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Human Capital, Natural Resource Scarcity, and the Rwandan Genocide

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Abstract

Many authors contend that ethnic extremism coupled with political manipulation were the primary factors behind the Rwandan genocide. Yet, to oversimplify the cause of this tragedy makes one blind to the complicated nexus that generated the outcome. Even though this genocide was quick in its execution, the events that lead to this massacre took years to unfold. We argue that the evolution of human capital and the competition for scarce resources contributed to the genocide.

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Introduction

Rwanda is among the smallest countries (26,388 km²) in sub-Saharan Africa with approximately ninety percent of its population engaged in agricultural or agriculturally related activities. Of the thirty-two percent of arable land, only ten percent is permanent cropland, contributing to significant levels of land scarcity. Forests and land employed for other uses cover approximately twelve and forty-five percent of the land, respectively.¹ Primary commodity export dependence characterizes the economy in that ninety-nine percent of its exports are of primary commodities, with coffee comprising between fifty and eighty percent of total exports.²

The Rwandan agricultural production system is consumption driven in that farmers tend to grow a mixture of products to satisfy subsistence needs.³ The capacity to grow sufficient food at the household level is a symbol of pride; Rwandans consider purchasing food, to provide an adequate supply to family members, to be undignified and a sign of poverty. On most farms, however, soil exhaustion has limited productivity. As family plots are increasingly fragmented due to generational transfers, farmers intensively cultivate their land to sustain production. Increases in agricultural production, however, have come at a high cost: increased environmental degradation. A historically inequitable distribution of land, coupled with increased rates of environmental degradation, exacerbated tensions associated with resource scarcity and contributed, we argue, to the Rwandan genocide.

Resource scarcities, however, are unlikely to, by themselves, generate a genocidal conflict. While resource scarcities may provide an economic incentive for conflict, we must place these scarcities into a framework within which genocide can be planned and

implemented. Only if we examine the interaction between resource scarcities and the accumulation of human capital in Rwanda can we infer how these factors contributed to the genocide.⁴

While we normally expect to see a positive relationship between educational attainment and social and economic wellbeing, a pattern exists in which “educated” elites have instigated and led rebellions and conflicts. Hutchinson, for example, argues that the war in Southern Sudan between the Nuer and Dinka tribes (1991-1999) was the “war of the educated.”⁵ From the civilian perspective, leaders imposed the war on the population. A tribal chief showed evidence of this in his statement: “The educated make us fight.”⁶ In neighboring Ethiopia, intellectuals led the rebellion that toppled the feudal government of Emperor Haile Selassie, while in Rwanda intellectuals played a significant role in the protracted conflict and resulting genocide.

The fact that improvements in educational attainment increase political awareness, provoking latent conflicts, is a problematic issue in conflict prone states. The government can more easily shape public perception with increasing literacy and widespread access to mass media. While education policy delivered through good governance may promote unity and democratic principles, the reverse is true if education policy is in the hands of an authoritarian state.

The remainder of the paper is structured as follows. We first discuss the accumulation of human capital in Rwanda. We examine the evolution of human capital prior to and during the colonial period. We then consider how institutions developed by the Belgian colonial administration influenced further evolution of human capital after

independence, during, and after the genocide. We then debate resource scarcities in a similar framework. The last section concludes and offers policy advice.

Human Capital Accumulation Prior to Independence

Pre-colonial education in Rwanda was largely informal. Parents and relatives educated their children regarding Rwandan cultures and values throughout their childhood in a community-based system or *itorero*.⁷ This method emphasized practical work skills as well as traditional storytelling and dancing. The community trained boys and girls separately and according to their future responsibilities, expecting boys to follow in their father's footsteps and become the head of the household, while teaching girls housekeeping and child rearing duties.

Roman Catholic Church missionaries introduced the modern Rwandan school in 1908 and educated the majority of students throughout the colonial period (Table 1).⁸ The colonial administration, in order to reduce costs, relied on missionaries to provide education and public health services, a policy that continued throughout the colonial period.⁹ In return for the missionaries' contribution in providing education and other public services, the Belgians cooperated with the missionaries' evangelistic efforts. While the goals of the missionaries were to evangelize the population and school the future leaders of Rwanda, the provision of these services was not free of bias.¹⁰ Missionaries, in tacit cooperation with the colonial administration, separated students by ethnicity and crafted a curriculum to reinforce the roles of the various ethnic groups.¹¹

Earmarking Tutsi students for training as future elite, missionaries provided meat-based meals and milk while only giving the Hutus, who were to play the traditional role, maize porridge and beans.¹² The missionaries further established a curriculum that exacerbated the Tutsi-Hutu division and reinforced the missionaries' belief that the Tutsi

were dominant and the Hutu subservient. High rates of university tuition relative to per-capita income further compounded admissions and attendance bias.¹³ The percentage of Hutu college students, for example, in the province of Butare (previously Astrida) declined from 16.6% in 1932 to 6.1% by 1945, an illustration of the institutional bias against Hutu students seeking higher education. If Hutus completed secondary or post-secondary education, employment opportunities were limited to labor-intensive vocations or the seminary. Merely being Hutu resulted in cultural and economic bias that reinforced the Hutu perception that Rwanda was a Tutsi-dominated enterprise. The systematic denial of opportunities bred a growing frustration and embitterment that, in part, enabled the 1959 Hutu revolution.¹⁴

By 1951, the number of black, primarily Tutsi, Rwandan priests had grown sufficiently to threaten the power of white missionaries. Concurrently, educated Tutsi started to agitate for self-government, leading the Belgians to conclude that the Tutsi were no longer reliable partners in the administration of Rwanda.¹⁵ The internal dynamics of the Roman Catholic missionaries also fostered a sense of change; more liberal Flemish clerics began to replace conservative clerics from southern Belgium.¹⁶ Within a short period of time, the colonial administration and the Roman Catholic Church modified their policy towards the Hutu, favoring the Hutu and relegating the Tutsi to second-class status.

Apart from supporting the Hutu's cause for justice, the Church also supplemented its logistical needs. The Hutus used the Church's weekly publication, *Kinyamateka*, to disseminate their views and to debate prominent issues. While the level of countryside literacy was very low, *Kinyamateka* was the main source of information for rural people

and proved to be an effective organ for the educated Hutu to openly confront the Tutsi. The abrupt change in attitudes and policies, however, could not undo the impact of decades of discriminatory policies on the distribution of human capital, employment opportunities, political power, and wealth.

Shifting attitudes among educators, of favoring one ethnic group to another, characterized the pre-independence educational system in Rwanda. Use of the mass media radicalized the latent conflict, which, after 1951, raised the awareness among Hutus that the Tutsi-ran state had relegated the Hutu to second-class citizenship. This policy change led to the eventual victory of the Hutu political party, in turn leading to Rwanda's independence in 1962. Tainting independence, however, was an unequal distribution of human capital; the Tutsi minority had a proportionally larger share of the population considered to be highly educated, while the Hutu minority was predominately the politically elite.

Human Capital Accumulation Post-Independence

With the concentration of political power in the Hutu elites, the question of reforming the educational system, to promote the acquisition of human capital across ethnic groups, quickly fell by the wayside. Ethnic discourse had always been used as a means to divert attention away from inner contradictions within Hutu elites.¹⁷

Consequently, the Hutu elites fostered a policy of segregation in order to maintain power and extend their political dominance.

The Church continued to play a major role in educating Rwandans as Church involvement in education and other social programs conserved state funds.¹⁸ As before, this relationship proved beneficial to both sides. Church involvement reduced

government expenditures and increased the legitimacy of the state, while the state sanctioned the activities of the Church.

Post-independence Rwanda saw the legacy of the colonial period applied in reverse. The Rwandan government systematically discriminated against the Tutsi, including the area of education. Educators assigned students identification files, requiring them to identify their ethnicity as Hutu, Tutsi or Twa.¹⁹ Rwandan history and civics teachings emphasized ethnicity, reinforcing social divisions, and incorporated, deliberately, the Tutsi myth in the curriculum.²⁰ The Hutu government, in effect, intentionally sought to bias the development of human capital to favor the Hutu.

Utterwulghe finds that the Hutu elite propaganda policy successfully validated the history they chose to convey in that the policy became the reality.²¹ Despite discrimination, the Tutsi within Rwanda lived fairly well, both socially and economically.²² Proportionally, they still retained a larger share of the economic and governmental resources with respect to their demographic segment.²³ Years of colonial rule favoring the Tutsi minority produced hundreds of thousands of Tutsi who, at the time of Rwanda's independence, were wealthy and well educated. As described in the previous section, although the Belgians reversed the educational policy in the late 1950s the disparity between educated Tutsi and Hutu remained starkly evident.

In 1975, the Rwandan government introduced a quota system as the criterion for admission into secondary education thus making entrance extremely competitive due to limited available places in public secondary schools.²⁴ In response to both constraints, parents set up private secondary schools. Unfortunately, many of these schools had poor teaching, and were not approved by the government, thereby denying graduates entry into

higher education. Often considered “education for the poor,” these private schools mainly developed in rural areas. Ironically, since these schools had no access to government subsidies or assistance from donors, the rural poor bore the contributions and fees to support their children’s schooling.

Many Rwandans did not complete an education beyond primary school (Tables 2 and 3), making them susceptible to information purveyed by the political elite. The failure of the education system in Rwanda to instill morality and openness in the intellectual thinking manifested in the events that led to the genocide. As Prunier observed, “[i]n the hysteria of Rwanda in April 1994, almost anybody might turn into a killer. But the responsibility lies with the educated people—with those in positions of authority, however small, who did not have the strength (or maybe even the wish) to question the poisonous effluents carried by their cultural stream.”²⁵

The Role of Human Capital in the Genocide

A large numbers of faculty members at the national universities were active supporters of the Hutu government because the admission to higher education was dependent on a quota based on ethnicity and region. Those who taught at the university or other government-sponsored educational institutions understood firmly that advancement in their career, and perhaps continued employment, depended largely on supporting government positions. Des Forges strengthens this argument by noting in her report, that “[b]oth those within Rwanda and those studying abroad wrote letters and made public statements that reported facts wrongly or misinterpreted data to support the official line.”²⁶

Rwandan academicians were, for example, actively and notoriously involved in administering and enforcing the propaganda against the Tutsi. Dr. Ferdinand Nahimana, the director of the Rwandese Information Office (ORINFOR) and one of Rwanda's most distinguished historians, administered the radio station that broadcast anti-Tutsi propaganda. He gained notoriety when Radio Rwanda broadcast false news reports that charged the Tutsi-based Liberal Party of "advocating the terrorist killing of twenty-two leading Hutu, politicians, army officers, civil servants, priests, businessmen, and lawyers," on March 3, 1992.²⁷ The very next day, Interahamwe militia began to kill Tutsi and burnt their huts in the Southern region of Rwanda. Approximately 300 people were killed during the six-day massacre.²⁸ In response to this incident and the results protests from Western ambassadors, the Rwandan government dismissed Nahimana and appointed him as a counselor to Rwanda's ambassador in Bonn. The German government, however, rejected Nahimana and returned to him to his university post where he argued that "Radio Rwanda had been infiltrated by agents of the Rwanda Patriotic Front [(RPF)], backed by evil foreign diplomats determined to undermine Hutu self-defense."²⁹ The Rwandan government later appointed Nahimana to *Radio-Television Libre des Mille Collines* (RTLMC), undoubtedly the most effective propaganda medium in Rwanda and an instrument of the genocide.³⁰

Radio was, arguably, the most effective means of delivering the message of hate and shaping public perspectives due to high levels of illiteracy. The RTLMC gained popularity because its broadcasts combined music and informal conversation that was targeted to the rural population. Extreme levels of poverty, however, meant that only 29 percent of all households had a radio in 1991.³¹

Other methods of delivering propaganda, however, were available to the Hutu regime. The Kigali newspaper *Kangura* aggressively attacked Tutsis after RPF attacks in 1990.³² Other newspapers and journals soon followed. Urban workers usually carried copies of *Kangura* home on the weekends, although it was published and sold in the Kigali capital.³³ At this time, approximately 52 percent of Rwandans were literate, and by reading to those that could not read, they effectively disseminated the propaganda throughout the community. The Hutu regime put to use all available human capital to spread the hate that fueled the genocide.

We must also recognize that active participation in the genocide was not limited to the educated elite or to those who participated in mass media. Hutu teachers either condemned their Tutsi pupils to the militia or killed the students themselves.³⁴ Thirty-two of forty-nine ringleaders of the genocide in Nyakizu, for example, were teachers. Evidence abounds that Tutsis who attempted to seek refuge in school compounds were systematically denounced and murdered. The implications of the participation of the educated in the genocide on post-genocide Rwanda are staggering.

Human Capital Accumulation Post-Genocide

The post-genocide government inherited what was left over in terms of human capital. As a direct result of the genocide, approximately 1,000 university students perished at three branches of the National University of Rwanda.³⁵ Within the small minority of Tutsi students in the university, few survived the genocide while most of the Hutu students fled the country. The Hutu regime killed over fifty instructors and one hundred and fifty staff members, also turning dozens of professors into refugees.³⁶

University and schools' compounds were destroyed while laboratory equipment and books were looted.

The enrollment of students in specific programs does not, arguably, reflect the needs of Rwanda. For example, although over 90 percent of Rwanda is involved in agriculture, 33.9 percent of the students are registered in economics or social and management sciences; 16.9 percent study law and 10.1 percent, the arts. Other programs, we argue, may be more relevant given agriculture's importance in the Rwandan economy. We observe a potential bias against programs we view as pertinent to the health of the Rwandan economy, noting that, for example, only 3.59 percent of the students registered in science, 3.6 percent in agronomy, 5.0 percent in educational sciences and 6.2 percent in applied sciences.³⁷ Curiously, the Rwandan government has not encouraged an improved match between the needs of the Rwandan economy and the output of its higher educational institutions.

Given the potential of education to bring about national reconciliation, poverty reduction and economic development, the Rwandan government must make the national curriculum for primary and secondary schooling a priority. Tragically, although the government was aware of the negative messages contained in the textbooks, teaching and learning materials remain unchanged, continuing until 2002 to disseminate the past culture of ethnic stereotypes. Finally, in September 2002, the government established a new textbook policy and a three-year plan for the review and revision of the primary school curricula and textbooks.³⁸

In general, post-genocide educational reconstruction revolves around the implementation of a durable educational policy, quality and relevancy of education,

accessibility and equality, eradication of illiteracy, and capacity building in science and technology.³⁹ To aid educational reconstruction efforts, the Rwandan government is undertaking a number of steps and is setting goals for improvement. First, the government seeks to provide universal primary education by 2010 and basic education for all by 2015. Second, the government set the target to, in the next twenty years, establish Rwanda as a regional service and information center chiefly to attract foreign investment. Although these targets appear very promising, we question how much progress revising the curriculum and issuing new textbooks and materials will make; this endeavor will require a substantial financial commitment on the part of the government

Compounding the problem of financial resources is the fact that, within public and private subsidized schools, most teachers have not completed a secondary education. After the genocide the proportion of qualified teachers fell from sixty to thirty-three percent while, at the same time, class sizes loomed with anywhere from sixty to eighty students per class.⁴⁰ The student intake capacity today is still limited and unevenly distributed among districts.⁴¹ Schools work under extremely precarious material conditions with teaching supplies largely limited to blackboards as other equipment may either be missing, not functioning, or non-existent.

In general, most schools lack sufficient resources; textbooks are in acute shortage and are not yet published in Rwanda. In some instances, schools either use laboratories donated by aid organizations ineffectively or not at all. Rwanda's schools are in poor condition with a need for significant improvements in water and sanitation facilities. Obvious financial and infrastructure challenges remain before the Rwandan government can implement an effective program of human capital accumulation. When we couple

these challenges with the specter of resource scarcity, we observe that the confluence of incentives, that influenced the development and implementation of the genocide, remain in Rwanda to this day.

Resource Scarcity Prior to Independence

During the pre-colonial period, the Mwami delegated the management of land resources and the administration of districts through his appointed chiefs called “*umutware w’ubutaka*” or chief of landholding, “*umutware w’umukenke*” or chief of pastures and “*umutware w’ingabo*” or the chief of men.⁴² In every district these three chiefs worked independently of one another according to their line of jurisdiction and also engaged in continuous reciprocal surveillance for the benefits of the inhabitants.⁴³ This mechanism provided a check and balance on the authority of each of the chiefs.

Four principles governed the use of land in the pre-colonial period. First, the head of the clan clearing forested land would invoke “*Ubukonde*,” or clan law to settle several families called “*abagererwa*” who would, in turn, pay a land tax to the head of the clan. The *umutware w’umukenke* also had “*igikingi*,” or the right to establish a land domain. He in turn distributed the available land to the pastoral families. Initially, the clan did not require tenants on *igikingi* to provide food or services in compensation for the use of the land, but this changed during the reign of Mwami Rwabugiri (1860 to 1895).⁴⁴ As such, the clan required the tenants on *igikingi* to pay compensation to the *umutware w’umukenke* for the use of the *igikingi*.

Second, a system of cattle ownership “*ubuhake*” or cattle contract or clientship also existed during the pre-colonial period. A cattle owner could allocate a number of cattle to an employee in exchange for his service.⁴⁵ While working conditions were

harsh, *ubuhake* provided a mechanism by which a landless person could obtain cattle. In essence, *ubuhake* allowed for upward mobility in the pre-colonial period. Third, a system of customary law or “*Inkungu*” authorized the local political authority to dispose of the escheated or abandoned land.⁴⁶ Fourth, the “*gukeba*” (also known as *kugaba*) a process of settling families into grazing land or on fallow land existed. These principles recognized land rights obtained in one of three ways: inheritance (through the male line), allotment by one of the chiefs, or the clearing of land to which no chief has laid claim.⁴⁷

The Germans recognized Mwamian authority over the land, resulting in an initially unchanged land tenure system during the German colonial period. The advent of the Belgian colonial administration in 1918, however, radically altered the land tenure system. Viewing the tripartite land tenure system as unwieldy, the Belgians attempted to dismantle it in favor of a centralized system. The Belgians introduced a land tenure system based on two guiding principles: no indigenous Rwandan should be dispossessed of their land and all vacant land belonged to the state.⁴⁸ Clearly these provisions initiated a dual system of land administration, subjecting all occupied lands to customary law while written law benefited the colonialist and the missionaries.

Shifting their support towards the Hutu, in 1954 the Belgian administration introduced a new law abolishing *ubuhake*.⁴⁹ The Belgians felt that *ubuhake* bound poor people, usually Hutus lacking cattle or land for cultivation, to powerful protectors, who were usually cattle-rich Tutsi.⁵⁰ Whether *ubuhake* actually created a system of indentured servitude remains a matter of debate. We do know that the elimination of the *ubuhake* created a new landless class of Hutu who possessed cattle. Without a dedicated

grazing area, competition for scarce grazing lands increased, environmental degradation worsened, and ethnic relations grew tenser.

Compounding this multi-faceted problem, the Belgian administration introduced “*paysannats*” due to high population density and the need to explore new areas.⁵¹ *Paysannats* were similar to *gukebas* but consisted of giving each family two hectares for cultivating crops such as cotton and coffee.⁵² The explicit bias against cattle grazing in favor of exportable agricultural products disrupted existing social and economic norms. The increasing emphasis on exportable products also increased the competition for arable lands and created an incentive for Hutus to seize Tutsi grazing lands. During the 1959 Hutu revolution, Hutus seized land and cattle belonging to the thousands of Tutsis who were either killed or fled to neighboring countries.⁵³ The competition for economic resources, we argue, fueled ethnic tensions and created the perverse incentive to increase institutional bias against the Tutsi.

Resource Scarcity Post-Independence

Soon after independence, the government embarked on a resettlement project by moving over 80,000 farmers and their families from the densely populated northeastern areas (Gikongoro, Ruhengeri, Gisenyi and Kibuye) to the western and southern part of the country.⁵⁴ The government also attempted to rapidly increase agricultural production through the conversion of primarily Tutsi-owned pasture lands into Hutu-owned cultivated lands. An unintended consequence of this policy was a rapid decrease in the production of manure, a decrease that could not be offset with manufactured fertilizers due to resource constraints. The government’s policy simultaneously increased ethnic

tensions, environmental degradation, and dependence on export crops. We illustrate the transition in the utilization of land in Table 4.

In 1976, the government increased its role in the sale of land. The minister in charge of lands now had to provide permission for any land transaction and the seller had to have at least two hectares of land remaining. The buyer's maximum ownership of land was specifically constrained at two hectares.⁵⁵ After 1976, the only land titles recognized by the state were those registered with the state; all other lands were considered state property. As a result of this policy, in the densely populated areas, such as Ruhengeri and Butare, the number of land transactions increased significantly.⁵⁶ Many peasants also resorted to renting land for a number of years as a means of survival.⁵⁷ The increasing fragmentation of family holdings through generational transfers and population pressures compounded problem of land scarcity. Between 1960 and 1990, for example, population density per hectare of cultivable land had nearly tripled (Table 5).

Land scarcity contributed to internal and external migration during this period. People sought to move out of the densely populated areas to escape environmental degradation and economic marginalization. Youth, on the other hand, desired to move from rural to urban areas in the search for economic opportunities. The government attempted to limit migration by requiring government permission for residence relocation, although there is no consensus on whether this policy actually influenced migration flows.

Economic conditions worsened in 1989 when the price of coffee declined by approximately 50% on the world market. The policy of export crop promotion had increased Rwanda's dependence on income generated from coffee exports; income that

declined significantly with the fall in coffee prices. A significant devaluation of the Rwanda currency soon followed, with a significant curtailment of public subsidies and services. As an increasing number of Rwandans relied on agricultural production, environment degradation (soil erosion, soil exhaustion, destruction of watersheds) coupled with economic marginalization (decreased coffee and tin prices), increased economic pressures on Hutus and Tutsis alike.

Concurrently, the Ugandan government denied Tutsi refugees residency in Uganda and pressured them to move back to Rwanda. The Rwandan government, believing the insurgency to be operating in the interests of the Tutsis, refused to accommodate the Tutsi refugees, fueling the RFP insurgency. RFP attacks created another significant movement of the Rwandan population, from the North to the South, further fueling the competition for already scarce resources. With a large pool of unemployed youth and a lack of economic opportunities, it should have come as no surprise that the youth became the soldiers of the genocide.

Resource Scarcity and Its Contribution to the Genocide

We argue that environmental degradation and the increasing economic marginalization of the Hutu in Rwanda contributed to the genocide. Environmental degradation, population density, and internally displaced populations lowered agricultural productivity and yields. Lower yields, coupled with declining prices for exported oriented crops, significantly reduced rural incomes. Declining incomes further marginalized the landless, the rural and urban poor, and the disaffected youth. The perceived concentration of assets (land, cattle, and other forms of wealth) in the hands of the Tutsi created a desire for the appropriation of these assets through violent means.

The government incentivized participation in the genocide by developing a mechanism for the pooling and distribution of assets of the Tutsi killed during the course of the genocide. Explicit rewards in the form of Tutsi land, cattle, and other forms of property were made to recruit and motivate the participants of the genocide.⁵⁸ Anecdotal evidence suggests that most of the participants in the genocide fought not because of their hatred of the Tutsi but for land, crops, and cattle. Responsible for the disposition of Tutsi assets, Burgomasters, to facilitate their disposition, created asset inventory lists and matched them to a list of those killed.⁵⁹ The list facilitated the conduct of the genocide by distinguishing between Tutsi households that had been eliminated (thus rendering their assets available for distribution) and those households who had surviving members, requiring further killings before the Burgomasters distributed their seized assets.

Case study evidence appears to lend credence to the hypothesis that the genocide disproportionately targeted relatively wealthy Tutsi, Twa, or 'moderate' Hutu.⁶⁰ In the commune of Kanama, situated in the Prefecture of Gisenyi, 26.8% of individuals characterized as landowners were killed during the genocide compared to 5.4% of the population of 596 inhabitants. From an economic perspective, the genocide may have been, in part, a murderous mechanism of asset redistribution.

Resource Scarcity Post Genocide

The post-genocide period in Rwanda can be characterized by the significant movements of individuals in the search of safety, land and economic opportunities. First, approximately 800,000 refugees who had emigrated prior to 1994 returned to Rwanda devoid of assets.⁶¹ Second, there were approximately one million internally displaced people after the genocide in 1994.⁶² Third, in 1996 and 1997, approximately 1.4 million

refugees returned from Tanzania, Burundi and Zaire. Fourth, insurgency activity increased during 1997 and 1998 resulted in the internal displacement of approximately 600,000 people from the prefectures of Gisenyi and Ruhengeri.⁶³

The government had limited success in resolving these issues. In an effort to soothe tensions, the government allowed temporary occupation of abandoned land by some of the 1959-1993 refugees. The government also permitted refugees to temporarily settle on state lands. In the provinces of Kibungo, Umutara, and Kigali Rural, the government, in a policy called “*imidugudu*” or villagisation, divided family plots between the owners and the old case refugees. This policy called for the construction of houses in settlement sites that effectively grouped all rural dwellers into villages as opposed to the traditional method of living.⁶⁴

The government auspiciously perceived several advantages in implementing the “*imidugudu*” or villagisation policy. First, having the population concentrated in villages mitigated the costs of basic service provision (water, sanitation, health, education).⁶⁵ Second, in a village setting, the government could more easily connect roads and communication networks to support market access and off-farm income generating activities. Third, the government thought the *imidugudu* would enhance security; concentrated population in villages are more secure. The government also thought that the concentration of the population could simultaneously hinder insurgents from securing hideouts and covert support. By distancing farmers from their land, the emotional attachment to the land as a part of a family heritage would, it was thought, decline over time. Farmers would thus treat land as an economic good without familial attachment.

Unfortunately, a practical implementation of the *imidugudu* policy in the midst of the urgency to meet the housing needs of a huge number of people within a short period of time created problems. First, the government inadequately planned and poorly chose sites for many of the projects, resulting in disastrous social, economic and environmental outcomes.⁶⁶ The decision to locate the *imidugudus* that were far from the farmland caused a significant fall in food production in some areas. Understandably, the availability of land governed the site selection process since high population density and acute shortage of land remained as the greatest challenge for Rwanda.

The shortage of public or state land forced the *imidugudu* to be installed on the private lands. Lacking sufficient resources to compensate the property owners whose land was taken for building *imidugudu* houses, the government decided that those who lived in the *imidugudu* should pay the compensation, leaving the mechanism to settle the issue to villager. Rarely did the land owners receive the compensation since the new villagers either did not have anything to offer or refused to compensate due to some past enmity.⁶⁷ The owners of the land also faced many difficulties in resuming their lives. They were either deprived of compensation, or the remaining farmland that they had, or the new farmland that they received in exchange, was too far from their residence.⁶⁸ Second, a failure to secure local participation in the planning process resulted in a poor sense of ownership among the communities, to the extent that some people considered that the houses they were living in belonged to the organization that constructed it.

The land issue remained an enormous challenge for the government since many families were still landless and had to sustain themselves by cultivating small borrowed, or rented, plots. Others worked on the land belonging to someone else for wages or in

exchange for the right to cultivate a small piece of land for themselves. The UN Office for the Coordination of Humanitarian Affairs found that the *imidugudu* residents in the region of Bugesera depended on food aid for survival since they had less easy access to land.⁶⁹ Naturally, those who lost their land in the process of creating the *imidugudu* suffered significant hardship.

According to the consultations on national unity and reconciliation, land disputes were the greatest factor that hindered sustainable peace.⁷⁰ These disputes ranged from conflicts over distribution of village plots, land redistribution operation, land exchange, inheritance and property violations.⁷¹ Even if land redistribution had been conducted efficiently and with some measure of equity, environmental degradation remains an unaddressed problem that continues to threaten the livelihood of the majority of the Rwandan population.

Summary and Conclusions

What lessons can be drawn from the Rwandan experience? Were there economic signals of an impending genocide? The relationship between resource scarcity and conflict in Rwanda appears to invoke the Malthusian argument that when population growth reaches the limit of subsistence, it will be held back by epidemics, infanticide, famine and war.⁷² The various positions in this debate are the anti-Malthusians, hard-Malthusians, and the soft-Malthusians.⁷³

The first school of thought completely rejects the Malthusian argument and argues that there is no relationship between conflicts and resource scarcity. Population growth stimulates knowledge creation, innovation, and economic growth⁷⁴ Inventions and innovations, in this view, increase productivity, output, and carrying capacity.

Population growth may, in fact, significantly influence agricultural productivity; growth induces gains in productivity and output.⁷⁵ The Malthusian threshold is irrelevant in this perspective as agricultural productivity will not decline to the point that resource scarcity induces conflict.

Obviously, the optimistic perspective with respect to agricultural productivity cannot be applied to the case of Rwanda. Habyarimana, for example, repeatedly refused to accept the return of refugees because Rwanda was overpopulated. While Habyarimana may have other reasons for barring the return of refugees, one cannot deny that there was significant consensus among international governmental organizations and non-governmental organizations that Rwanda was indeed overpopulated relative to its environmental carrying capacity. Increases in population did not result in increased productivity through innovation or invention. Increases in output occurred through the more intensive utilization of low-quality land and the increased effort of farmers, that is, agricultural productivity actually declined prior to the genocide. Perhaps an intensive effort at land reform might have partially addressed this issue, but fiscal constraints prohibited significant investment in the agricultural sector. It is unlikely that, in the case of Rwanda, agricultural productivity could have been sufficiently increased prior to the genocide to mitigate its underlying economic incentives.

The second school of thought ('hard' Malthusian) hypothesizes that a direct relationship exists between overpopulation and resource scarcity. Population increases exponentially while agriculture increases in a linear fashion. Eventually, population growth exceeds the subsistence level of agriculture. Population growth induces environmental degradation, economic marginalization, and violent conflict.⁷⁶ A succinct

and direct line of causation exists from population growth to violent conflict. If one accepts this hypothesis, government policy should promote a reduction in the birth rate to mitigate conflict. Government policy, however, should not merely focus on the growth of the population; it should also promote the effective use of natural resources.⁷⁷ Without sufficient institutional constraints, common resources are likely to be depleted at a rate greater than their natural rate of replenishment, increasing competition for the remaining resources and the likelihood of conflict.

Two potential flaws exist in the ‘hard’ Malthusian hypothesis. First, for population growth to directly and significantly influence consumption and violent conflict, the potential influence of other causal variables is held constant. Technology diffusion, for example, may significantly alter this relationship by allowing developing countries to bypass older technology. Cell phone technology, for example, allows users in developing countries to bypass inefficient land-line networks. Developing countries free ride on the research and development expenditures of developed countries. In the case of Rwanda, resource constraints mitigated the potential impact of technology diffusion, especially after the dramatic decline in coffee and tin prices. Second, the hypothesis relies on the concept of diminishing returns to increases in labor, that is, marginal product per worker falls with the addition of each new laborer in the agricultural sector. While new investments and technology infusion may increase agricultural productivity, we may also see a perverse effect in that productivity increases may induce a decline in agricultural sector economic opportunities. As farmers become more efficient, their demand for labor declines, increasing the supply of low-skilled, unemployed laborers.

While the arguments of the hard-Malthusians seem applicable to pre-genocide Rwanda, counter-factuals do exist. Tanzania and Bangladesh have higher population densities and are as poor as Rwanda, yet have not experienced conflict on a proportional scale to that of Rwanda.⁷⁸ It is also unlikely that the resource-constrained government could have actively promoted birth-control, especially given the active role of the Roman Catholic Church in health and education in Rwanda prior to the genocide.

The third school of thought ('soft' Malthusians) argues that resource scarcity does not necessarily induce violent conflict. Institutions and economic development can alter the relationship between scarcity and conflict. While the potential exists for scarcity to spark a violent competition for resources, population growth is neither necessary nor sufficient for violent conflict to occur.

Overpopulation, in the case of Rwanda, may have contributed to the conduct of the genocide as it increased the competition for scarce resources. The government incentivized the conflict by awarding participants in the genocide the assets of those killed during the genocide.⁷⁹ Overpopulation, however, was not the rationale for the genocide. Political domination and a desire for an aggressive redistribution of economic assets, we argue, were the root causes of the genocide, not the desire to mitigate population density.

The 1959-1963 conflict, for example, displaced significant numbers of Tutsi land owners whose lands were subsequently occupied by Hutu farmers.⁸⁰ These farmers grew increasingly concerned that they would be forced off "their" lands as the RFP activities increased inside Rwanda in the early 1990s.⁸¹ When we couple this fear with environmental degradation and the economic crisis of 1984-1994, we can envision the

subtle pressures of declining incomes on Hutu farmers and the lack of economic opportunities for Hutu youth. Finally, RFP activity resulted in the internal displacement of approximately one million Rwandans in the early 1990s, Rwandans who gathered in camps around Kigali. These camps served as a recruiting ground for disaffected youth who served as the foot soldiers of the genocide.⁸²

In summary, the biased accumulation of human capital, environmental degradation, and economic marginalization combined to form a fertile ground for the genocide. We must recognize, however, that these conditions may have been necessary for the genocide to occur but may have not been sufficient. The genocide required a motivating force beyond mere ethnic hatred. The creation of a set of incentives to motivate participation in the genocide, we believe, was the catalyst. Without the government's active policy of appropriating and redistribution Tutsi assets, the genocide may have been limited in scope and duration. With the policy, there was a strong economic incentive to find and kill each member of a Tutsi household so that the household's assets could be collected and redistributed. The interaction between human capital accumulation and resource scarcity, we believe, contributed to the scope and pace of the Rwandan genocide.

Table 1

The School System of Rwanda-Burundi, 1956 to 1957⁸³

Type of School	No. of State schools	No. of Mission schools	Percentage of Mission schools out of total	No of students in states schools	No of students in mission schools	Percentage of students in Mission schools out of total
Kindergartens and Primary	17	2,686	99.3	2,12	234,010	97.6
Secondary	2	2	50.0	365	219	37.5
Schools for Teachers	1	15	93.7	61	1,515	96.1
Teacher Training	1	8	88.9	36	391	91.6
Special Schools	4	29	87.9	401	1,469	78.6

Table 2

Level of Education of the Active Population in 1992 (percentage)⁸⁴

Level of education	All sectors	Formal sector
No education	54.6	25.2
Primary level	41.3	46.0
Secondary level	3.8	25.8
Higher education	0.2	3.1
Undetermined	0.2	0.0

Table 3

Some Educational and Employment Indicators before 1994⁸⁵

Literacy (%)	52.1%
Average education (at age of more than 25 years)	1.1 year
School enrollment in 1990 (between 6 to 25 years)	39%
Population depending for their living on:	
Agriculture	90%
Industry	2%
Services	8%
Population below the poverty line	85%

Table 4

Use of Pastures, Cultivated Areas, Fallow Land and Forest in Hectares⁸⁶

Utilization	1970	1980	1986	Percentage of increase (+) or decrease (-) from 1970 to 1986
Pastures	487,884	322,060	99,360	-59%
Cultivated land	527,660	710,400	826,500	+56%
Fallow land	200,000	154,000	123,000	-38%
Communal forest	27,156	57,200	99,500	+266%
Total	1,242,700	1,243,660	1,248,360	

Table 5
Rwandan Population and Farmland Density: 1960 to 1990⁸⁷

Year	Population (million of people)	Persons per Cultivable Hectare
1960	2.6950	2.3
1965	3.1919	2.8
1970	3.7566	3.3
1975	4.2426	3.7
1980	5.2570	4.6
1985	6.3520	5.5
1990	7.5902	6.6

Note: Population numbers were taken on December 31.

¹ Herman Musahara, "Landnet Rwanda Chapter: Land and Poverty in Rwanda," paper presented at the Seminar on Land in Rwanda, Umubano, 23 November 2001.

² *Rwanda Economy*, access on 19 June 2003, <<http://www.sas.upenn.edu/AfricanStudies/NEH/rw-econ.html>>

³ Saskia Van Hoyweghen, "The Urgency of Land and Agrarian Reform in Rwanda," *African Affairs* 8.392 (1999): 353-372.

⁴ For the purposes of the paper, we define human capital in terms of education; an increase in human capital is an increase in educational attainment.

⁵ Sharon E. Hutchinson, "A Curse from God? Religious and Political Dimensions of the Post-1991 Rise of Ethnic Violence in South Sudan," *The Journal of Modern African Studies* 39 (2001): 324.

⁶ Ibid

⁷ Usha George, *A Cultural Profile: Rwanda* (Toronto: University of Toronto Press, 2001) 11.

⁸ Rwandese Republic Ministry of Education, UNESCO and UNDP, *Study of the Education Sector in Rwanda* (1998): 25

⁹ Timothy P. Longman, "Empowering the Weak and Protecting the Powerful: The Contradictory Nature of Churches in Central Africa," *African Studies Review* 41.1 (1998): 55.

¹⁰ Rwandese Republic Ministry of Education, *Education Sector Policy* (Kigali: 2002) 4.

¹¹ Rwandese Republic Ministry of Education, UNESCO and UNDP, *Study of the Education Sector in Rwanda* (1998): 25

¹² Ibid.

¹³ Gerard Prunier, *The Rwanda Crisis: History of Genocide* (New York: Columbia University Press, 1995) 33.

¹⁴ The only place where secondary education was offered until the mid-1950s as described by a group of researchers on Rwanda: Richard F. Nyrop, Lyle E. Brenneman, Roy V. Hibbs, Charlene A. James, Susan MacKnight, Gordon C. McDonald in *Rwanda: A Country Study* (Washington D.C.: GPO, 1985) 96.

¹⁵ Gerard Prunier, *The Rwanda Crisis: History of Genocide* (New York: Columbia University Press, 1995) 43-44.

¹⁶ Lee Ann Fujii, "Origin of Power and Identity in Rwanda," paper presented at the Annual Conference of the International Studies Association, Chicago, Illinois, 20 February 2001.

¹⁷ Saskia Van Hoyweghen, "The Disintegration of the Catholic Church of Rwanda: Study of the Fragmentation of Political and Religious Authority," *African Affairs* 95.380 (1996): 382.

¹⁸ Timothy P. Longman, "Empowering the Weak and Protecting the Powerful: The Contradictory Nature of Churches in Central Africa," *African Studies Review* 41.1 (1998): 5.

¹⁹ Peter Uvin, "Tragedy in Rwanda: The Political Ecology of Conflict," *Environment* 38 (1996): 8.

²⁰ Fictitiously, the Tutsi were charged as being the culprit behind all Rwanda's trouble, the oppressor of the Hutu and had the intention to revive their domination.

²¹ Steve Utterwulghe, *The Online Journal of Peace and Conflict Resolution* 2.3 (1999), accessed electronically on 07 May 2003, <www.trinstitute.org/ojpcr/>

²² Gerard Prunier, *The Rwanda Crisis: History of Genocide* (New York: Columbia University Press, 1995) 76.

²³ Steve Utterwulghe, *The Online Journal of Peace and Conflict Resolution* 2.3 (1999), accessed electronically on 07 May 2003, <www.trinstitute.org/ojpcr/>

²⁴ Rwandese Republic Ministry of Education, UNESCO and UNDP, *Study of the Education Sector in Rwanda* (1998): 37.

²⁵ Gerard Prunier, *The Rwanda Crisis: History of Genocide* (New York: Columbia University Press, 1995) 128., 248.

²⁶ Allison Des Forges, *Leave None To Tell the Story: Validating the Message* (New York: Human Right Watch, 1999).

²⁷ Howard Adelman and Astri Suhrke, eds., *The Path of a Genocide: The Rwanda Crisis from Uganda to Zaire* (New Jersey: Transaction publishers, 1999) 95.

²⁸ Ibid.

²⁹ Ibid.

³⁰ RTLMC was founded with the assistance of Felicen Kabuga, a wealthy businessman whose daughter was married to a son of Habyarimana. Even though RTLMC was privately owned, it was aided by the staff and facilities of Radio Rwanda, the official government-owned station. Its broadcasting studio were connected to the electric generator of Presidential Palace, permitting it to continue operating even in the event of power failure – source from Frank Chalk, Howard Adelman & Astri Suhrke, *The Path of a Genocide: The Rwanda Crisis from Uganda to Zaire* (New Jersey: Transaction publishers, 1999) 96.

³¹ Ibid.

³² This method drew similarity with how Kayibanda and his cliques used *Kinyamateka* to propagate their ideas on Hutu revolution to the masses.

³³ Allison Des Forges, *Leave None To Tell the Story: The Media* (New York: Human Right Watch, 1999) 3

³⁴ Gerard Prunier, *The Rwanda Crisis: History of Genocide* (New York: Columbia University Press, 1995) 254.

³⁵ Louise Tunbridge, "With 1,000 of Its Students Killed in Civil War, the National University of Rwanda Changes Radically," *The Chronicle of Higher Education* 43.12 (1996): A53.

³⁶ Ibid.

³⁷ Rwandese Republic Ministry of Education, UNESCO and UNDP, *Study of the Education Sector in Rwanda* (1998): ix.

³⁸ Rwandese Republic Ministry of Education, *Education Sector Policy* (Kigali: 2002) 11.

³⁹ Rwandese Republic Ministry of Education, *Education Sector Policy* (Kigali: 2002) 19-27.

⁴⁰ Jaya Earnest and David Treagust, "Voices from the Classroom: Teachers' and Students' Perceptions and Experiences on Science Education Reform in a Transitional Society," paper presented at the International Education Research Conference of the Australian Association for Research in Education, Brisbane, 4 December 2001.

⁴¹ Rwandese Republic Ministry of Education, UNESCO and UNDP, *Study of the Education Sector in Rwanda* (1998): 29.

⁴² Eugene Rurangwa, "Land Policy and Land Reform in Sub-Saharan Africa: Perspective of Land Reform in Rwanda," paper presented at the FIG XXII International Congress, Washington D.C., 29 April 2002.

⁴³ Johan Pottier, "Taking Stock: Food Marketing Reform in Rwanda, 1982-1989," *African Affairs* 92.366 (1993): 8. Basically the chief of pastures was responsible for the grazing land and collecting taxes on cattle, while the chief of landholding collected dues on labor (*uburetwa*) and acted as arbitrator in land disputes. But both of them listened to each other on complaints put forward by their colleagues.

⁴⁴ M. Catherine Newbury, "Uburetwa and Thangata: Catalysts to Peasant Political Consciousness in Rwanda and Malawi," *Canadian Journal of African Studies* 14.1 (1980): 99.

⁴⁵ Israel Ntaganzwa-Rugamba, "Rwanda: A Classic Colonial Distortion of African History and Its Catastrophic Consequences," New York, 2000, 23.

⁴⁶ Eugene Rurangwa, "Land Policy and Land Reform in Sub-Saharan Africa: Perspective of Land Reform in Rwanda," paper presented at the FIG XXII International Congress, Washington D.C., 29 April 2002.

⁴⁷ Herman Musahara, "Landnet Rwanda Chapter: Land and Poverty in Rwanda," paper presented at the Seminar on Land in Rwanda, Umubano, 23 November 2001.

⁴⁸ Ibid.

⁴⁹ Herman Musahara, "Landnet Rwanda Chapter: Land and Poverty in Rwanda," paper presented at the Seminar on Land in Rwanda, Umubano, 23 November 2001.

⁵⁰ Herman Musahara, "Landnet Rwanda Chapter: Land and Poverty in Rwanda," paper presented at the Seminar on Land in Rwanda, Umubano, 23 November 2001.

⁵¹ Eugene Rurangwa, "Land Policy and Land Reform in Sub-Saharan Africa: Perspective of Land Reform in Rwanda," paper presented at the FIG XXII International Congress, Washington D.C., 29 April 2002.

⁵² Ibid.

⁵³ Paul Magnarella, "Explaining Rwanda's 1994 Genocide," *Human Rights and Human Welfare* 2:1 (2002): 26.

⁵⁴ John F. May, "Policies on Population, Land Use, and Environment in Rwanda," paper presented at the Annual Meeting of the Population Association of America, Cincinnati, Ohio, 3 April 1993.

⁵⁵ Eugene Rurangwa, "Land Policy and Land Reform in Sub-Saharan Africa: Perspective of Land Reform in Rwanda," paper presented at the FIG XXII International Congress, Washington D.C., 29 April 2002.

⁵⁶ Herman Musahara, "Landnet Rwanda Chapter: Land and Poverty in Rwanda," paper presented at the Seminar on Land in Rwanda, Umubano, 23 November 2001.

⁵⁷ Ibid.

⁵⁸ Human Rights Watch, "Uprooting the Rural Poor in Rwanda: Background," *Property and Returning Refugees*, accessed September 23, 2003, <<http://www.hrw.org/reports/2001/rwanda/rwnvilg-03.htm>>

⁵⁹ Allison Des Forges, *Leave None To Tell the Story: Disputes Over Property* (New York: Human Right Watch, 1999) 20. A burgomaster was the chief of a commune.

⁶⁰ Catherine Andre and Jean-Philippe Platteau, "Land Relation under Unbearable Stress: Rwanda Caught in the Malthusian Trap," Case Study, University of Namur, Belgium, 1995, 47-49. The studied area was the commune of Kanama situated in the Prefecture of Gisenyi.

⁶¹ Ministry For Lands, Human Resettlement & Environmental Protection, *Brookings Initiative in Rwanda: Land and Human Settlement* (2001) 61, during the Arusha accord both parties (the standing Rwandan government and RPF) had agreed that "with a view to promote social harmony and national reconciliation, refugees who fled the country over 10 years ago not claim their property if it has been occupied by other individuals. To compensate them, the government will put land at their disposal and will assist them to resettle".

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Human Rights Watch, "Uprooting the Rural Poor in Rwanda: Background," *Property and Returning Refugees*, accessed September 23, 2003, <<http://www.hrw.org/reports/2001/rwanda/rwnvilg-03.htm>>

⁶⁵ Ministry for Lands, Human Resettlement and Environmental Protection, *Brookings Initiative in Rwanda: Land and Human Settlement* (2001) 62.

⁶⁶ Ministry for Lands, Human Resettlement and Environmental Protection, *Brookings Initiative in Rwanda: Land and Human Settlement* (2001) 62.

⁶⁷ Ibid., in a sample of 500 *imidugudu* residents in late 1999, only eight percent of those who had ceded land for *imidugudu* received something in exchange.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Ministry for Lands, Human Resettlement and Environmental Protection, *Brookings Initiative in Rwanda: Land and Human Settlement* (2001) 62, over 80% of the cases coming before a prefect are concerned with land.

⁷¹ Ibid.

⁷² Thomas Homer-Dixon, *Environment, Scarcity, and Violence* (New Jersey: Princeton University Press, 1999) 28-46.

⁷³ Dixon simplified the debate by categorizing three main positions that is the neo-Malthusians, the Economic optimists, and the distributionists. Other author, for example, Frank Furedi, in his writing, [*Population and Development: A Critical Introduction* (New York: St. Martin's Press, 1997)] categorizes eight proponents in the debate, that is, the developmentalist perspective, the redistributionist perspective, the limited resources perspective, the socio-biological perspective, the people-as-a-Source-of-Instability perspective, the women and human rights perspective, the people-as-problem-solver perspective and the religious pro-natalist perspective. Lief Ohlsson, in his dissertation, ["Environment, Scarcity, and Conflict: A Study of Malthusian Concerns," University of Goteborg, 1999, 99-112] identified seven positions that were adapted by the social scientist when applying Malthusian theory in the Rwanda case studies. These positions can be seen as either avoidance, rejection on principled grounds, intuitive acceptance, determining the role of scarcities, determining the role of the developmental model, empirical corroboration and empirical refutation.

⁷⁴ Peter Uvin, *Avoiding Violence: The Development Enterprise in Rwanda* (Connecticut: Kumarian Press, 1998) 183.

⁷⁵ Ester Boserup, *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure* (Chicago: Aldine Publishing Company 1965) 11-14.

⁷⁶ Paul R. Ehrlich and Anne H. Ehrlich, *The Population Explosion* (New York: Simon And Schuster Publisher, 1990) 23.

⁷⁷ Garrett Hardin, "Life Boat Ethics: The Case against Helping the Poor," *Psychology Today* September 1974: 38-43.

⁷⁸ Peter Uvin, *Avoiding Violence: The Development Enterprise in Rwanda* (Connecticut: Kumarian Press, 1998) 182-183.

⁷⁹ Gerard Prunier, *The Rwanda Crisis: History of Genocide* (New York: Columbia University Press, 1995) 4.

⁸⁰ Saskia Van Hoyweghen, "The Urgency of Land and Agrarian Reform in Rwanda," *African Affairs* 98 (1999): 353-372.

⁸¹ Peter Uvin, "Tragedy in Rwanda: The Political Ecology of Conflict," *Environment* 38 (1996): 15.

⁸² James K. Gasana, "Natural Resources Scarcity and Violence in Rwanda," *IUCN* (2002): 229-230. Gasana held the post of Minister of Agriculture (1990 to 92), and Minister of Defense (1992 to 93) in the Rwandan government headed by Hayarimana. He was involved in negotiating with the RPF delegation during the Arusha Agreement process. Knowing that the extremists led by Colonel Bagosora were watching him, he fled to Switzerland shortly before the signing of the accord in fear of his life. His colleague, Foreign Minister Ngulinzira, who stayed behind was among the first to be killed in April 1994 genocide. Source: Gerard Prunier, *The Rwanda Crisis: History of Genocide* (New York: Columbia University Press, 1995)163.

⁸³ Helen Kitchen ed., *The Educated African* (New York: Praeger Publisher, 1962) 211, with the original source from Belgian official statistics. Later on, the mission schools were categorized as private education.

⁸⁴ Survey on Employment, Ministry of Finance and Economic Planning, 1992.

⁸⁵ James K. Gasana, "Natural Resources Scarcity and Violence in Rwanda," *IUCN* (2002): 211.

⁸⁶ Republique Rwandaise, *Le Rwanda et le probleme de ses refugies. Contexte historique, analyse et voies de solution*, Kigali: Presidence de la, Commission Speciale sur les problemes des émigrés rwandais (1990): 117.

⁸⁷ John F. May, "Policies on Population, Land Use, and Environment in Rwanda," paper presented at the Annual Meeting of the Population Association of America, Cincinnati, Ohio, 3 April 1993, citing from ONAPO, *Le Probleme Demographique au Rwanda et le Cadre de sa solution*, vol. I: Interrelations Population-Developpement, Kigali: Office National de la Population, 1990, p.15 and REPUBLIQUE RWANDAISE, *Le Rwanda et le probleme de ses refugies. Contexte historique analyse et voies de solution*, Kigali: Presidence de la Republique, commission Speciale sur les problemes des émigrés rwandais (1990): 117.