



CHAPTER 10

Malthus in Africa: Rwanda's Genocide

A dilemma ■ Events in Rwanda ■ More than ethnic hatred ■ Buildup in Kanama ■ Explosion in Kanama ■ Why it happened ■

When my twin sons were 10 years old and again when they were 15, my wife and I took them on family vacations to East Africa. Like many other tourists, the four of us were overwhelmed by our firsthand experience of Africa's famous large animals, landscapes, and people. No matter how often we had already seen wildebeest moving across the TV screen of *National Geographic* specials viewed in the comfort of our living rooms, we were unprepared for the sight, sound, and smell of millions of them on the Serengeti Plains, as we sat in a Land Rover surrounded by a herd stretching from our vehicle to the horizon in all directions. Nor had television prepared us for the immense size of Ngorongoro Crater's flat and treeless floor, and for the steepness and height of its inner walls down which one drives from a tourist hotel perched on the rim to reach that floor.

East Africa's people also overwhelmed us, with their friendliness, warmth to our children, colorful clothes—and their sheer numbers. To read in the abstract about “the population explosion” is one thing; it is quite another thing to encounter, day after day, lines of African children along the roadside, many of them about the same size and age as my sons, calling out to passing tourist vehicles for a pencil that they could use in school. The impact of those numbers of people on the landscape is visible even along stretches of road where the people are off doing something else. In pastures the grass is sparse and grazed closely by herds of cattle, sheep, and goats. One sees fresh erosion gullies, in whose bottoms run streams brown with mud washed down from the denuded pastures.

All of those children add up to rates of human population growth in East Africa that are among the highest in the world: recently, 4.1% per year in Kenya, resulting in the population doubling every 17 years. That population explosion has arisen despite Africa's being the continent inhabited by humans much longer than any other, so that one might naïvely have expected Africa's population to have leveled off long ago. In fact, it has been exploding recently for many reasons: the adoption of crops native to the New World (especially corn, beans, sweet potatoes, and manioc, alias cassava), broadening the agricultural base and increasing food production beyond that previously possible with native African crops alone; improved hygiene, preventive medicine, vaccinations of mothers and children, antibiotics, and some control of malaria and other endemic African diseases; and national unification and the fixing of national boundaries, thereby opening to settlement some areas that were formerly no-man's lands fought over by adjacent smaller polities.

Population problems such as those of East Africa are often referred to as “Malthusian,” because in 1798 the English economist and demographer Thomas Malthus published a famous book in which



he argued that human population growth would tend to outrun the growth of food production. That's because (Malthus reasoned) population growth proceeds exponentially, while food production increases only arithmetically. For instance, if a population's doubling time is 35 years, then a population of 100 people in the year 2000, if it continues to grow with that same doubling time, will have doubled in the year 2035 to 200 people, who will in turn double to 400 people in 2070, who will double to 800 people in the year 2105, and so on. But improvements in food production add rather than multiply: this breakthrough increases wheat yields by 25%, that breakthrough increases yields by an additional 20%, etc. That is, there is a basic difference between how population grows and how food production grows. When population grows, the extra people added to the population also themselves reproduce—as in compound interest, where the interest itself draws interest. That allows exponential growth. In contrast, an increase in food yield does not then further increase yields, but instead leads only to arithmetic growth in food production. Hence a population will tend to expand to consume all available food and never leave a surplus, unless population growth itself is halted by famine, war, or disease, or else by people making preventive choices (e.g., contraception or postponing marriage). The notion, still widespread today, that we can promote human happiness *merely* by increasing food production, without a simultaneous reining-in of population growth, is doomed to end in frustration—or so said Malthus.

The validity of his pessimistic argument has been much debated. Indeed, there are modern countries that have drastically reduced their population growth by means of voluntary (e.g., Italy and Japan) or government-ordered (China) birth control. But modern Rwanda illustrates a case where Malthus's worst-case scenario does seem to have been right. More generally, both Malthus's supporters and his detractors could agree that population and environmental problems created by non-sustainable resource use will ultimately get solved in one way or another: if not by pleasant means of our own choice, then by unpleasant and unchosen means, such as the ones that Malthus initially envisioned.

A few months ago, while I was teaching a course to UCLA undergraduates on environmental problems of societies, I came to discuss the difficulties that regularly confront societies trying to reach agreements about environmental disputes. One of my students responded by noting that disputes could be, and frequently were, solved in the course of conflict. By that, the student didn't mean that he favored murder as a means of settling disputes. Instead, he was merely observing that environmental problems often do create conflicts among people, that conflicts in the U.S. often become resolved in court, that the courts provide a perfectly acceptable means of dispute resolution, and hence that students preparing themselves for a career of resolving environmental problems need to become familiar with the judicial system. The case of Rwanda is again instructive: my student was fundamentally correct about the frequency of resolution by conflict, but the conflict may assume nastier forms than courtroom processes.



In recent decades, Rwanda and neighboring Burundi have become synonymous in our minds with two things: high population, and genocide (Plate 21). They are the two most densely populated countries in Africa, and among the most densely populated in the world: Rwanda's average population density is triple even that of Africa's third most densely populated country (Nigeria), and 10 times that of neighboring Tanzania. Genocide in Rwanda produced the third largest body count among the world's genocides since 1950, topped only by the killings of the 1970s in Cambodia and of 1971 in Bangladesh (at the time East Pakistan). Because Rwanda's total population is 10 times smaller than that of Bangladesh, the scale of Rwanda's genocide, measured in proportion to the total population killed, far exceeds that of Bangladesh and stands second only to Cambodia's. Burundi's genocide was on a smaller scale than Rwanda's, yielding "only" a few hundred thousand victims. That still suffices to place Burundi seventh in the world since 1950 in its number of victims of genocide, and tied for fourth place in proportion of the population killed.

We have come to associate genocide in Rwanda and Burundi with ethnic violence. Before we can understand what else besides ethnic violence was also involved, we need to begin with some background on the genocide's course, the history leading up to it, and their usual interpretation that I shall now sketch, which runs as follows. (I shall mention later some respects in which this usual interpretation is wrong, incomplete, or oversimplified.) The populations of both countries consist of only two major groups, called the Hutu (originally about 85% of the population) and the Tutsi (about 15%). To a considerable degree, the two groups traditionally had filled different economic roles, the Hutu being principally farmers, the Tutsi pastoralists. It is often stated that the two groups look different, Hutu being on the average shorter, stockier, darker, flat-nosed, thick-lipped, and square-jawed, while Tutsi are taller, more slender, paler-skinned, thin-lipped, and narrow-chinned. The Hutu are usually assumed to have settled Rwanda and Burundi first, from the south and west, while the Tutsi are a Nilotic people who are assumed to have arrived later from the north and east and who established themselves as overlords over the Hutu. When German (1897) and then Belgian (1916) colonial governments took over, they found it expedient to govern through Tutsi intermediaries, whom they considered racially superior to Hutu because of the Tutsi's paler skins and supposedly more European or "Hamitic" appearance. In the 1930s the Belgians required everybody to start carrying an identity card classifying themselves as Hutu or Tutsi, thereby markedly increasing the ethnic distinction that had already existed.

Independence came to both countries in 1962. As independence approached, Hutu in both countries began struggling to overthrow Tutsi domination and to replace it with Hutu domination. Small incidents of violence escalated into spirals of killings of Tutsi by Hutu and of Hutu by Tutsi. The outcome in Burundi was that the Tutsi succeeded in retaining their domination, after Hutu rebellions in 1965 and 1970-72 followed by Tutsi killings of a few hundred thousand Hutu. (There is inevitably much uncertainty about this estimated number and many of the following numbers of deaths and



exiles.) In Rwanda, however, the Hutu gained the upper hand and killed 20,000 (or perhaps only 10,000?) Tutsi in 1963. Over the course of the next two decades up to a million Rwandans, especially Tutsi, fled into exile in neighboring countries, from which they periodically attempted to invade Rwanda, resulting in further retaliatory killings of Tutsi by Hutu, until in 1973 the Hutu general Habyarimana staged a coup against the previous Hutu-dominated government and decided to leave the Tutsi in peace.

Under Habyarimana, Rwanda prospered for 15 years and became a favorite recipient of foreign aid from overseas donors, who could point to a peaceful country with improving health, education, and economic indicators. Unfortunately, Rwanda's economic improvement became halted by drought and accumulating environmental problems (especially deforestation, soil erosion, and soil fertility losses), capped in 1989 by a steep decline in world prices for Rwanda's principal exports of coffee and tea, austerity measures imposed by the World Bank, and a drought in the south. Habyarimana took yet another attempted Tutsi invasion of northeastern Rwanda from neighboring Uganda in October 1990 as the pretext for rounding up or killing Hutu dissidents and Tutsi all over Rwanda, in order to strengthen his own faction's hold on the country. The civil wars displaced a million Rwandans into settlement camps, from which desperate young men were easily recruited into militias. In 1993 a peace agreement signed at Arusha called for power-sharing and a multi-power government. Still, businessmen close to Habyarimana imported 581,000 machetes for distribution to Hutu for killing Tutsi, because machetes were cheaper than guns.

However, Habyarimana's actions against Tutsi, and his newfound toleration of killings of Tutsi, proved insufficient for Hutu extremists (i.e., Hutu even more extreme than Habyarimana), who feared having their power diluted as a result of the Arusha agreement. They began training their militias, importing weapons, and preparing to exterminate Tutsi. Rwandan Hutu fears of Tutsi grew out of the long history of Tutsi domination of Hutu, the various Tutsi-led invasions of Rwanda, and Tutsi mass killings of Hutu and murder of individual Hutu political leaders in neighboring Burundi. Those Hutu fears increased in 1993, when extremist Tutsi army officers in Burundi murdered Burundi's Hutu president, provoking killings of Burundi Tutsi by Hutu, provoking in turn more extensive killings of Burundi Hutu by Tutsi.

Matters came to a head on the evening of April 6, 1994, when the Rwandan presidential jet plane, carrying Rwanda's President Habyarimana and also (as a last-minute passenger) Burundi's new provisional president back from a meeting in Tanzania, was shot down by two missiles as it came in to land at the airport of Kigali, Rwanda's capital, killing everyone on board. The missiles were fired from immediately outside the airport perimeter. It remains uncertain to this day by whom or why Habyarimana's plane was shot down; several groups had alternative motives for killing him. Whoever were the perpetrators, Hutu extremists within an hour of the plane's downing began carrying out plans evidently already prepared in detail to kill the Hutu prime minister and other moderate or at least less extreme members of the democratic opposition, and Tutsi. Once Hutu opposition had been



eliminated, the extremists took over the government and radio and set out to exterminate Rwanda's Tutsi, who still numbered about a million even after all the previous killings and escapes into exile.

The lead in the killings was initially taken by Hutu army extremists, using guns. They soon turned to efficiently organizing Hutu civilians, distributing weapons, setting up roadblocks, killing Tutsi identified at the roadblocks, broadcasting radio appeals to every Hutu to kill every "cockroach" (as Tutsi were termed), urging Tutsi to gather supposedly for protection at safe places where they could then be killed, and tracking down surviving Tutsi. When international protests against the killings eventually began to surface, the government and radio changed the tone of their propaganda, from exhortations to kill cockroaches to urging Rwandans to practice self-defense and to protect themselves against Rwanda's common enemies. Moderate Hutu government officials who tried to prevent killings were intimidated, bypassed, replaced, or killed. The largest massacres, each of hundreds or thousands of Tutsi at one site, took place when Tutsi took refuge in churches, schools, hospitals, government offices, or those other supposed safe places and were then surrounded and hacked or burned to death. The genocide involved large-scale Hutu civilian participation, though it is debated whether as many as one-third or just some lesser proportion of Hutu civilians joined in killing Tutsi. After the army's initial killings with guns in each area, subsequent killings used low-tech means, mainly machetes or else clubs studded with nails. The killings involved much savagery, including chopping off arms and legs of intended victims, chopping breasts off women, throwing children down into wells, and widespread rape.

While the killings were organized by the extremist Hutu government and largely carried out by Hutu civilians, institutions and outsiders from whom one might have expected better behavior played an important permissive role. In particular, numerous leaders of Rwanda's Catholic Church either failed to protect Tutsi or else actively assembled them and turned them over to killers. The United Nations already had a small peacekeeping force in Rwanda, which it proceeded to order to retreat; the French government sent a peacekeeping force, which sided with the genocidal Hutu government and against invading rebels; and the United States government declined to intervene. In explanation of these policies, the U.N., French government, and U.S. government all referred to "chaos," "a confusing situation," and "tribal conflict," as if this were just one more tribal conflict of a type considered normal and acceptable in Africa, and ignoring evidence for the meticulous orchestration of the killings by the Rwandan government.

Within six weeks, an estimated 800,000 Tutsi, representing about three-quarters of the Tutsi then remaining in Rwanda, or 11% of Rwanda's total population, had been killed. A Tutsi-led rebel army termed the Rwandan Patriotic Front (RPF) began military operations against the government within a day of the start of the genocide. The genocide ended in each part of Rwanda only with the arrival of that RPF army, which declared complete victory on July 18, 1994. It is generally agreed that the RPF army was disciplined and did not enlist civilians to murder, but it did carry out reprisal killings on a much smaller scale than the genocide to which it was responding (estimated number of reprisal



victims, “only” 25,000 to 60,000). The RPF set up a new government, emphasized national conciliation and unity, and urged Rwandans to think of themselves as Rwandans rather than as Hutu or Tutsi. About 135,000 Rwandans were eventually imprisoned on suspicion of being guilty of genocide, but few of the prisoners have been tried or convicted. After the RPF victory, about 2,000,000 people (mostly Hutu) fled into exile in neighboring countries (especially the Congo and Tanzania), while about 750,000 former exiles (mostly Tutsi) returned to Rwanda from neighboring countries to which they had fled (Plate 22).

The usual accounts of the genocides in Rwanda and Burundi portray them as the result of pre-existing ethnic hatreds fanned by cynical politicians for their own ends. As summed up in the book *Leave None to Tell the Story: Genocide in Rwanda*, published by the organization Human Rights Watch, “this genocide was not an uncontrollable outburst of rage by a people consumed by ‘ancient tribal hatreds.’ . . . This genocide resulted from the deliberate choice of a modern elite to foster hatred and fear to keep itself in power. This small, privileged group first set the majority against the minority to counter a growing political opposition within Rwanda. Then, faced with RPF success on the battlefield and at the negotiating table, these few powerholders transformed the strategy of ethnic division into genocide. They believed that the extermination campaign would restore the solidarity of the Hutu under their leadership and help them win the war . . .” The evidence is overwhelming that this view is correct and accounts in large degree for Rwanda’s tragedy.

But there is also evidence that other considerations contributed as well. Rwanda contained a third ethnic group, variously known as the Twa or pygmies, who numbered only 1% of the population, were at the bottom of the social scale and power structure, and did not constitute a threat to anybody—yet most of them, too, were massacred in the 1994 killings. The 1994 explosion was not just Hutu versus Tutsi, but the competing factions were in reality more complex: there were three rival factions composed predominantly or solely of Hutu, one of which may have been the one to trigger the explosion by killing the Hutu president from another faction; and the invading RPF army of exiles, though led by Tutsi, also contained Hutu. The distinction between Hutu and Tutsi is not nearly as sharp as often portrayed. The two groups speak the same language, attended the same churches and schools and bars, lived together in the same village under the same chiefs, and worked together in the same offices. Hutu and Tutsi intermarried, and (before Belgians introduced identity cards) sometimes switched their ethnic identity. While Hutu and Tutsi look different on the average, many individuals are impossible to assign to either of the two groups based on appearance. About one-quarter of all Rwandans have both Hutu and Tutsi among their great-grandparents. (In fact, there is some question whether the traditional account of the Hutu and Tutsi having different origins is correct, or whether instead the two groups just differentiated economically and socially within Rwanda and Burundi out of a common stock.) This intergradation gave rise to tens of thousands of personal tragedies during the 1994 killings, as Hutu tried to protect their Tutsi spouses, relatives, friends, colleagues, and pa-



trons, or tried to buy off would-be killers of those loved ones with money. The two groups were so intertwined in Rwandan society that in 1994 doctors ended up killing their patients and vice versa, teachers killed their students and vice versa, and neighbors and office colleagues killed each other. Individual Hutu killed some Tutsi while protecting other Tutsi. We cannot avoid asking ourselves: how, under those circumstances, were so many Rwandans so readily manipulated by extremist leaders into killing each other with the utmost savagery?

Especially puzzling, if one believes that there was nothing more to the genocide than Hutu-versus-Tutsi ethnic hatred fanned by politicians, are events in northwestern Rwanda. There, in a community where virtually everybody was Hutu and there was only a single Tutsi, mass killings still took place —of Hutu by other Hutu. While the proportional death toll there, estimated as “at least 5% of the population,” may have been somewhat lower than that overall in Rwanda (11%), it still takes some explaining why a Hutu community would kill at least 5% of its members in the absence of ethnic motives. Elsewhere in Rwanda, as the 1994 genocide proceeded and as the number of Tutsi declined, Hutu turned to attacking each other.

All these facts illustrate why we need to search for other contributing factors in addition to ethnic hatred.

To begin our search, let's again consider Rwanda's high population density that I mentioned previously. Rwanda (and Burundi) was already densely populated in the 19th century before European arrival, because of its twin advantages of moderate rainfall and an altitude too high for malaria and the tsetse fly. Rwanda's population subsequently grew, albeit with ups and downs, at an average rate of over 3% per year, for essentially the same reasons as in neighboring Kenya and Tanzania (New World crops, public health, medicine, and stable political borders). By 1990, even after the killings and mass exilings of the previous decades, Rwanda's average population density was 760 people per square mile, higher than that of the United Kingdom (610) and approaching that of Holland (950). But the United Kingdom and Holland have highly efficient mechanized agriculture, such that only a few percent of the population working as farmers can produce much of the food for everyone else, plus some surplus food for export. Rwandan agriculture is much less efficient and unmechanized; farmers depend on handheld hoes, picks, and machetes; and most people have to remain farmers, producing little or no surplus that could support others.

As Rwanda's population rose after independence, the country carried on with its traditional agricultural methods and failed to modernize, to introduce more productive crop varieties, to expand its agricultural exports, or to institute effective family planning. Instead, the growing population was accommodated just by clearing forests and draining marshes to gain new farmland, shortening fallow periods, and trying to extract two or three consecutive crops from a field within one year. When so many Tutsi fled or were killed in the 1960s and in 1973, the availability of their former lands for redistribution fanned the dream that each Hutu farmer could now, at last, have enough land to feed



himself and his family comfortably. By 1985, all arable land outside of national parks was being cultivated. As both population and agricultural production increased, per-capita food production rose from 1966 to 1981 but then dropped back to the level where it had stood in the early 1960s. That, exactly, is the Malthusian dilemma: more food, but also more people, hence no improvement in food per person.

Friends of mine who visited Rwanda in 1984 sensed an ecological disaster in the making. The whole country looked like a garden and banana plantation. Steep hills were being farmed right up to their crests. Even the most elementary measures that could have minimized soil erosion, such as terracing, plowing along contours rather than straight up and down hills, and providing some fallow cover of vegetation rather than leaving fields bare between crops, were not being practiced. As a result, there was much soil erosion, and the rivers carried heavy loads of mud. One Rwandan wrote me, "Farmers can wake up in the morning and find that their entire field (or at least its topsoil and crops) has been washed away overnight, or that their neighbor's field and rocks have now been washed down to cover their own field." Forest clearance led to drying-up of streams, and more irregular rainfall. By the late 1980s famines began to reappear. In 1989 there were more severe food shortages resulting from a drought, brought on by a combination of regional or global climate change plus local effects of deforestation.

The effect of all those environmental and population changes on an area of northwestern Rwanda (Kanama commune) inhabited just by Hutu was studied in detail by two Belgian economists, Catherine André and Jean-Philippe Platteau. André, who was Platteau's student, lived there for a total of 16 months during two visits in 1988 and 1993, while the situation was deteriorating but before the genocide's explosion. She interviewed members of most households in the area. For each household interviewed in each of those two years, she ascertained the number of people living in the household, the total area of land that it owned, and the amount of income that its members earned from jobs off the farm. She also tabulated sales or transfers of land, and disputes requiring mediation. After the genocide of 1994, she tracked down news of survivors and sought to detect any pattern to which particular Hutu ended up being killed by other Hutu. André and Platteau then processed this mass of data together to figure out what it all meant.

Kanama has very fertile volcanic soil, so that its population density is high even by the standards of densely populated Rwanda: 1,740 people per square mile in 1988, rising to 2,040 in 1993. (That's higher even than the value for Bangladesh, the world's most densely populated agricultural nation.) Those high population densities translated into very small farms: a median farm size of only 0.89 acre in 1988, declining to 0.72 acre in 1993. Each farm was divided into (on average) 10 separate parcels, so that farmers were tilling absurdly small parcels averaging only 0.09 acre in 1988 and 0.07 acre in 1993.

Because all land in the commune was already occupied, young people found it difficult to marry, leave home, acquire a farm, and set up their own household. Increasingly, young people postponed



marriage and continued to live at home with their parents. For instance, in the 20- to 25-year-old age bracket, the percentage of young women living at home rose between 1988 and 1993 from 39% to 67%, and the percentage of young men rose from 71% to 100%: not a single man in his early 20s lived independently of his parents by 1993. That obviously contributed to the lethal family tensions that exploded in 1994, as I shall explain below. With more young people staying home, the average number of people per farm household increased (between 1988 and 1993) from 4.9 to 5.3, so that the land shortage was even tighter than indicated by the decrease in farm size from 0.89 to 0.72 acre. When one divides decreasing farm area by increasing number of people in the household, one finds that each person was living off of only one-fifth of an acre in 1988, declining to one-seventh of an acre in 1993.

Not surprisingly, it proved impossible for most people in Kanama to feed themselves on so little land. Even when measured against the low calorie intake considered adequate in Rwanda, the average household got only 77% of its calorie needs from its farm. The rest of its food had to be bought with income earned off the farm, at jobs such as carpentry, brick-making, sawing wood, and trade. Two-thirds of households held such jobs, while one-third didn't. The percentage of the population consuming less than 1,600 calories per day (i.e., what is considered below the famine level) was 9% in 1982, rising to 40% in 1990 and some unknown higher percentage thereafter.

All of these numbers that I have quoted so far for Kanama are average numbers, which conceal inequalities. Some people owned larger farms than others, and that inequality increased from 1988 to 1993. Let's define a "very big" farm as larger than 2.5 acres, and a "very small" farm as smaller than 0.6 acre. (Think back to Chapter 1 to appreciate the tragic absurdity of those numbers: I mentioned there that in Montana a 40-acre farm used to be considered necessary to support a family, but even that is now inadequate.) Both the percentage of very big farms and the percentage of very small farms increased between 1988 and 1993, from 5 to 8% and from 36 to 45% respectively. That is, Kanama farm society was becoming increasingly divided between the rich haves and the poor have-nots, with decreasing numbers of people in the middle. Older heads of households tended to be richer and to have larger farms: those in the age ranges 50-59 and 20-29 years old had average farm sizes of 2.05 acres and only 0.37 acre respectively. Of course, family size was larger for the older household heads, so they needed more land, but they still had three times more land per household member than did young household heads.

Paradoxically, off-farm income was earned disproportionately by owners of large farms: the average size of farms that did earn such income was 1.3 acres, compared to only half an acre for farms lacking such income. That difference is paradoxical because the smaller farms are the ones whose household members have less farmland per person to feed themselves, and which thus need more off-farm income. That concentration of off-farm income on the larger farms contributed to the increasing division of Kanama society between haves and have-nots, with the rich becoming richer and the poor becoming poorer. In Rwanda, it's supposedly illegal for owners of small farms to sell any of their



land. In fact, it does happen. Investigation of land sales showed that owners of the smallest farms sold land mainly when they needed money for an emergency involving food, health, lawsuit costs, bribes, a baptism, wedding, funeral, or excessive drinking. In contrast, owners of large farms sold for reasons such as to increase farm efficiency (e.g., selling a distant parcel of land in order to buy a parcel nearer to the farmhouse).

The extra off-farm income of larger farms allowed them to buy land from smaller farms, with the result that large farms tended to buy land and become larger, while small farms tended to sell land and become smaller. Almost no large farm sold land without buying any, but 35% of the smallest farms in 1988, and 49% of them in 1993, sold without buying. If one breaks down land sales according to off-farm income, all farms with off-farm income bought land, and none sold land without buying; but only 13% of farms lacking off-farm income bought land, and 65% of them sold land without buying. Again, note the paradox: already-tiny farms, which desperately needed more land, in fact became smaller, by selling land in emergencies to large farms financing their purchases with off-farm income. Remember again that what I term “large farms” are large only by Rwanda standards: “large” means “larger than a mere 1 or 2 acres.”

Thus, at Kanama most people were impoverished, hungry, and desperate, but some people were more impoverished, hungry, and desperate than others, and most people were becoming more desperate while a few were becoming less desperate. Not surprisingly, this situation gave rise to frequent serious conflicts that the parties involved could not resolve by themselves, and that they either referred to traditional village conflict mediators or (less often) brought to the courts. Each year, households reported on the average more than one such serious conflict requiring outside resolution. André and Platteau surveyed the causes of 226 such conflicts, as described either by the mediators or by the householders. According to both types of informants, land disputes lay at the root of most serious conflicts: either because the conflict was directly over land (43% of all cases); or because it was a husband/wife, family, or personal dispute often stemming ultimately from a land dispute (I'll give examples in the next two paragraphs); or else because the dispute involved theft by very poor people, known locally as “hunger thieves,” who owned almost no land and were without off-farm income and who lived by stealing for lack of other options (7% of all disputes, and 10% of all households).

Those land disputes undermined the cohesion of Rwandan society's traditional fabric. Traditionally, richer landowners were expected to help their poorer relatives. This system was breaking down, because even the landowners who were richer than other landowners were still too poor to be able to spare anything for poorer relatives. That loss of protection especially victimized vulnerable groups in the society: separated or divorced women, widows, orphans, and younger half-siblings. When ex-husbands ceased to provide for their separated or divorced wives, the women would formerly have returned to their natal family for support, but now their own brothers opposed their return, which would make the brothers or the brothers' children even poorer. The women might then seek to return to their natal family only with their daughters, because Rwandan inheritance was traditionally by



sons, and the woman's brothers wouldn't see her daughters as competing with their own children. The woman would leave her sons with their father (her divorced husband), but his relatives might then refuse land to her sons, especially if their father died or ceased protecting them. Similarly, a widow would find herself without support from either her husband's family (her brothers-in-law) or from her own brothers, who again saw the widow's children as competing for land with their children. Orphans were traditionally cared for by paternal grandparents; when those grandparents died, the orphans' uncles (the brothers of their deceased father) now sought to disinherit or evict the orphans. Children of polygamous marriages, or of broken marriages in which the man subsequently remarried and had children by a new wife, found themselves disinherited or evicted by their half-brothers.

The most painful and socially disruptive land disputes were those pitting fathers against sons. Traditionally, when a father died, his land all passed to his oldest son, who was expected to manage the land for the whole family and to provide his younger brothers with enough land for their subsistence. As land became scarce, fathers gradually switched to the custom of dividing their land among all sons, in order to reduce the potential for intrafamily conflict after the father's death. But different sons urged on their father different competing proposals for dividing the land. Younger sons became bitter if older brothers, who got married first, received a disproportionately large share—e.g., because the father had had to sell off some land by the time younger sons got married. Younger sons instead demanded strictly equal divisions; they objected to their father giving their older brother a present of land on that brother's marriage. The youngest son, who traditionally was the one expected to care for his parents in their old age, needed or demanded an extra share of land in order to carry out that traditional responsibility. Brothers were suspicious of, and sought to evict, sisters or younger brothers who received from the father any present of land, which the brothers suspected was being given in return for that sister or younger brother agreeing to care for the father in his old age. Sons complained that their father was retaining too much land to support himself in his old age, and they demanded more land now for themselves. Fathers in turn were justifiably terrified of being left with too little land in their old age, and they opposed their sons' demands. All of these types of conflicts ended up before mediators or the courts, with fathers suing sons and vice versa, sisters suing brothers, nephews suing uncles, and so on. These conflicts sabotaged family ties, and turned close relatives into competitors and bitter enemies.

That situation of chronic and escalating conflict forms the background against which the killings of 1994 took place. Even before 1994, Rwanda was experiencing rising levels of violence and theft, perpetrated especially by hungry landless young people without off-farm income. When one compares crime rates for people of age 21-25 among different parts of Rwanda, most of the regional differences prove to be correlated statistically with population density and per-capita availability of calories: high population densities and worse starvation were associated with more crime.



After the explosion of 1994, André tried to track down the fates of Kanama's inhabitants. She found that 5.4% were reported to her as having died as a result of the war. That number is an underestimate of the total casualties, because there were some inhabitants about whose fates she could obtain no information. Hence it remains unknown whether the death rate approached the average value of 11% for Rwanda as a whole. What is clear is that the death rate in an area where the population consisted almost entirely of Hutu was at least half of the death rate in areas where Hutu were killing Tutsi plus other Hutu.

All but one of the known victims at Kanama fell into one of six categories. First, the single Tutsi at Kanama, a widowed woman, was killed. Whether that had much to do with her being Tutsi is unclear, because she furnished so many other motives for killing: she had inherited much land, she had been involved in many land disputes, she was the widow of a polygamous Hutu husband (hence viewed as a competitor of his other wives and their families), and her deceased husband had already been forced off his land by his half-brothers.

Two more categories of victims consisted of Hutu who were large landowners. The majority of them were men over the age of 50, hence at a prime age for father/son disputes over land. The minority were younger people who had aroused jealousy by being able to earn much off-farm income and using it to buy land.

A next category of victims consisted of "troublemakers" known for being involved in all sorts of land disputes and other conflicts.

Still another category was young men and children, particularly ones from impoverished backgrounds, who were driven by desperation to enlist in the warring militias and proceeded to kill each other. This category is especially likely to have been underestimated, because it was dangerous for André to ask too many questions about who had belonged to what militia.

Finally, the largest number of victims were especially malnourished people, or especially poor people with no or very little land and without off-farm income. They evidently died because of starvation, being too weak, or not having money to buy food or to pay the bribes required to buy their survival at roadblocks.

Thus, as André and Platteau note, "The 1994 events provided a unique opportunity to settle scores, or to reshuffle land properties, even among Hutu villagers. . . . It is not rare, even today, to hear Rwandans argue that a war is necessary to wipe out an excess of population and to bring numbers into line with the available land resources."

That last quote of what Rwandans themselves say about the genocide surprised me. I had thought that it would be exceptional for people to recognize such a direct connection between population pressure and killings. I'm accustomed to thinking of population pressure, human environmental impacts, and drought as ultimate causes, which make people chronically desperate and are like the gunpowder inside the powder keg. One also needs a proximate cause: a match to light the keg. In most



areas of Rwanda, that match was ethnic hatred whipped up by politicians cynically concerned with keeping themselves in power. (I say “most areas,” because the large-scale killings of Hutu by Hutu at Kanama demonstrate a similar outcome even where everybody belonged to the same ethnic group.) As Gérard Prunier, a French scholar of East Africa, puts it, “The decision to kill was of course made by politicians, for political reasons. But at least part of the reason why it was carried out so thoroughly by the ordinary rank-and-file peasants in their ingo [= family compound] was feeling that there were too many people on too little land, and that with a reduction in their numbers, there would be more for the survivors.”

The link that Prunier, and that André and Platteau, see behind population pressure and the Rwandan genocide has not gone unchallenged. In part, the challenges are reactions to oversimplified statements that critics with some justice lampooned as “ecological determinism.” For instance, only 10 days after the genocide began, an article in an American newspaper linked Rwanda’s dense population to the genocide by saying, “Rwandas [i.e., similar genocides] are endemic, built-in, even, to the world we inhabit.” Naturally, that fatalistic oversimplified conclusion provokes negative reactions not only to it, but also to the more complex view that Prunier, André and Platteau, and I present, for three reasons.

First, any “explanation” of why a genocide happened can be misconstrued as “excusing” it. However, regardless of whether we arrive at an oversimplified one-factor explanation or an excessively complex 73-factor explanation for a genocide doesn’t alter the personal responsibility of the perpetrators of the Rwandan genocide, as of other evil deeds, for their actions. This is a misunderstanding that arises regularly in discussions of the origins of evil: people recoil at any explanation, because they confuse explanations with excuses. But it *is* important that we understand the origins of the Rwandan genocide—not so that we can exonerate the killers, but so that we can use that knowledge to decrease the risk of such things happening again in Rwanda or elsewhere. Similarly, there are people who have chosen to devote their lives or careers to understanding the origins of the Nazi Holocaust, or to understanding the minds of serial murderers and rapists. They have made that choice not in order to mitigate the responsibility of Hitler, serial murderers, and rapists, but because they want to know how those awful things came to be, and how we can best prevent recurrences.

Second, it is justifiable to reject the simplistic view that population pressure was the single cause of the Rwandan genocide. Other factors did contribute; in this chapter I have introduced ones that seem to me important, and experts on Rwanda have written entire books and articles on the subject, cited in my Further Readings at the back of this book. Just to reiterate: regardless of the order of their importance, those other factors included Rwanda’s history of Tutsi domination of Hutu, Tutsi large-scale killings of Hutu in Burundi and small-scale ones in Rwanda, Tutsi invasions of Rwanda, Rwanda’s economic crisis and its exacerbation by drought and world factors (especially by falling coffee prices and World Bank austerity measures), hundreds of thousands of desperate young Rwandan men displaced as refugees into settlement camps and ripe for recruitment by militias, and



competition among Rwanda's rival political groups willing to stoop to anything to retain power. Population pressure joined with those other factors.

Finally, one should not misconstrue a role of population pressure among the Rwandan genocide's causes to mean that population pressure automatically leads to genocide anywhere around the world. To those who would object that there is not a *necessary* link between Malthusian population pressure and genocide, I would answer, "Of course!" Countries can be overpopulated without descending into genocide, as exemplified by Bangladesh (relatively free of large-scale killings since its genocidal slaughters of 1971) as well as by the Netherlands and multi-ethnic Belgium, despite all three of those countries being more densely populated than Rwanda. Conversely, genocide can arise for ultimate reasons other than overpopulation, as illustrated by Hitler's efforts to exterminate Jews and Gypsies during World War II, or by the genocide of the 1970s in Cambodia, with only one-sixth of Rwanda's population density.

Instead, I conclude that population pressure was *one* of the important factors behind the Rwandan genocide, that Malthus's worst-case scenario may sometimes be realized, and that Rwanda may be a distressing model of that scenario in operation. Severe problems of overpopulation, environmental impact, and climate change cannot persist indefinitely: sooner or later they are likely to resolve themselves, whether in the manner of Rwanda or in some other manner not of our devising, if we don't succeed in solving them by our own actions. In the case of Rwanda's collapse we can put faces and motives on the unpleasant solution; I would guess that similar motives were operating, without our being able to associate them with faces, in the collapses of Easter Island, Mangareva, and the Maya that I described in Part 2 of this book. Similar motives may operate again in the future, in some other countries that, like Rwanda, fail to solve their underlying problems. They may operate again in Rwanda itself, where population today is still increasing at 3% per year, women are giving birth to their first child at age 15, the average family has between five and eight children, and a visitor's sense is of being surrounded by a sea of children.

The term "Malthusian crisis" is impersonal and abstract. It fails to evoke the horrible, savage, numbing details of what millions of Rwandans did, or had done to them. Let us give the last words to one observer, and to one survivor. The observer is, again, Gérard Prunier:

"All these people who were about to be killed had land and at times cows. And somebody had to get these lands and those cows after the owners were dead. In a poor and increasingly overpopulated country this was not a negligible incentive."

The survivor is a Tutsi teacher whom Prunier interviewed, and who survived only because he happened to be away from his house when killers arrived and murdered his wife and four of his five children:

"The people whose children had to walk barefoot to school killed the people who could buy shoes for theirs."