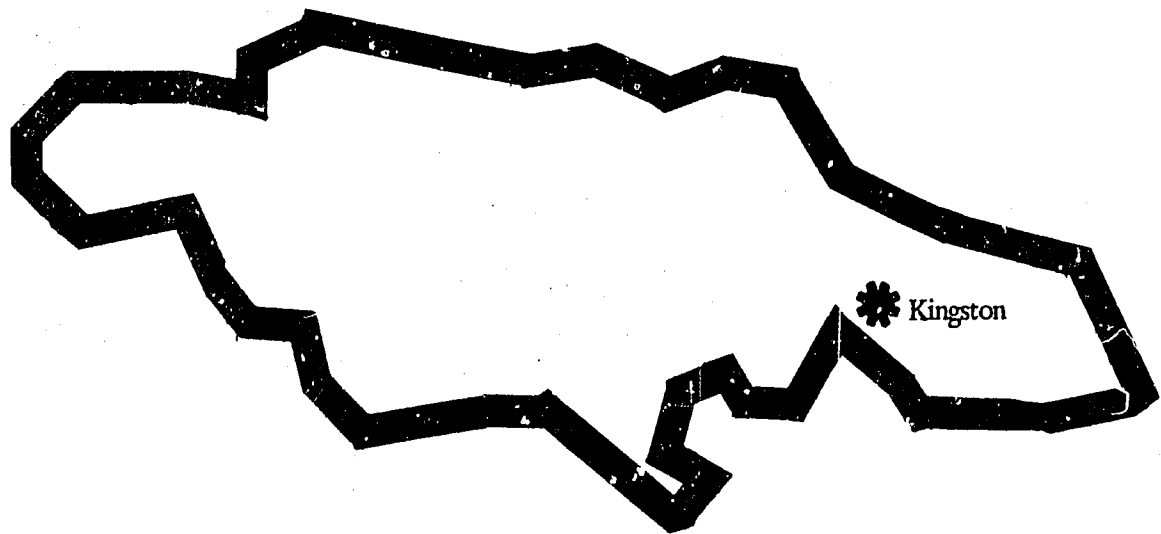


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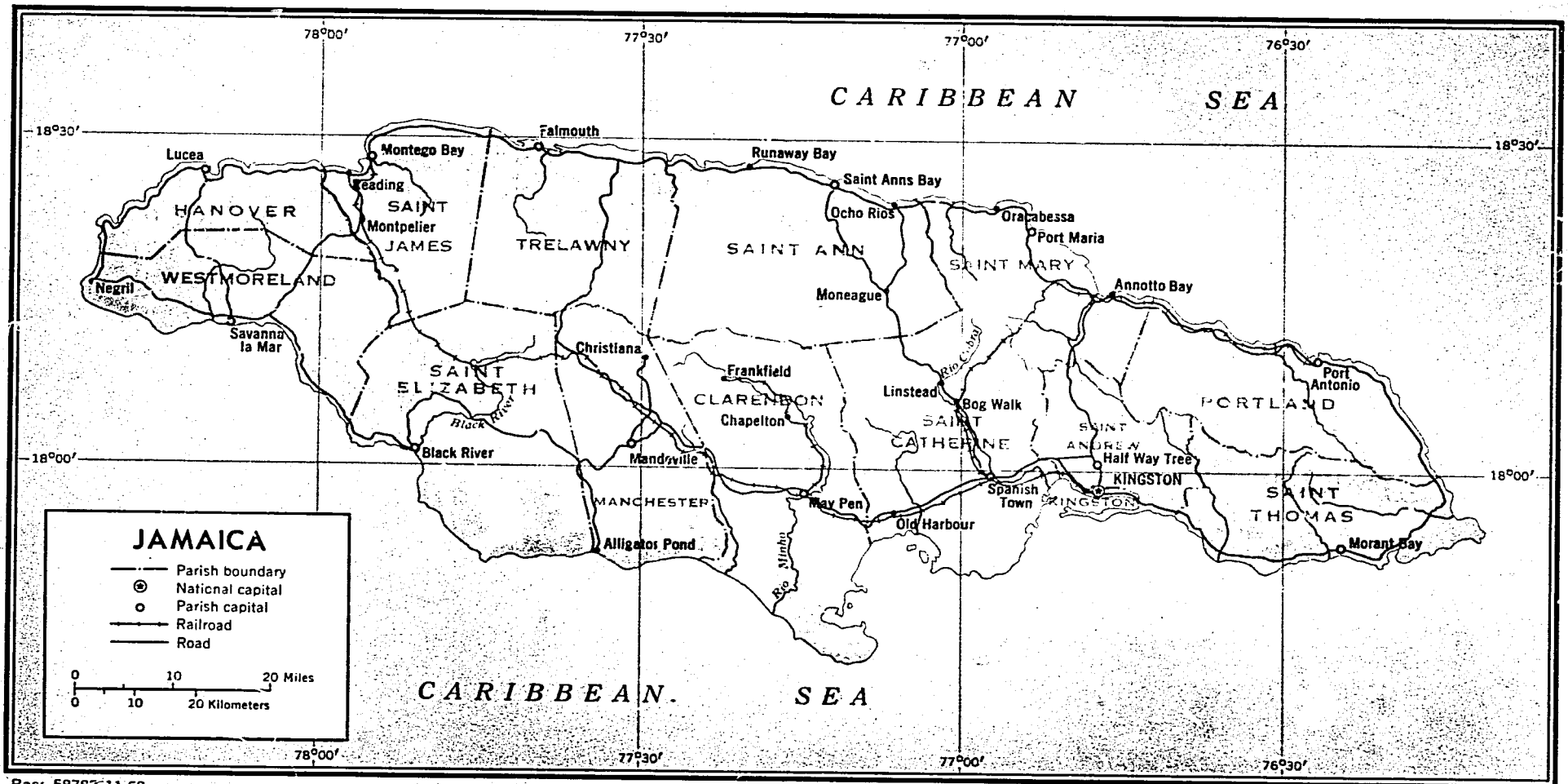
# Jamaica

## A Country Profile



1983

Office of U.S. Foreign Disaster Assistance  
Agency for International Development  
Washington, D.C. 20523



Base 58783 11-68

**JAMAICA: A COUNTRY PROFILE**

prepared for

The Office of U.S. Foreign Disaster Assistance  
Agency for International Development  
Department of State  
Washington, D.C. 20523

by

Evaluation Technologies, Inc.  
Arlington, Virginia  
under contract AID/SOD/PDC-C-2112

The Country Profile Series is designed to provide baseline country data in support of the planning and relief operations of the Office of U.S. Foreign Disaster Assistance (OFDA). Format and content have evolved over the last several years to emphasize disaster vulnerability, planning, and resources.

We hope that the information provided is also useful to other individuals and organizations involved in disaster-related activities. Every effort is made to obtain current, reliable data; unfortunately it is not possible to issue updates as fast as changes would warrant. Therefore, where the most current names and statistics are important, the bibliography points to regularly updated sources.

We invite your comments and questions. Please address these to OFDA at the address above.

July 1983

## ACKNOWLEDGEMENTS

Special thanks for their continuing and invaluable assistance in the preparation of this report are expressed to the staff of Jamaica's Office of Disaster Preparedness and Emergency Relief Coordination, specifically to Mr. Franklin McDonald, Cmdr. Richard Harvey, Mr. Keith Ford, and Ms. Suzanne Haik, and to Cpl. Willis Hill, Jamaican Defense Force. Other individuals throughout the Jamaican Government Service were also generous with their time and expertise. We hope that this publication will prove to be of assistance to them and others in the international disaster relief community.

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1. General Information

1.1 Geographic Codes

AID Standard	532
State Region	ARA
FIPS	JM

1.2 Time Zones

EST  
GMT - 4

1.3 Host Country Mission

Embassy of Jamaica  
1850 K St., N.W.  
Suite 355  
Washington, D.C. 20006  
Tel: 452-0660

For current information on the Jamaica Embassy staff in the United States, refer to U.S. Department of State, Diplomatic List.

1.4 U.S. Mission to Jamaica

Embassy of the United States  
Jamaica Mutual Life Center  
2 Oxford Road, 3rd. Fl.  
Kingston, Jamaica  
Tel: 809-92-94850

For current information on the U.S. Embassy staff in Jamaica, consult the most recent edition of the Department of State, Key Officers of Foreign Service Posts.

**1.5 Currency**

\$1 Jamaican = \$1.78 U.S.  
 \$1 Jamaican = \$2.07 U.S. (parallel market)

**1.6 Travel and Visa Information**

Passport and visa not required of tourists in direct travel from U.S. territory, for stays of up to 6 months. Tourists must have proof of U.S. citizenship, however, and return ticket. Tourist card issued upon arrival; returned to immigration authorities on departure. Passport, but no visa required if arriving from U.S. territory. Visa required for business or study, at no charge. Business visas usually valid up to 14 days.

**1.7 Calendar and Holidays**

New Year's Day	Jan. 1
Ash Wednesday	*
Good Friday	*
Easter Monday	*
National Labor Day	May 1
Independence Day	First Monday in August
National Hero's Day	Third Monday in October
Christmas Day	December 25
Boxing Day	December 26

\* variable dates

**1.8 Treaties and Agreements**

Agricultural Commodities  
 Aviation  
 Consuls  
 Defense  
 Economic and Technical Cooperation  
 Investment Guaranties  
 Peace Corps  
 Telecommunications

**1.8 Treaties and Agreements (cont'd.)**

Trade and Commerce  
Visas  
Weather Stations

**1.9 International Organization  
Memberships**

CARICOM, Caribbean Care Farmers Association, FAO, G-77, GATT, International Bauxite Association, IBRD, ICAO, IDB, IFC, ICO, IMF, OAS, PAHO, SELA, UN, UNESCO, WHO, WMO.

**1.10 Government****National:**

Jamaica is a constitutional monarchy and an independent member of the British Commonwealth. The titular sovereign (Queen) is represented on the island by a Governor-General who appoints the Prime Minister, and, on the latter's recommendation, the members of the Cabinet. The legislative branch consists of a 21-member appointed Senate, and 60-member popularly elected House of Representatives.

**Regional:**

Jamaica's three counties, Cornwall, Middlesex, and Surrey, are divided into 14 parishes. Kingston and St. Andrew are jointly administered by the Kingston and St. Andrew Corporation (KSAC). The 12 Parishes are administered by Parish Councils. Parishes are further divided into 60 electoral constituencies which elect House Representatives, for five year terms.

**Current Status:**

The Jamaica Labor Party, led by Prime Minister Edward Seaga, gained control of the Legislature in 1980, following eight years of People's National Party (PNP) control led by Michael Manley. Seaga is pursuing a national policy of economic conservatism and fiscal control, while actively soliciting and encouraging foreign investment.



### 1.11 Ethnic and Sociocultural Groups

Jamaica's national flag reflects the diversity of her population: "Out of many, one people." The majority of the population is black; whites, East Indians, and Chinese comprise minority populations, all contributing to the country's ethnic, racial, and cultural pluralism.

### 1.12 Languages

English is the official language. Educated Jamaicans speak Jamaican English which resembles the British English spoken by expatriates, but has an even stress and some idiomatic constructions. Jamaican Creole is spoken by the majority. Chinese and Hindi are spoken in the Chinese and Indian communities.

### 1.13 Religions

Many Christian churches are represented; the Anglican Church is the largest. Revivalism and spiritualism of Afro-Christian cults have wide appeal among the poor. Of these, the Rastafarian Brethren have the largest following and espouse black awareness and repatriation to Africa. There are several Moslem and Hindu groups and a small Jewish community.

### 1.14 Geography

Jamaica lies between latitudes 17° 43' and 18° 32' N and longitudes 76° 11' and 78° 21' W, approximately 160 km. west of Haiti and 145 km. south of Cuba. Total land mass measures 10,991 sq. km. (234 km. east to west and about 82 km. north to south). 885 km. of irregular coastline feature numerous natural harbors and coves, and stretches of white sandy beaches along the northern coast, and black sandy beaches along the south. Topography consists of a highland interior formed by mountain peaks and limestone plateaus that run along the length of the island, surrounded by coastal plains. The highest mountain peaks are the Blue Mountains in the east (up to 2,600 m.).

**Climate:**

Jamaica enjoys a tropical climate moderated by north or northeast trade winds and land-sea breezes. Rainfall and temperatures vary with location and altitude. Average annual rainfall for the entire island is 195.8 cm., with the Blue Mountains and northeast coast receiving the most rain - over 508 cm., while Kingston receives less than 75 cm. Coastal temperatures are fairly uniform, averaging 27° C (25-26° C in January-February, and 28-29° C in July and August), but there is a one to two degree (C) drop in temperature per 300 m. increase in elevation. Blue Mountain peak registers an annual average of 13° C.

**1.15 Population**

Approximately one-third of Jamaica's estimated 2.2 million people live in the capital city, Kingston. The national population growth rate has decreased in recent years to 1.2 percent, however, high internal migration to urban centers continues to expand these populations. Other population concentrations are in Montego Bay, Spanish Town, May Pen, and Savanna-la-Mar, while rural populations are dispersed along the coasts and in upland areas.

**Population by Parish, 1970 & 1980**

	<u>1970</u>	<u>1980</u>
Total	1,890,703	2,223,400
Kingston & St. Andrew	562,416	677,600
St. Thomas	72,051	50,300
Portland	69,038	76,500
St. Mary	100,966	111,800
St. Ann	123,006	139,100
Trelawny	61,917	69,600
St. James	106,942	129,400
Hanover	59,799	65,300
Westmoreland	114,205	124,400
St. Elizabeth	127,911	143,300
Manchester	125,748	150,600
Clarendon	178,474	201,700
St. Catherine	188,500	234,000

Source: Jamaica Department of Statistics,  
Demographic Statistics 1981.

1.16 HealthVital Statistics  
(1979):

Births/1,000 population	27.1
Deaths/1,000 population	6.2
Infant mortality/1,000 live births	15.0
Child death rate (ages 1-4)/1,000	3.0
Life expectancy at birth	70 years

Health Facilities:

Most health services are supplied by the Ministry of Health and Environmental Control through 23 general public hospitals, and a number of specialized hospitals in Kingston. One specialized hospital, the Hansen Home (leprosy), is located in Spanish Town. A small private health sector administers five private hospitals. There is an overall total of 6,408 hospital beds nationwide. 154 health centers and dispensaries provide out-patient and preventive services in Kingston-St. Andrew and in rural parishes. Approximately 2,000 community health aides provide basic health services in rural communities throughout the island.

Diseases:

Heart disease and other cardiovascular circulatory diseases have been the major cause of death (49%), followed by cancer (16%), pneumonia (9%), enteritis and other diarrheal diseases (7%), and diabetes (6.3%). The incidence of communicable diseases has declined dramatically in recent years. However, diseases such as typhoid and leptospirosis maintain fair levels of endemicity and occasionally epidemics are experienced. Nutritional deficiencies, especially among children under 5 years of age, are cause for serious concern; the death rate attributed to malnutrition is 22.7/1,000 for the total population.

1.17 EconomyOverview:

Jamaica's economy has suffered a decline since the middle of the 1970s, as increased oil prices, decreased revenues from the bauxite/aluminum industry, and a worldwide recession have combined to lower the national GDP. However, in 1981, the Jamaican economy grew for the first time since 1973. Real GDP growth

was estimated at 1.3% as most productive sectors (construction, tourism, domestic agriculture) increased in response to improved business confidence. The export agriculture sector did not grow, however, as output (and exports) of sugar declined reflecting serious long-term problems in this sector. Unemployment and inflation both declined - the latter substantially (from 29% in 1980 to 6% in 1981) as a result of increased availability of imported and domestically produced goods. Unemployment remains one of the most critical problems facing Jamaica, most acutely among the young unskilled urban population.

**Balance of Payments:**

Policy changes in 1980-81 contributed to a sharp deterioration of Jamaica's balance of payments position: the open economy that enabled consumers to increase imports and thereby ease inflation, was not matched by sufficiently expanded exports. Bauxite and aluminum exports increased only marginally due to a depressed world market; sugar and banana production and exports declined; and tourism increased only slightly. International balance of payments assistance through bilateral and multilateral channels and a commercial loan to the Government of Jamaica permitted the country to retain the same level of international reserves as in 1980.

**Exports:**

Bauxite, aluminum, sugar, bananas, pimento, cocoa, coffee, citrus, tobacco, ginger, rum.

**Imports:**

Fuels (30%), raw materials (30%), capital goods (14%), consumer goods (9%), and food (5%).

**Major Trading Partners:**

<u>Exports (1980)</u>		<u>Imports (1980)</u>	
United States	37%	United States	31%
United Kingdom	19	United Kingdom	7
Canada	11	Venezuela	19
Norway	6	Netherlands	17
CARICOM	4	Antilles	
Other	23	CARICOM	7
		Other	19

1.18 Communications**Radio Network:**

The Government-owned Jamaica Broadcasting Corporation broadcasts from Kingston, Montego Bay, Mandeville, and Port Maria, Sunday through Saturday from 4:45 a.m. to 12:00 midnight. Radio Jamaica Ltd. operates an island-wide commercial and public-service station 24-hours a day, seven days a week. At least three quarters of the island's population listens to the radio daily. Radio West, Radio Northeast, and Radio Central are community radio stations, also operated by the Jamaica Broadcasting Corp.

**Television:**

Jamaica Broadcasting Corporation broadcasts from nine transmitters operating 67.5 hr./wk.

**Telecommunications:**

Telephone service throughout the island is operated by automatic exchange by the Jamaica Telephone Company. Domestic and international telegraph and telex services are also available. (See also section 3.5, Communications.)

1.19 Transportation**Roads:**

The main road network (all paved) parallels the coast and crosses the island via three main north-south roads, Kingston to Annotto Bay, via Stony Hill; Kingston-Spanish Town to St. Ann's Bay, via Mount Diablo; and Savanna-la-Mar to Montego Bay, via Mackfield. Secondary and tertiary roads fan out from the principal roads to connect more than 1,150 villages and towns.

**Ports:**

Kingston is the principal of Jamaica's 15 ports, with equipment and facilities to handle all types of cargo and vessels. Montego Bay on the northeast coast also has good accommodations and can handle most cargoes. Most of the remaining ports are designed to handle specialized cargoes, such as bauxite and aluminum and agricultural exports. (For details on accommodations and facilities of Jamaica's ports, see Lloyds of London's Ports of the World.)

**Shipping:**

The Jamaica Merchant Marine is Jamaica's national shipping line; it is 75% government-owned and includes charter vessels and one vessel owned jointly with private interests. Jamaica also participates in Naviera Multinacional del Caribe (NAMUCAR), a shipping company set up by seven Caribbean countries, and the West Indies Shipping Company, an inter-regional company owned and operated by CARICOM member governments.

**Rail:**

Jamaica Railway Corporation operates two railway lines connecting Kingston with Montego Bay and Port Antonio via Spanish Town. These lines are in need of extensive repair. Total rolling stock included 31 locomotives, 34 passenger vehicles, and an unspecified number of freight vehicles in 1978. The bauxite companies own several short lines which operate between their plants and the ports. Bauxite, aluminum and related processing materials make up 99% of the freight traffic.

**Airports:**

Jamaica has two international airports, Norman Manley at Kingston and Sir Donald Sangster at Montego Bay, four airfields for domestic traffic, and about thirty privately owned airstrips (principally used by sugar and bauxite company personnel). (See Section 3.4, Airports, for characteristics of these airstrips.)

**Airlines:**

Air Jamaica, the government-owned international airline, provides air service between Jamaica and New York, Miami, Chicago, Toronto, and the Bahamas, while Trans-Jamaican Airlines, also government-owned, provides internal air service between Montego Bay, Kingston, Mandeville, Ocho Rios, and Port Antonio.

Foreign airlines serving Jamaica include Aeroflot, Air Canada, American Airlines, British Airways, British West Indies Airways, Cayman Airways, Cubana, Eastern Airlines, Lufthansa, KLM, Pan Am, and TACA (El Salvador).

## 2. Disaster Vulnerability

### 2.1 Overview of Physical Environment

Jamaica, the third largest island in the Caribbean, measures approximately 234 km., east to west and 82 km., north to south. It is naturally divided into three regions consisting of flat coastal plains, especially broad in the southwest and southeast, rugged, steep-sided mountains, and interior valleys and plateaus. The mountain ranges run northwest to southeast with long spurs extending to the coastal plains, while more than two-thirds of the country's land area is made up of limestone hills and plateaus in the central and western interior. The coastal plains measure less than 3 km wide along most of the north and parts of the south coast, but expand into broad embayments and agricultural plains in the south, southwest, and eastern zones. The coastal lowlands and interior valleys are the sites of major agricultural activity. They are also highly flood-prone.

Most weather patterns move over Jamaica from a northeasterly direction, depositing heavy rains in the north and east. The major NW-SE mountain ranges prevent the rains from travelling on to the south coast, and, as a result, the densely populated area in the south can suffer periods of extended drought. When precipitation actually reaches the area, flooding usually results.

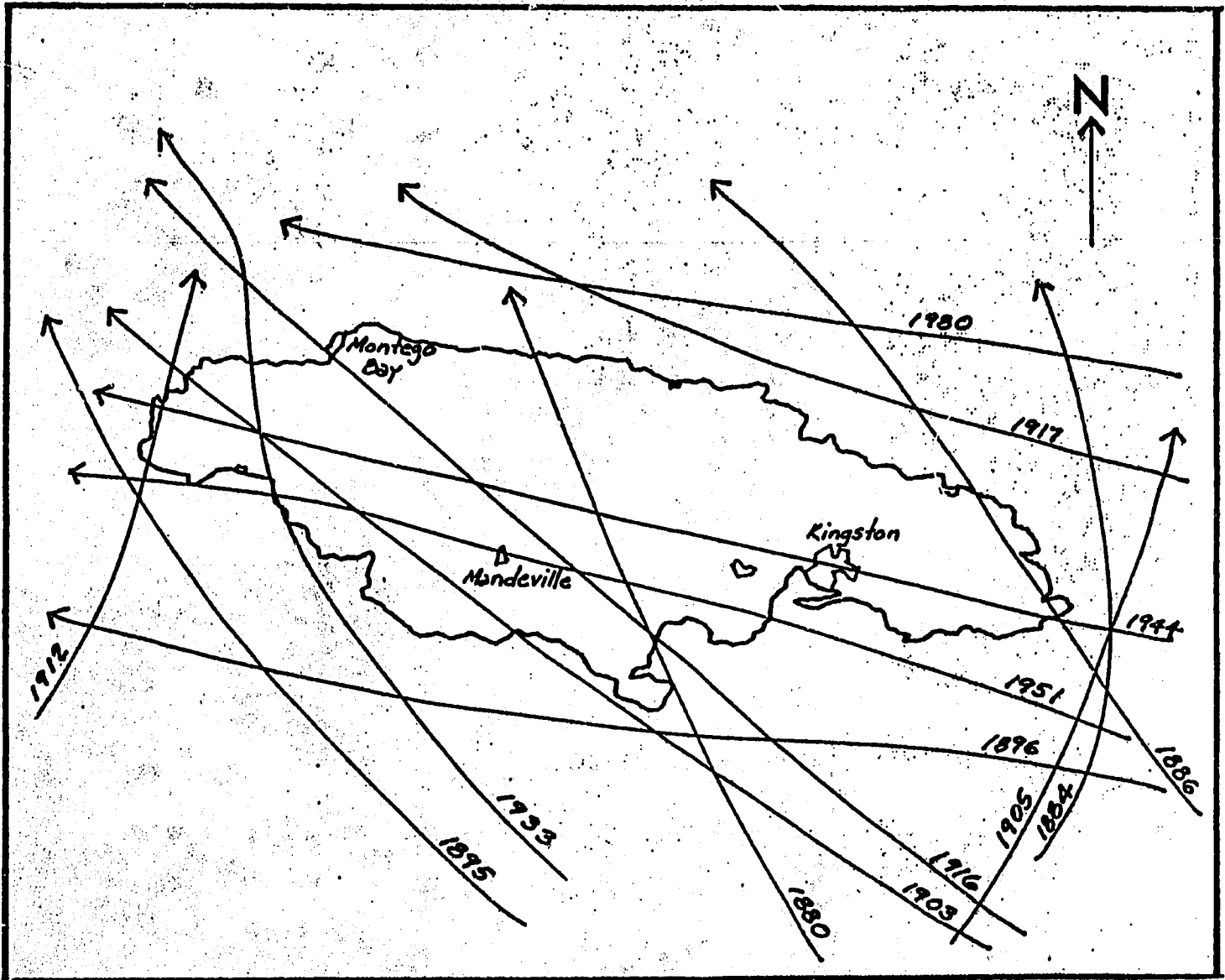
Elevation varies from below sea level in the coastal marsh areas in the southwest to 2,600 m. in the Blue Mountain range in the east. Massive run-off from the higher elevations contributes to flooding problems along the coasts. In areas such as Kingston, which is built on unconsolidated alluvial soil, the infusion of mountain run-off overloads the absorptive capacity of the soil, further exacerbating flood conditions. Approximately one third of the country's 2.2 million people live in the Kingston-St. Andrews Corporate area. Pressure for housing has led to extensive settlement in marginal areas and development of reclaimed landfill areas - all prone to flooding.

The largest of the island's many rivers is the Black River in St. Elizabeth. From its mouth at the southern coast it is navigable for approximately 40 km. and serves as a principal transportation route for area farmers and fishermen. Black River winds southward from the central mountains a total of 70 km., although it is submerged in the limestone hills for part of this distance. Other major rivers include the Yallahs River in St. Thomas, Rio Minho in Clarendon, Martha Brae in Trelawny, and the Great River in St. James. All the rivers rise in the mountains and flow either north or south to the sea. Most rivers are highly irregular, appearing and disappearing as they travel through the limestone hills to the coast.

Jamaica's coastal areas are quite varied and offer large potential for development of fish and tourist industries. Mangrove stands in the

FIGURE 1.

# Hurricane Tracks 1880-1980



Source: NOAA, 1977  
INTERTECT, Dallas, Texas



west and southwest, and coral reefs in the west and along the north coast provide natural buffers to the sea.

## 2.2 Hazard Analysis

### Hurricanes

Jamaica is situated in one of the most active hurricane regions in the world. The hurricane season runs from June through November, but most storms form in August, September, and October. Since 1880 at least 14 major hurricanes have hit the island, and numerous tropical storms have also caused damage. The damage caused by hurricanes and tropical storms is most severe in the housing and agriculture sectors. High winds of up to 85 mph tear roofs from homes, buildings from their foundations, and agricultural crops from the ground. The accompanying rains cause widespread flooding, washing out roads, bridges, and communication lines, and carrying away survivors' homes and household possessions. The excess water saturates the soil creating landslides and mudslides. On the coastal areas, the high winds generate huge tidal waves which can reach far onto the shore, beating down and carrying away everything in their path.

Much of the destruction associated with hurricanes is a result of poor siting and weak construction. Development in areas in the historical path of major hurricanes requires that special measures be taken to protect structures and crops from hurricanes' effects. In the Kingston area, construction of residential and commercial buildings extends to the edge of the sea. Maps delineating the reach of a typical 10 or 25 foot tidal wave clearly show that the areas which will be inundated and damaged include major new developments in downtown Kingston. A storm surge, or tidal wave of such destructive potential could hit the Jamaican coast even if the accompanying hurricane did not.

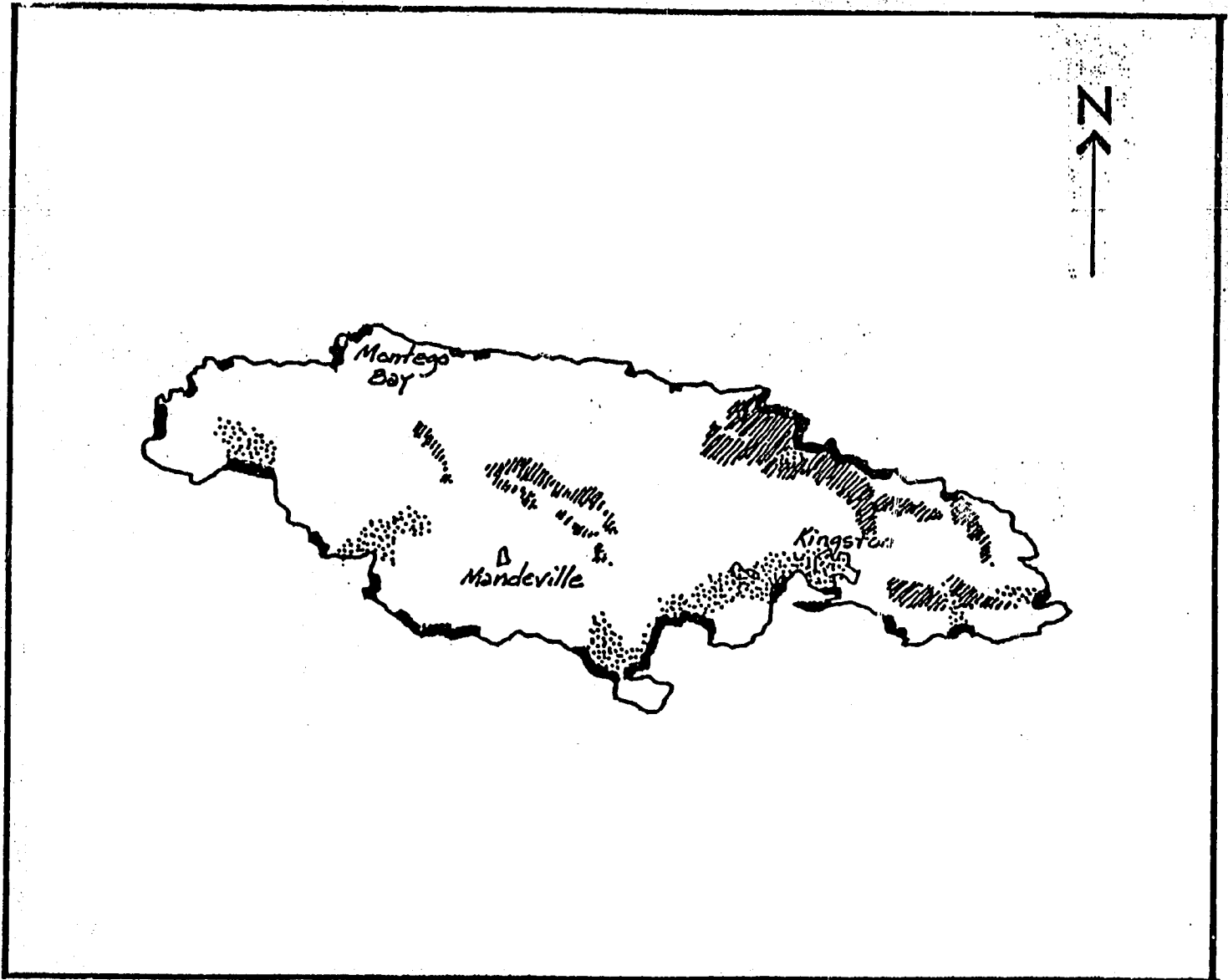
Some natural features help to offset the destructive potential of hurricane-generated storm surges. Coastal barrier reefs shelter parts of the northeast coast and the west coast by providing a buffer to break the force of tidal waves. However, recent and proposed development projects threaten to reduce the effectiveness of these natural mitigators.

### Floods

Most of the island is prone to flooding, however, this is most severe in the low-lying areas in the east, west, and the capital. The extensive marshlands in the west in Westmoreland and St. Elizabeth, the agricultural plains in Clarendon, and the eastern perimeter of Portland and St. Thomas are all low-lying flood-prone areas. Because they are also the sites of some of the best farm land, much agricultural activity is centered in these regions, including sugar cane, rice, coconut, banana, and pineapple cultivation.


FIGURE 2

# Hurricane Hazards in Jamaica



 Storm Surge Hazard

 Mudslide Hazard

 Flood Hazard

Source: ODIPERC, 1981  
INTERTECT, Dallas, Texas

The densely populated Kingston-St. Andrew Corporate area is highly flood-prone. Surface run-off is the principal problem as drainage gullies and sewer systems are inadequate to handle the volume of water which accumulates during a serious deluge. The run-off from the surrounding mountain ranges rushes down to the low-lying city and is dispersed over land throughout the city. As a result, Kingston is transformed into a huge flood pool which eventually drains into the sea.

In some areas of the city, the problem of flooding is particularly acute primarily as a result of poor construction and inadequate design specifications implemented during construction. Several housing developments constructed on marginal low-lying or land-filled areas expose large concentrations of people to a high degree of vulnerability.

Low-lying areas of Westmoreland, St. Elizabeth, and Hanover in the west have been subject to extensive flooding as well. In 1979, some of the worst flooding in memory necessitated the evacuation of the entire town of New Market. The town was under water for more than six months and, as a result, the population's agricultural crops, livestock, and household possessions were either extensively damaged or completely lost. New Market is now being rebuilt on higher ground. The same June 1979 floods washed out roads, eroded bridges, and forced the evacuation by boat and makeshift rafts of isolated populations throughout the Savanna-la-Mar coastal area. (See June 1979 Western Floods Case Report, at OFDA, Washington, DC.)

#### Fire

The threat of fire is most serious in the southern and western regions of the country where periodic droughts create an ideal environment for fire. During drought conditions, low water pressure throughout the municipal KSAC water system enhances the risk of fire and drastically reduces the Fire Brigade's ability to respond effectively. In the southwestern area, including the Black River and Savanna-la-Mar environs, spontaneous fires erupt on the marshlands. Such fires are difficult to reach and are usually left to burn themselves out.

#### Erosion

Coastal dredging, deforestation, and poor farming practices contribute to the growing problem of erosion in Jamaica. A recent FAO study projected that Jamaica will look like Haiti within twenty years if present land use practices are continued. Dredging of the coastal areas to expand and enhance tourist areas has contributed to the erosion of the coast and alteration of the currents. Gradual urban encroachment on the mangrove forests is reducing the size of these areas to the detriment of the dependent marine life, but also to the breakdown function these forests serve.

Environmental Hazards

Red Mud Waste - Each year tons of red mud slurry, the waste product of alumina processing, are generated; for each ton of bauxite refined into alumina, one ton of red mud waste is generated. The caustic slurry, composed of aluminum and sodium compounds with some iron impurities, is stored in abandoned mine pits or natural hollows measuring 5 to 100 acres, with almost no precautions against infiltration. Infiltration and contamination of the nearby aquifers has rendered the water unusable for domestic, and agricultural applications in many areas. Additionally, the ponds will not support the development of secondary vegetation.

Seismicity

Situated within the seismic zone of the Antillean arc, Jamaica has experienced serious earthquakes in the past, and numerous tremors. The densely populated Kingston area experiences approximately 20 tremors annually.

Water Shortage

The Kingston metropolitan water catchment area is in the third year of a significant shortfall in rain. This has necessitated water shut-offs in major areas of Kingston to conserve water.

Most informed observers project that population growth and the increased growth and requirements of industry and agriculture will raise the demands for water during the next two decades so rapidly as to outpace the supply, whether or not rainfall deficiencies occur. Thus chronic shortages can be expected, acting as a constraint on development.

2.3 Disaster History

Jamaica has a history of disasters caused by hurricanes, earthquakes, and floods. Hurricanes, the most recurrent disaster type, cause extensive and repeated damage to the agricultural sector. The following lists only some of the most devastating disasters which have occurred since 1692 (when an earthquake caused the capital city to slip into the sea).

Selected Major Disasters

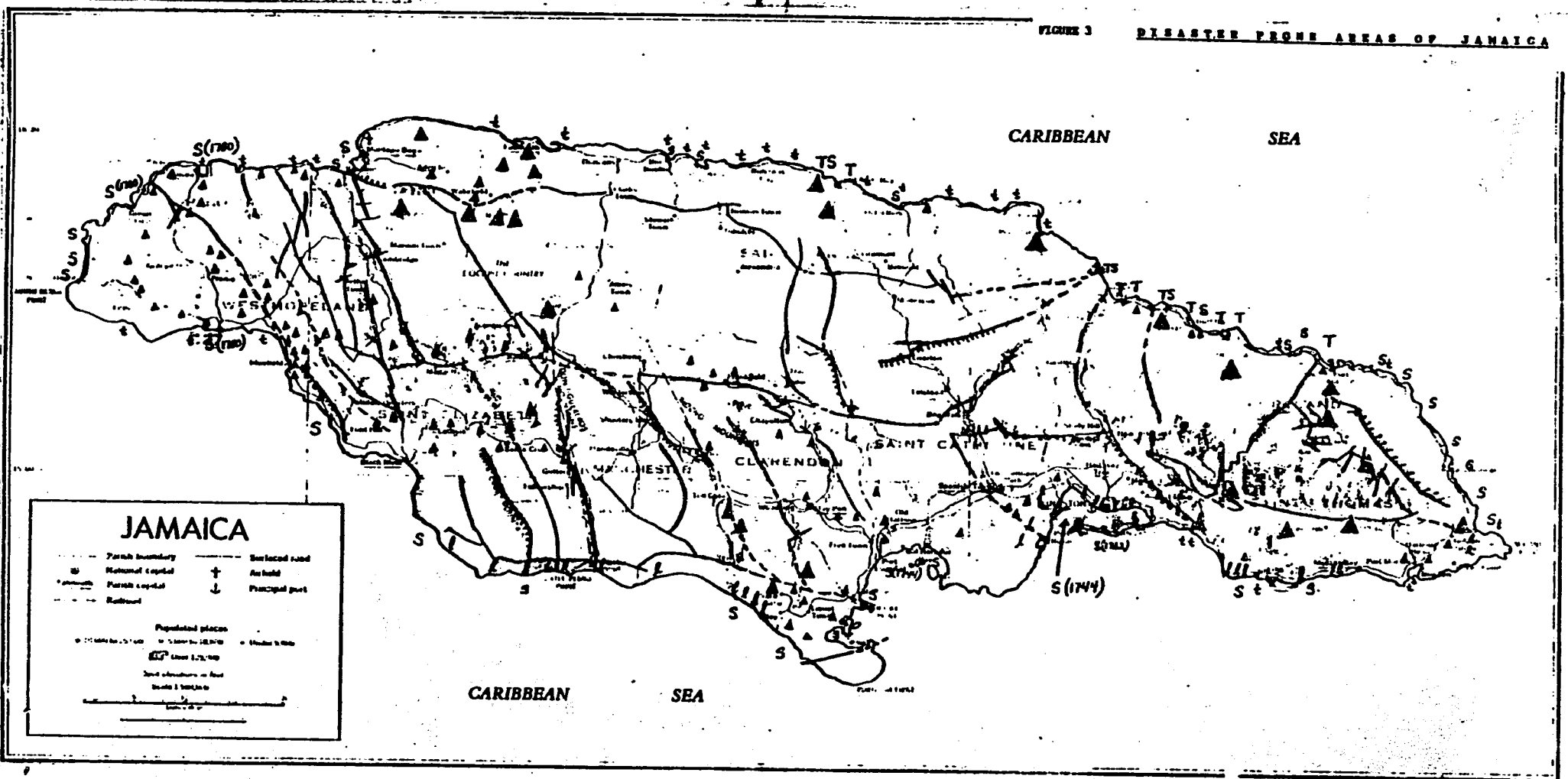
<u>Date</u>	<u>Disaster Type</u>	<u>Location</u>	<u>Number Killed</u>	<u>Number Affected</u>	<u>Damage (\$000)</u>
1692	Earthquake & Tsunami	Islandwide St. Ann's Bay	2,000	n.a.	n.a.

Date	Disaster Type	Location	Number Killed	Number Affected	Damage (\$000)
1722	Hurricane & Tidal Surge	Fort Royal, Queenstown	400	n.a.	n.a.
1780	Hurricane & Sea Wave	Savanna-la-Mar & West Coast	300	n.a.	n.a.
1850	Cholera Epidemic	Urban areas	32,000	n.a.	n.a.
1907	Earthquake	Kingston & Port Maria	1,200	90,000	n.a.
1912	Hurricane Tidal wave	Western Parishes Savanna-la-Mar Montego Bay	142	n.a.	n.a.
1933	Flood	Kingston-St. Andrew	53	n.a.	n.a.
1933	Hurricane	Western Parishes	10	n.a.	n.a.
1944	Hurricane	Portland, St. Thomas, Kingston, St. Mary	26	n.a.	n.a.
1951	Hurricane	South Coast	154	20,000	\$20-50,000
1957	Earthquake	St. James & Western Parishes	3	n.a.	n.a.
1968	Drought	Nationwide	n.a.	100,000	\$56,000
10/19/73	Tropical Storm	Kingston & entire island	6	2,500	\$1,700
1976	Civil Strife	Kingston	n.a.	60,000	n.a.
1977	Dengue Fever	Widespread			
6/79	Flood	Western Jamaica	39	160,000	n.a.
8/4/80	Hurricane	North Coast	9	10,000	\$30,000
5/20/80	Fire/Accident	Kingston	187	n.a.	n.a.
1/81	Fire	Esso Plant, Montego Bay	n.a.	n.a.	\$14,000

Source: Office of Disaster Preparedness and Emergency Relief Coordination, and Office of U.S. Foreign Disaster Assistance Disaster History.

FIGURE 3

DISASTER PRONE AREAS OF JAMAICA



Legend

Major fault

Major fault scarp

Inferred fault

S Destructive storm surge potential

S(1780) Reported storm surge, (year of occurrence) parentheses.

L High liquefaction potential

L Historical record Liquefaction effects

T Historical record of Tsunami (tidal waves)

t Moderate Tsunami potential

Major flood prone areas

Reported flood events

## 2.4 Vulnerability of Infrastructure

### Principal Highways, Airports, Ports

The road network is extensive throughout the island, however, the principal roads connecting the north and south coasts are limited to narrow two-lane highways, with little or no shoulders. The two principal north-south routes cross through the mountains carrying all the commercial traffic between Kingston and the northern population centers of Ocho Rios, Port Antonio, and Montego Bay. Twisting along an interior fault line, the roads wind their way through small towns to the coast. The potential for traffic accidents including those involving tanker trucks carrying volatile materials is great. Similarly, the ability of fire and other emergency vehicles to reach the scene of an accident is hindered by the congestion and limited passing area. The roads are overall well-maintained, being hard-surfaced the entire perimeter and on the three north-south routes. Secondary roads are hard surfaced around the larger towns, but are primarily marl (a local stone) in other areas. During the dry season these roads are quite passable. However, rain can cause large potholes to form on the unpaved secondary roads, some big enough to engulf a car. During heavy rains, even the hard-surfaced roads become dangerous as they flood quickly.

The road along the north coast is built close to the sea at many points and is therefore vulnerable to flooding and tidal surges. The southern coast road from Kingston to Negril runs through the agricultural plain until it returns to the coast at Black River. From Black River to Negril the road parallels the coast; it was this area that experienced substantial damage from the June 1979 floods. Several parts of the road were completely washed away and the force of the water carried away the foundations of several small bridges. The roads here have been repaired and some of the worst hit were elevated and rerouted several feet inland.

### Airports

Jamaica's two principal airports are Norman Manley International in Kingston and Sir Donald Sangster in Montego Bay. Numerous smaller and private airstrips serve specialized communities (e.g., bauxite company personnel). The Kingston Airport is situated on a narrow peninsula that parallels the shore to form one of the best natural harbors in the world. However, because the strip of land is so narrow, the road to the airport is at sea level its entire length, making it highly vulnerable to flooding and liquefaction.

Airport accidents are a concern. The airport in Kingston maintains its own fire brigade, with some specialized equipment.

### Hospitals

Hospitals and health centers serve vital functions at all times, but especially during disaster relief operations. (See section 3.5, Medical

Facilities, for a list of hospitals and health centers.) A serious problem facing the hospitals throughout the island is that of electricity supply. Very few hospitals have the standby generators required to enable them to operate when the electricity fails. Power outages of short or long duration are not uncommon in the Kingston-St. Andrews Corporate area during non-emergency periods. Heavy rains or high winds can easily knock out power and communications lines, most of which are above ground. The Office of Disaster Preparedness has equipped the major hospitals with CB radios to address the communication problem; however, the need for alternate electricity generators is being met only through local private fund raising activities, including collections in the churches.

### Communications

The communications network is highly vulnerable to almost any kind of natural disaster in Jamaica. Most telephone lines are laid above ground thus exposing the system to disruption from hurricane winds, rains, and earthquakes. Because the telephone system would almost surely be inoperable following a major storm or other disaster, other communication systems would be required.

The VHF system is effective and reliable as long as the strategic repeater stations remain in operation. During Hurricane Allen in 1980 four repeaters were put out of commission in the eastern third of the island by the high winds. As a result, stricken communities were isolated from central government relief agencies. CB radios have limited applicability for maintaining nationwide communications because of their very short range, especially in poor weather conditions; however, if there are enough CB radios in operation short distances from each other, they can serve as a valuable communications link within a disaster-stricken parish. (See section 3.1, Parish Plans.)

In the event of disaster, it is the commercial radio network which is relied upon to broadcast early warnings, hurricane alerts and watches, and to communicate all guidelines and messages from the central relief coordinators. The commercial stations (see 3.4, Host Resources, for list of stations) are also dependent upon repeater stations and so are vulnerable to disruption.

### Utilities

Electricity, gas, water, sewerage systems - all will be locally affected by a serious emergency. In heavy downpours, electricity lines are among the first to be disrupted. Overloading of existing drainage gullies (sometimes additionally burdened by accumulated trash), combined with substandard drainage systems in many concentrated urban areas, can lead to serious flooding in some areas after a moderate to heavy rain. In some instances, flooding can cause sewerage systems to back up producing a potential health hazard. Another result is intrusion or contamination of the potable water system by sewage.



Water systems vary throughout the island. The Kingston-St. Andrews Corporate area is served by a series of five discrete reservoir systems, interconnected by narrow couplings at a few points. During the periodic droughts to which Kingston is prone, the water authorities have introduced rationing schemes or "lock-outs," rotating periods during which water is cut off to certain parts of the system for a few hours at a time. As administered, there is no regularity to the scheduling or duration of the lock-outs. However, once water is reintroduced to the locked-out area, the accumulated pressure within the system produces burst pipes in many parts of the city. In addition, the variations in water pressure expose the entire municipal system to possible intrusion of contaminants.

In the western third of the island following the June 1979 floods, health officials were fearful that the major disruption of the sewerage and water systems would result in a large-scale health problem with possible epidemic levels of typhoid. However, despite the severity of the flooding, no health problems related to water contamination developed, principally because the force of the rains carried the sewage straight out to sea in most areas. In New Market, however, the entire population was forced to evacuate when the flood waters failed to recede, even as much as six months after the storm.

In most rural areas, water is collected from stand pipes located along the road. These sources could be disrupted by landslides or earthquakes, which would likely rupture the supply lines. In the drier southwestern areas, water tanks are used to collect and store water for the dry period. While most of the stored water is used for irrigation, it is a potential source of potable water in the event of a disaster. (Now in its third year of drought, however, the southwest and KSAC area cannot count on finding much water stored in such tanks.)

#### Buildings - Residential and Commercial

For a comprehensive study of vulnerability of the housing sector in Jamaica, see Improvement of Vernacular Housing in Jamaica to Withstand Hurricanes and Earthquakes, prepared by Intertect for OFDA in October 1981 and available in the OFDA library. This detailed report describes popular housing construction styles, and analyses their ability to withstand hurricane force winds and low and high intensity earth movement caused by earthquakes. Mitigation measures to reduce the damage to existing structures and new construction are described. The most frequent damage to housing during a hurricane is the loss of the roof. One of the most basic mitigation techniques is the installation of metal straps to securely fasten the roof to the structure below.

Other hazards to buildings include inundation from storm surges in coastal areas, flooding in low-lying or poorly drained areas, and mud and landslides in unstable soil areas. The vulnerability to construction situated in areas prone to these hazards is high. (See Figure 3, Disaster Prone Areas of Jamaica.)

The Office of Disaster Preparedness has initiated a study of housing vulnerability nationwide to identify the location and construction type of the most vulnerable structures. Questionnaires distributed to each parish also request information on the type and location of buildings, facilities, and infrastructure which have been damaged by floods in the past or recently constructed in areas that have been flooded in the past. This data will provide a fairly reliable base from which to develop further land use and zoning guidelines.

3. Disaster Preparedness and Assistance3.1 Jamaica Disaster Plan

In 1980, the Government of Jamaica established the Office of Disaster Preparedness and Emergency Relief Coordination (ODP) within the Office of the Prime Minister to coordinate disaster prevention, preparedness, and emergency relief operations nationwide. ODP operates as a part of the Prime Minister's Office and interacts extensively with the Planning Departments, Ministry of Construction, Agriculture, and others engaged in development and relief.

Office of Disaster Preparedness and  
Emergency Relief Coordination (ODP)  
2a Devon Road  
Kingeton 10  
Tel: 809/929-4400 to 04

Franklin McDonald  
Director

Keith Ford  
Head  
Research and Planning

Suzanne Haik  
Head  
Public Education and Training

ODP is the coordinating office for all disaster preparedness and relief operations in Jamaica. In this capacity, its most critical function is not that of directly providing relief, but in developing and mobilizing existing resources, at the national and parish levels to anticipate and plan for disasters. ODP is therefore organized into three divisions: Planning and Research; Preparedness and Emergency Operations; and Public Education, Information and Training. The Planning and Research Branch is engaged in developing a comprehensive picture of Jamaica's disaster vulnerability - pinpointing those areas judged to be most vulnerable to various types of disasters, and identifying mitigation measures which can be implemented to reduce the identified risks. This branch is gathering data from the parishes on the extent of damage, cost of repair, and availability of local resources during past major disasters. This information will be pooled with current figures received from the ministries on the distribution and availability of reconstruction equipment and materials likely to be needed following a large-scale disaster. Planning and Research also works to promote disaster awareness, and consequent mitigation among the ministries engaged in planning and effecting Jamaican development projects as well as among the professional societies, Bureau of Standards, land-use and other development planners.

The Preparedness and Emergency Operation Branch works directly with the national ministries, Parish Disaster Committees, and voluntary organizations to develop and maintain assessments of risk and vulnerability, resources available for relief, and communications systems to ensure continuous contact before, during, and after an emergency. Preparedness and Operations staff travel throughout the island to work with the local Parish Disaster Committees in developing a comprehensive coordinated plan for providing local relief. This decentralized approach is designed to ensure that the local community will be able to meet their immediate needs during the first 72 hours of a major disaster, the period during which national relief agencies may be unable to reach the area.

The Public Education and Training Branch is engaged in an ongoing program to educate the national population about the dangers and risks associated with the various disasters to which Jamaica is prone, and to inform them of preparedness and mitigation measures they can take to reduce these risks. Programs in the local schools, civic associations, and voluntary agencies use films, speeches, and training materials to promote awareness of the hazards, the need for preparedness, the meaning of early warnings, and practical measures to improve the safety of the population.

ODP maintains detailed inventories of the resources available throughout the country for disaster relief operations. See section 3.4, Host Resources.

#### Ministry Plans

The emergency relief operations of the various ministries would be coordinated through the National Disaster Committee during a national disaster. However, individual ministries have been encouraged to develop emergency command centers and procedures for activating the centers during the critical phases of emergencies. The Ministry of Health has developed such a plan. Other ministries with a potential role during emergency situations, i.e., Construction (Housing & Public Works), Public Utilities, National Security, and Local Government, have developed ad hoc methods of addressing these situations. The Directorate of Housing in the Ministry of Construction maintains a large store of prefabricated housing construction supplies which could be dispersed if necessary. The Directorate of Maintenance produces a monthly report on the national distribution and condition of all its equipment (trucks, front-end loaders, rollers, graders, pick-ups, etc.).

#### Parish Plans

Each parish in Jamaica has established a Parish Disaster Committee which is composed of: the Mayor; Deputy Mayor; Parish Councillors; Secretary; Senior Police; Fire Brigade; Medical, and Poor Relief Officers; the Superintendent of Roads & Works; the Parish Managers of Central Government Ministries; and representatives of voluntary agencies active in the parish; the private sector, ham-radio and CB radio clubs or operators, and the Jamaican Information Service. Each Parish is developing a parish

Disaster Plan which details all arrangements necessary to cope with the effects of a natural or man-made disaster within the parish. At this writing, all 12 parishes and the Kingston-St. Andrews Corporation have submitted initial Parish Plans and Contact Lists to ODP. The Contact Lists are updated periodically and submitted to ODP.

The Parish Plan calls for the establishment of an Emergency Operations Center in an accessible, relatively disaster-proof structure to serve as the headquarters for all relief operations. The parishes are now identifying sites for potential shelters, estimating numbers of people likely to require assistance, and establishing alternate communication networks for use following a disaster. Copies of the initial plans are on file at ODP.

Parish Disaster Committees Contact List

<u>Parish</u> KSAC	<u>Mayor</u> Ms. Coleen Yap	<u>Tel Nos.</u> 922-6053 (Direct)	<u>Dep. Mayor</u> Mr. Ina Ashman
	<u>Secretary</u> Mr. J.J. Clarke (Town Clerk)	<u>Tel Nos.</u>	<u>Asst. Sec.</u>
	<u>Supt. Roads &amp; Works</u> Mr. Hodelin	<u>Disaster Coord.</u>	<u>Tel Nos.</u>
<u>Parish</u> St. Thomas	<u>Mayor</u> Noel A. Flemmings	<u>Tel Nos.</u> 982-2270, 7276 2227/2321	<u>Dep. Mayor</u> Dudley H. Barclay
	<u>Secretary</u> Mr. Grant	<u>Tel Nos.</u> 982-2513	<u>Asst. Sec.</u> N. Davis Ms. Quarrie
	<u>Supt. Roads &amp; Works</u> E.M. Jarrett	<u>Disaster Coord.</u> Miss H. Mitchell	<u>Tel Nos.</u> 982-2227 926-4705 (H)
<u>Parish</u> Portland	<u>Mayor</u> Gerald A. Tucker	<u>Tel Nos.</u> 983-2665, 2765	<u>Dep. Mayor</u> Bertran Manahan
	<u>Secretary</u> Mr. Fielding	<u>Tel Nos.</u> 993-3188	<u>Asst. Sec.</u>
	<u>Supt. Roads &amp; Works</u> A. Ho Sang	<u>Disaster Coord.</u>	<u>Tel Nos.</u>

<u>Parish</u> St. Mary	<u>Mayor</u> Mrs. H. Knight	<u>Tel Nos.</u> 994-2288, 2280	<u>Dep. Mayor</u>
	<u>Secretary</u> Mr. F. Nicholson	<u>Tel Nos.</u>	<u>Asst. Sec.</u> Mr. L. Fielding
	<u>Supt. Roads &amp; Works</u> O. Serjue	<u>Disaster Coord.</u> Walter G. Brady	<u>Tel Nos.</u> 994-2288
<u>Parish</u> St. Ann	<u>Mayor</u> Derrick L. Frater	<u>Tel Nos.</u> 972-2615	<u>Dep. Mayor</u> Henry McKenzie
	<u>Secretary</u> Mr. W.F. Solomon	<u>Tel Nos.</u>	<u>Asst. Sec.</u> Mr. Osborne Mr. D.D. Hay
	<u>Supt. Roads &amp; Works</u> S. Martin	<u>Disaster Coord.</u> Mr. D.D. Hay	<u>Tel Nos.</u> 972-2615
<u>Parish</u> Trelawny	<u>Mayor</u> Osmond E. Hillock	<u>Tel Nos.</u> 954-2208	<u>Dep. Mayor</u> Aston Gordon
	<u>Secretary</u> Mrs. Ramdatt	<u>Tel Nos.</u> 954-2228	<u>Asst. Sec.</u> Miss Corbett
	<u>Supt. Roads &amp; Works</u> T. Brown	<u>Disaster Coord.</u> Mrs. Flora Ramdatt	<u>Tel Nos.</u> 954-2208, 2228 954-2294 (H)
<u>Parish</u> St. James	<u>Mayor</u> Shalmanezzer Scott	<u>Tel Nos.</u> 952-5500, 5502	<u>Dep. Mayor</u> Princes E. Vernon
	<u>Secretary</u> Mrs. Forsythe	<u>Tel Nos.</u>	<u>Asst. Sec.</u> Mr. L. Cassis
	<u>Supt. Roads &amp; Works</u> F. O'Meally	<u>Disaster Coord.</u> Mr. Shalmanezzer Scott	<u>Tel Nos.</u> 952-5500 952-4510 (H)

<u>Parish</u> Hanover	<u>Mayor</u> Mrs. Zena Stanhope	<u>Tel Nos.</u> 956-2212	<u>Dep. Mayor</u> Darius Holt
	<u>Secretary</u> Mr. E. Liundo	<u>Tel Nos.</u>	<u>Asst. Sec.</u> Mr. E. Grant
	<u>Supt. Roads &amp; Works</u> R. Small	<u>Disaster Coord.</u> Mr. E. Liundo	
<u>Parish</u> Westmoreland	<u>Mayor</u> Sebert Davis	<u>Tel Nos.</u> 965-2615/2798	<u>Dep. Mayor</u> Wilbert Sirjue
	<u>Secretary</u> Ms. E. Innerarity	<u>Tel Nos.</u> 955-2797	<u>Asst. Sec.</u> Mr. H. Williams
	<u>Supt. Roads &amp; Works</u> C. Fennel	<u>Disaster Coord.</u> Ms. E. Innerarity	
<u>Parish</u> Manchester	<u>Mayor</u> C. C. Charlton	<u>Tel Nos.</u> 962-2278	<u>Dep. Mayor</u> George Marshall
	<u>Secretary</u> Mr. O. Hammond	<u>Tel Nos.</u>	<u>Asst. Sec.</u> Mrs. H. Brown
	<u>Supt. Roads &amp; Works</u> N. Lovemore	<u>Disaster Coordinator</u> Cornel Helps	
<u>Parish</u> St. Catherine	<u>Mayor</u> Everrod Williams	<u>Tel Nos.</u> 984-3111-2	<u>Dep. Mayor</u> Henry Tinker
	<u>Secretary</u> Ms. Joyce Bolton	<u>Tel Nos.</u> 984-3113	<u>Asst. Sec.</u> Mrs. Lawrence
	<u>Supt. Roads &amp; Works</u> R. Osbourne	<u>Disaster Coord.</u> Ms. Joyce Bolton	

<u>Parish</u> Clarendon	<u>Mayor</u> Canute T. McLeod	<u>Tel Nos.</u> 986-2234	<u>Dep. Mayor</u> Basil Lindsay
	<u>Secretary</u> Mr. H. Freeman	<u>Tel Nos.</u> 966-2403	<u>Asst. Sec.</u> Mrs. Hammond Mrs. Morgan
	<u>Supt. Roads &amp; Works</u> L. Campbell	<u>Disaster Coord.</u> Mrs. C. Hammond	

3.2 Office Of Disaster Preparedness (ODP) Resources

The Office of Disaster Preparedness (ODP) is the principal coordinating office for all disaster preparedness and relief activities. This office maintains detailed inventories of the resources required and available during a disaster.

In addition to the specific resource listings below, ODP maintains lists of commercial suppliers of communications equipment (printing, public address systems, mobile and hand-held radios), pharmaceutical and shelter supplies, household utensils, portable lighting units, generators, water storage units, water treatment equipment, bandages, bedding, medical supplies, food, transportation and evacuation equipment, fire stations, salvage and recovery services.

The briefing room at ODP displays a large map of the island indicating the location of critical services. Included are locations of hospitals (with number of beds), location of repeater stations, military installations, fire and police stations, and electric generating plants.

3.3 Medical Facilities

Public Hospitals

<u>Parish</u>	<u>Public Hospitals</u>	<u>Beds</u>	<u>Phone</u>
St. Thomas	Princess Margaret	165	982-2304/2371
	Isaac Barrant	64	982-2366



<u>Parish</u>	<u>Public Hospitals</u>	<u>Beds</u>	<u>Phone</u>
K.S.A.C.	National Chest	232	927-7121
	KPH	453	922-0210
	VJH	185	922-1700
	Bellevue	1,600	928-1380
	HHC	260	926-5721
	Univ. of West Indies	135	927-6624
	Hope Institute	52	927-7209
	Mona Rehab	120	927-9911
Portland	Port Antonio	112	993-2646
	Buff Bay	110	996-2232
St. James	Cornwall Regional	262	952-5100
Clarendon	May Pen	71	986-2528
	Lionel Town	70	986-3226
	Chapelton	121	987-2215
	Spauldings (Percy Junior)	163	964-2322
Manchester	Mandeville	128	962-2040
	Hargreaves - Private	25	962-2040
St. Catherine	Spanish Town	144	984-2623
	Linstead	135	985-2241
St. Elizabeth	Black River	128	965-2212
St. Mary	Port Maria	120	994-2312
	Annotto Bay	117	
Westmoreland	Savanna-la-Mar	197	955-2533
St. Ann	St. Ann's Bay	130	972-2272
	Alexandria	35	975-2372
Trelawny	Falmouth	102	954-2250
	Ulster Spring	33	
Hanover	Noel Holmes	111	956-2233

Private Hospitals

1. Nutthall Memorial Crossroads 926-2139 - 46 general beds
2. St. Joseph's Vineard Town 928-4955 - 24 maternity beds
3. Community Medical Associates 926-1400 - 60  
Half-way Tree Rd.
4. Andrews Memorial Hospital 926-7401 - 50
5. Reynolds Jamaica Mines operates a health facility at its plant in Lydford, St. Ann. The facility is staffed by a doctor and three nurses, is equipped with x-ray equipment, and provides out-patient care and performs minor surgery.
6. ALCAN Partners of Jamaica operates a primary care facility with two doctors, several nurses, and three ambulances.
7. Three private clinics in Clarendon include: Alcoa (986-2561) - nurses, doctors available by request; Monymons (986-2231) - full time doctor, nurses, pharmacist; New Yarmouth 986-2521 - no full time medical staff.

ODP maintains a current list of local health departments and health centers, organized by parish, with phone numbers.

Health Centers

<u>Parish</u>	<u>Type 1</u>	<u>Type 2</u>	<u>Type 3</u>	<u>Type 4</u>	<u>Type 5</u>
St. Thomas	12	4	4		
KSAC	22	8	17	1 (U.W.I.)	1
Portland	10	4	2		
St. James	15	9	5		
Clarendon	25	10	9		
Manchester	19	7	6		1
St. Catherine	15	10	7		
St. Elizabeth	15	8	7		
St. Mary	22	7	5		
Westmoreland	12	5	6		
St. Ann	18	7	5		
Trelawny	10	6	2	1	
Hanover	13	7	2	1	

## 3.4 Airports

Aerodromes Listed with Civil Aviation Dept.

<u>Name</u>	<u>Parish</u>	<u>Runway Length</u>		<u>Surface</u>	<u>Status</u>
		<u>Elev. Ft.</u>	<u>Ft.</u>		
Appleton	St. Eliz.	425	2100	Marl & Grass	Private Oper.
Boscobel	St. Mary	90	3000	Asphalt	Minor Pub. Oper.
Braco	Trelawny	10	2800	Grass	To Be Decommissioned
Caymans Estate	St. Cath.	280	2200	Asph.	Private Oper.
Discovery	St. Ann	30	1500	Asph.	Private Oper.
Duckenfield	St. Thomas	10	2500	Grass	Private Oper.
Ewarton	St. Cath.	600	2200	Asph.	Private
Frome	Westmoreland	60	2300	Marl	Private
Holland	St. Eliz.	50	2050	Grass	Private
Ken Jones	Portland	6	3000	Asph.	Minor Public
Kirkvine	Manchester	1200	3000	Asph.	Private Restricted
Llandovery	St. Ann	-	2000	Marl & Grass	Private Restricted
Lydford	St. Ann	1200	1800	Marl & Grass	Private Open
Marlborough	Manchester	2450	2175	Marl & Grass	Private Open
Nair	St. Eliz.	550	2000	Asph.	Private Open
Negril	Hanover	4	2164	Asph.	Min. Pub. Restricted
Norman	Kingston	10	8565	Asph.	Major Public Open
Manley I. Port	St. Cath.	3	1200	Grass	Private
Esquival					
Sangster I.	St. James	3	8700	Asph.	Major Public Open
Sweet River	Westmoreland	100	2300	Marl & Grass	Private Restricted
Silent Hill	Manchester	2500	1900	Asph.	Private Restricted
Tinson Pen	St. Andrew	15	3000	Asph.	Minor Public Open
Tulloch	St. Cath.	300	1800	Marl & Grass	Private Restricted
Unity	St. Mary	370	1600	Asph.	Private Restricted
Vernamfield	Clarendon	100	4000	Concrete	Minor Public Open
Camp	St. Andrew	200	2400	Dirt & Grass	Military
Moneague	St. Ann	1200	1200	Asph. & Grass	Military

\* Prior permission required from owners of those aerodromes listed as private.

Additional specifications are available at ODP.

Military Installations

Up Park Camp, Kingston - main JDF Base has 1,200 ft. airstrip.

Other installations at: New Castle, Port Antonio, Port Maria, Moneague (has airstrip 1,200 ft.), Mandeville, Montpelier (has 1,200 ft. strip), Montego Bay (located at old airport).

3.5 Communications

Local citizen's band (CB) clubs, mobile radio units of the Ministry of Public Works, Transportation, and the Fire Brigade, and the Jamaican Defense Force radio network will be the principal alternate communications media if normal telephone communication fails. CB clubs are organized throughout the island and have been integrated into the individual Parish disaster plans. The following is a list of clubs and the parishes in which they operate. Phone numbers and addresses of contact persons for each club are on file at ODP.

Western Star CB Assoc. - Westmoreland, Hanover  
 Citizen Band Operators of Portmore - Portmore, W. Kingston  
 POTCOM - Portland, St. Thomas  
 Western Citizens Band Assn. - St. James, Trelawny, Hanover  
 Eastern Citizens Band Assn. - St. Thomas  
 St. Elizabeth Citizens Band Assn. - St. Elizabeth  
 Spanish Town CB Radio Assn. - St. Catherine  
 SECOM - St. Mary & St. Ann  
 Linstead CB Assn. - St. Catherine  
 Central Citizens Band Club - Manchester, St. Elizabeth, Clarendon  
 Clarendon CB Club - Clarendon  
 Citizens Band Radio Assn. (CIBRA) - Westmoreland  
 North East St. Elizabeth CB Assn. - St. Elizabeth  
 Mountain Range CB Assn. - E. Kingston, Harbor View, St. Thomas

The Public Works Division maintains an island-wide communications system to track their equipment in the field. A complete list of stations, repeaters, and call numbers is on file at ODP. The Fire Brigade operates on a frequency of 158.775 mhz (VHF) from its base station in York Park, and through nine substations, as well as a number of mobile units in the Brigade's vehicles. The Traffic Department in Kingston also has a comprehensive system which operates on frequency 169.255 (T) and 173.725 (R) and connects the Mayor with the principal corporate offices through substations and mobile units.

Jamaica Telephone Company has developed a set of procedures for hurricane emergencies (a copy is on file at ODP), and Jamintel Company Ltd., the international telephone company, has prepared Guidelines for Disaster Emergency Contingency Planning. The plans focus on restoring the network following a disaster.

ODP Communications System - ODP presently operates both a CB system and a VHF system from its base at Devon Road. Staff vehicles are equipped with a VHF through which they maintain communication with headquarters while in the field. ODP has placed CB radios in the major hospitals in order to be able to communicate with the emergency health care personnel 24 hours a day. (Unfortunately, to date this system has not proven reliable because the radios, viewed as valuable property, have been locked up after normal working hours, to prevent their theft. This renders the "emergency" communication system inoperable during non-business hours.)

ODP will soon acquire several single-side band (SSB) radios, self-contained portable units which will be distributed around the island to establish a nationwide emergency communications net. SSB radios are the most reliable communications medium during emergency situations when other repeater dependent systems (including the JDF's) can fail.

#### Parish Disaster Communications Systems

As a permanent and regular part of each Parish Disaster Plan, the local CB radio club runs a test of the emergency communications system at a set time one day each week. The CB net has a range of between 5 and 15 miles depending upon the terrain, weather, and time of day.

The parishes are also exploring the creation of other alternate communications systems. Working through local youth groups, several parishes are recruiting owners of motorcycles and mopeds to serve as emergency couriers during disaster situations. These small vehicles can more easily traverse blocked roads than larger cars or trucks, and can therefore carry messages between a disaster site and the national relief center.

#### 3.6 Road Clearing and Construction

The Directorate of Maintenance in the Ministry of Construction (Works) is responsible for maintaining the roads throughout the island. The Directorate operates 67 stations or substations with seven regional headquarters: Savanna-la-Mar, Montego Bay, Mandeville, Richmond, Spanish Town, and two in the Kingston-St. Andrews Corporate area. Equipment is concentrated in the areas of greatest traffic density and use, but is less than adequate in all stations. At any one time, at least 60 percent of the equipment is out of service.

3.7 Search & Rescue Services

Jamaica Defense Force  
 HQ Up Park Camp  
 Kingston 5  
 926-8121-8

Police Canine Div.  
 Harmon Barracks  
 928-1095, 96

Coast Guard HMJS Cagway  
 Port Royal  
 Kingston 1  
 928-7873-7874-7626

Recompression Chamber  
 U.W.I. Marine Biology Lab.  
 Discovery Bay  
 Dr. Woodley 973-2241

Marine Police Div.  
 New Port East  
 922-3176

U.S. Coast Guard  
 7th. District Miami  
 305-350-5611

3.8 Fire Services

The fire service in Jamaica is decentralized; each parish maintains its own fire brigade, equipment, facilities, and staff. Training is conducted on-the-job by the station fire chief. There is little or no compatibility of equipment between parishes because the equipment at the respective fire stations has been acquired from different foreign suppliers. As a result, when a large-scale fire requires a coordinated collective response, the hose fittings, couplings, and engines of the various responding fire companies are often incompatible.

The lack of a single national fire service has caused some delays in the local release of equipment needed during a major fire. Because there is no single chain of command or authority, individual fire brigades are under no obligation to provide support to fires outside their jurisdiction.

3.9 Public Information

Mr. Ken Williams  
 Jamaica Information Service  
 58 a. Half-Way Tree Rd.  
 Kingston 10  
 926-3740

Radio Jamaica (RJR)  
 32 Lynhurst Rd.  
 Kingston  
 926-1100

Jamaica Broadcasting Corp.  
 News Room  
 5 South Odeon Ave.  
 Kingston 5  
 926-3535

Gleaner Co. Ltd.  
 7 North St.  
 Kingston  
 922-3400

3.10 Voluntary Agencies

After a period of recession, voluntary agencies in Jamaica are reemerging as a powerful and effective resource for disaster preparedness and relief. Through the cooperative efforts of ODP and the leading voluntary agencies, the voluntary services sector has established a Disaster Planning Committee which meets every month. Represented at the meetings are the Jamaican Red Cross, the Girl Guides, Catholic Relief Services, Seventh-day Adventist World Service, the Salvation Army, the Caribbean Conference of Churches, the Hyacinthe Lightbourne Nursing Society, the Boy Scouts, the St. Johns Ambulance Brigade, the Jamaica Combined Cadet Force, and the Council on Voluntary Social Services, an umbrella organization representing approximately 50 voluntary agencies (YMCA, Women's Federation, Royal Lifesaving Society, etc.). These organizations are working together to develop a coordinated plan for voluntary agency support during a disaster, by identifying their respective resources and assuming and allocating responsibilities accordingly. They are initiating training programs for themselves and their respective memberships, providing forums for disaster awareness presentations, and mobilizing their constituencies to be ready to assist in a time of emergency.

ODP is working closely with these voluntary agencies to support their planning efforts at the national level, and encourage expanded activity, recruitment, and training at the parish level.

The following is a list of local voluntary agencies with contact persons and telephone numbers where available:

Jamaica Red Cross  
Yvonne Clarke, Franklin Smith  
76 Arnold Road  
Kingston 5  
Tel: 809/926-7861

Catholic Relief Services  
Donald L. Carcieri, Program Director  
10 Emerlad Road  
Kingston 4  
Tel: 809/922-4309

Council of Voluntary Social Services  
Miss Elsie Sayle

Church World Services  
Caribbean Conference of Churches  
Celina Tapper  
P.O. Box 527  
Kingston 10  
Tel: 809/926-7007

Salvation Army  
153-B Orange Street  
P.O. Box 153  
Kingston 10  
Tel: 809/929-6910/12, 13

Mennonite Central Committee  
Ron & Elaine Braun, Directors  
29 Windsor Avenue  
Kingston 5

Mennonite Economic Development Associates  
Barrington Shand, Chairman  
The MEDA-Jamaica Committee  
Retreat Post Office  
St. Mary, Jamaica

Jamaica 4-H Clubs  
95 Old Hope Road  
Kingston 6

Project Hope  
David E. Edwards, Program Director  
P.O. Box 1600  
Kingston  
Tel: 809/926-5915

Seventh-day Adventist World Service  
H.R. Bennett  
P.O. Box 22  
Mandeville  
Tel: 809/962-2284

YWCA of Jamaica  
Elaine Rainford, National General Secretary  
2H Camp Road  
Kingston 5  
Tel: 809/928-3023

Hyacinthe Lightbourne Society  
Nurse Mavis Llewelyn  
809/927-9575

St. John's Ambulance Brigade  
A.C. Folkes  
809/926-7656

Jamaica Girl Guides  
Mariella Abrams  
Tel: 809/926-6277



Jamaica Scouts Association  
Aron Lander  
Tel: 809/926-7209

International Organizations

UNICEF

Imperial Life Building  
60 Knutsford Blvd.  
P.O. Box 305  
Kingston 5  
Tel: 809/926-7584  
Tx: 2361

Christian Action for Development in the Caribbean (CADEC)  
P.O. Box 527  
14 South Avenue  
Kingston 10  
Tel: 809/926-7114  
Tx: 2385

3.11 U.S. Mission Disaster Plan

There is no disaster plan for the U.S. Mission in Jamaica. However, the Mission Disaster Relief Officer maintains a close working relationship with the Office of Disaster Preparedness. During past disasters (Hurricane Allen, 1980, Western Flooding, 1979) the USG has worked effectively with the Jamaican Emergency Relief Coordinator. The A.I.D. Mission, through the Office of U.S. Foreign Disaster Assistance, has provided funding for disaster management training for key ODP personnel, as well as for seminars, conferences, and studies coordinated by ODP. The U.S. Mission has a fleet of five trucks (one 3-ton, and four smaller trucks) which could be contributed to a relief effort.

3.12 Mitigation Efforts

The Government of Jamaica has undertaken a major study of the nation's resources and another of its natural hazards. The Ministry of Agriculture's Rural Physical Planning Division is making rapid progress in its program to inventory and analyze the entire island, identifying each hectare of land by soil composition, and current use, the amount of rainfall, and temperature fluctuations.

The aim of this multi-year project is to provide policy makers with the information they need to make informed choices between various development alternatives. Models which indicate what crops will grow best in which part of the country, can be matched to national policy objectives (reduced unemployment and increased foreign exchange) to select optimum development alternatives.

The Office of Disaster Preparedness is conducting a nationwide study to identify and manage Jamaica's natural hazards. As a part of this effort, ODP asked each Parish Council to identify areas within their parish which have historically been damaged during storms, hurricanes, floods and areas which are likely to suffer in the future from such events. From the lists submitted, ODP selected high priority areas for further in-depth study. These were identified as follows:

- a. areas of high population concentration were given priority over other areas;
- b. areas supporting activities important to the regional and national economies were evaluated with priority given to safeguarding the national economy; and
- c. areas slated for future development by the J.I.D.C. were given priority over areas not scheduled for development.

To date, the following priority areas have been targeted for detailed disaster vulnerability analysis:

KINGSTON & ST. ANDREW

Kingston Water Front  
Main Gully Courses  
Rockfort - Paradise Street

PORTLAND

Manchioneal  
Long Bay  
Windsor  
Buff Bay  
The Rio Grande Valley

ST. MARY

Annotto Bay  
Baileys Vale - Port Maria (along the Pagee River)

TRELAWNY

Falmouth  
Wakefield  
Wait-a-bit

ST. JAMES

Montego Bay  
Anchovy  
Reading

ST. ELIZABETH

Maggotty  
New Market  
Middle Quarters  
Lacovia  
Santa Cruz  
Black River

CLARENDON

Alston  
Kellits  
Hayes  
Four Paths  
Race Course  
Milk River  
Lionel Town

ST. CATHERINE

Ewarton  
Old Harbour Bay  
Portmore

JAMAICA

3. Disaster Preparedness and Assistance

HANOVER

Hopewell  
Sandy Bay  
Lucea/West River  
Chigwell

WESTMORELAND

Savanna-La-Mar  
Petersfield  
Whithorn  
Whitehouse

ST. THOMAS

Seaforth  
Poorman's Corner  
Morant Bay  
Port Morant  
Golden Grove  
Bath

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