



Natural Resource Scarcity and Violence in Rwanda

Photo: Inset – Soil degradation by erosion and landslides in the northern commune of Giciye (Gisenyi prefecture, 1999), James Gasana

Background – Soil degradation as exacerbated by landslides in 1998 in the southern commune of Musange (Gikongoro prefecture), James Gasana

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Abstract

The social and political implications of different types of environmental scarcities were important contributors to the violent conflict in Rwanda during the 1990s. These scarcities, which became acute in the 1980s, were the result of complex interactions between demographic pressure, inequitable access to and shortage of land resources, and resource depletion or degradation. The resulting degradation of ecological capital forced rural inhabitants into a vicious cycle of poverty, thereby compounding their dissatisfaction with the State. The government's failure in acknowledging and addressing such grievances prompted political dissension and presented opposition leaders with an opportunity to wage war against the regime. When the country became deeply entangled in the war, radical politicians were able to re-centre the dialectic from rich versus poor to Tutsi against Hutu. In order to promote a peaceful, stable future, the meaning of national security must be re-conceptualized to emphasize human and environmental security. Efforts must be made towards designing sustainable development strategies that promote the conservation and diversification of land use and other resources, address the environmental impacts of refugee influxes, and support population planning.

List of abbreviations and acronyms

AFP	Agence France Presse
DRC	Democratic Republic of Congo
FAO	United Nations Food and Agricultural Organization
FLH	Family land-holding
IDPs	Internally displaced persons
Inh.	Inhabitants
Kcal	Kilocalorie
MRND	Mouvement Républicain National pour la Démocratie et le Développement (National Republican Movement for Democracy and Development)
NAC	National Agriculture Commission
RAF	Rwandan Armed Forces
RPF	Rwandan Patriotic Front.

Table D1. Chronology

Nov. 59-Sept. 1961	The Social Revolution in which the Hutu peasantry dissented against the Tutsi landlords causes more than 150,000 Tutsi to flee the country.
1 July 1962	Rwanda gains independence from Belgium
July 62–July 1973	The ruling Hutu elite refuses Tutsi access to political power and does not facilitate the return of the refugees; power becomes progressively south-based
5 July 1973	J. Habyarimana takes over power in a military coup d'état, and the power base shifts to the north
December 1978	Institutionalization of a one-party system
23 January 1986	Y. Museveni takes over power in Uganda with the help of Rwanda refugees
1988	Influx into Rwanda of Hutu Burundians fleeing massacres perpetrated by the Tutsi army
1989	Famine in southern Rwanda causes hundreds of deaths and an exodus of poor peasants towards neighbouring countries
1 October 1990	The Tutsi rebels of RPF based in Uganda attack Rwanda
10 June 1991	Habyarimana government legalizes opposition parties
Aug '91–May '92	Insurgency in the south and in the Capital to force the opening of the government to opposition parties gives rise to intra-Hutu violence
16 April 1992	Coalition government to allow democratic transition is established, with a prime minister from opposition party
1 August 1992	A cease-fire agreement is reached between RPF and Rwandan government
8 February 1993	RPF violates the cease-fire and war creates 1 million IDPs
4 August 1993	Arusha Peace Agreement signed
21 October 1993	The first democratically elected President of Burundi, Melchior Ndadaye (Hutu), is assassinated by men of the country's Tutsi army
4 April 1994	Famine warning by FAO and OXFAM
6 April 94	A missile hits the plane transporting President Habyarimana of Rwanda and President Ntaryamira of Burundi, killing all the occupants
7 April–June 1994	Genocide of Tutsi and resumption of war
19 July 1994	RPF wins war and takes power in Rwanda; over 2 million refugees flee to neighbouring countries

Introduction

Many studies on the Rwandan conflict tend to oversimplify its causes by overemphasizing what is presented as a historical antagonism between Hutu and Tutsi ethnic groups. However, in assessments that attempt to get away from such a narrow focus, analysts such as Bächler (1999) and Gasana (1997) reveal the significant role played by environmental factors, among other root causes. Environmental causes of major significance in this context are natural resource-linked and are due to population pressure, decline of agricultural land per family land-holding (FLH), soil degradation and shortage of firewood. In the mid-1980s, environmental stress caused a famine that resulted in hundreds of deaths and produced thousands of southern Rwandan environmental refugees who unsuccessfully attempted to settle in Tanzania. The National Agricultural Commission (NAC), that was set up in March 1990 in the aftermath of this famine warned the government that unless adequate measures were taken to improve food access for the deprived rural populations, a social crisis was very likely to erupt before the turn of the century.

At the time the NAC conducted its work, the factors at work on the fault-lines of Rwandan society included population pressure, environmental scarcity, unequal access to land for those who depended directly on natural resources, unequal education opportunities, unemployment of rural youth, and unequal representation in power. The major divisions within the Rwandan society were regional, ethnic and social. The elites' micro-society had its additional fault-lines within which the factions struggled to control access to State resources, control of the means of public violence and State apparatus, and above all, control of the economy of the Capital City—Kigali.

While the politics of ethnic violence in Rwanda have been thoroughly analyzed, what remains less understood is how the environmental scarcities interacted with social, economic and political factors to heighten the explosiveness of tension in the period preceding the 6 April 1994. Available data show that strong grievances linked to environmental scarcities existed at the end of the 1980s. Although this was a reality, no one could have predicted a catastrophe of the magnitude of genocide. There can therefore be no room for a kind of deterministic thinking that attempts to rigidly link environmental degradation to human destruction.

However, this does not justify the unquestioning approaches followed by most analyses, which limit their focus to the effects of the conflict and to the political strategies of the actors, without analyzing their root causes. Of course, attention to politics is very important, especially considering that the 1994 genocide could have been avoided had the country had politicians of such a mind. There is no justification for the violent options chosen by key decision-makers in the government and military, who obvious-

ly lacked political vision. Nevertheless, in order to build a sustainable future for the Rwandan society, it is necessary to elucidate the context in which these disastrous political choices were made and allowed to cause so much damage. In this sense, the focus on politics alone is insufficient for the study of the Rwandan crisis.

In this paper, I provide another perspective of the analysis of the Rwandan conflict. Specifically, I will attempt to show the political and social implications of environmental scarcities and how they relate to the 1994 violent conflict. I use Thomas Homer-Dixon's analytical framework (Homer-Dixon, 1999) in combination with the data that was available between 1984 and 1990 on agricultural productivity, population, land tenure, fuel-wood needs and availability and soil erosion. Homer-Dixon's model highlights three sources of environmental scarcities: structural scarcity, which is caused by an imbalance in a distribution of resources that favours the powerful groups of society, demand-induced scarcity which is caused by population growth or increased per capita resource consumption, and supply-induced scarcity which is caused by degradation or depletion of environmental resources. It further highlights two pernicious interactions of these sources, which are resource capture and ecological marginalization. Population pressures and marginalization led to soil degradation, contributing to fallow reduction and to further declines in land productivity. The resulting degradation of the ecological capital forced rural inhabitants into a vicious cycle of poverty.

This paper will show how the discontentment of the poor peasantry driven by environmental and population pressures, in conjunction with drought and famine, made leaders of the Tutsi rebellion based in Uganda believe that there was an opening for war against the regime. When the country became deeply entangled in the war, radical leaders were able to re-center the political dialectic, from rich versus poor, to Tutsi against Hutu, inciting ethnic hatred and the spiral of political violence which led to genocide in 1994.

This analysis demonstrates the need to pay increased attention to environmental scarcities as important factors in the Rwandan conflict. Solutions to this bi-polar ethnic conflict cannot successfully be mobilized without a re-conceptualization of national security that emphasizes human and environmental security over the security of ethno-political regimes. Indeed the challenge for Rwandan society is how to change from a model of resource distribution where one winner-takes-all to one where all ethnicities can win.

Overview of the Case

Rwandan society comprises three ethnic groups: Hutu, Tutsi and Twa. Before the 1994 genocide, these groups made up 89 per cent, 10 per cent and one per cent of the population, respectively. However, the picture we

would have from the prevailing historical accounts is that Rwandan society is ethnically dual. The percentage of the Twa group is so small that they do not weigh significantly in coalitions with the other groups.

Before the end of the 1950s, the Tutsis were the dominant group in Rwandan society, accounting for more than 95 per cent of chiefs and 88 per cent of the political bureaucracy (Bächler, 1997:182). Following the 1959 Social Revolution in which the Hutu peasantry dissented against the Tutsi feudal landlords, there were violent changes in governance and a redistribution of land to landless peasants. An estimated 150,000 to 200,000 inhabitants of the Tutsi ethnic group fled violence to neighbouring countries. Subsequent ethnic strife triggered by refugees' armed attacks on the country in the 60s left thousands of Tutsi victims of massacres. The new Hutu leaders continued to live under the specter of a counterrevolution and as such, created a *de facto* one-party regime in which the Tutsi had no political voice.

This winner-take-all outcome characterized a political system in which the winners of the Hutu elite alienated the losers of the Tutsi aristocracy from political processes. It was facilitated by the Cold War: as the rebellion of Tutsi refugees who attacked Rwanda in the 60s was armed by communist countries, the Western powers supported the Hutu regime in an attempt to stabilize the political situation and prevent the emergence of Communism.

In 1973, Major-General Juvénal Habyarimana, a Hutu, led a military coup d'état that brought to power a predominantly northern elite and founded the Second Republic. The development endeavor pursued by his regime was rapidly undermined by severe contradictions. Issues of rural poverty, and the numerous dualities within Rwanda such as those between the north and south, the Hutu and Tutsi, the rich and the poor as well as eventually that between the refugees and inner population, overcame any attempts for compromise or government control.

On 1 October 1990, the predominantly-Tutsi Rwandan Patriotic Front (RPF), led by a former Ugandan deputy minister of Defense, Major-general Fred Rwigema, attacked Rwanda from Uganda. As the existing grievances were too complex to be solved by military means alone, war degenerated into an ethnic conflict, and thereby forced Habyarimana to open the regime to multiparty system. The rebirth of multi-party system in 1991 under war tension and ethnic and regional rivalry led the State to loss of control and to a rapid self-empowerment of radical factions. These factions competed for membership amongst the dispossessed of all categories, but particularly amongst the landless rural youth. The armed conflict and the tensions along the regional and ethnic rivalries led to tri-polar politics: Habyarimana's party, the opposition parties constellation and the RPF.

In April 1992, Habyarimana formally accepted to abide by a protocol signed by his party and 4 opposition parties on the formation of a coalition government for the democratic transition. Based on this protocol, a plural government headed by a prime minister from the opposition, and comprising 10 ministers from four opposition parties and 9 ministers from Habyarimana's party was formed on 16 April 1992. With the real opposition occupying key government portfolios, there was an end to Habyarimana's one-party regime. However, he remained in power as head of state, and leader of the most powerful internal political faction.

On 4 August 1993, the Arusha peace accord was signed between the government and the RPF. It provided the RPF with 5 key government portfolios out of a total of 21. The accord also provided that sixty per cent of the military was to be from the government's Rwandan Armed Forces (RAF) and forty per cent from RPF, but the command at all levels had to be equally shared between RAF and RPF.

On 6 April 1994, a missile hit the plane transporting J. Habyarimana and President C. Ntaryamira of Burundi, killing all passengers aboard. Taking into consideration the assassination of President Ndadaye of Burundi in October 1993, a total of three Hutu presidents had been assassinated in 6 months. The Presidential guard and the militias attempted to exploit the deaths of these three Hutu presidents by inciting anti-Tutsi violence in order to maintain control of the Rwandan state. At the same time, the RPF resumed war and attacked from the North. In fear of retaliation, a huge portion of the Hutu population fled into Tanzania and Zaire to escape the RPF advance. The Front won the war and set up a new regime on 19 July 1994.

Demographic Pressure and the Threat to Human Sustainability

Demographic pressure and inequitable access to land resources cause ecological *pembenization* of the poor peasantry

In the 1980s, the inequality in access to land resources in Rwanda caused severe structural scarcity for the rural population, the majority of which were affected by ecological marginalization. For this process of marginalization, I shall use the term "*pembenization*" from the Swahili word "*pembeni*" or "aside," used in Rwanda's national language in the expression "*gushyira i pembeni*" which means "to push aside." It depicts more concretely the process by which a large section of the peasantry in Rwanda has been progressively put aside by the development models followed by successive regimes of independent Rwanda.

Ecological *pembenization* occurs as a result of unequal access to resources and high population pressure which shift the poor peasantry to unpro-

ductive steep slopes, very acidic soils, or deprives them of land entirely. The land tenure model granting total freedom to peasants to manage their family land-holdings (FLHs) did not foresee the consequences of land fragmentation in successive generational transfers. As the traditional mode of heritage consisting in partitioning parental FLH among all the heirs was not reformed, there was an excessive fragmentation of cultivated land, resulting in a great number of near-landless and landless farmers. At the end of the 1980s, virtually all cultivatable land in Rwanda was already in use.

Table D2 gives descriptive data from the 1984 agricultural survey summarized by P. Dooms (1989) on the size categories of FLHs, and further analyzed by Gasana (1994) who estimated that 43 per cent of poorer families owned only 15 per cent of cultivated lands, with average FLH area varying from less than 0.25 ha to 0.75 ha. About 50 per cent of rural families had to hire land to produce for their basic subsistence needs. On the other end of the spectrum, 16 per cent of land-rich families owned 43 per cent of cultivated lands, with an average FLH area of more than 1 ha. As a result, poor farmers were squeezed in steep unproductive lands, where the soil is constantly removed by erosion, becoming in-situ ecological refuges. In 1989 it was estimated that 50 per cent of cultivated soils had slopes higher than 18 per cent.

As a result of this imbalance, about two thirds of the population of Rwanda was unable to meet the minimum food energy requirements of 2,100 calories per person per day, their effective food energy consumption having fallen below 1,900 cal per person per day. As the hungry were not only landless or near-landless, but also earned little or no monetary revenue, there was a structural famine whose roots were embedded in the inequitable and disorderly land tenure. In 1985, poor families spent 88 per cent of their earnings to purchase food, and 98 per cent of the poor were rural families. The skewed distribution of land concentrating almost half of arable land in the hands of wealthier people who did not need to use its full potential aggravated this situation. This situation contributed to the appalling per cent of rural unemployment amongst adults that had reached 30 per cent at the end of the 1980s and to slow human development, as most indicators showed (see Box 4A). By mid-1990, before the beginning of the war, it was already clear that as a result of this inequitable land access and high population pressure, the social explosion was only a matter of a few years. A report of the NAC expressed that fear in the following terms (Gasana, 1991a):

It can be concluded that if the country does not operate profound transformations in its agriculture, it will not be capable of feeding adequately its population under the present growth rate. Contrary

to the tradition of our demographers who show that the population growth rate will remain positive over several years in the future, one can not see how the Rwandan population will reach 10 million inhabitants unless important progress in agriculture as well as other sectors of the economy were achieved. Consequently it is time to fear the Malthusian effects that could derive from the gap between food supply and the demand of the population, and social disorders which could result from there.

Unequal access to land resources aggravated socio-economic cleavage between the poor peasantry and the elites. From the 1970s, appropriation of new land became increasingly linked to political power. Ranches and fields in drained productive wet valleys were allocated to men of influence or to their rural relatives.

Box 4A: Some socio-economic indicators before 1994

Area of Rwanda	26,338 km ²
Demographic data:	
Population in 1992	7.5 millions
Urban population	426,000 inh.
Crude population density	290 inh/km ²
Density on arable lands	843 inh/km ²
Rate of natural increase, 1991	3.2%/year
Life expectancy at birth	46.5 years
Literacy (%)	52.1%
Average education (at age of more than 25 years)	1.1 year
School enrolment in 1990 (between 6 to 25 years)	39%
Population below poverty line	85%
Population depending for their living on:	
Agriculture	90%
Industry	2%
Services	8%
Supply of food energy (% of needs, 1988-90)	80%
Gross national product, 1991	270 US\$/capita

Resource capture—by which the powerful elites amassed land, in combination with population pressure, resulted in accelerated environmental degradation. By the end of the 1980s the ethnic categories were not the issue any more. The real issue was the appalling poverty of a greater section of the rural population. This poverty had various causes which lead to food insecurity and misery: lack of access to land, to education, and to health services.

Table D3 gives a description of the social categories based on agricultural statistics of food energy consumption. The *abakire*, rich families, have an adequate amount of land, are involved in business or are employed in the administration or in politics. They are either in power or are well connected to those in power. Their sons and daughters have access to schools. The *abakene*, poor families, have threshold FLHs of between 0.8 to 1.0 ha. This is considered to be a “threshold FLH” because it represents the minimum area necessary to secure a stable food situation.

They have barely what they need for their subsistence, and they owe what they do have either to their barely adequate FLHs or to supplemental employment. They are unable to invest because they have no savings, they have no connection with those in power and their children have no clear future perspectives. Even further down on the social scale, the *abatindi* have neither access to land, nor to paid jobs because of lack of opportunities for unskilled labor, nor to health services. The peasants in this category may have small FLHs on rocky eroded hill slopes. As they are illiterate and powerless, they are permanently exposed to violence, malnutrition and to environmental haphazard.

The categories *abakene*, *abatindi* and *abatindi nyakujya* were divided not so much by ethnic identities but through access to land and state resources. The members of these categories described collectively the administrative and political elite, Hutu or Tutsi, as *abaryi* or “eaters,” who merely exploited them. This is typical of the kind of rhetoric that was fast developing in the 1980s, that of the rich versus the poor and not of the Hutu versus the Tutsi.

The incidence of scarcity due to inequitable access to land resources was most severe in the agro-ecological regions where soils remain very acidic. In the local terminology of the national language, these acidic soils were called “*ubutaka bushalira*” or sour soils. “Sour” soil was characteristic of the south and southwestern prefectures of Gikongoro, Cyangugu and Kibuye, and parts of Butare, Gisenyi, Kigali and Byumba. Soils in these high altitude regions lack regenerative capacity when they are put under intensive cropping. Their optimal use is forest or tea crop cover. Only highly manured gardens around homesteads could develop the so-called “*sols anthropiques*” which were productive. In addition, these poor-quality lands

were extremely vulnerable to disasters. Localized famines of 1989 were particularly severe throughout the highlands of Cyangugu, Gikongoro, Gisenyi and Kibuye prefectures.

In the Rwandan context, the notion of resource capture should be expanded to include the capture of State itself, both in the political and economic sense. To have access to power, to those who are in power or to own property was a means of securing political power. In the 1980s the political, military and administration elites focused on amassing wealth and the régime did not pay sufficient attention to the broader social issues of poverty, education, health, and equity of access to natural resources. On the contrary, there was a practice of land accumulation by those in power, and the development of state administration. In one of the most accurate analyses of the extent of capture of State in Rwanda, Maton (1993) illustrated how the wealthy leaders, regardless of ethnic group or any other status, were fiercely and irresponsibly amassing considerable wealth amid appalling misery, on the verge of a “social and political volcano that could explode at any time.”

The correlation between political power, wealth and resource capture was established from reliable statistics in the above study by Maton. He showed that since the early 1980s, the revenue of State servants was higher than those of businessmen. Furthermore, nearly 22 per cent of the revenue of the richest came from the rural sector in 1982. In 1993–94, that contribution of the rural sector had passed to 50 per cent.

Regional allocation of foreign aid to development projects reflected this accumulation pattern. Furthermore, a project could be physically located in a given region, but economically target beneficiaries of a different region where the project manager came from. By the mid-1980s, competing regional interests over projects dominated politics. The expectations of the south as expressed in consultations that were held in each prefecture in a national planning process could not be met. Indeed the plan could not be elaborated because the exercise became highly divisive. Inequitable social conditions and political oppression started to highlight the disparities in the distribution of rural development projects. As power was in the hands of a northwestern elite, the discontented southerners held the regime to be responsible for this.

The notion of resource capture must be further extended to include the attempts of the elites to exploit the situation of poverty itself as a means of attracting foreign aid. This poverty became a resource for the elite, as different factions struggled to capture the resources that ought to target the poor. Even after the return to multiparty system that took effect in June 1991, the elites interpreted democracy as a way of securing access of members of their factions to these foreign aid resources.

Up until the mid 1980s, the capture of national resources had permitted harmony among various factions of the national elite. However, in the second half of the 1980s, this situation deteriorated rapidly as the value of Rwanda's exports diminished due to the fall of coffee prices on world market. The value of coffee exports which was US\$60 per capita per annum in the period 1976-1979 fell to US\$13 in 1991. With decreased external earnings, the capacity of the regime to redistribute State resources among its clients, to reward political loyalty and to attract new supporters suffered, and dissension against it consolidated.

Soil degradation accelerates and worsens environmental scarcities by reinforcing population pressure, contributing to fallow reduction and to further soil degradation

Table D3 gives demographic data, by prefecture, for the years 1991 and 1994. The population of Rwanda increased more than threefold over a period of fifty years, from 1,887,000 in 1948 to 7,500,000 in 1992. The rate of annual population growth was one of the factors of the imbalance between food production and food demand. Population grew 1.5 per cent in 1948. It was 2.6 per cent in 1970, 3.7 per cent in 1978, 3.4 per cent in 1987 and 3.2 per cent in 1992.

About 92 per cent of the country's population was rural and earned its living from agricultural activities practiced on 11,250 km² of cultivated land (43 per cent of country's area). This represented a density of 843 inhabitants/km² of arable land. With a population density of 290 inhabitants/km² in 1992, Rwanda was the most densely populated country in Africa. The low percentage of urban population meant that most of the country's population increments were absorbed by the rural sector. This, with the land fragmentation by generational transfers in heritage practices, lead to high proportions of small FLHs. With 1,277,000 rural families, the average family thus had only about 1 ha of land upon which to subsist.

The topographic conditions of the country are not favourable for high population densities. The topography is rugged and sharply demarcated hills and mountains with steep gradients characterize the land. Thus high population pressure caused the reduction of fallow land and increased pressure on marginal and pasturelands, accelerating deforestation and erosion. As land was further divided amongst heirs with each successive generation, the total family production output and the per capita food availability decreased. This practice insured that each new generation inherited more poverty, and rural families of younger generations had fewer resources to invest in health and education.

High population caused a reduction of grazing lands, whose area cover dropped from 34 per cent in 1965 to 16 per cent in 1987. The conse-

quence of this was that there was an increase in livestock densities on remaining grazing lands, which contributed to their rapid degradation and negatively affected the value of the farmland. Based on the total national production that stagnated since 1983, the biophysical carrying capacity²⁷¹ was estimated to be 5,240,000 inhabitants (Gasana, 1991a). The total population permanently living under food insecurity was 2,360,000 in 1990. As a result of high population growth, agriculture production stagnated since 1983 and labour productivity fell, while population continued to grow at more than three per cent per annum. By the early 1990s, rural unemployment affected the equivalent of 30 per cent of active population. Policy response to high population growth was adopted only in the beginning of the 1980s. Family planning programs were implemented, but they had had no effects when the multi-faceted social, economic and environmental crisis erupted in late 1980s.

One of the factors that contributed to poor population policy in successive regimes was the demographers' presentation of predictions of continuous geometrical long-term population growth, without taking into account the carrying capacity parameters. For example, it was projected that Rwanda would reach a population of 26.7 million inhabitants by the year 2030, whereas in actuality it would be difficult to imagine how it could reach even 10 million if there wasn't either a technological revolution to increase crop production or an economic revolution in order to reduce direct dependency on natural resources.

In the beginning of the 1990s, Rwanda faced an enormous challenge of meeting the needs of its population which was projected to reach 10,239,000 by the year 2000. The projections made by the ministry of Agriculture, Livestock and Environment in December 1991 (Gasana, 1991c) showed that the required productions necessary to meet this population increase were a real challenge. They required doubling the 1990 production level on the same arable land, and this represented an average annual production growth of 7 per cent between 1992 and 2000. This required achieving a thorough technological transformation of agriculture, a project which obviously could not be achieved in such a short time. There was little chance that the country could reach these targets shown in this table as the enormous technology gap, increasing soil losses due to crop production intensification and declining soil fertility due to soil nutrient removals presented substantial obstacles to progress.

All this highlights once again the importance of the population variable in the Rwandan socioeconomic and environmental tangle. It became clear that the country was paying the penalty of not having adopted appropriate population policies aiming at slowing population growth and developing non-land based economic activities earlier. It is evident that high

demographic pressure and resource capture led to unsustainable land use as the poor were forced to farm on shallow soils of steep hillsides in combination with the shortening of fallow periods and the cultivation of pasturelands and forested areas. Furthermore, there was a spillover of population onto marginal lands. Poor farmers who had not inherited land distributed after the Revolution were squeezed onto steep and stony lands where soil is constantly removed by erosion. For its part, soil erosion increased demographic pressure on natural resources by reducing soil organic matter and nutrients, diminishing water retention capacity and reducing soil depth available to root growth.

Due to shortage of land, most agriculture is practiced on hillside. Table C5 shows that 50 per cent of arable land has slopes that are higher than 10°. The annual loss of agriculture land due to soil erosion was estimated to be equivalent to 8,000 ha in 1990, representing 0.7 per cent of total arable area. This represents the loss of the capacity to feed 40,000 inhabitants every year. It was further estimated that to compensate the loss of soil fertility due to erosion requires the import of about 142,000 tons of fertilizers every year, or about 140,000 tons more than the quantity used in 1989 for food crop production.

This hillside agriculture faced three uncertainties in the northwestern region as described by Charlery de la Masselière (1994): uncertainty about the integrity of land heritage, which puts into question, for example the possibility of controlling soil degradation on the hillsides; uncertainty about profitability of productive investment, on which depend land conservation measures; and uncertainty about small-holders' economic future, which may lead them to leave the hills.

High-altitude FLHs on steep slopes of acidic soils without permanent cover crop were those hardest hit by soil erosion. The deprivation of farmers in these conditions was passed to their children, whose situation was even worse. Soil erosion, in a country with a land resource-based economy, contributed therefore to the erosion of the social fabric by aggravating social disparities, locally between farmer families, and nationally between agro-ecological regions. It is one of the factors of the violent social relations that have not allowed the peasants to live in good harmony with the environment. The affected populations lived in a permanent situation of environmental scarcity as they suffered all the consequences of excess or shortage of rains, crop diseases, landslides, soil acidity, and could neither grow buffer crops such as banana, nor apply the more secure multi-tier agricultural systems.

Regional disparities in agricultural productivity, disfavours the southern prefectures of Cyangugu, Gikongoro, Kibuye, but also certain highlands of Gisenyi in the northwest, were due more to large areas covered by eroded

acidic soils than to an allocation of development projects favouring the north. In the 1980s, hundreds of poor farmers in the southern highlands died as victims of severe environmental scarcities while others fled the country as ecological refugees. The ill social consequences of the environmental discrimination compounded the political rift between the ruling northern elite and the southern region. As we shall see, the rampant famine in the south contributed to the weakening of the legitimacy of Habyarimana's one party regime.

One of the factors that aggravated the decline of agricultural productivity was fuel-wood scarcity, which has links with soil degradation. In Rwanda there is a heavy dependency on biomass as a source of energy. Combined with an accelerated population growth, this dependency contributes to accelerated deforestation. It was estimated that at least 90 per cent of wood production in Rwanda was used as fuel-wood. In the period 1991/92 the estimated difference between total annual wood needs and actual wood consumption was 4,489,500 m³ (Gasana, 1991b; Gasana, 1994). The difference between actual total annual wood consumption and the annual allowable cut was 1,899,000 m³. This means that the rate of wood harvest was 57 per cent greater than the growth of new stock. It was estimated that this over-harvesting produced a net deforestation rate of 8,000 ha per year, and involved accelerated use of farm crop residues as a substitute for fuel-wood equivalent to 1.7 ton of organic matter per ha per year. Wood scarcities therefore had negative effects not only on the reduction of vegetative cover but also on the loss of soil fertility. With the increasing use of crop residues as a source of domestic energy, it was estimated that only 26 per cent of the organic matter that was required to maintain soil fertility was recovered. The reduction of food production resulting from the decline of soil organic matter was the equivalent of 65,000 tons of cereals per year.

Survey data reported by Samyn (1993) shows that the average wood production in the farming systems at that time was 1.54 m³ per ha per year. The small FLHs had enormous difficulties in producing all the fuel-wood they needed for domestic use. It was also estimated that intensification of agro-forestry could raise the average wood production from 1.54 m³ to an optimistic 4.04 m³ per ha per year. However, even if such a challenge could have been met, FLHs of less than 0.75 ha would still not have been able to produce all the wood they needed for domestic use as Table D6 shows. The structural scarcity of wood, one which had an enormous negative impact on farm crop production, was rooted in the lack of land for small FLHs and had been aggravated by overpopulation. The effect of scarcity as well as other factors described above, in conjunction with meteorological variations and crop diseases, had the effect of significantly reducing the per capita food energy supply.

A comparison of regional disparities in food supply based on data on food energy production between 1984 and 1989 showed that for a total of 7 out of 10 rural prefectures, the rate of production growth increase had been negative. It was positive for Kibungo and Ruhengeri and stagnated for Byumba. The situation was even worse for the rate of production increase per capita. All the prefectures recorded a negative rate. The most dramatic cases were for Gikongoro (-51.3 per cent), Kibuye (-48.2 per cent), Butare (-42.5 per cent), Cyangugu (-39.7 per cent), Gitarama (-24.3 per cent), and Gisenyi (-22.6 per cent). These are prefectures where demography interacts adversely with the effects of high soil acidity.

Delegitimization and Destabilization of the State: Internal Political Dissension Developed From Growing Rural Poverty That Threatened the Regime's Legitimacy

The rebellion leaders thought that both dissension and the discontentment of the dispossessed peasantry were an opportunity to wage war against this regime

The Second Republic, by concentrating political power to the northwestern region and putting an end to democratic processes initiated by the 1959 Social Revolution, sharpened competition for power and resources between Hutu elites of different regions, in addition to the Hutu-Tutsi competition which already existed. The grievances of the landless and near-landless peasants of southern Rwanda never ceased to be expressed ever since the elite of northern region took dominance of the Rwandan politics.

Discontentment in the south worsened with the belief that the regime was investing more in rural development in the north than in the south. As a result of lack of transparency in national project accounting, southerners did not see them as a consequence of adverse ecological conditions of their region. The southern-based political dissension that had begun to develop in the early 1980s exploited grievances linked to environmental scarcities in order to rally the peasantry against the regime. Indeed since 1989 the representatives of farmers' organizations started to vocalize this dissent against the administration. They denounced the dispossession of the poor peasantry, who were forced to sell their lands in order to survive.

This discontentment of the southern peasantry reached its peak by 1988–89. As I mentioned earlier, environmental scarcities were of such a magnitude that human sustainability itself started to be threatened as famine caused hundreds of deaths, and thousands more fled to other regions and to neighbouring countries. Since that time, the decline of the legitimacy of Habyarimana's regime accelerated. The leaders of the RPF in Uganda judged that time was ripe to declare war against the regime. In an

interview broadcast by the Voice of America in the week of the outbreak of the October 1990 War, a spokesperson of the RPF rebellion justified the choice of this particular timing referring to the convergence of conditions, citing the appropriation of national resources by the ruling elite and famine in the country, as follows:

“... RPF chose this particular time because objective conditions in Rwanda were ripe. In the past the problem used to be presented as a Hutu versus Tutsi conflict, later it was presented as north versus south conflict, and then as a conflict between Gisenyi and Ruhengeri, and between Bashiru and Bagoyi groups. (...) Our analysis is that the contradictions were ripe, as Rwandans realized that the conflict was neither between Hutus and Tutsis nor between North and South, but between them and a clique of people who want to hold power and appropriate the country's resources. For this reason we thought this was the appropriate time. In addition there were problems of famine and others which showed that this was the time.”

The dialectic of resources scarcity and resource capture by the elites continued after the breakout of war. This is illustrated by the following excerpt of an interview given to Radio Rwanda by the chairperson of a southern peasant organizations federation, TWIBUMBE BAHINZI:²⁷²

There is a generalized famine in the country, that is difficult to eradicate, because it is only the cultivators-pastoralists who are bearing its impacts, while the “educated” are enjoying its side effects. Those who should assist us in combating that famine are of no use to us (...). There are still many obstacles before the end of the famine. It will require no less than a revolution similar to that of 1959, so that cultivators-pastoralists may have leaders who are really willing to assist them. (...)

On top of this there is war. Even if the cultivators-pastoralists can still till the land, it is very difficult for them to work in good conditions when they have spent the night guarding the roadblocks, and are not sure that they are going to harvest. (...). As in the case of famine, it is the educated and the politicians who “eat” side effects of war, and the cultivators-pastoralists and the militaries who “eat” its ill effects.

This interview shows that despite the rigor of war, the peasants were not yet considering that ethnicity was an issue. At this time, their debate was still around social effects of environmental scarcities, social inequality in the country, and governance.

However, both war and radical politicians re-centered the dialectic of the 1980s, shifting it from rich versus poor and north versus south to that of Tutsi against Hutu.

In the context of war and internal pressure for political change, the standing regime could not protect itself from external pressures and there were few resources available to maintain authoritarian rule. Habyarimana was unable to come up with a new vision that would put an end to the growing societal rift. Even his allies started playing Hutus against Tutsis, and at the same time, the increasingly vocal farmer's representatives were undertaking to politicize the issue of rural poverty, and pursued an agenda contrary to the State.

By mid 1991, Habyarimana opened the system to multipartism. However, the political parties which emerged were only splintered factions of the former ruling party, civil servants led by influential politicians. The strength of the latter depended on their potential to protect their followers in the administrative bureaucracies and to ensure their share of State resources. The proliferation of violent party youth wings brought about the quasi-privatization of security and public violence. Militants of the major opposition parties based in the south wanted to topple Habyarimana's regime by a popular uprising based on discontentment of southern peasantry. They organized the rural youth of their parties into wings called *Inkuba*, or thunder, and *Abakombozi* or liberators, that perpetrated acts of wide scale vandalism in order to destabilize the regime.

Although the presence of environmental scarcities helped quicken the advent of political pluralism, acute party competition contributed to a deep political uncertainty. The opening of the political system coincided with a context of fierce war for power, and a loss of internal political coherence in the civil and military administrations. In the end, efforts to find solutions to environmental scarcities ground to a halt as the major focus became centered on war and factional politics. As far as agricultural production was concerned, there was a total paralysis of policy implementation, as the new political environment required the abandonment of the top-down agricultural extension methods.

In order to mobilize and enroll the rural youth, opposition parties exploited the issue of land resource capture by those who were close to the regime, linking it to landlessness and rural poverty. They used a model they designated as *Ukubohoza* or liberation, to force the restructuring of political resources between the northwestern ruling elite and the south-based opposition. Their strategy was to rally the unemployed urban and rural youths, using political and economic domination of the north as an argument to explain the root cause of their grievances. Their crusade consisted of acts of civil disobedience such as invading the offices of local administrations

and seizing the lands owned by influential authorities or those used by cooperatives and by development projects. Arsonists also targeted forest plantations established on degraded communal hillsides.

There is a correlation between these types of violence and the socioeconomic conditions of the communes where they occurred. Table D7 shows that a disproportionate fraction of the 30 communes with lowest revenue per capita were localized in southern prefectures of Gikongoro, Kibuye and Cyangugu. It further indicates that the incidence of sociopolitical violence was less likely to occur in prefectures where the average food energy production per capita per day was higher than 1,500 kcal. Their distribution followed very closely the occurrence of very acidic, high altitude soils of very low agricultural potential. It is in these communes, in addition to the Capital, that political violence started. In the south, violence took the form of an insurgency movement which drew its force from deprivation of the landless and near-landless peasantry and the desperateness of uneducated and jobless rural youth. Insurgents, in a way that was reminiscent of the 1959 Revolution, imposed new municipal authorities in Cyangugu, Gikongoro, and Kibuye prefectures.

It should be noted that the 30 richer communes, mostly found in productive agro-ecological regions of the Kibungo, Kigali and Byumba prefectures, had no record of insurgency. However there were cases in which rival politicians imposed violence on these richer communes. Hence, not surprisingly, this violence focused along ethnic lines and targeted the Tutsi. The communes concerned had significant Tutsi populations, such as Kanzenze in Kigali prefecture, and Murambi in Byumba prefecture, where the Liberal Party, mostly Tutsi, wanted to establish a stronghold.

In the *Ukubohoza*, the opposition goal of power sharing matched the youth's goal of land sharing. The spirit generated by the insurgency was extended to the administration in general. As opposition parties entered the government on 16 April 1992, there was a new phenomenon of partitioning of State in disguise of "power sharing." In this generalized instability, personal interests of leading party heads fluctuated, and the Government failed to maintain political coherence. Parties treated their departments as private fiefdoms. This contributed to rivalries and to a low level of accountability. A party holding a portfolio would use it for advancing its strategies, from use of administration resources for the party to member recruitment and non-member exclusion. This created job insecurity among the civil servants, and job insecurity led to the creation of perverse solidarity. Under conditions of economic hardships, strong political allegiance was essential for survival in the new politically segmented administration. Thus, elites, fearful of losing their government positions and power, created protection alliances and recruited landless rural youth in party youth wings for their political protection.

For the hard-liners in Habyarimana's camp, considerations of maintaining political power took precedence over ending war. Similarly, for the rebellion and its allies, considerations of power took precedence over securing society's harmony. With the impetus of the *Ukubohoza* insurgency, the partitioned State power lost its ability to control violence in rural areas. In many communes, discontented youth and radicalized poor peasantry were setting the rules themselves, manning road blocks and impeding the gendarmerie's law maintenance operations.

To halt this destabilization, the *Interahamwe* youth wing was organized by men close to Habyarimana as a response. In certain areas, the *Interahamwe* defended the influential politicians, protected their lands from squatters or "liberated back" the lands that were already taken over. In the northern prefectures of Gisenyi and Ruhengeri, a considerable effort was underway to prevent the rally of the youth around the theme of land resource capture. Leaders of farmer's organizations were enrolled in the ruling party, MRND and local members of the opposition met a harsh treatment. The climate was so hostile against dissension that even the landless and near-landless peasants had to support Habyarimana's camp in solidarity against southern-based opposition.

With this solidarity, the capture of land resources remained a dormant issue in the north. Yet in the late 1980s through 1991 there remained discontentment in Gisenyi about the World Bank sponsored capture of ranches by the members of Habyarimana's family and their close allies. In the Gisenyi and Kibuye prefectures, violence in poor communes took the form of ethnic strife. Politicians exploited the rampant misery in order to turn the landless rural poor against the Tutsi, promising them their lands in return for support. This pattern was observed in 1991 in Kibilira commune of Gisenyi prefecture, and in August 1992 in Gishyita and Rwamatamu communes of Kibuye prefecture.

The northwestern-based regime, besieged by the central and southern political dissension, tried to avoid a matching movement of the northern peasantry. To prevent insurgency, the dissatisfaction of the poor peasantry in the prefecture of Gisenyi had to be channeled into ethnic strife. For this, the northwestern ruling elite used kinship ties to strengthen its influence on potential dissidents and to rally their support, and recruited landless youth in the north-dominated army. Ethnic strife of this pattern concerns the communes of Kibilira and Satinsyi. In other communes of Gisenyi and Ruhengeri, ethnic violence was more openly a result of the criminalization of the administration. Local authorities became intolerant of the opposition which they considered to be a contagion from the southern and central regions. They incited Tutsi massacres in several communes, including Giciye, Kayove, and Mutura in Gisenyi, and Nkuli and Kinigi in Ruhengeri.

By mid 1992, the major endeavor of political parties was to control the rural society. As it constituted 90 per cent of the country's population, it was not only a reservoir of votes, but also, being a reservoir of poverty, it was a reservoir of militants for youth militias. There were strong fears of civil war opposing the rich and the rural poor. With this in mind, Habyarimana deployed a great effort to personally request the influential farmer representatives, individually, to rally the peasant movement on his side. He promised them to take their advice into account and to include their own goals in the agenda of his party. With this outreach effort, he had no problem in co-opting some of the most vocal farmer representatives in different positions of his party and in making them abandon their rhetoric concerning rural poverty.

Mass movements of internally displaced persons (IDPs) concentrating in particular regions worsen misery, create ethnic tensions

After the failure of its first attack in October 1990, the RPF resorted to guerilla war and maintained a military pressure on the country. As the war front advanced, thousands of civilians were forced into displacement camps. This caused immense suffering to the inhabitants of Byumba and Ruhengeri prefectures and disrupted agricultural production in two prefectures that were among the four that recorded overall food production surpluses.

It must be underlined that the displacement of populations fleeing war in the north contributed singularly to the combustion of ethnicity that led to the deterioration of the political process in 1994. The civilian populations of a different ethnic group than that of the rebels were explicitly targeted by the rebellion based in Uganda, expelled from their homes and continuously bombed in the camps in an attempt to force them to move further into the government controlled zone. Their living conditions were harsh and the rigor of war operations often made dreadful assaults on personhood and dignity.²⁷³ At each phase of the war as the frontline kept advancing, there was a new and more significant influx of IDPs because the rebels included the camps among the military targets.

The IDPs out-flux reinforced the ethnic dimension of the conflict and was the beginning of the most tragic drama of the country's history. The war casualties exceeded 100,000 people, and the infant mortality rate reached 300 per 1,000 live births. With the overwhelming numbers of populations involved, the means of traditional hospitality in recipient areas of the prefectures of Byumba, Ruhengeri and northern Kigali were far exceeded. The IDPs were settling in the open or in communal forest plantations, setting up round thatched huts of fortune ironically named *blindés*, because, in addition to resembling in shape and size the small armored cars of the army's special units, they were quite the opposite as far as the protection effect was concerned.

There were four phases of the IDPs outfluxes:

- In the first phase (October–December 1990), the front, localized in Byumba, forced 30,000 inhabitants of the Muvumba and Ngarama communes to flee their homes.
- In the second phase, the guerrilla-type war extended to other communes of Byumba (Bwisige, Cyumba, Gituza, Kivuye, Kiyombe, Mukarange, Ngarama) and by the end of 1991 the IDPs population had reached 350,000 inhabitants.
- In the third phase, in January of 1991, the RPF widened and elongated the war front after the attack on Ruhengeri town and in Butaro and Cyeru communes. By July 1992, when the cease-fire Agreement took effect, the IDPs population in the camps had reached 500,000 inhabitants.
- The fourth phase corresponds to the violation of the cease-fire agreement of February 1993 by RPF and the resumption of war. At this time, the total number of IDPs had surpassed 1,000,000 inhabitants, or about 1/7 of the total country's population, which had been regrouped into 40 camps. The situation further worsened in October 1993 as a new influx of 350,000 Burundi Hutu refugees who had fled violence following the assassination of President Ndadaye were hosted in Butare prefecture, already in a very precarious food situation. In total, the number of IDPs and refugees together reached 1,350,000 inhabitants.²⁷⁴

This phenomenon took place in areas of high populations of Ruhengeri and certain communes of Byumba, both of which did not have sufficient resources for the incoming populations. Short of food and of wood for cooking, these IDPs had their normal caloric food intake drastically reduced. In addition, the social impacts of these camps were dramatic. Families were separated and scattered, affecting marriage, divorce rates and morality standards. Health centers were overwhelmed and mortality increased. Suspension of schooling and lack of occupation for the youth led to increased delinquency and crime. As of February 1993, the situation was as follows:

- In Byumba, the inhabitants abandoned 12 of 17 communes, while five communes had more than double their population.
- In Kigali and Urban Kigali prefectures, the total population of IDPs from Byumba and Ruhengeri was about 500,000 inhabitants.
- In Ruhengeri prefecture, five of the 16 communes were abandoned, while six communes, which hosted the IDPs, had more than doubled their population.

The scarcity situation existing before the war was aggravated. Supply of food energy was at best 1,100 calories per person per day,²⁷⁵ not only due to a limited food supply, but also to reduced means of transportation available to humanitarian organizations. This combined to create severe environmental scarcity which was the result of previous demand-induced and supply-induced scarcity. The push of the frontline was followed by the push of the front of ecological devastation and exacerbation of environmental scarcity. In the end, this situation led to total economic deprivation of families and entire regions, and had catastrophic consequences on the economy and on social fabric at the national level. The mechanism is quite straightforward:

- population pressures increased, as refugee camps were located in the same regions (prefectures) as the origin of those concerned;²⁷⁶
- Growth of influx of populations with the advance of the frontline at each phase of war further increases population pressures;
- Increase in the demand for food, firewood and water scarcity in recipient communes provoked an increase of the rate at which environmental resources are used;
- Disruption of agricultural production due to pillaging of crops, war insecurity, disruption of services;
- Host populations become as challenged as IDPs in terms of scarcity;
- Tensions developed between IDPs who received assistance, and host populations who did not receive assistance but whose crops were pillaged and who could not produce according to normal standards;
- Increase in the radius of resource scarcity. Where the rate of resource replenishment is lower than the rate of increase in resource demand, resources are rapidly depleted, and prices of basic food items rocket upwards;
- Strain on resources reduces access to food commodities in urban areas like Kigali and in turn brings social tension to the national level;
- At each new phase of war, IDPs and host populations move together in a new area, and this increases pressure on the environment;
- The dispossession of IDPs appeared more and more irreversible and the spread of deprivation reinforced frustration and heightened ethnic hatred;
- The transitional government which had become effective as of 16 April 1992 and had negotiated a peaceful settlement was placed under heavy stress as it divided spending between acting to stabilize the

frontline, and to prevent further IDPs influx while assisting the existing needy populations in camps.

There was a powerful interaction of dynamics that increased the flow of IDPs, environmental scarcity, and escalation in radical political discourse and political violence. Environmental scarcity compounded by war was an overwhelming factor behind the use of ethnic politics by unscrupulous political actors. The intransigence of the rebellion further contributed to the escalation of ethnic politics by providing the conditions that consolidated the political base of hard-liners.

When war broke out in 1990, youth aged between four and seven never completed their primary school. Instead they lived in conditions of social disruption in the camps, where they experienced daily hardships, insecurity and death. They became the principal base for the recruitment of members of *Interahamwe* militias. They reinforced the alliance between the radical politicians and the urban delinquents, not for ideological commitment, but because of the torture of famine and other conditions linked to the extreme misery of the camps and lack of alternatives. Indeed they served whoever paid or fed them. Many were seen turning the party colours of their caps inside out in riots, depending on which party hired them.

War in the North and the advance of the RPF, driving people from their homes as they marched southward, created anti-rebellion sentiment. The discontentment of the IDPs helped President Habyarimana reclaim support and legitimacy. Indeed he became the IDPs' most vocal advocate and the leaders of his party had openly manifested more sympathy to their miserable situation than had the opposition leaders and the opposition-led government. With the progress of the Arusha peace negotiations, the phenomenon of population displacement entered into the vote equation. For the regime and the anti-RPF camp, the IDPs represented an important capital of votes to win over, and for the opposition, they represented a loss of votes. Here we have the harsh reality for the IDPs. For many of them the warring factions were divided into two camps among which they had to choose: the camp of those who wanted them to die before voting and the camp of those who wanted their votes before they died.

In the prevailing political environment, the IDPs could not get the sympathy they so much needed, as their camps moved closer to the Capital Kigali. Instead they encountered hostility from the opposition members, Hutus and Tutsis alike. They found themselves in utter bewilderment, unable to understand this lack of sympathy for their situation. On the other hand, the inhabitants of Kigali could feel and see directly the realities of war-induced environmental scarcities. Not far from the city, about 500,000 IDPs were in camps, such as Rutare, Mugambazi, Mbogo, Rutongo. Prices for food rocketed upwards, as Byumba and Ruhengeri,

which were among the 4 breadbasket prefectures of the country, were invaded. Kigali's fuel wood forest plantations were cut down in the communes of Buyoga, Tumba, Mugambazi, Mbogo, Tare, Rutare, and Muhura.

Ethnic-based slaughter in the wake of assassination and its impact on neighbouring Congo-Zaire

In the beginning of 1994, the Rwandan society was under the interacting stresses of unsettled political and military tensions, a struggle for power and State resources among the elites, environmental scarcities, and the IDPs' growing resource needs. In this context of simmering rebellions and failing institutions, ethnic tension combusted.

The government was therefore unable to cope with a famine of unprecedented magnitude in the country's history. By the end of March 1994, there was a real threat of mass starvation resulting from this tangle of stress factors. In the beginning of April 94, FAO and OXFAM made a stern appeal for urgent assistance for more than 800,000 inhabitants who were under the threat of death by starvation. Here is an account made by AFP news agency in a release of 4 April 1994:

NAIROBI, 4 April (AFP) – At least 500,000 people are threatened by famine in Rwanda, due to drought, food shortage, influx of populations displaced by the civil war, and the influx of Burundian refugees (...).

The 500,000 are "populations in extreme urgency," (...). The number of those affected at different levels is comprised between 800,000 and 2.5 millions (...).

A report established by the humanitarian organization OXFAM with the collaboration of the government and other organizations sets at more than 800,000 the number of people who need urgent food aid. (...).

Another survey by the humanitarian organization Caritas puts at more than one million the population in urgent need, and the government is requesting food aid for at least 2.5 million people, different humanitarian sources indicated.

Two weeks ago, the United Nations Agriculture and Food Organization (FAO) had found the food situation all over Rwanda to be "critical" and had estimated that only urgent food aid can avert the famine.

When the plane carrying presidents Habyarimana of Rwanda and Ntaryamira of Burundi was shot down on 6 April 1994, it was like pouring fuel on a burning house. This event, at a moment of extreme ethnic

tension in both countries, ignited the Rwandan society. War resumed on 7 April and the fear it caused added to the above threat of widespread starvation and offered a new tool to extremist political Hutu groups. Seeking to prevent the takeover of Rwanda by the Tutsi-led RPF and its southern-based sympathizers, they used the presidential guard and the *Interahamwe*, comprising mostly Hutu youth from IDPs camps near Kigali, to perpetrate the murder of Hutu opposition politicians and the mass slaughter of the Tutsi.

This account of the succession of events that characterized the Rwandan political process in the early 1990s shows clearly that the humanitarian tragedy of the IDPs, which was an effect of the October 1990 war waged by a Tutsi-led rebellion, caused a spiral of environmental scarcities, which led to a spiral of ethnic hatred. This dreadful context of acute environmental scarcity, heightened ethnic tension and the resumption of war, was harnessed by extremist Hutu politicians as a pretext for the Tutsi genocide.

The RPF defeated the RAF and took power on 19 July 1994. Following this takeover, over 2 million Hutu refugees fled to neighbouring countries, including 1.2 million to the Democratic Republic of Congo (DRC).

This massive exodus had a devastating environmental, social and political impact on the Eastern DRC, particularly in the Northern Kivu Province. This is a fertile and densely populated area, where Rwandan immigrants, Tutsi and Hutu, known together as Banyarwanda constituted the majority of the population. They comprised immigrants who arrived before colonial era, those who arrived in organized transmigration under the colonial administration, and the 1959 Tutsi refugees.

Before 1994 exodus into the region, there were already land tenure disputes and political competition in the Masisi, a region of Northern Kivu, pitting the Congolese Hunde, with their Nande and Nyanga allies, against the Banyarwanda. The disputes resulted from economic domination by the Banyarwanda, who controlled the lands and were using their wealth to secure political influence, both locally and in Kinshasa. The grievances due to the inequitable access to land which resulted led to ethnic clashes in 1993. This violence, which targeted the Banyarwanda, caused more than 6,000 deaths and displaced 250,000 people.

Following the massive influx of Hutu refugees in 1994, there was a new Hunde, Nande, Nyanga and Hutu alliance against local Tutsi, who were forced to flee to Rwanda. However, as many Hutu refugees infiltrated in Masisi in search of land to cultivate for survival, pressures on environmental resources mounted and the Hunde feared that this influx would further strengthen the Hutu control over the land resources and local politics, and eventually lead to the creation of a Hutu state in the Great Lakes

Region. Amid this rising fear, the Hunde and Hutu politicians competing for political influence in the Capital Kinshasa fomented animosity between indigenous groups and Banyarwanda populations. The resulting conflict caused thousands of deaths and displaced 200,000 people.

After Laurent Kabila's power takeover in the DRC, there was a new reshuffling of alliances. The Hunde, Nande, Nyanga and Hutu united against Tutsi and forced them to flee to the Congolese town of Goma and to Rwanda.

The succession of land disputes between frequently-shifting alliances of warring groups in Northern Kivu were sharpened by the contagion of the Rwandan ethno-political conflict. The most recent of these disputes pitted the pastoralist Hema against the Lendu peasants in the Ituri region. It resulted from claims made by Hema on the land allegedly belonging to the Lendu.

These land resource conflicts in Eastern DRC help sustain conflict in the region, as the Rwandan and Ugandan occupying armies are accused of arming sympathizers among the rival groups.

Conclusion

This paper illustrates how the ethnically-based winner-take-all land access model implemented following the 1959 Revolution failed to constitute a durable response to the ethno-political conflict in Rwanda. This model of natural resource distribution lacked a coherent land tenure framework, and a mechanism to integrate the losers into the exercise of power. In addition, successive post-independence regimes reinforced a system of many-faceted exclusions: regional, ethnic, political, social, economic and ecological. This led to explosive interactions between ecological exclusion affecting the poor peasantry and political exclusion affecting the elites of central and southern regions and the Tutsi. These interactions provided an opportunity to the rebellion and to extremist politicians who turned ethnic rivalries into political tools.

The analysis shows the need to pay greater attention to the role of environmental scarcities in the Rwandan conflict. It departs from most studies that focus on history and politics and shows clearly that there exist environmental root causes of the Rwandan conflict, different from those that have been addressed so far.

Three factors made the social effects of natural resource scarcity contribute to violence. First, large populations were adversely affected by scarcity, and were dissatisfied with the State. Second, the government did not consider seriously the significance of this dissatisfaction, and there was no open national debate on peaceful solutions. Third, the emerging opposition

leaders challenged the regime by organizing the dissatisfied and unemployed populations into armed militias, the youth in particular, and playing upon ethnic mistrust.

The major conclusion emerging from this analysis is that demographic pressure, inequitable access to land resources, and increased fragmentation of landholdings due to generational transfers, together caused loss of livelihoods and ecological marginalization of the poor peasantry. Peasants were trapped into practicing unsustainable crop production on easily degraded steep hillsides, further degrading lands, diminishing productivity and decreasing fallow times. The resulting degradation of the ecological capital led the rural economy into a vicious circle of shrinking returns and increased pressure on a steadily diminishing resource base.

Internal political dissension developed from the dialectic of worsening rural poverty, threatening the regime's legitimacy. The rebellion leaders thought that the discontent of the dispossessed peasantry was an opportunity to wage war against the regime. By forcing many to abandon their homes as IDPs, this war further worsened environmental scarcities and polarized the Rwandan society along its ethnic axis.

A cause-effect chain between environmental scarcity and conflict emerged: from environmental scarcities leading to the 1988/89 famine to political dissension in the south and to the Tutsi-led RPF war of October 1990; from the RPF war to increased environmental scarcity and to a spiral of ethnic tension after February 1993, culminating with the Tutsi genocide triggered by the assassination of President Habyarimana.

As regards lessons learned, four aspects seem to be relevant. First rapid population growth is the major driving force behind the vicious circle of environmental scarcities and rural poverty. The dynamics of this growth exerted an enormous pressure on natural resources and caused an imbalance between demand and supply, the rapid decline of agricultural productivity and the decrease of food availability. It induced the use of marginal lands on steep hillsides, shortening of fallow, conversion of pasturelands to crop production, deforestation and soil degradation. If so, then, second, conserving the environment is essential for long-term poverty reduction. Yet doing so requires breaking the vicious circle of demographic pressure—cultivation of steep hillsides—poverty. Decelerating population growth is the only way that will insure sustainable protection of the environment. In the long term, this is possible only if Rwanda adopts a bold population policy with aggressive family planning programs aiming at reducing fertility rate. In addition, sustainable agriculture systems based on technologies that improve soil fertility and increase fuel wood production can reduce the risks faced by the peasants.

Third, to break the links between environmental scarcities and conflict, win-win solutions are essential as far as access to natural resources of different sociological groups is concerned. The present winner-take-all model is one in which the ethnic group which fails to grab power loses its access to natural resources and thus loses resource security for its members. This has created a society that is constantly gripped by fear. The winner fears the return of the loser and this fear leads to bipolarization and to the distinction between dominating and oppressed groups. The fear is symmetrical between the two ethnic groups because of society's ethnic duality. Domination of one ethnic group leads to resentment by the oppressed one. This resentment leads to ethnic enmity. Enmity maintains tension and leads to revenge when the upheavals resume. The resulting double symmetry of fear and enmity that is the source of structural instability is now the root core of the Rwandan conflict. The Tutsis think that the Hutus threaten their existence, including their access to natural resources. The Hutus think the same of the Tutsis.

Fourth, solutions to a bipolar ethnic conflict cannot successfully be mobilized without a re-conceptualization of Rwandan national security that emphasizes human and environmental security before the security of ethno-political regimes. Indeed the challenge of the Rwandan society is how to change the ominous winner-take-all model and build a win-win situation. How will it be possible to convince all the rival ethnic factions that sustainable peace will come about only if Hutus seek security and prosperity without excluding Tutsis, and that Tutsis seek the same for Hutus? The answer would be to find a mechanism, perhaps based on a civilian-controlled police force, which would assure mutual security not just for the members of the ethnic faction in power, preventing it from monopolizing access to state and natural resources, and providing assurance of security for all.

The memories of past inter-ethnic victimization and revolving cycles of vengeance are a reality. It is equally a reality that ethnic violence is an important element of state violence, and both are associated inextricably with ethnic armed forces. These forces have become a real threat to the survival of society because instead of protecting all citizens, they are divided strictly along ethnic lines. A political model based on ethnic armies simply leads to the partitioning of society into rival groups paradoxically united by enmity and mutual fear. These military forces have sought winner-take-all solutions in the aim of maintaining ethnic power and ensuring the exclusion of losers. Yet these armies deprive human development initiatives of capital and resources, in a country where there is a great need to invest in education, health and environmental restoration.

Demilitarization is a pre-condition for interethnic confidence rebuilding and for helping Rwanda to turn away from environmental resource abuse

and ethnic violence. A police force which is placed under civilian control and exercises its coercive power legitimately, in a way that is legally and socially acceptable may be best. There must be enough safeguards in the constitution and the legislation to prevent the use of police violence against innocent citizens. Even police power and means of violence should not be so important that they could neutralize the entire society.

A new model based on human and environmental security and not security of ethnic factions in power requires reparation of the social fabric through interethnic and interregional confidence building, improvement of governance and reparation of the environment. The foundations for human and environmental security should include: improving equity in access to natural resources, creating employment, governing more accountably, and strengthening civil society.

With regard to this conclusion, the recommendations for the roles of IUCN and to other relevant international organizations are as follows:

1. *Assist the Great Lakes countries in re-conceptualizing the meaning of national security and promoting demilitarization and a shift of resources towards basic human security needs.*

Rwanda faces enormous challenges that stand between today's symmetrical ethnic fear and a secure future for all Rwandans, Hutu and Tutsi. The international community and relevant international organizations could help in developing a new national security vision in Rwanda. Security for each individual citizen, whatever his ethnic group, and not security of ethno-political factions in power, could allow the country to achieve national reconciliation and socio-economic reconstruction. The Costa Rican model of demilitarization and disarmament to build a democratic welfare state could serve as an inspiration.

At present, a quasi-ethnic army is used to ensure the protection of the Tutsi faction in power against the excluded Hutu factions, a ferment for continued sociopolitical violence, not only in Rwanda but also in the entire Great Lakes region. Rwandan society remains gripped by tension, given a past of ethnic violence where the army was an instrument for maintaining the power monopoly. At present there seems to be no formula by which the armed forces can cease to be ethnic in their composition and command. If they reflect the actual ethnic proportions in society, they will be considered a threat by the Tutsi minority group. If, on the other hand, the Tutsi are over-represented, the Hutu will feel insecure. This is the dilemma faced by both Rwanda and Burundi, which have not yet freed themselves from the impasse of the winner-take-all model.

2. *Assist these countries, Rwanda and Burundi, in designing sustainable development strategies that reduce the heavy dependency of their population on cropland.*

The techniques for agricultural production used in both Rwanda and Burundi are environmentally unsustainable at the high population densities in these countries. To ensure adequate living standards for their populations, these countries need to transform their economies and their agricultural systems.

The vicious circle of poverty and environmental degradation can be broken by empowering citizens at every level. It is therefore of utmost importance to guarantee every citizen a basic education, which will help him or her to live a decent life, free of ignorance, famine, illness, and unemployment. An education program targeting a minimal level for every man and woman should be provided, so that youth may become fully responsible citizens who will not participate in extremist groups.

Sustainable development is a useful framework within which to address the environmentally linked aspects of the Rwandan conflict. In this context, demilitarization of Rwanda may be a key factor for peace and reduction of poverty. This should be recognized by donors and it should be put on the political agenda. There should be a dialogue on how to free national resources for sustainable development programs and on how to prevent their diversion to maintain ethnic armies.

3. *Assist in the search of strategies of reducing the environmental scarcities caused by IDPs and refugee influx in host areas.*

Massive displacement of populations fleeing conflict zones compels refugees to use fuel wood and water at an unsustainable rate in order to survive the extreme hardships of insecure camps. In addition to the stress caused to environment by this accelerated destruction of resources, the Rwandan case clearly shows that sharp environmental scarcity caused by population displacement and the resulting desperation of IDPs may elevate conflict to new heights.

In light of the frequent environmental damages caused in the Great Lakes region by population flows in conflict areas, there is a need of new strategies of humanitarian and international political intervention. In this regard, IUCN and other relevant organizations could propose "Guidelines on protection of IDPs and mitigation of the impacts of sociopolitical conflicts on the environment."

For long-term peace and stability in the Great Lakes region, strategies aiming at promoting democracy may lead to more reliable results.

Promoting open political systems based on democratic principles is the only way to build consensus on common goals for national resource use.

4. *Assist in elaborating strategies for population planning and reduction of the demographic growth rate that take into account the protection of environment.*

It is evident that Rwanda must seek ways to maintain a sustainable population by reducing the average birth rate. In the past total fertility rate per woman remained very high. The impact of family planning efforts has not been significant. The high population levels and slow economic growth have resulted in unsustainable pattern of natural resource use and deterioration of life support systems. Assisting the country in changing the trend in demographic growth is therefore crucial. There is a particular need to improve the education of women in an effort to raise awareness on the high fertility rates, and to improve access to contraceptives.

5. *Promote land use and sustainable livelihood systems that reduce loss of productive land and increase its carrying capacity.*

Rwanda must improve land productivity in order to meet the needs of its population. This requires improvements in agricultural productivity as one of the factors in increasing or at least maintaining the carrying capacity of the land, and ensuring the long term social stability. There is need to further invest in agricultural research, allowing the development of sustainable agroforestry systems capable of producing greater yields in ways that are consistent with environmental protection.

6. *Assist with fuel wood production and development and implementation of alternative energy sources.*

Deforestation and resulting land degradation have contributed to the misery of Rwanda's population, and inefficient traditional wood energy use remains a threat to sustainable agriculture. Forest cover needs to be increased. In particular, access to fuel wood in densely populated areas needs to be improved. At the same time there is need to explore other alternatives of energy sources (e.g., solar cookers) in order to reduce the pressure on existing forest resources.

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Tables

Table D2. Characteristics of family landholdings (FLH) in 1984

Category of FLH by area (ha)	Per cent of total number of FLHs	Per cent of total area of FLHs	Average area (ha)	Average family size	Food energy production per capita in kcal per day in 1989	Relative land productivity index
< 0.25	7.4	1.0	0.215	3.4	1,156	3
0.26–0.50	19.0	5.9	0.413	4.0	1,414	1.9
0.51–0.75	16.5	8.4	0.585	4.4	1,721	1.5
0.76–1.00	13.8	10.0	0.763	5.1	1,893	1.4
1.01–1.50	15.6	15.7	1.034	5.4	2,027	1.1
1.51–2.00	11.1	16.1	1.424	6.0	2,249	0.9
> 2.00	16.4	42.9	2.274	6.4	2,521	0.6

Table D3. The population of Rwanda, by prefecture, in 1991 and 1994

Prefecture	Population in 1991 (from census)	Population in 1994 (estimated)
Butare	766,839	838,190
Byumba	783,350	856,237
Cyangugu	515,129	563,059
Gikongoro	464,585	507,812
Gisenyi	734,697	803,057
Gitarama	851,516	930,746
Kibungo	655,368	716,347
Kibuye	470,747	514,548
Kigali (rural)	918,869	1,004,365
Kigali (urban)	237,782	259,906
Ruhengeri	766,112	837,395
Total	7,164,994	7,831,663

Table D4. Average food energy availability in different social categories

Social category	Percentage of national population in the category	Available food energy in kcal per person per day
Abakire (the rich)	25	> 2,100
Abakene (the threshold poor)	15	1,900–2,100
Abatindi (the poor)	50	1,400–1,900
Abatindi nyakujya (the deprived)	10	< 1,400

Table D5. Classification of cultivated land by slope category

Description	Category of slope	Area of cultivated land	
	Steep Slope (in degrees)	Percentage	ha
Level to undulating	0–5	34	382,500
Undulating	5–10	16	180,000
Sloping	10–25	32	360,000
Steep	25–30	8	90,000
Very Steep	30–35	6	67,000
Stiff slope	> 35	4	45,000
Total		100	1,125,000

Table D6. Needs and potential of wood production in the FLHs based on a consumption of 0.71 m³ per capita per year and mean annual wood production 4.04 m³ per ha per year

Category of FLH by area (ha)	Wood needs per FLH in m ³ per year	Potential annual wood production per FLH in m ³	Net wood production budget per FLH in m ³ per year
< 0.25	2.41	0.87	- 1.54
0.26–0.50	2.84	1.67	- 1.17
0.51–0.75	3.12	2.36	- 0.76
0.76–1.00	3.62	3.08	- 0.54
1.01–1.50	3.83	4.18	+ 0.35
1.51–2.00	4.26	5.75	+ 1.49
> 2.00	4.54	9.19	+ 4.65

Table D7. Data showing correlation between poverty and incidence of sociopolitical violence in 1991–1992

Prefecture	Food energy production per capita in kcal per day in 1989	Distribution of the 30 richest communes	Distribution of the 30 poorest communes	Incidence of insurgency or ethnic strife (1991–1992)
Gikongoro	657		Kivu, Mudasomwa, Mubuga, Muko, Musange, Musebeya, Nshili, Nyamagabe, Rwamiko,	Kivu, Nshili
Cyangugu	846		Kamembe, Karengera, Kirambo	Gatare, Gishoma, Kagano, Karengera
Butare	1,056		Huye, Kigembe, Maraba, Ngoma, Nyabisindu, Runyinya	
Kibuye	1,097		Bwakira, Gishyita, Gitesi, Kivumu, Mabanza, Mwendo, Rutsiro, Rwamatamu	Gishyita, Rwamatamu
Kigali	1,187	Bicumbi, Butamwa, Gikomero, Gikoro, Kanombe, Kanzenze, Mbogo, Mugambazi Musasa, Rubungo, Rushashi, Rutongo, Shyorongi, Tare	Nyarugenge	Nyarugenge

Prefecture	Food energy production per capita in kcal per day in 1989	Distribution of the 30 richest communes	Distribution of the 30 poorest communes	Incidence of insurgency or ethnic strife (1991–1992)
Gitarama	1,219	Nyamyumba Nyakinama Muhura, Murambi, Tumba Birenga, Kabarondo, Kayonza, Kigarama, Muhazi, Mugesera, Rukira, Rukara, Rusumo, Rutonde, Sake	Cyumba, Kibali, Kivuye	Masango, Nyabikenke, Nyakabanda, Taba
Gisenyi	1,230			Giciye, Kayove, Kibilira, Ramba, Satinsyi
Ruhengeri	1,595			
Byumba	1,763			
Kibungo	2,086			

Environment and Security Brief 5

Land Degradation in Haiti

For the island nation of Haiti, land degradation has increasingly become an impediment to development and poverty alleviation. Apart from undermining agricultural productivity and restricting family incomes, this degradation has also become a catalyst for social tension and conflict.²⁷⁷

Several processes are driving Haiti's land degradation. These include depletion of soil nutrients, salinization, agrochemical pollution, soil erosion, vegetative degradation, and deforestation.²⁷⁸ The full impact of Haiti's land degradation reaches far beyond decreased productivity and reduced yields on of individual family, but holds broader, socio-political implications. Declining agricultural production and family income can prompt rural families to migrate to urban areas. This migration can lead to several pathways that generate social tension and conflict. In one scenario, rural to urban migration can lead to a rapid population growth in Haitian cities, particularly Port-au-Prince, thereby placing substantial strain on local resources such as water, sanitation, and drainage systems. Amidst rising discontent over declining standards of service and deteriorating living conditions, public protest and rioting may erupt over the government's inability or unwillingness to adequately address the situation.²⁷⁹ The second scenario looks at how migrants usually settle in small groups, sharing similar origins and/or ethnic backgrounds. In the face of rising fuelwood prices and scarcity of other resources, conflict can emerge, pitting these groups against each other to compete over resource access.²⁸⁰ Although the immediate causes of conflict in Haiti and elsewhere are usually more directly attributable to poverty, weak, irresponsible or corrupt government, and a lack of economic opportunities, it is important to recognize that particularly in Haiti's case, land degradation often initiates social instability and poverty,²⁸¹ culminating in violence.

Conservationists should address the environmental contributors to conflict and their implications for social stability. An effective, multi-pronged approach to slowing down and eventually reversing land degradation will require the combined efforts of local communities, government bodies, and NGOs.²⁸² Conservationists should help the government develop a framework for political and economic reform that incorporates the prevention of land degradation. Furthermore, conservationists can work with local non-government organizations and the government to establish more efficient needs-based donor allocations.²⁸³

Because much of the land degradation occurs on Haiti's small farms, conservationists can also work with the owners and operators of family farms to help them adopt more environmentally sound activities and identify incentives for sustainable land use.²⁸⁴ Farmers can be educated on the impact of their choices and agricultural practices on their land's productivity and sustainability.²⁸⁵ Furthermore, community forestry projects can be established so that communities can benefit from this common interest, and protect the island area from deforestation, which contributes to soil erosion and flooding.²⁸⁶

Environment and Security Brief 6

Impact of Conflict on Rwanda's Mountain Gorillas

The plight of Rwanda's mountain gorillas provides a powerful example of the impacts of conflict and environmental degradation on biodiversity. There are only around 650 mountain gorillas left in the wild. Approximately 300 live in southwest Uganda's Bwindi Impenetrable Forest and about 350 more are found in the forested slopes of the Virunga Conservation Area (Volcano National Park), which spans the Democratic Republic of Congo, Rwanda and Uganda.²⁸⁷

The gorillas have confronted a number of threats over the past for decades. Diane Fossey, an American primatologist who lived and worked with the mountain gorillas from 1963 to 1985, first drew public attention to the devastating effects of poaching and habitat encroachment on gorilla populations, that were facing extinction as a result. While there were an estimated 450 gorillas in the Virunga national park in 1960, their numbers dropped to only 254 in 1981 because of these activities. Thanks in part to the international attention gained by the conservation and research efforts of the Karisoke Research Center, founded by Ms. Fossey in 1967 in Rwanda, the gorilla population was better protected during the 1980s (the last human-induced gorilla death during that decade taking place in 1983) and numbers climbed back up to 324 by 1989.²⁸⁸ But this was a short-lived victory, as 1990 saw the outbreak of civil war in Rwanda. The Hutu and Tutsi clashes between 1990 and 1994 directly threatened conservation efforts, with the park headquarters and Mountain Gorilla Veterinary Project's laboratory being destroyed, along with the Karisoke Research Center. By the mid-1990s, most conservation work was suspended because of the genocide in Rwanda. If gorillas were not caught in the crossfire, they were threatened by habitat destruction from military activities and sprawling refugee settlements, as well as increased poaching and snaring activities. Greater proximity to human activities also increased the gorillas' exposure to diseases, to which they have very little immunity.²⁸⁹

In spite of a catastrophic civil war and genocide during the 1990s, and continued instability in the region, the mountain gorillas have pulled through miraculously well: a recent estimate put the population in the Virunga forest at 358, up from the 1989 numbers. This increase is attributed to persistent, low-level conservation activities, even in the worst circumstances.²⁹⁰ Basic financial and logistical support of park

staff, and in some instances collaboration with the government army, enabled conservationists to monitor and protect gorilla groups.

Efforts to clean up the park have been underway, and gorilla conservation is being promoted as a sustainable economic measure, as gorilla tourism attracts valuable foreign currency. With Rwanda's large population of rural poor desperately in need of farmland, the gorillas still face an uncertain future. Conservation workers say that local people need to be convinced that the gorillas and the forest are important, as well as potentially profitable.²⁹¹ However, incidents such as the March 1999 killing of eight tourists and their guide by Rwandan rebels in southwest Uganda could undermine such efforts, and point to the continued instability in the region.²⁹² Without peace and an increased awareness of the importance of the native ecosystem and its species, the delicate balance of preserving mountain gorillas and human livelihoods in Central Africa cannot be achieved.

Endnotes

271. In absolute terms, these disparities would not be alarming. But it is necessary to be aware of two things. First, farm differentiation according to size developed very rapidly from an egalitarian situation of the 1960s. Secondly, the proportion of those families that could not produce enough to satisfy their needs because of minute landholdings was too high. What is important to note is the absolute lack of access to land resources for a great number of rural families especially under conditions of high unemployment.
272. The biophysical carrying capacity is the total population that could sustainably inhabit the country under its present agricultural technology and a rural based economy.
273. Excerpt from a debate in the national language broadcast by Radio Rwanda on 28 January 1992.
274. This is illustrated for example by two documentaries of the Rwandan Television, "SOS Butaro" and "SOS Byumba", which contain IDPs' accounts collected in July 1992.
275. Personal communication by the director of the Rwandan Red Cross at that time.
276. This can be illustrated by the case of the Prefecture of Byumba. It had a total of 17 communes of which 11 had their populations displaced and concentrated in only 4 host communes of Gituza, Muhura, Murambi and Rutare. Thus Muhura Commune, with a population of 50,000 inhabitants, was hosting an additional population of 80,000 inhabitants displaced by war in northern Byumba, after February 1992.
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