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**Intelligence Report**

*Office of Resources, Trade, and Technology*

**Burundi: A Geographic Profile  
of a Potential Crisis Area** 

*A Research Paper*

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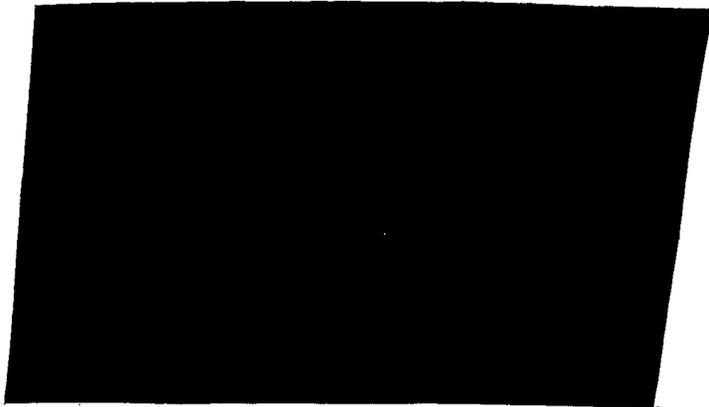
## **Intelligence Report**

*Office of Resources, Trade, and Technology*

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# **Burundi: A Geographic Profile of a Potential Crisis Area**

*A Research Paper*



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## Burundi: A Geographic Profile of a Potential Crisis Area [REDACTED]

### Key Findings

*Information available as  
of 15 September 1994  
was used in this report.*

Burundi, with an ethnic composition and a history of turmoil similar to that of Rwanda, is showing signs of renewed ethnic tension and may experience a fresh wave of killings and large-scale population movements. If this occurs, it would add to the already large population of refugees and displaced persons:

- Since independence in 1962, Burundi has been periodically plagued by ethnic tensions between the majority Hutus and minority Tutsis; some 200,000 Burundians have been killed, and thousands have fled the country.
- Some 1 million displaced Burundians and Rwandan refugees are now receiving humanitarian assistance within Burundi.
- Civil strife and drought in the past year have reduced Burundi's food production by at least 25 percent; this will necessitate 180,000 metric tons of food aid through the end of 1994. *Additional population movements would increase dependency on food aid and disrupt the agricultural sector, as would a resumption of ethnic violence.* [REDACTED]

Although Burundi has a well-developed transportation network by African standards, it is already under heavy use by humanitarian relief efforts in the region:

- *Logistic problems and the coming rainy season will challenge existing, and any new, relief efforts. In addition, Burundi's communications network would most likely be disrupted by a major outbreak of violence.* [REDACTED]

In the long term, Burundi faces numerous problems that will require international assistance if the economy is to keep pace with population growth:

- *Agricultural productivity is leveling off; yields will have to increase if output is to keep up with population growth. Increasing demands for firewood—the country's most important source of fuel—will further deplete Burundi's remaining forests.* [REDACTED]

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## Burundi: A Geographic Profile of a Potential Crisis Area

### Introduction

Like Rwanda, Burundi continues to be troubled by ethnic tensions between the majority Hutus and the minority Tutsis. Indeed, since 1962, major outbreaks of interethnic violence have occurred six times. The most recent of these occurred in October 1993 and precipitated large-scale population dislocations that necessitated a response from international humanitarian assistance organizations.

Recent tension, centered between Burundi's Tutsi-dominated military and the Hutu government, may erupt into a new wave of violence. This would derail relief efforts in the area, produce new refugees and displaced persons, and disrupt Burundi's agricultural economy because most of the displaced would probably be farmers. Burundi—typically self-sufficient in food—would become increasingly dependent on international aid. Because Bujumbura already serves as the hub for relief efforts in the area, a major increase in the number of people in need might overload the transportation system.

### Population Characteristics

Burundi had a population of about 6.1 million people as of mid-1994, according to the US Census Bureau's International Programs Center. The population is increasing at a rate of 2.3 percent per year, and the high fertility rate—women of childbearing age average nearly seven children each—will sustain growth for some time. Population density is 245 people per square kilometer (km); indeed, because of the violence and flight from Rwanda, Burundi has displaced its northern neighbor as Africa's most densely populated country. Some 95 percent of the population live in rural areas.

Bujumbura—the capital—holds 75 percent of the urban population. The other major urban areas are Gitega, Rumonge, and Ngozi.

### Ethnic Rivalry

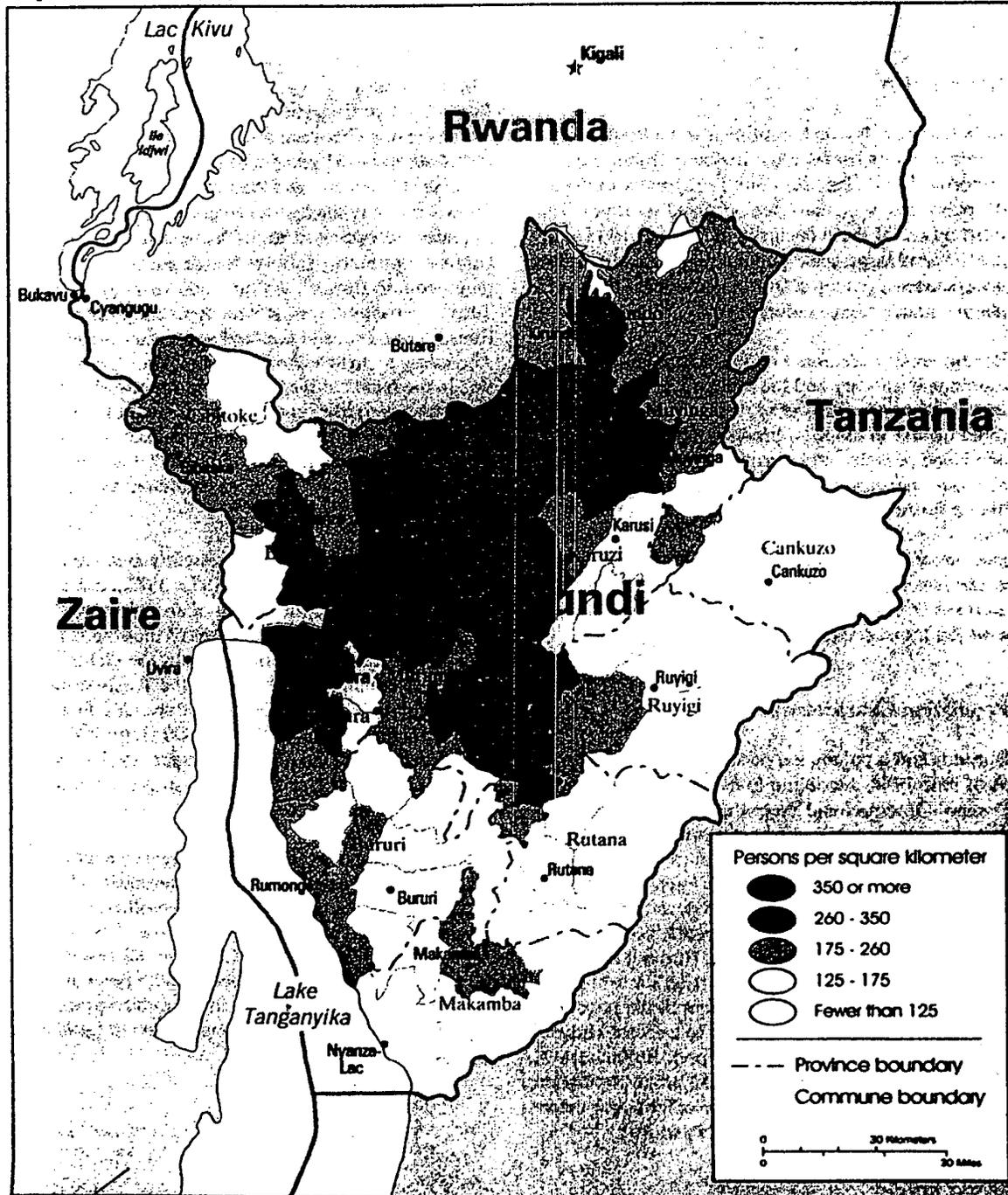
Burundi—like Rwanda—has long been plagued by ethnic tensions between the Hutus and the Tutsis. Hutus comprise 85 percent of the population, Tutsis make up 14 percent, and the remaining 1 percent are Twas—possibly the last survivors of the aboriginal Pygmies. The Hutus are primarily farmers whose ancestors migrated into Burundi 800 to 1,000 years ago. The Tutsis are pastoral people who apparently migrated from Ethiopia several hundred years after the Hutus. most of the wealth was in the hands of the Tutsis, and for several centuries they, much like feudal lords, granted the use of cattle and land to Hutu cultivators in exchange for services and goods. Beginning in 1897, German and then Belgian colonial practices continued to keep the Hutus in a feudal state.

Ethnic conflict has occurred frequently since independence in 1962. In 1965, 1969, 1972, 1988, and 1991, ethnic conflict led to the killing of an estimated 200,000 Burundians and the flight of thousands to neighboring countries. More recently, the October 1993 coup attempt by elements of the Tutsi-dominated military led to the deaths of Burundi's first Hutu President and more than 50,000 Hutus and Tutsis; created more than 600,000 refugees in Rwanda, Tanzania, and Zaire; and internally displaced about 1 million Burundians.

Despite the pronounced ethnic differences between the Hutus and Tutsis, some similarities exist. The majority of both groups speak the two official languages—Kirundi and French—as well as Kiswahili. Both are also predominantly Christian: 62 percent of the population is Roman Catholic, and 5 percent is Protestant. Most of the remaining one-third practice traditional African beliefs, although a small number are Muslim.

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Figure 2  
Population Density by Commune, 1990



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### The Population in Need

Within the country, about 700,000 to 1 million drought-affected and displaced Burundians are currently in need of assistance. An estimated 571,000 displaced persons are in camps, and dispersed in the countryside.

Larger concentrations are in Muyinga, Ngozi, and Kirundo, which are also where Rwandan refugees are located. As of early September,

450,000 Burundians who fled during the October 1993 coup attempt have returned; these are probably in greatest need because they have no land to farm or secure place to live. Meanwhile, about 40,000 Burundian refugees remain in Tanzania, 135,000 are in Zaire, and 6,000 are in Rwanda.

In addition to the displaced Burundians, about 200,000 Rwandan refugees are currently in Burundi, adding to the ethnic tensions and straining local food supplies. At the beginning of the Rwandan crisis in April, about 80,000 Tutsis fled from Rwanda to Burundi; most of these have returned. The remaining Rwandans are mostly Hutus who fled in mid-July when the Rwandan Patriotic Front captured Kigali and the southern town of Butare. Except for about 10,000 spread out along the northern border, all are in camps.

Both nonrefugee and refugee populations are in poor health because of inadequate sanitation, a lack of potable drinking water, and disease. Some 70 percent of the rural population lacks adequate sewage treatment, and, even in Bujumbura, only 11 percent of the people have access to sewer systems. In addition, about 45 percent of Burundi's population lacks access to safe drinking water. As a result, waterborne diseases account for more than 70 percent of all endemic diseases.

Annually, tuberculosis affects 367 people per 100,000—or 67 percent more than in other Sub-Saharan African countries.

There are 27 AIDS cases per 100,000 Burundians.

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### Humanitarian Relief Efforts

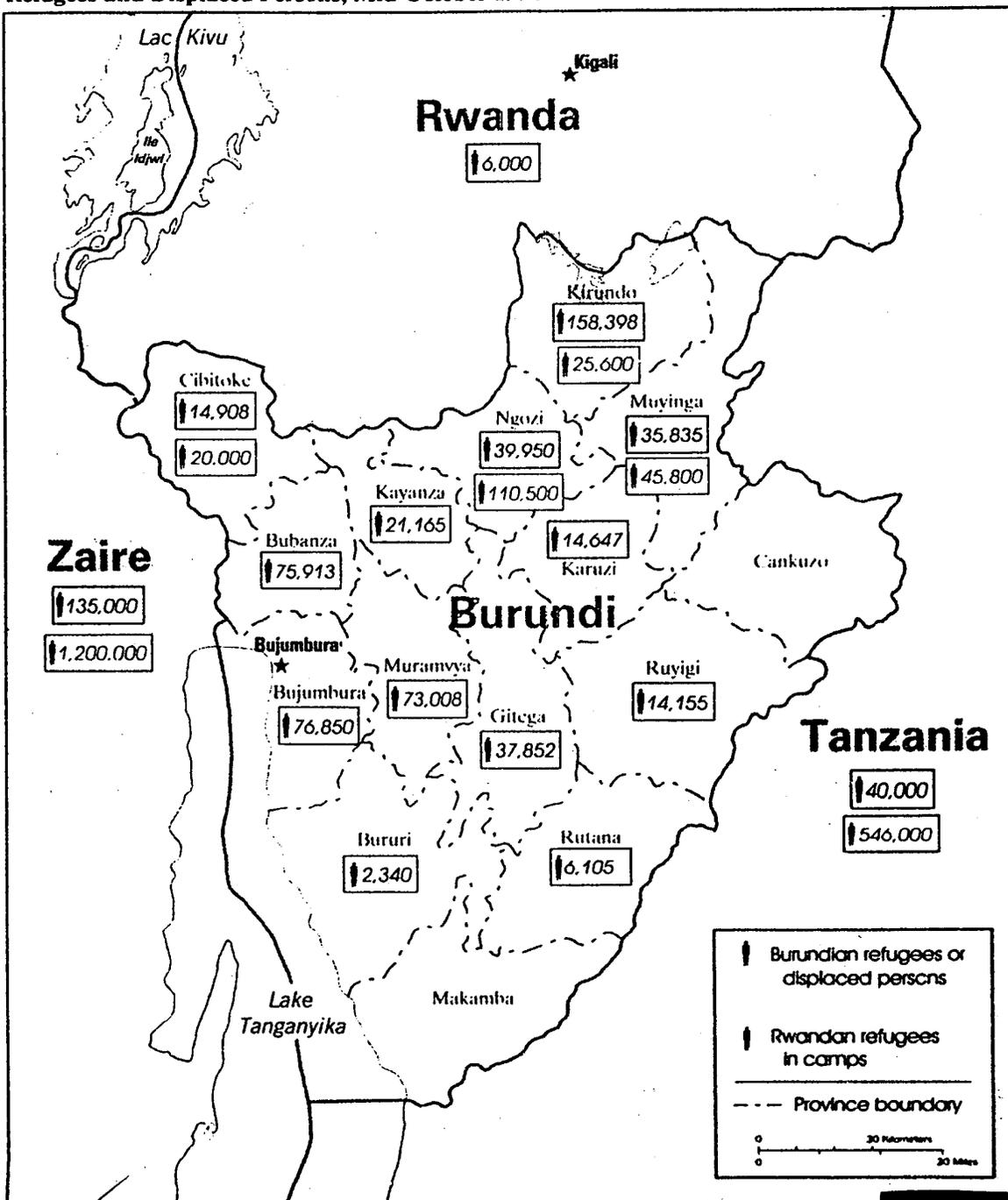
Many nongovernmental organizations (NGOs) are working in Burundi to assist the large refugee and displaced populations. UNHCR, the lead coordinator for refugees, works with several NGOs to provide comprehensive humanitarian aid. The World Food Program (WFP) plans resources and logistic support, and the International Federation of the Red Cross and Red Crescent Societies (IFRC) is in charge of camp management and food distribution. In addition, Medicins Sans Frontiers (MSF) organizations from Belgium and France are responsible for providing health and sanitation services, and Cooperation for American Relief Everywhere (CARE) is providing transport and distribution of food and other goods. The Oxford Committee for Famine Relief (OXFAM), International Action Against Hunger (AICF), and the Burundi Red Cross Society, among others, are also providing assistance.

For the displaced Burundians, the situation is different. There is no coordinating agency responsible for overall camp management. In addition, while the WFP distributes food with the help of Catholic Organizations for Charitable and Social Action (CARITAS), there is relatively little aid available to the displaced populations, according to USAID. Some nonfood aid is provided by other NGOs.

Violence continues to interrupt relief deliveries to the displaced persons and refugees. Incidents in mid-August caused UNHCR relief workers in Kirundo Province to temporarily leave the area after one of their workers was fatally shot. UNHCR feels its job is becoming more difficult in the northern provinces; its biggest fear is that Rwandan refugee camps will get caught up in the spiraling unrest. In August, [redacted] voiced a concern that continued violence in Bujumbura might halt food convoys to southwestern Rwanda and disrupt aid into Zaire.

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Figure 3  
Refugees and Displaced Persons, Mid-October 1994



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██████████ 15 percent of the urban population carries the HIV virus. Diarrhea, hepatitis, and cholera are also common causes of illness and death. Furthermore, the infant mortality rate—115 per 1,000 live births—is high. Malaria, diarrhea, and respiratory infections remain the biggest problems within the refugee and displaced persons camps. ██████████ although deaths rates are comparatively low. ██████████

### Agriculture and Food

Agriculture is the most important sector in the Burundian economy.<sup>1</sup> Although food production has generally kept up with rapid population growth—Burundi is one of the few countries in Sub-Saharan Africa that is usually self-sufficient in food—production this year will be about 2.9 million metric tons—more than 25 percent below average. ██████████

██████████ Dry weather and ethnic clashes reportedly forced a quarter of the country's small landholders to leave their farms and disrupted the planting of the first-season crops. Despite good rainfall and the return of some farmers during the second season, production remained significantly below normal because many farmers remained displaced and because there were shortages of seeds and other inputs. ██████████

██████████ the small third-season crop harvested in October should be near normal in the limited area where it has been planted. Nevertheless, ██████████ Burundi will need 180,000 metric tons of food aid through the end of the year. ██████████

Burundi's climate allows for the year-round cultivation of various food crops. Beans, bananas, and cassava are the principal crops, and sweet potatoes, corn, and sorghum are also grown. ██████████

beans and corn are usually planted in October/November and are harvested in January/February, closely followed by the planting of sweet potatoes

<sup>1</sup> Agriculture provides about half the country's Gross Domestic Product (GDP)—one of the largest shares in the world—and employs more than 90 percent of the labor force. ██████████

and sorghum, which are harvested in June/July. Various crops are grown during a short third season between July and October. Bananas and cassava are grown throughout the year and provide some measure of food security during droughts—which led to their increased cultivation following several dry spells in the 1980s. ██████████ The popularity and marketability of bananas stem from their widespread use in making banana beer. ██████████

The agricultural sector is dominated by small landholders who cultivate food crops mostly for their own consumption. ██████████ there are more than 1 million family farms in Burundi averaging 0.7 hectare in size. About 40 percent of the land area is cultivable, and virtually all of this—including many steep hillsides—is cropped. Most farming is done by traditional low-yield methods using primitive tools—sticks, hoes, and machetes. Women do most of the farming, while men tend the livestock.<sup>2</sup> In the agricultural heartland of central and western Burundi, erosion and loss of soil fertility have become the biggest threat to agricultural productivity. The Belgians implemented programs to build contour ridges and terracing to control torrential runoff, but since independence much of this work has fallen into disrepair. Chemical fertilizers are used infrequently because most farmers cannot afford them. Manure is not commonly used either because herds are usually grazed away from fields, and manure is not collected. ██████████

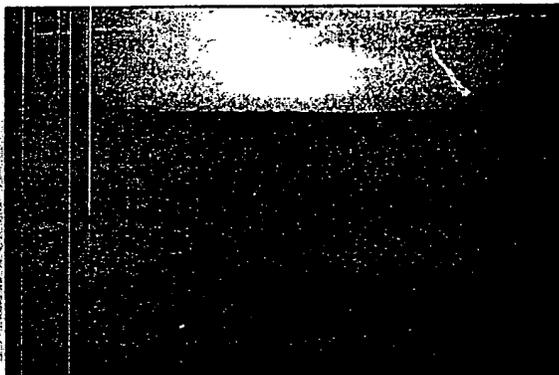
Fish are an important component of the Burundian diet. ██████████ 23,000 tons of fish were caught in 1991, with about 95 percent coming from Lake Tanganyika. Production decreased through the late 1980s—due partly to cheap imports from Tanzania—but it has picked up in recent years. Most of the catch is sold fresh daily in the central market in Bujumbura, and the rest is dried and marketed throughout the country. Lakes in the north,

<sup>2</sup> Although important as symbols of wealth and prestige, livestock are not a major source of food or income. Nevertheless, some 70 percent of the nation's livestock were killed during the October 1993 coup attempt. ██████████

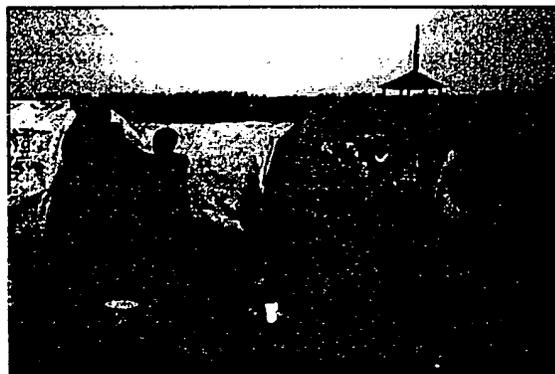
**Figure 4  
Burundi: A Pictorial Profile**



**Unaccompanied children at the Ntamba  
refugee camp in the Muyinga Province.**



**Dwellings at Ntamba camp; the plastic  
sheeting is essential during the rainy season.**



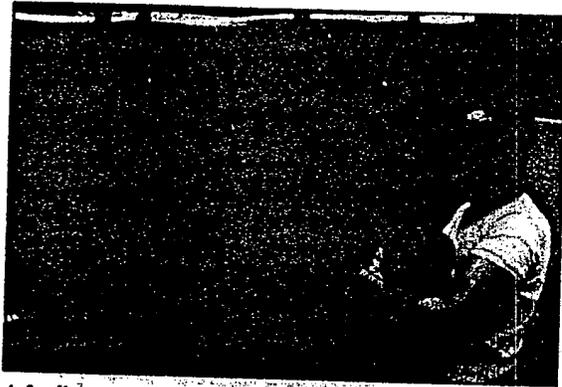
**Ruvumu camp in the Ngozi Province. The  
collection of wood—a main source of fuel in  
refugee and displaced camps—is aggravating  
the country's deforestation problems.**



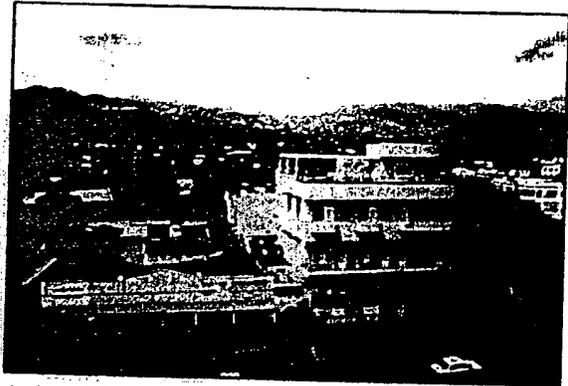
**Children collect water from an underground  
spring at the Mugano camp in the Muyinga  
Province. Poor sanitation and drinking water  
are a leading cause of high mortality rates in  
refugee and displaced camps.**

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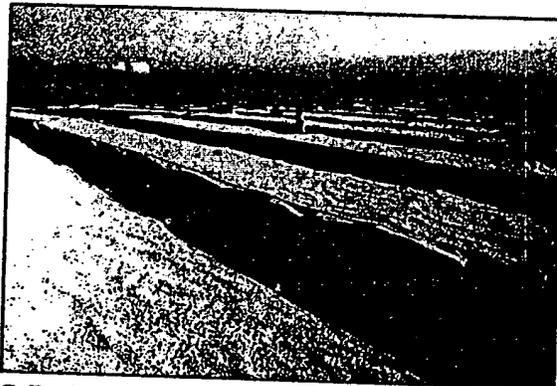
**Figure 4 (continued)**



A feeding center at the Mugano camp in the Muyinga Province; the camp is home to about 30,000 Rwandan refugees.



A view of downtown Bujumbura, Burundi's capital, main industrial center, and home to some 75 percent of the country's urban population.



Coffee drying on racks. Coffee is Burundi's main cash crop and export earner.



Farmers harvest tea; agriculture employs over 90 percent of the work force.

*Marches Tropicales Et Méditerranéennes*

**Climate and Terrain**

Burundi occupies about 27,800 square kilometers (km) on the Great East African Plateau and is roughly the size of Maryland. Its wet season usually begins in late September and lasts until May. Thunderstorms average six to 10 days per month and account for most of the rainfall; the heaviest rains, during March and April, occur 20 days a month. The dry season lasts from June to September.

The country has three natural geographic zones:

- The Imbo plain. Tropical and 800 meters above sea level, this plain stretches along the eastern shore of Lake Tanganyika and north to the Ruzizi River valley along the Great Rift Valley. Temperatures average 21°C to 23°C, and annual rainfall measures 750 to 1,000 millimeters (mm).
- The Great Rift Valley mountains. Rising steeply to form the divide between the Congo and Nile Rivers, these mountains extend from south to north and generally average less than 6 km in width. The ridges range from 1,500 to 2,400 meters, with peaks not exceeding 2,600 meters. Temperatures average about 16°C, and rainfall ranges from 1,300 to 1,500 mm in the upper elevations and almost 1,800 mm in the north near the Rwanda border.
- The central and eastern plateaus. The plateaus, where almost half the population lives, range from 1,500 to 2,000 meters above sea level. Average temperatures range from 18°C to 19°C and rainfall from 1,000 to 1,400 mm. The plateaus slant toward the eastern border where hotter and drier savanna conditions prevail; temperatures here average 20°C to 23°C, and rainfall totals from 750 to slightly more than 1,000 mm.

which are being stocked with fry, should become more important producers in the future.

Cash crops—mostly coffee and some tea, cotton, and tobacco—account for most exports. If renewed turmoil resulted in major disruptions in the agricultural

**Table 1  
Burundi Labor Force, 1991**

Economic Sector	Total Number of People	Percent of Work Force
Total	1,900,000	
Agriculture	1,767,000	93.0
Government	76,000	4.0
Industry and commerce	28,500	1.5
Services	28,500	1.5

sector, foreign exchange earnings would be greatly reduced—as has occurred in Rwanda. Cash crops are grown on both state-run plantations and about half the small farms in Burundi. The government, with World Bank and other donor assistance, has invested heavily in the development of the coffee industry during the last two decades, placing particular emphasis on increasing productivity and quality. As a result, output has increased by more than 25 percent since 1979, and virtually all the coffee grown now is high-quality arabica, which commands a 10- to 15-percent premium on the world market.

Coffee exports accounted for 81 percent of Burundi's \$41 million in foreign exchange earnings in 1991.

Even if the current crisis subsides, Burundi's agricultural sector will have to overcome several obstacles to keep pace with population growth. Because there is little idle cultivable land, future production increases will have to come from improved yields. This will require better erosion control, use of fertilizers, improved cropping techniques, and controlled grazing of livestock. In addition, the government will need to develop a food-marketing system and improve agricultural extension services to small holders.

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**Figure 5**  
**Burundi: Climate Conditions**

— Minimum temperature      — Maximum temperature

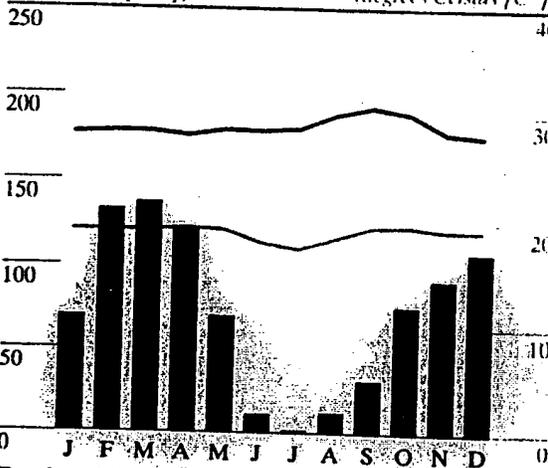
**Bujumbura**  
Precipitation  
(millimeters [mm])

Temperature  
(degrees Celsius [C<sup>o</sup>])

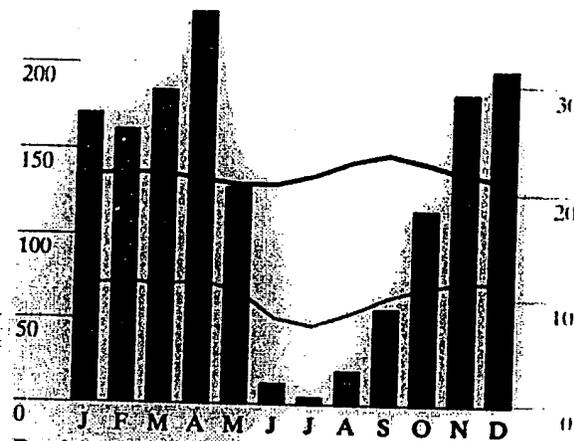
**Kisozi**

Precipitation (mm)

Temperature (C<sup>o</sup>)



Dry days: 143, wet days: 83.

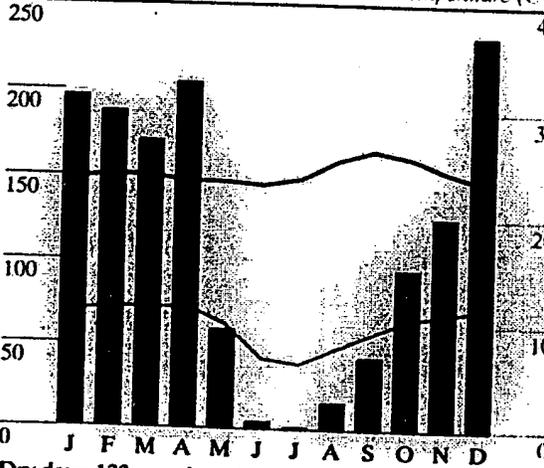


Dry days: 106, wet days: 226.

**Ruvironza**

Precipitation (mm)

Temperature (C<sup>o</sup>)

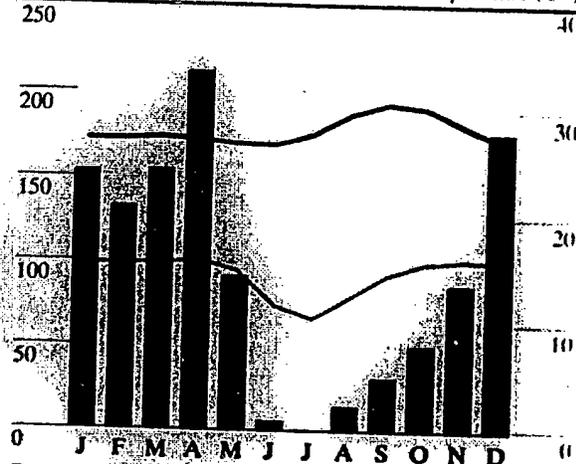


Dry days: 133, wet days: 181.

**Musasa Plateau**

Precipitation (mm)

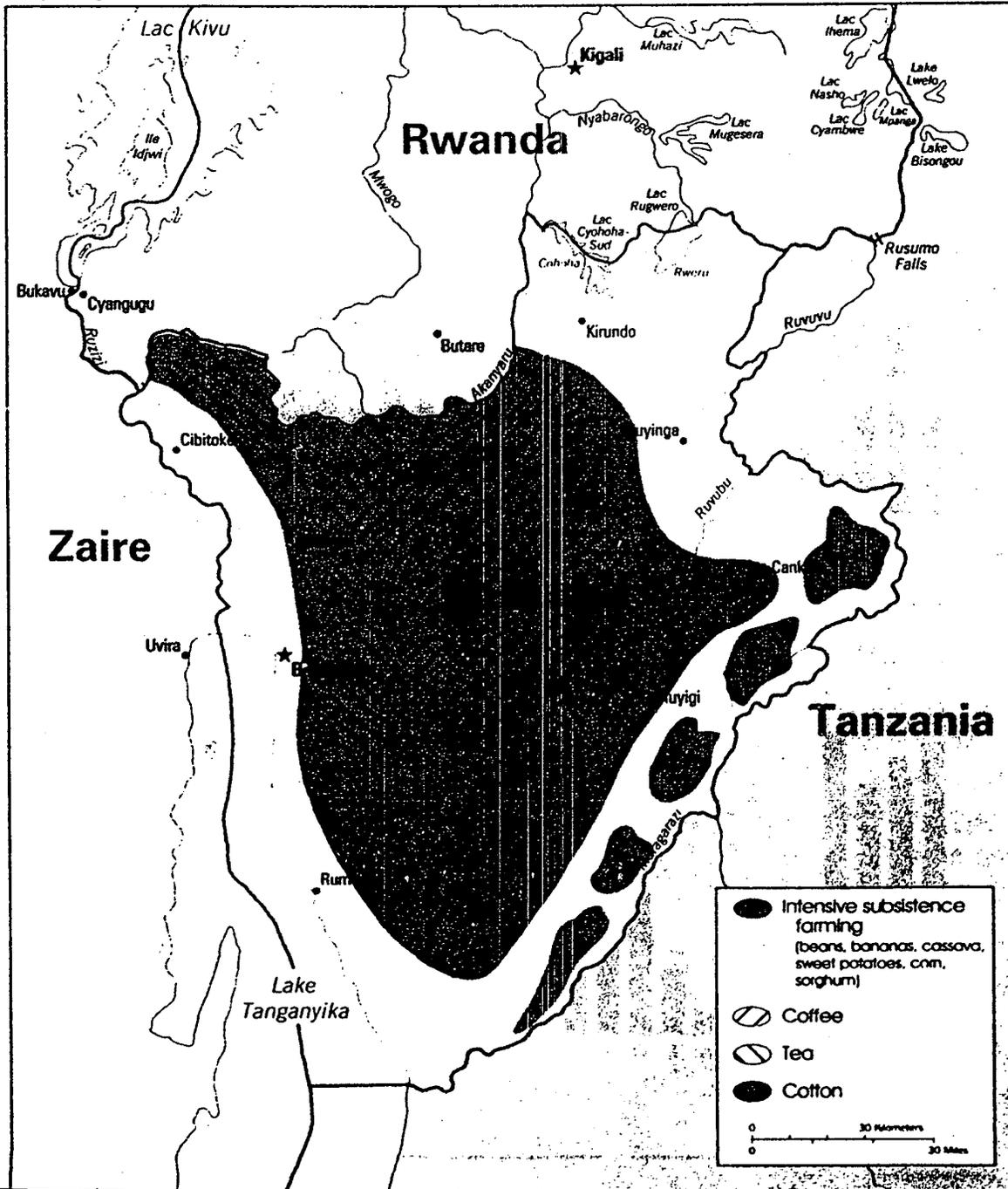
Temperature (C<sup>o</sup>)



Dry days: 159, wet days: 166.

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Figure 6  
Major Agricultural Areas



**Table 2**  
**Burundi Estimated Agricultural Production, 1986-91**

*Thousand metric tons*

	1986	1987	1988	1989	1990	1991
Bananas	1,436	1,440	1,480	1,608	1,547	1,580
Sweet potatoes	611	626	619	659	664	680
Cassava	554	579	567	648	569	580
Beans	313	327	320	187	149	170
Maize	164	174	206	138	168	140
Rice (paddy)	20	28	27	37	40	39

**Table 3**  
**Burundi Cash Crop Production**

*Metric tons*

	1986	1987	1988	1989	1990	1991
Coffee	31,260	37,260	35,312	32,451	34,925	34,205
Tea (dry)	3,597	4,382	3,721	3,858	4,044	5,325
Cotton (lint)	3,116	3,071	2,959	2,869	2,192	2,905

**Industry and Mineral Production**

Burundi's industry is largely oriented toward production of goods for local consumption. Located primarily in Bujumbura, industry contributed only 20 percent of the GDP in 1992.

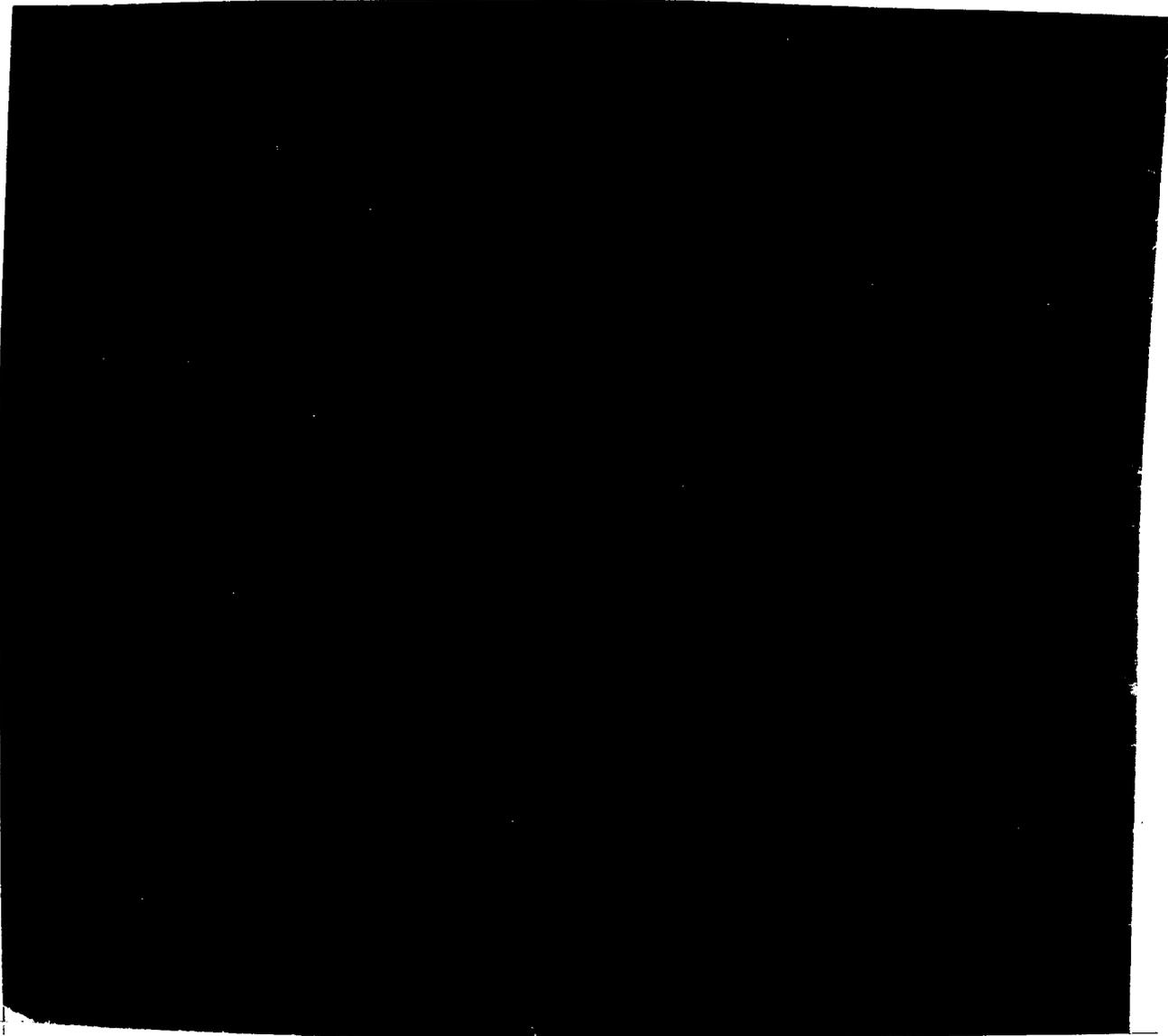
Agricultural processing—including beer and soft drink production and sugar mills—dominates the sector; cotton cloth, cigarettes, and other consumer goods are also produced. A coffee-processing industry prepares coffee for export. Most industrial facilities are operating well below capacity, according to an academic study. High transportation costs, a small domestic market, fluctuating world prices, and

a lack of educated personnel constrain Burundi's industrial growth potential.

The mining industry, although small, could become an important contributor to the national economy. Production is currently limited to small amounts of tin and gold, as well as a few locally important industrial minerals.<sup>3</sup> Nevertheless, large deposits of nickel with associated copper, cobalt, and platinum-group

<sup>3</sup> The country at one time produced tungsten, columbium, bastnaesite, and the rare-earth mineral europium, but declining world prices and other problems led to closure of the mines.

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metals—located in a belt running from northeast to south—present promising possibilities for development. [redacted] Burundi has 5 percent of world nickel reserves. [redacted]

Both the government and private industry are giving special attention to the expansion of gold production—which currently is all small-scale operations—and development of a phosphate deposit. [redacted]

[redacted] was sufficiently encouraging to spur the government to commission a detailed study of an area in the northeast. Drill testing for development of a phosphate fertilizer facility at the Matongo deposit has reportedly been completed, and the project is awaiting funding. [redacted]

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### Transportation Infrastructure

Bujumbura is the hub for humanitarian relief efforts for needy Burundians and Rwandans in the country, as well as in southwestern Rwanda and eastern Zaire. Burundi's relatively well-developed road network facilitates aid distribution, but it has no railroads.

The 5,900-km highway system includes about 640 km with bituminous surfaces, 2,260 km with improved surfaces, and 3,000 km with unimproved surfaces.

Bituminous-surfaced and improved-surfaced roads are in fair-to-good condition. Main routes radiate from Bujumbura west to Zaire, north to Rwanda, and east to Tanzania. A modern 114-km two-lane highway—completed by the Chinese in 1987—links the north and south. At the same time, a network of dense—albeit undeveloped—roads reaches all areas of the country. These rural roads probably will be the weakest link in aid distribution, should a widespread humanitarian crisis occur; this is especially the case in the rainiest months of March and April, when many roads are impassable.

Most bridges are short, one-lane structures with gross load capacities of 3 metric tons. Prefabricated Bailey-type steel bridges are also in use. These have capacities of up to 20 metric tons. The newer bridges on the Chinese-built roads are of the reinforced concrete-deck type—single spans placed on abutments. Vertical clearance is unlimited on most bridges.

Rural roads have numerous ruts; the few bridges on these routes usually have low capacities. The highway system has one known ferry crossing and no known tunnels.

Burundi has only three usable airfields: Bujumbura International, Gitega, and Kirundo. Only Bujumbura has a hard-surfaced runway; the other two have graded or natural surfaces.

Bujumbura's runway exceeds 3,000 meters and is probably suitable, with some restrictions, for use by C-130, C-141, C-17, IL-76, AN-124, and—at least provisionally—C-5 aircraft. In addition, Bujumbura is the only field designated as an airport of entry. The two other airfields have virtually no support facilities and can accommodate only light or utility-type aircraft. Military

The port at Bujumbura—the country's only developed port on Lake Tanganyika—is the center of the area's relief efforts.<sup>3</sup> Aid commodities are routed by rail across Tanzania from the port at Dar es Salaam to Kigoma and then barged up Lake Tanganyika to the port. The port has a minimum draft of 12 meters at its dredged entrance and approximately 550 meters of alongside berthing. Limited offloading and storage capabilities hinder stockpiling, and the lack of transport vehicles—especially during the harvest seasons—and fuel hampers delivery and cross-border assistance. In early September, manpower and fuel shortages caused a 10,000-metric-ton backlog of food in Kigoma and less than a one-week supply of food in Bujumbura.

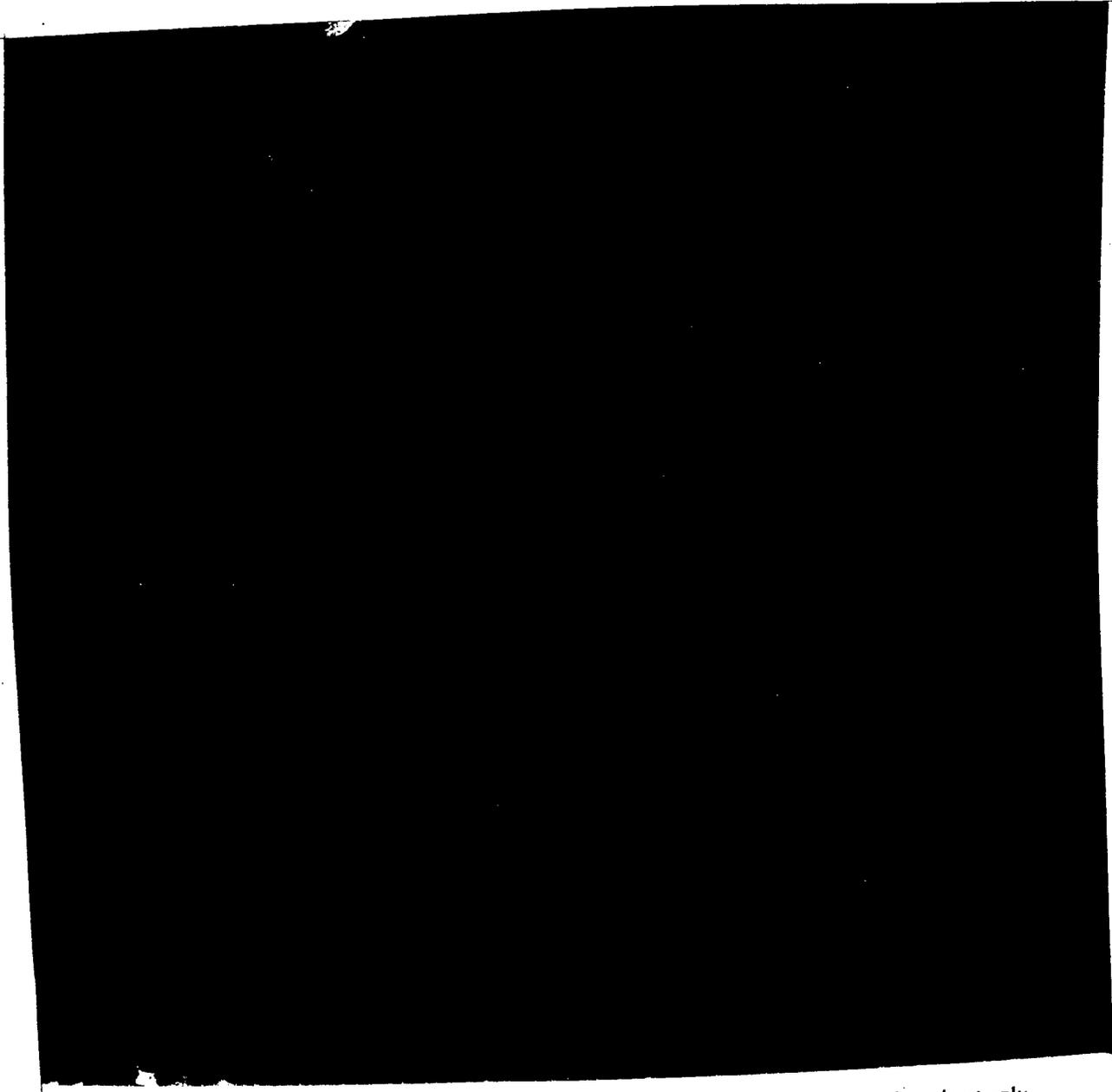
### Telecommunications/Communications

Burundi's telecommunications network primarily serves the urban areas and has some 8,000 telephone lines—one line per 750 residents. Almost 90 percent of telephone subscribers are in Bujumbura. Should violence break out, the network will probably be severely disrupted, as occurred in Rwanda. Through radio relay links, satellite, some wire, and some radio communications, the National Office of Telecommunications provides domestic, international, telegraph, and telex services.

<sup>3</sup> Military reporting indicates that Nyanza-Lac and Rumonge, south of Bujumbura, are primarily small fishing ports unsuitable for heavy resupply operations.

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sources. While direct dial service is available to many countries, only two lines are available for calling the United States. [REDACTED]

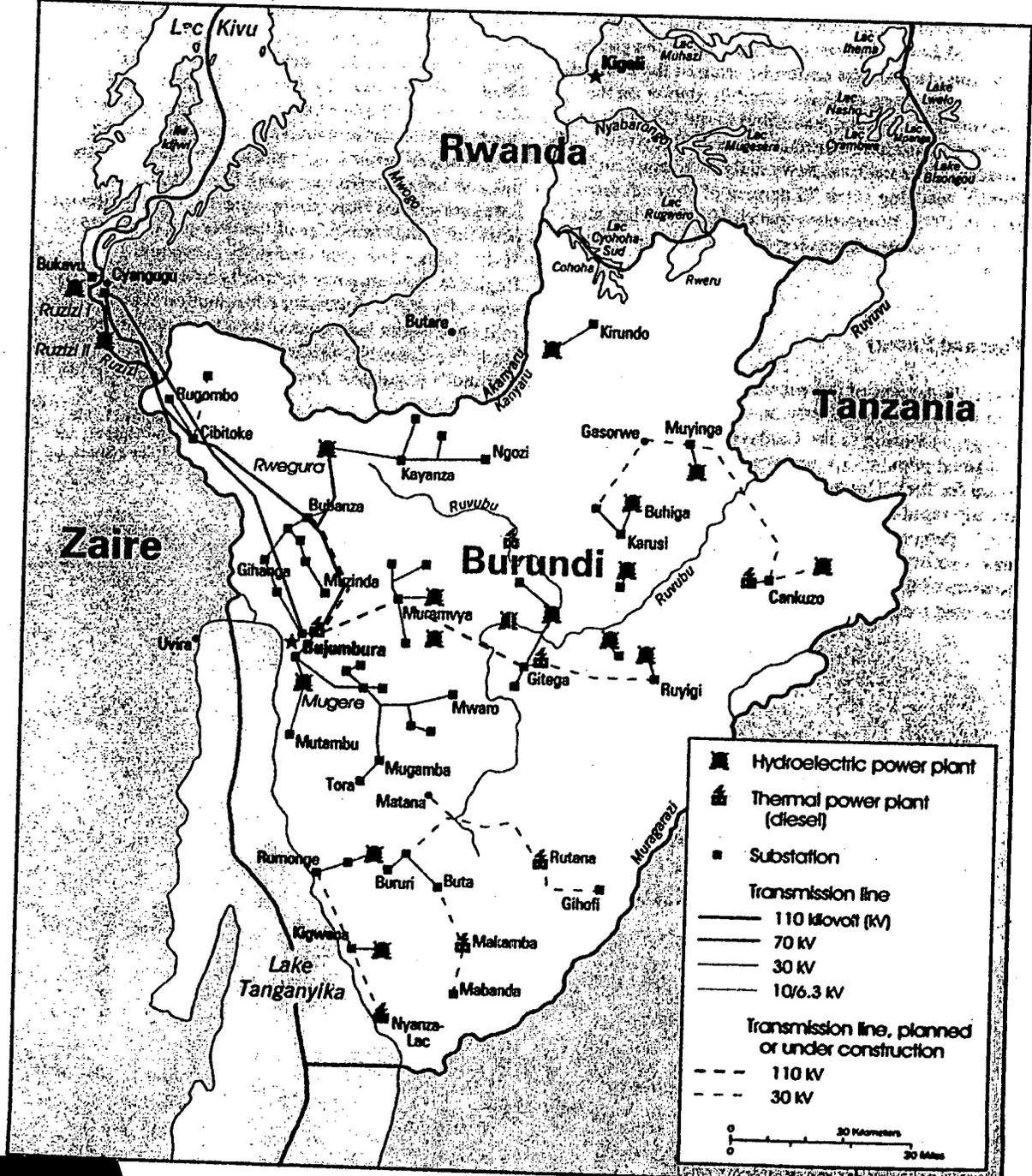
The country's radio and TV system broadcast only from the capital. Burundi National Radio broadcasts two programs out of Bujumbura on shortwave.

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Figure 9  
Power Network, 1990



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medium wave, and VHF/FM in French, English, Kirundi, and Kiswahili. [REDACTED] The topography interferes with reception—especially in central Bururi Province. In addition to the government-run stations, the extremist wing of the Burundi Democratic Front operates a mobile station on the Rwanda-Zaire border, [REDACTED]

[REDACTED] Burundi National Television broadcasts the national news daily in Kirundi and French, reaching some 75 percent of Burundi territory. In 1993, Burundians owned 50,000 radios and 4,500 televisions. [REDACTED]

#### Fuel and Energy

Some 90 percent of the subsistence sector and 80 percent of all households rely on wood and charcoal for energy. [REDACTED] Refugee and displaced populations are also dependent on firewood for fuel. This situation will hasten Burundi's already rapid deforestation. Forests have dwindled to only 7 percent of the land area—about 220,000 hectares. [REDACTED] About three-quarters of the forest are in plantations, and the rest is protected natural forests. [REDACTED]

Hydropower is the main source of electricity; Burundi has no petroleum or natural gas reserves. In 1991, about 92 percent of the electricity was produced by hydroelectric plants at Mugere and Rwegura. [REDACTED] The Ruzizi plant—jointly owned by Burundi, Rwanda, and Zaire—13 smaller hydroplants, and diesel-powered plants provide the remainder. The country has 55 megawatts of generating capacity. The largest transmission lines—extending south from Ruzizi and Rwegura toward Bujumbura—are 70- to 110-kilovolt (kV) lines, the remainder of the network is mostly 30-kV lines.<sup>6</sup> The state electricity company, Regideso, now supplies electricity to all major towns. By 1992, electricity consumption was 142 million kilowatt hours. [REDACTED]

[REDACTED] Nevertheless, fewer than 5 percent of Burundi's population has access to electricity. [REDACTED]

<sup>6</sup> For purposes of comparison, 132-kV lines are common in the United States, serving smaller towns throughout the Midwest and South; 456-kV lines are among the largest in the United States. [REDACTED]

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