its beginnings in 2004 when it had six desktop computers, six chairs, six tables, and two employees. The telecenter provides valuable services in high demand in the community. For a small fee, community members may utilize a veritable cornucopia of services. Two full-time staff members provide secretarial services, lessons about what the Internet is and how to browse the Internet, small business support services, receipt and delivery of federal express packages, translation of documents, and even charging of cellular phones.

Despite the opportunities and resources it provides, the Nyamata telecenter faces serious challenges. Of four telecenters established by the Academy for Educational Development in 2004 with support from USAID, three (in Gitarama, Nyanza, and Nyagatare) collapsed because they were unable to cover their expenses. Only Nyamata (founded in October 2004) remains active, making it the oldest telecenter in Rwanda. The technical components of the telecenter, including the computers, the scanner, and the fax, are not fully utilized, in part because few people in Nyamata read English. Rwandan literacy rates are low even in Kinyarwanda.

In his speech, Nyirishema Nyamata telecenter founder Paul Barera referred to infrastructural challenges that occasionally stop the telecenter from operating. The Internet network at the center often goes down owing to power shortages. Outages lasting up to two days mean that telecenters cannot always recharge the batteries for their generator on a daily basis. As a result, electricity supply remains uneven, cutting deeply into profitability, as without electricity computers are simply inert metal boxes. Internet connectivity is expensive, more than most community members can pay. Despite the best efforts of Barera to expand the telecenter's revenue stream, the services provided are costly compared with the purchasing power of the local people. The problem is not a lack of vision, energy, or commitment. Rather, the questions are whether these noble efforts are financially sustainable and whether the capacity of indigenous Rwandans is sufficient to maintain this technology over the long term.

The Rwandan state took responsibility for the development of information and communications technology (ICT) infrastructure with the intent of rebuilding a shattered economy, turning Rwanda into a second world country, and modernizing the nation. Most of the early work of the Rwandan Patriotic Front (RPF) government, headed by the charismatic president and former RPF general Paul Kagame, was devoted to rebuilding and reconstruction. The government's work also included explicit exercises in envisioning

a new nation. As part of its reconstruction effort, the government created a national consultative process in 1998–99 aimed at answering questions like, How Rwandans envision their future. What kind of society do Rwandans want to live in? What transformations are needed to emerge from a deeply unsatisfactory social and economic situation?

These are fascinating questions. Rwanda's future depends on eliciting meaningful responses from the people, but, as this chapter suggests, that effort faces serious difficulties because of institutional deficiencies that an ideology of technology-driven modernization may be insufficient to correct. ICT development is a central element in the government's imagination of a modern Rwanda. As such, ICT policy is a key site for investigating the role of sociotechnical imaginaries in rebuilding that shattered nation.

In the early twenty-first century, President Paul Kagame and the Rwandan state were in the midst of simultaneously building a variety of imaginaries, both political and sociotechnical. First, Kagame wished to knit Rwandans into a nation not divided by ethnicity or caste but unified in imagining a shared national identity. Second, he wished to rebuild a nation shattered by civil war and depressed by poverty into a modern state with strong economic prospects. Third, he wished to show that his government could provide for all Rwandans in terms of security, prosperity, and economic advancement. Kagame used ICT in particular to build this sociotechnical imaginary. He publicly performed a vision of Rwanda as a modern and prosperous country, projecting a desirable future for a country haunted by a bloody past. He believed, and indeed evangelized, that Rwanda could attain a positive social order of peace and unity, modernity and prosperity, through vigorous advances in science and technology.

Past and Future

In 1994, humanity lost its way in Rwanda, a small, hilly, densely populated, landlocked country in central-east Africa (Uvin 2001). A civil war¹ between the RPF, based in Uganda, and the Habyarimana government of Rwanda turned into genocide against Tutsis and moderate Hutus. Violence directed largely at civilians on the basis of ethnicity took "appalling, barbarous forms" (Allen 1999, 369). The Rwandan génocidaires put their hands on the levers of state power, with deadly results (Mamdani 2001; Semujenga 2003; Dallaire 2003; Gourevitch 1998). The international community, including the United Nations (UN) and the United States, stood by and watched passively (Dallaire 2003; Melvern 2004; Allen 1999).

Engulfed in violence and warfare, the Rwandan state and political sys-

tem collapsed completely (Allen 1999). More than a million people were killed, two million fled the country as refugees, and approximately three million were internally displaced out of a total population of about eight million. Further, the country suffered a disastrous drop in professional capacity, particularly in science, technology, and public administration, losing a generation of teachers, entrepreneurs, civil servants, and doctors (UNDP 2004). The gross domestic product was halved in a single year. The nation's productive physical infrastructure was completely destroyed (Republic of Rwanda 2000).

Despite Rwanda's devastating history and its status as one of Africa's poorest countries, the nation's self-proclaimed "ICT Champion," Paul Kagame, imagined that one day Rwanda would be the information technology hub of the region. Following Kagame's ascension as president in 2000, his government implemented a sweeping agenda to reshape the Rwandan economy and society. The government believed that information and knowledge, powered by ICT, would be the primary source for job creation, wealth generation and redistribution, and rapid economic development. Just as in the South Korean national imaginary nuclear power was viewed through the lens of "atoms for development" (Jasanoff and Kim 2009, 121), so in the Rwandan national imaginary telecommunications and the Internet are viewed as ICT for development.

Kagame's government envisioned a Rwanda in which citizens coexist peacefully and collaboratively to build an economically productive future. For Rwanda to move beyond the history of bloodshed and the failures of the postindependence period, the state would endeavor to create a unified nation out of two groups who are extremely close culturally but yet have experienced bitter and long-standing social and political divisions. The government reimagined a Rwandan nation in which ethnicity was not the key factor in inclusion or exclusion and in which real power sharing occurred between the Tutsi and the Hutu. Kagame and the RPF government attempted to provide the Rwandan people with a common narrative of who they were, where they had come from, and where they were headed (Jasanoff, introduction to this volume). This new narrative emphasized linguistic and cultural similarities, attempting to elide the differences so sharply delineated and reified by the Belgians.

The ICT policies embraced by Kagame attempted to implement three goals that together constituted Rwanda's sociotechnical imaginary of modernization and development. The first was the construction of Rwanda as an "African Singapore," thoroughly modern, wealthy, and powered by ICT. The second was the formation of an inclusive and nonracial state. The final—

and most externally directed—element of this imaginary was that of changing the political culture of the fractured nation, perhaps even moving toward a more participatory democracy. Technology, more specifically ICT, represented a “crucial constitutive element” in the emerging Rwandan national imaginary (Jasanoff and Kim 2009, 133). Indeed, the RPF government could claim great success in distributing ICT infrastructure throughout the country. The government prioritized state reconstruction (Ottaway 1999), rebuilding heavily damaged telecommunications infrastructure, such as damaged phone lines, and simultaneously upgrading and replacing them with infrastructure that can carry data.

At the same time, Rwanda resisted adapting to a vision of its political future largely conceived by international donors. Donor money and advice flooded Rwanda in the late 1990s, aiming to create a Western-style democracy from the top down, as was also attempted in Iraq and Afghanistan. RPF leaders feared that this externally generated vision of governance in the Western mold would conflict with the nation’s peace and security. A discourse of democracy was adopted in Rwanda, but elections were not heavily contested nor competitive at the national level. On its face, a Western observer might cry foul; yet a persuasive argument could be made that simple reliance on majority rule would result in permanent disenfranchisement—or worse—for the minority Tutsi, the main victims of the 1994 genocide. Like the rapidly developing countries known as the “Asian tigers,” the ruling government in this small East African country determined that peace and economic progress were more desirable than Western-style democracy, at least in the short term.²

Since the Rwandan state has not embraced participatory democracy as understood in the sense of the European Union or the United States, the Rwandan people have had little input into whether ICT is a good way to move forward for development; they also had little input into how it should be configured or where it should be distributed. They were not empowered to put forth alternative imaginaries. Instead, the government of Rwanda, firmly steered by the RPF, laid out a clear plan about how the building of ICT would proceed, a plan with little room for discussion and debate.

So, will a top-down imaginary take hold in Rwanda? What is needed for it to become the shared goal of many rather than the vision of one leader or an elite few? Kagame’s vision of Rwanda as a modern, technologically advanced, middle-income country was clearly popular with both the RPF political machinery and donors. How could it be made popular with the common Rwandan? The former Soviet Union may provide a model for this kind of spread of a top-down ideology to the common people. The Soviet

Union—particularly under Stalin—had a similar sociotechnical imaginary that combined manufacturing, technology, and production. Like Rwanda, which had just gone through a genocide, the Soviet Union had gone through the devastating Second World War, in which millions died brutal deaths on the Western front. Yet Russians today longingly remember the stability, the order, and the pride of the old Soviet Union. Stalin tapped into two key themes that tugged at the heartstrings of his fellow countrypeople: pride and reconstruction. If Kagame can build a similar semblance of national pride and identity (which at this point is very much still a possibility) and overcome the vicious ethnic divisions of the past, there is a chance that his sociotechnical vision may take deeper root. However, this is no easy task. Kagame and the RPF government have had only decades to imagine a new nation, build a national identity, reconstruct the nation's economic capacity, and push forward the image of a scientifically based economy. The Rwandan leadership has been simultaneously involved in creating "an imagined political community" (Anderson 1983) and a "collectively held, institutionally stabilized, and publicly performed vision of a desirable future" based on ICTs (Jasanoff, Introduction). To make these two intertwined imaginaries take root together is not impossible, but the task may be Herculean.

Embedded Hierarchy: Centralization as an Artifact of History

ICT policy in Rwanda reflects and reinforces the nation's tradition of hierarchical rule as well as the new economic and political visions for its future. Centralization in Rwanda reaches back centuries. In contrast to its neighbors, Rwanda existed as a fairly coherent whole from precolonial times (Fisiy 1998, 20). The Kingdom of Rwanda was a monarchy with an administrative structure that emanated from the court as early as the mid-sixteenth-century (Melvern 2004, 5; Fisiy 1998, 20). A strong military system powered by an expansionist state began to develop by the eighteenth century. During the nineteenth century, the Rwandan state embarked on empire building and reached a height of centralization, becoming a powerful state respected by neighboring rulers (Semujenga 2003, 15). The state system of Rwanda before the genocide has been characterized as "hierarchical, omnipresent and forceful" (Van Leeuwen 2001, 639). Scholars note that Rwanda had an "entrenched culture of obedience," which facilitated the swiftness of the genocide (Paluck and Green 2009).

Before Rwanda came under Belgian rule after the First World War, there were deep cultural commonalities across the nation that made many ethnic distinctions meaningless (Mamdani 2001; Fisiy 1998). All Rwandese speak

one language, Kinyrwanda, share one style of religious celebration, and perform the same set of traditions and rituals.³ Perniciously, however, the Belgians constructed artificial “racial” distinctions between the Hutu and Tutsi. Under colonialism, the Hutu were brutally discriminated against in all walks of life, and social divisions were reified and strictly enforced (Mamdani 2001, 92–105; Semujenga 2003, 16; Melvern 2004, 5). These actions privileged the Tutsi socially and economically (Fisiy 1998, 20).

Rwanda attained independence from Belgium in 1962, but the colonial ordering of Hutu and Tutsi into a visible socioeconomic hierarchy poisoned the period following independence. As colonialism came to an end, the Hutu majority called for a change in Rwanda’s power structure that would accord them more rights (Semujenga 2003, 16). In 1959 the Hutu Revolution called for majority rule and overthrew the Tutsi chiefs with the support of the Belgian government. In response to the rise of political majority in the 1959 “peasant revolution,” a first wave of killings against Tutsis took place, resulting in the deaths of 20,000 Tutsi. Those Tutsi who survived were expelled from political life and became stateless refugees. Many fled to Uganda (de Lame 2004).

Kagame’s family belonged to this massive wave of refugees. Kagame was born into an aristocratic Tutsi family with ties to King Rudahigwa of Rwanda (Grant 2010), but the family lost all wealth and status as refugees. As a child, Kagame remembered houses burning as a Hutu death squad ran toward his family’s car. His family fled from Rwanda, spent time in the Democratic Republic of Congo (Zaire) and Burundi, and finally landed in Uganda in 1960. Kagame was raised in a Nshungerezi refugee camp in southern Uganda (Thompson 2004). As a refugee, he had to queue for food and study under a tree (Grant 2010). As Kagame reached manhood in Uganda, a 1973 military coup installed Major General Juvenal Habyarimana, an ethnic Hutu, into power in Rwanda.⁴ The coup led to a period of relative calm between the Hutu and the Tutsi; however, under Habyarimana, the Rwandan economy declined, corruption escalated, and health and education services collapsed.

In the 1980s, Kagame fought in the bush in the Ugandan civil war alongside the leftist National Resistance Army organized by Yoweri Museveni, and, as a military intelligence officer, he helped Museveni ascend to the presidency. Museveni arranged training for Kagame, first in Cuba in 1986 and later in 1989 at the US Army Command and Staff College. Seeing the success of Museveni’s armed struggle, in the late 1980s, Kagame and his childhood friend from the Ugandan refugee camp, Fred Rwigyema, began building an army of Rwandan exiles within the Ugandan army, which would become the RPF. Despite Museveni’s support for Kagame, Rwandan refugees were

not granted Ugandan citizenship. The Ugandan president encouraged the departure of Rwandan refugees back to Rwanda, because they had become a political liability in a country with its own long history of ethnic civil war.

In October 1990, the RPF crossed the border into Rwanda, where they were routed, but a “low-intensity civil war” began (Reyntjens 2006). Kagame assumed command and rebuilt the RPF in the Virunga Mountains. On July 17, 1994, the RPF, led by Major General Kagame, defeated the remnants of Rwandan government troops and declared the end of the civil war. Four days later, under the Arusha Accords, a multiethnic Government of National Unity was formed.

From the start, one of the most pressing problems facing the RPF government was how to enact the imaginary of a Rwandan nation distinct and separate from its bloody past and comprising a newly unified future. Under Kagame, leadership shifted to the Tutsi minority, which at the time comprised approximately 15 percent of the population; by contrast, the Hutu majority comprised 84 percent, and only 1 percent was Twa (Central Intelligence Agency 2007). As Mamdani noted early on, “Rwanda’s key dilemma is how to build a democracy that can incorporate a guilty majority alongside an aggrieved and fearful minority in a single political community” (Mamdani 2004, 266).

Kagame’s experiences as a refugee, as a stateless man alienated from his homeland, as a military commander raised up and then rejected, and as a rebel fighting for his people’s place in their homeland forged his iron personality. A passionate yet pragmatic man, his life was dedicated to righting an injustice, yet above all to surviving. He was a military man through and through, trained and mentored under Museveni, himself a nation builder and an autocrat. Kagame’s background and associations groomed him to be authoritarian. He also inherited institutions that had been crafted before, during, and after colonialism to support a style of governance that favors centralized, hierarchical rule. At the same time, the Rwandan state also inherited a nation whose civil society and administrative leadership had been destroyed by war. The most effective societal bulwarks against authoritarianism were missing from the start of Kagame’s presidency.

A Phoenix from the Ashes? The Reconstruction Government

Critics observe that Rwanda’s postgenocide government remains militaristic and authoritarian (Uvin 2001, 184). The Tutsi-dominated RPF agreed to share power with the moderate Hutu parties, the Democratic Republican Movement, the small Social Democratic Party, and the Liberal Party

(Lemarchand 2007). Over time, however, power became concentrated in the hands of the RPF. In 1995, Prime Minister Faustin Twagiramungu resigned and became an exile, as did President Bizimungu and other leading Hutu members of the coalition. Later that year, the moderate Hutu party, the *Mouvement Democratique Republicain* was banned on grounds of “divisionism.” Respected Africanist and scholar Rene Lemarchand states that “Rwanda had become for all intents and purposes, a one-party state” (Lemarchand 2007, 7).

On April 22, 2000, Kagame became the fourth president of independent Rwanda. He was reelected in 2010 in an election that was considered “transparent and efficiently run” by some (CNN Wire Staff 2010). That he received 93 percent of the vote, however, called into question the fairness of the election. In his governance style, Kagame emerged as a player of established Rwandan political scripts as well as a ruler in the well-worn style of the African Big Man. Rwanda’s policy apparatus provides neither a tradition nor an established set of practices for participation by average Rwandans or, more strikingly, for the opposition to have a voice. Regardless of whether one is an admirer or a critic of the RPF government and its leader, Rwanda’s hesitant return to governability in the 2000s displayed few systemic checks and balances on the ruling party (Allen 1999, 179).

As the leader of a minority government, Kagame was under pressure to demonstrate that he intended to treat all areas of the country and all citizens “fairly,” partly in accordance with its mission of reconciliation and partly to ensure its own survival. According to former US Ambassador Herman Cohen, “In Brussels and Paris, Hutu intellectuals continue to plot revenge” against the RPF. Kagame himself observed, “Without successful reconciliation, political stability and security, private investors will not develop confidence in the country.” Despite this decorous statement, more is at stake than just the level of private investment in Rwanda. The very existence of the Rwandan nation is at risk because of external threats on the Congo border and internal challenges to Kagame’s rule. Inside the country, growing numbers of political opponents view armed resistance as a real option. Heirs to the Hutu Power movement led an insurrection at the end of 1997 in the northwestern provinces. Enemies mass at Rwanda’s borders. Burundi and the Congo house large contingents of exiled *génocidaires* who would be happy to see Kagame overthrown.

On taking office, Kagame developed a strong national agenda (Ottaway 1999). His government aggressively pursued policies for eliminating the ethnic distinctions that led to the genocide (International Crisis Group 2002). It brought relative order, security, and stability to a country that had

endured almost forty years of ethnic bloodshed. Eight political parties joined in the government of national unity. Kagame consistently respected the central tenets of the Arusha Accord and treated the accord as a fundamental law (International Crisis Group 2002). His supporters note that his government has been highly effective in rebuilding the country and responsive to the needs of the majority. The electoral system pays careful attention to the representation of various vulnerable social groups in both the parliament and ministries. Members of parliament are mainly elected indirectly by organizations of youth, women, and the disabled. On a positive note, as of 2004, Rwanda had the highest number of female parliamentarians in the world. Further, Hutu held at least fifteen of the twenty-nine positions in the 2004 government and thirteen of the eighteen ministerial portfolios.

Participatory democracy, however, has been slow to take root in the new Rwanda. The International Crisis Group states that political parties are “only tolerated if they agree not to question the definition of political life drawn up by the RPF.” The party has banned local political meetings and grassroots meetings. It has banned opposition political parties and imprisoned political opponents. Indeed, Mrs. Victoria Ingepire, a moderate Hutu whose brother was killed in the genocide, returned to challenge Kagame in the 2010 presidential election but was placed under house arrest and accused of “genocide ideology.” Human rights observers have expressed serious concerns over government efforts to muzzle the press, which has resulted in the flight of some editors, including those of the formerly pro-RPF *Imboni*, into exile. One critical newspaper editor died mysteriously in an automobile accident and was found with his head nearly severed. The vice president of the Democratic Greens died of machete wounds days before the election.

Dreaming of a Rebuilt Nation

Nearly two decades after the genocide, Rwanda has crushing social and economic problems. In a country that ranks among the world’s least developed, approximately 60 percent of Rwandans earn less than a dollar a day (Baldauf 2007; Barigye 2008). Life expectancy at birth is only forty-five years. Rwanda’s population is set to double by 2030. The economy is predominantly agricultural, and 91.1 percent of the population is actively involved in agriculture, with only 1.7 percent working in the industrial sector of the economy. The Human Development Index ranks Rwanda 161 out of 177 countries.

Against this background, the sociotechnical imaginary of ICT for de-

velopment represents a crucial ingredient for Rwanda to transform itself from an agricultural third world country into a technologically driven second world country. In 2008, Kagame announced his aim to “use the power of science and technology to transform” Rwandan society (Kagame 2008). He sought rhetorical inspiration from the United States, promising to leverage science and education to permit “a more rapid socioeconomic transformation” and help the country make better development choices (Kagame 2008). He argued that he had a “developmental vision” and that he aimed for Rwanda’s public sector to play a leading role in this matter. Enormous support from the outside world for this vision translated into significant resources from donors. Rwanda’s economy began growing at 7.5 percent a year. It had a competent government with a transformative vision (Kinzer 2008). At the heart of Kagame’s vision for the country’s economic rebirth was a new technological tool: ICT.

The RPF government believes, in a manner reminiscent of Walt Rostow, the father of modernization, that ICTs offer Rwanda the opportunity to “leap-frog the key stages of industrialization and transform her subsistence agriculture dominated economy into a service-sector driven, high value-added information and knowledge economy that can compete on the global market.”⁵ Kagame asserts that “Rwanda is at risk of being . . . marginalized if she fails to embrace these technologies to transform her economy and society.”⁶ He believes the potential of ICT can help achieve the “vision of a modern economy for Rwanda.”⁷ Albert Butare, Minister of State for Energy and Communications, seconds Kagame, calling ICT “an indispensable tool for . . . modernization” (Bowman 2007b).

According to Dr. Pius Ndyambaje—the president’s ICT advisor in 2004—Rwanda’s first ICT policy is borrowed directly from Malaysia’s Vision 2020⁸ and Singapore’s vision of transforming the country into an “Intelligent Island,”⁹ using ICT as the main engine for promoting accelerated development and growth (Dzidonou 2002). It is hard to determine whether this vision is in competition with other competing choices because the government of Rwanda since 1994 has not been transparent. Indeed, Rwanda’s reconstruction has occurred through central planning, massive national consultations, and elaborate white paper guidance documents that combine Soviet-style planning with American-style motivational mission statements. Whereas in the American and to some extent the Korean cases the educational and scientific capacity to attain the desired sociotechnical imaginary was not at issue (Jasanoff and Kim 2009), in Rwanda the national vision of ICT as a socioeconomic engine did not evolve over time. Instead it emerged

fully formed from the forehead of a Zeus-like United Nations Economic Commission for Africa (UNECA), in detachment from questions of the population's actual capacity.

Getting ICT on the Agenda

The American discourse of the digital divide seeped into Africa gradually via multiple authors and international organizations. Former UN Secretary General Kofi Annan firmly believed that, by overcoming the divide, ICT could help Africa's developing nations to "modernize" while allowing them to pursue social welfare goals. Annan stated "Information and Communication technologies can help us turn the [potential for investment growth in developing countries] into concrete opportunities that will help the poor work their way out of poverty while, at the same time benefiting the world community as a whole."¹⁰ The African Information Society Initiative (AISI) was launched concurrently with the rise of ICT as a social goal in 1996, only two years after the genocide ended and Rwanda's Government of National Unity was formed. According to the UNECA, "Africa needed a common vision for its quest not only to bridge the digital divide between Africa and the rest of the world but more importantly to create effective digital opportunities to be developed by Africans and their partners, and to speed the continent's entry into the information and knowledge global economy" (UNECA 1996).

UNECA—a major donor body—encouraged the Organisation of African Unity (OAU) Heads of State Summit to adopt the AISI in 1996. The initiative supported the efforts of twenty-eight African countries to develop "national information and communication infrastructure" policies. In March 2001, under Annan, the UN established an Information and Communication Technologies Task Force in part to support Africa's drive for self-development. This project presumed that ICT can be used to contribute to the elimination of poverty, human development, the elimination of gender disparities, and the combating of disease. Indeed, Goal 8, Target 18, of the UN Millennium Development Goals urges the international community to distribute the benefits of ICT more equitably.¹¹

African and global activists participated in internationally sponsored ICT forums such as the 2001 World Summit on the Information Society, organized by the UN's International Telecommunications Union and endorsed by the UN General Assembly. The summit drew together civil society members, private sector organizations, governments, UN organizations, and other donors. Social activists observing the emergence of the new set of technologies

recognized ICT as a potential economic and political resource and, importantly, one that acts as a vehicle to discuss long-held social justice objectives such as combating poverty, empowering women, and improving education and health care in a modern context. These activists followed the lead of US actors and set about creating a discourse that emphasized the need to distribute that resource equitably.

This commitment garnered results. By 2012, the International Telecommunication Union had named Rwanda among the top six developing countries in the world in terms of the strength of its ICT market (Buteera 2012). Kagame again was in the lead. As cochair of the UN Broadband Commission for Digital Development, he called on world leaders to place access to broadband on the policy agenda of the Millennium Development Goals. His vision coupled ICT's technological potential with imagined solutions to the region's most urgent problems: "As we look to the future we realize that we need to do more and faster, the world is waiting, and our people are counting on us, whether it is central databases of crop yields and market information for farmers, integrated school curricula for pupils, and entrepreneurial opportunities for youth" (Kagame 2008).

"Flying Geese" versus "Utopian Computing"

As Kagame's words make clear, Rwandan advocates and policy makers imagine ICT as an instrument of social and political betterment, not just as a technological tool. A closer investigation suggests that two somewhat different imaginaries are at work in the Rwandan context: that ICTs will improve productivity and lead to economic growth and that ICTs will improve social and development outcomes. I refer to the first as "flying geese" and the second as "utopian computing."

Economists and technocrats predominantly focus on ICT's contribution to manufacturing productivity. These advocates believe ICT can improve African participation in the global marketplace (Dzidonou 2002) as well as economic participation in the domestic marketplace for small businesspeople. This vision of ICT focuses on nationwide infrastructure and connectivity—particularly in remote and rugged areas—meaning electricity, copper wires, satellite towers, very small aperture terminals, and fiber-optic cables. The vision of ICT as a rural economic facilitator also requires improvements in the educational infrastructure. Students will have to become computer literate—no small task on a continent where most classrooms lack glass windows and where sums are done on blackboards with chalk.

A more utopian vision, held by civil society activists, sees this technology

as a tool that can help develop social justice and perhaps democracy. Many practitioners and scholars have argued that ICT may contribute to improved social, economic, and development outcomes in poor areas of the West, in developing nations in general, and in Africa in particular (Eggelston 2002). According to these visionaries, access to ICT can empower women and give the poor increased economic opportunities while improving the quality of education and the delivery of medical services in rural areas. This most utopian version will require African governments to move from paper files to electronic files, invest in a well-developed infrastructure of electricity, fiber-optic cables, satellite towers, and copper wires in both cities and rural areas and utilize healthy doses of political will at the national, regional, and multinational levels.

The rapid economic growth of the Asia Pacific region between the 1960s and 1990s, termed by some economists as an economic miracle, provided the main source of inspiration behind Rwanda's ICT planning. Following this flying-geese model, Rwanda seemed to be aiming to move up in technological development by following in the pattern of the countries ahead of it in the development process (Radelet and Sachs 1997, 52). On the basis of both his rhetoric and his planning priorities, it is clear that Kagame's focus was on ICT as "a symbol of the power of science and technology that [a nation] should actively seek to acquire in order to develop into a strong, modern nation," just as the Korean state once viewed nuclear energy (Jasanoff and Kim 2009, 131). Yet the RPF vision of ICT as a socioeconomic driver lacks contestation, lacks debate, and lacks discussion with the grass roots. ICT policy in Rwanda has been developed and implemented by donors and the state, not crafted by citizens.

Citizen Participation in ICT Policy Making

Remarkably, Rwanda developed the first ICT policy in the East African region in 2001, but modernization was not a grassroots creation. It was the result of direction from the topmost levels of government. As of 2007, Rwanda had already issued two ICT policies organized in five-year increments. This process produced a detailed document with clear implementation indicators and detailed time frames widely discussed and admired by other governments throughout the East African region.¹² One adviser to the Rwandan government notes that "This country is very hierarchical, and whatever the government decides to do, it will do, and society will follow in a [. . .] disciplined way" (Baldauf 2007).

The representative from Duhamic—the main umbrella organization that

oversees the nongovernmental organization (NGO) sector in Rwanda and one of the only strong NGOs visible in Rwanda—Mr. Innocent Benineza, stated his belief that civil society “had not been consulted enough in the National Information and Communications Infrastructure plan (NICI) process” (Bowman 2007a); however, he qualified that statement by saying that “many NGOs do not understand the importance of ICT” (Benineza 2008). Benineza believes that the government does listen to civil society but also asserted that the government’s lack of engagement with civil society results from the weak and inactive nature of Rwandan civil society. Benineza asserts that the government needs to make more concerted efforts to involve civil society in the policy process.

One government supporter, a Rwandan with impressive foreign academic credentials who lives abroad, cautioned me to focus on the effectiveness of the government’s implementation, not on its autocratic nature. After all, there are many African governments that are autocratic yet not effective. For example, he remarked, “What would a farmer say about ICT policy anyway?” He observed that there are certain prerequisites for any person to participate in a consultation and that significantly more education and capacity building are needed in Rwanda to allow citizens to exercise democratic rights, such as participation. Drawing on democratic theory, an observer could contend that perhaps the citizens are not as well qualified as they might be, but the correct response nevertheless—particularly in a country like Rwanda, which is rebuilding society from the rubble—is to furnish citizens the opportunity to understand the ends and means of their interests, not to exclude them from decision making altogether (Dahl 1989). In fact, this type of an approach informed the *gacaca*¹³ process.

Although a small number of “stakeholders” were recruited during the ICT policy development process, even the most generous account by government officials suggests that participation by the average Rwandan, or even elite representatives of major social sectors, was low. By contrast, the Rwandan government, multilateral donors, and the multinational private sector enjoyed high levels of participation and influence in the development of the Rwandan ICT policy.¹⁴ The second round of policy development increased citizen participation to the level of “placation” (Arnstein 1969), in the sense that a few handpicked representatives of civil society and the Rwandan private sector participated on the National Task Force. In the words of one official at the Rwandan Information Technology Authority, “There were stakeholders, but [the process] was not engaging the stakeholders. There were stakeholders in the writing. One consultant led the NICI I process. He engaged, but not as much as one would wish.”¹⁵

As shown above, the ICT policy-making process supports arguments that the RPF government's idea of citizen participation is one of guided and controlled consultation. Rwandan citizens do not have an effective way of voicing concerns about decisions the government is taking, with respect to ICT.

Some argue that Rwanda is a society based on censorship and that those who speak out against the government are punished, imprisoned, or worse (Reyntjens 2006). Some observers believe that the government of Rwanda is guilty of cooptation or repression of independent forces in civil society. Indeed, according to the International Crisis Group, civil society in Rwanda "exist[s] between repression and coercion" (International Crisis Group 2002). Accordingly, there is no social organization that can provide a voice of dissent or even mild critique and, for that matter, criticism regarding the direction, pace, and design of Rwanda's ICT policy and implementation or any other policy issue.

Equity, Education, and Human Resource Capacity in Rwanda

The centerpiece of the Rwandan government's effort to distribute ICT to the Rwandan population is education. Education is one of the eight pillars in the nation's ICT policy. Education-related ICT projects are wide-ranging, and span training teachers, rolling out computers, installing Internet connectivity, pursuing monitoring and evaluation, writing content in Kinyarwanda, and digitizing math, biology, chemistry, and physics. Rwanda has made primary school education free and has extended this free education to the first three years of secondary school. As of 2008, the Rwandan government was spending 1.6 percent of its gross domestic product on the promotion of science.

The government places especially strong emphasis on science and technology in education. In the words of the director of planning for the Rwandan Ministry of Education, "We want to use ICTs for education. We want a skilled workforce."¹⁶ One of the government's key goals is to deploy the technological resources needed to implement educational reform and ICT initiatives.¹⁷ A specific objective is to "transform Rwanda into an IT literate nation" and improve the educational system over a period of ten years. As part of the process of attaining digital literacy, the government initiated a comprehensive program to deploy and "exploit" computers in schools.

This effort included the placement of computers in schools, work to bring the Internet to schoolchildren, attempts to put a computer science curriculum in place, and a program to train thousands of teachers in basic computer literacy in cooperation with Microsoft. In 2006, the Rwandan gov-

ernment began placing computers in schools, both public and private. The aim was, by 2007, to identify every single school in the country and give each an identical number of computers, regardless of its size and location. Primary schools received one laptop each, while secondary schools were slated to receive ten laptops each. In addition, each of Rwanda's thirty districts was to receive precisely one telecenter.

This distributive strategy essentially ignored a school's needs in allocating hardware such as laptops. Giving each school exactly the same number of computers regardless of "need" maximized blame avoidance, but at the expense of educational utility or the efficient use of resources. Computers were distributed with little regard for general literacy, computer literacy, staff conditions, electrification, or student needs. To some extent, this blueprint for distributing technological artifacts evenly could have the perverse effect of actually reinforcing existing inequalities. Areas of the country that already had more schools would have more computers than areas that were educationally more deprived. At the same time, schools with extremely high student populations would receive too few laptops for their size. The adoption of such a numerically egalitarian notion of equity underscores the state's power but also the perverse constraints created by the imaginary of equity in postgenocide Rwanda.

The government was aware of the concern that sending out the physical artifacts of ICTs before attempting to accomplish other core social objectives, such as reducing poverty,¹⁸ or ensuring universal literacy (Baldauf 2007). But Education Ministry officials have a ready response: "Europe did not wait until everyone had a car before building airplanes." Echoing these sentiments, Rwanda's Minister of State, Energy, and Communications Albert Butare recounted in a 2007 interview an exchange with Rwanda's development partners: "You are too ambitious. Do you really need computers and the Internet or [do you need] sufficient drinking water, good shelter and food?" We said, [they are] not exclusive. We need all of them" (Kimani 2008).

Given Rwanda's experience with ICTs during the genocide, particularly with radio, it is no accident that Kagame wished to keep his hands firmly on the levers of ICTs. The deposed Hutu government used both official and unofficial radio sources to incite the genocide (Metzl 1997). The Rwandan media, encouraged by the *Akazu*—a powerful circle around the widow of President Habyarimana—attempted in 1994 to convince Hutu that they would soon be victims of a genocide mounted by the Tutsi (Chalk 1999). The Arusha Accords, signed in 1993,¹⁹ barred the government-owned Radio Rwanda from inciting hatred, so the *Akazu* created their own private radio station, the RTLM, blending African music, talk radio, and coded attacks

on Tutsi and their allies, deliberately targeting youth gangs like the *Interahamwe* (Chalk 1999). RTLM was founded in part in response to reforms that allowed moderates to take positions inside the Ministry of Information, which controlled Radio Rwanda (Metzl 1997). One may speculate that Kagame wished to keep control of the means of communication, including radio, television, and information technology, firmly within his own grasp so he could control the message. It was, however, precisely such centralized government control of the radio that facilitated the genocide. The RPF's top-down approach gives Tutsis more access to ICTs without addressing the structural dangers of centralized, top-down communications systems.

Conclusion: Constructing Alternative Imaginaries

As the first government to be elected to power after the genocide, the ruling RPF regime adopted a transformative vision of the role of information and communication technologies in rebuilding Rwandan society. The goal of nationwide connectivity proved successful in terms of securing the access of the average Rwandan to ICTs. However, the Rwandan planners envisioned and built a top-down, centrally controlled, state-run Internet. The Rwandan state succeeded in distributing hardware but was less successful in building capacity or local ownership and buy-in of the technology.

Kagame and the government of Rwanda have repeatedly announced their ambition to be an African Singapore, but what would this mean in practice? Singapore is wealthy and technologically advanced, but it is also autocratic and, with regard to human rights, repressive. The Singaporean government relies on the Internal Security Act "to hold, without charge or judicial review, those suspected of subversion, espionage, and terrorism." Freedom of expression is sharply limited in Singapore. Government authorities curtail rights to freedom of expression, association, and assembly. They deny legitimacy to associations of ten or more, if they deem the groups "prejudicial to public peace, welfare or good order." The government requires police permits for five or more people planning a public event, and it uses contempt of court, criminal and civil defamation, and sedition charges to rein in critics (Human Rights Watch 2013). Accordingly, imitating Singapore economically comes with an implied imitation of its less than democratic process.

Kagame imagined ICTs as a gift from the state to the people, not as a collaborative or, even more profoundly, a grassroots effort. This approach was implemented at the cost of determining what a town or a school actually needed or what was appropriate for people in particular localities. Increased participation might have slowed deployment, especially if it meant includ-

ing people with little prior understanding of or use for new technologies. Nonetheless, the effect would have been to construct a more contentious but possibly more productive set of state-society relationships from those that the RPF found tolerable. Further, the effect would have been to educate the public and get them involved in their own development decisions. Given that Kagame selected a technology that evolves most quickly, and most innovatively from the users themselves, it seems a crucial oversight to keep Rwandan users in the dark about the power of this potential engine of socioeconomic transformation.

Yet Rwanda remains in a very delicate situation, with a sharply divided population and enemies massed at the border. Multiparty democracy, implemented at a breakneck speed, for its own sake, could easily lead to new outbreaks of violence. Singapore offers Rwanda the idea of stability, which gives the economy time to develop and the population time to become more unified and to gain the educational and technical capacity they need to compete. Transition to multiparty democracy and a free press shook neighboring Kenya to the core in 2007, nearly plunging the country into a bloody civil war. Indeed, to avoid ethnically based violence, the Kenyan press voluntarily chose to limit itself to messages of peace for nearly one week before the 2013 election. What alternative could Rwanda follow? A managed transition toward democracy on the model of countries like Ghana, South Africa, and Kenya might be an effective way to move Rwanda toward a more democratic future, while avoiding the backward slide of neighboring Uganda.

Consistent with such a plan, an alternative sociotechnological imaginary could have focused more on infrastructure and hardware sustainability. Given that fewer than 10 percent of Rwandans had access to electricity in 2008, the government of Rwanda's rapid effort to distribute resources such as laptops seems at best loosely connected to a broader effort to create interconnected systems that could enhance the ability of the Rwandan people to communicate (Majtenyi 2008). This failure to put necessary infrastructure in place before distributing the artifacts of proposed development is particularly problematic in the case of ICTs, which quickly become obsolete and require sophisticated human resources for optimal use.

An imaginary rooted in concerns for sustainability might also have placed greater emphasis on grassroots participation. Local people need to be listened to, not just "consulted" or "educated." The citizens of Nyamata could be talked to and incorporated into a decision-making process about how to make their telecenter more sustainable and what infrastructure as well as educational requirements they need to keep that telecenter running and to allow schools and hospitals to most effectively utilize new technolo-

gies. Criticism and input could actually strengthen the development of a durable, technologically sophisticated framework, as well as a durable system of governance that further develops with use. The creativity on display by the children of Nyamata on opening day could be harnessed to help design Rwandese software, write local content in Kinyarwanda, and acquire know-how to repair and maintain the computers.

Under Kagame, dramatic changes were wrought in postgenocide Rwanda. The country elected more women political leaders than any other country in Africa and possibly the world. Progress has been made in attaining the political imaginary of Rwanda as a single nation uniting once fiercely divided social groups. Nonetheless, rumblings of discontent indicate that the process of national unification will take time to complete. Kagame and the RPF accused and jailed political opponents for “genocide ideology” and “ethnic divisionism.” Some Hutu leaders feel that Kagame—who appeared to be president for life, not unlike his neighbor Yoweri Museveni—has reinstalled the Tutsi as a *de facto* politically, if not socially, privileged group.

ICTs can, of course, be governed in a top-down fashion, as is the case in China and Iran, or from a bottom-up fashion, as is largely—although not exclusively—the case in the United States. Because ICTs emerged in the West as an academic experiment, although one with government funding, ICT governance remained an unregulated and even anarchic domain for many years. Indeed, there are at least two types of ICT governance: the governance of the technology inside the technological community, for example, the distribution of domain names like Rwanda.go.rw; and the more overt regulation of gateways, access points, and information providers. In the Rwandan case, a largely authoritarian government created an interesting paradox. On the one hand, the government promoted broad access and national immersion in this innovative technology. On the other hand, access was provided, and controlled, by the state and not the private sector. And what the state giveth, the state can also take away.

In many ways, Rwanda’s ICT policy presumed more capacity and more unity than actually existed. For the government’s ambitious efforts to be successful in the long run, dramatic strides must be made in developing the capacity of the Rwandan population to understand, manage, maintain, and make choices about both ICT and their own governance. This is, in its essence, an endeavor to nurture the capacity of the grass roots. Technological systems are social as well as material, and people need to have a deep enough understanding of and intellectual investment in technology to fully utilize it, maintain it, and prevent it from decaying and becoming obsolete. Similarly, for the sociotechnical project of a sustainable state to succeed, Kagame

and the government of Rwanda must gradually step back from centralized control and make space for creativity, independence, and innovation, lest their efforts to build a new, modern, economically successful Rwanda decay owing to peoples' lack of participation in and maintenance of the institutions of governance.

Notes

1. The Rwandan Civil War began in 1990.
2. My analysis is based on several visits to Rwanda over a four-year period spanning 2004–2008 during which thirty-five ethnographic interviews were conducted with high-ranking Rwandan policy makers, private sector participants, and nonprofit activists. In addition, I have consulted numerous primary and secondary sources.
3. In precolonial times, the designations of Hutu, Tutsi, and Twa were historical social roles representing forest, pasture, and field, with social mobility among these groups.
4. The Habyarimana regime, which drew its strength from the Hutu of the north, broadened its discriminatory lens, discriminating against the Tutsi as well as against Hutu from the south of the country.
5. National Information Communications Infrastructure Plan (NICI) I, preamble, paragraph 5; NICI II, Foreword.
6. NICI I, preamble, paragraph 8.
7. NICI II, Foreword.
8. Information on Malaysia's plans for information and communications technology is available at <http://www.american.edu/initeb/ym6974a/nationalictpolicies.htm> (accessed December 12, 2008).
9. Mahatir Mohamad, "Malaysia on Track for 2020 Vision," speech given on January 10, 1999.
10. "ICT: A Priority for Africa's Development," remarks by Kofi Annan to the Opening of the third meeting of the United Nations Information and Communication Technologies Task Force.
11. "Information and Communication Technologies: A Priority for Africa's Development," A Statement by H.E. Kofi A. Annan, Secretary General of the United Nations, contained in ICT Task Force Series 2 at xv.
12. The membership of the NICI-2005 Plan Steering Committee can be found in Appendix 2 of the NICI I Plan. The final plan was produced by Clement Dzidonou, a Ghanaian, in consultation with a steering committee consisting primarily of Rwandan government officials. Appendix 2: The NICI-2005 Plan Steering Committee, "An Integrated ICT-Led Socio-Economic Development Policy and Plan for Rwanda, 2001–2005: The NICI-2005 Plan.
13. The *gacaca* court is part of a system of community justice inspired by tradition and established in 2001 in Rwanda, in the wake of the 1994 Rwandan genocide.
14. As noted above, donors were crucial in the planning and development phases of the NICI process. The most important donor was UNECA. Donors have also played a key role in implementing the NICI process. Most other donors began their involvement in implementation of the NICI process after 2001. The donors who have been most involved after implementation in Rwanda are the United Kingdom Department for International Development, which has worked with the Rwandans on education

and capacity building in the realm of ICT; the Swedish International Development Cooperation Agency, which supported the establishment of Rwandan Information Technology Authority and has provided strong support for the National University of Rwanda; and the United Nations Development Program, which provided significant financial support to the Rwandan Ministry of Infrastructure for the formulation of the NICI II plan and for the development of a feasibility study for the construction of telecenters in Rwanda. Indeed, the United Nations Development Program worked with RITA, the Rwandan Ministry of Infrastructure, and the UNECA to supervise the completion of NICI II and to design Rwanda's telecenters, relying heavily on high-priced international consultants. The World Bank did not begin showing serious interest in Rwanda's ICT plans until 2005 but became very engaged at that point in the E-Rwanda program.

15. Anonymous RITA official, August 16, 2007.
16. Bowman 2007c.
17. NICI I, Strategy E. According to NICI I, the government of Rwanda also aims to develop human resources in ICTs; develop ICT applications for education; computerize the civil service, particularly within the Ministry of Education; develop the necessary standards for deployment of ICTs in schools; and create conditions that allow ICT to be fully utilized in education.
18. Approximately 60 percent of the Rwandan population lives below the poverty line.
19. Somewhat confusingly, the Arusha accords began on August 4, 1993, before the genocide was completed, between the then government of Rwanda and the then rebel RPF, to end the three-year-old Rwandan Civil War. They were an international effort to bring peace to Rwanda that was not completely successful. The genocide began on April 7, 1994, against Tutsi and Hutu moderates, after Hutu president Habaryimana was killed in a plane crash on April 6, 1994.

References

- Allen, Chris. 1999. "Endemic Violence, and State Collapse in Africa." *Review of African Political Economy* 26(81): 367–84.
- Anderson, Benedict. 1983. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso.
- Arnstein, Sherry R. 1969. "A Ladder of Citizen Participation." *American Institute of Planner's Journal* 35(4): 216–24.
- Baldauf, Scott. 2007. "Rwanda Aims to Become Africa's High-tech Hub." *Christian Science Monitor*, October 17.
- Barigye, Tony. 2008. Rwanda Focused on Her Population. *New Times*, July 11.
- Bowman, Warigia, 2007a. Interview with Nongovernmental Activist, Innocent Benineza, July 15.
- . 2007b. Interview with Rwandan Minister of Education, Albert Butare, July 17.
- . 2007c. Interview with Eugene Karangwa, Rwandan Head of ICT, Mineduc and Yisa Claver, Rwandan Director of Planning, Mineduc. August 13.
- Buteera, Fred. 2012. "Global Report Names Rwanda Most Dynamic in ICT." *Digital News*, October 15.
- Central Intelligence Agency. 2007. "Country Profile for Rwanda." *World Factbook*. Washington, DC: Central Intelligence Agency, September 6.
- Chalk, Frank. 1999. *Radio Propaganda and Genocide*. Montreal: MIGS.

- CNN Wire Staff. 2010. "Kagame wins re-election in Rwanda, official results show." CNN World Online. August 11. Available at <http://www.cnn.com/2010/WORLD/africa/08/11/rwanda.elections/>.
- Dahl, Robert A. 1989. "A Theory of the Democratic Process." In *Democracy and Its Critics*. New Haven: Yale University Press.
- Dallaire, Romeo. 2003. *Shake Hands with the Devil*. New York: Carol and Graff.
- de Lame, Daniel. 2004. "Mighty Secrets, Public Commensality, and the Crisis of Transparency: Rwanda through the Looking Glass." *Canadian Journal of African Studies* 38(2): 279–317.
- Dzidonou, Clement. 2002. *A Blueprint for Developing National ICT Policy in Africa*. Nairobi: African Technology Policy Studies Network.
- Eggelston, Karen. "Information and Communication Technologies, Markets, and Economic Development." In *The Global Information Technology Report: Readiness for the Networked World*. New York: Oxford University Press, 2002.
- Fisiy, Cyprian. 1998. "Of Journeys and Boarder Crossings: Return of Refugees, Identity, and Reconstruction in Rwanda." *African Studies Association* 41(1): 17–28.
- Grant, Richard. 2010. "Paul Kagame: Rwanda's Redeemer, or Ruthless Dictator?" *Telegraph*, July 22.
- Gourevitch, Philip. 1998. *We Wish to Inform You That Tomorrow We Will Be Killed with Our Families: Stories from Rwanda*. New York: Farrar Strauss and Giroux.
- Human Rights Watch. 2013. "World Report 2013:Singapore." <http://www.hrw.org/world-report/2013/country-chapters/singapore>. Accessed April 30.
- International Crisis Group. 2002. "Rwanda at the End of the Transition: A Necessary Political Liberalisation." *Africa Report No. 53*. Nairobi/Brussels.
- Jasanoff, Sheila, and Sang-Hyun Kim. 2009. "Containing the Atom: Sociotechnical Imaginaries and Nuclear Regulation in the US and South Korea." *Minerva* 47(2): 119–46.
- Kagame, Paul. 2008. "Challenges and Prospects of Advancing Science and Tec: The Case of Rwanda." *Science Magazine* 322(5901): 545–51.
- Kimani, Mary. 2008. "Information Technology Helps Rwandan Clinics Reach Out." *New Times*, June 1.
- Kinzer, Stephen. 2007. "After So Many Deaths, Too Many Births." *New York Times*, February 11.
- . 2008. *A Thousand Hills: Rwanda's Rebirth and the Man Who Dreamed It*. Hoboken: John Wiley and Sons.
- Lemarchand, Rene. 2007. "Consociationalism and Power Sharing in Africa: Rwanda, Burundi, and the Democratic Republic of Congo." *African Affairs* 106(422): 1–20.
- Majtenyi, Cathy. 2008. "Rwanda Strives to Become High Technology Hub for Africa." *Voice of America*, June 3.
- Mamdani, Mahmood. 2001. *When Victims Become Killers: Colonialism, Nativism, and the Genocide in Rwanda*. Princeton: Princeton University Press.
- Melvern, Linda. 2004. *Conspiracy to the Murder: The Rwandan Genocide*. London: Verso.
- Metzl, Jamie. 1997. "Rwandan Genocide and the International Law of Radio Jamming." *American Journal of International Law* 91(4): 628–51.
- Ottaway, Marina. 1999. *Africa's New Leaders: Democracy or State Reconstruction?* Washington DC: Carnegie Endowment for Peace.
- Paluck, Elizabeth, and Donald Green. 2009. "Deference, Dissent, and Dispute Resolution: An Experimental Intervention Using Mass Media to Change Norms and Behavior in Rwanda." *American Political Science Review* 103(4): 622–44.
- Radelet, Steven, and Jeffrey Sachs. 1997. "Asia's Reemergence." *Foreign Affairs* 75: 44–59.

- Republic of Rwanda. 2000. *Rwanda Vision*. Kigali: Ministry of Finance and Economic Planning, July.
- Reyntjens, Filip. 2006. "Post-1994 Politics in Rwanda: Problematising 'Liberation' and 'Democratisation.'" *Third World Quarterly* 27(6): 1103–17.
- Rostow, W. Walt. 1960. *The Stages of Economic Growth: A Non-Communist Manifesto*. Cambridge, UK: Cambridge University Press.
- Semujenga, Josias. 2003. *Origins of Rwandan Genocide*. New York: Humanity Books.
- Thompson, Mark. 2004. "Pacific Asia after 'Asian Values': Authoritarianism, Democracy, and Good Governance." *Third World Quarterly* 25(6): 1079–95.
- UNDP, Kigali Rwanda. 2004. "UNDP Country Cooperation: 2004–2008, Project Profiles, Government of Rwanda." United Nations Development Program.
- Uvin, Peter. 2001. "Difficult Choices in the New Post-Conflict Agenda: The International Community in Rwanda after the Genocide." *Third World Quarterly* 22(2): 177–89.
- Van Leeuwen, M. 2001. "Rwanda's Imidugudu Programme and Earlier Experiences with Villagisation and Resettlement in East Africa." *Journal of Modern African Studies* 29(4): 623–44.