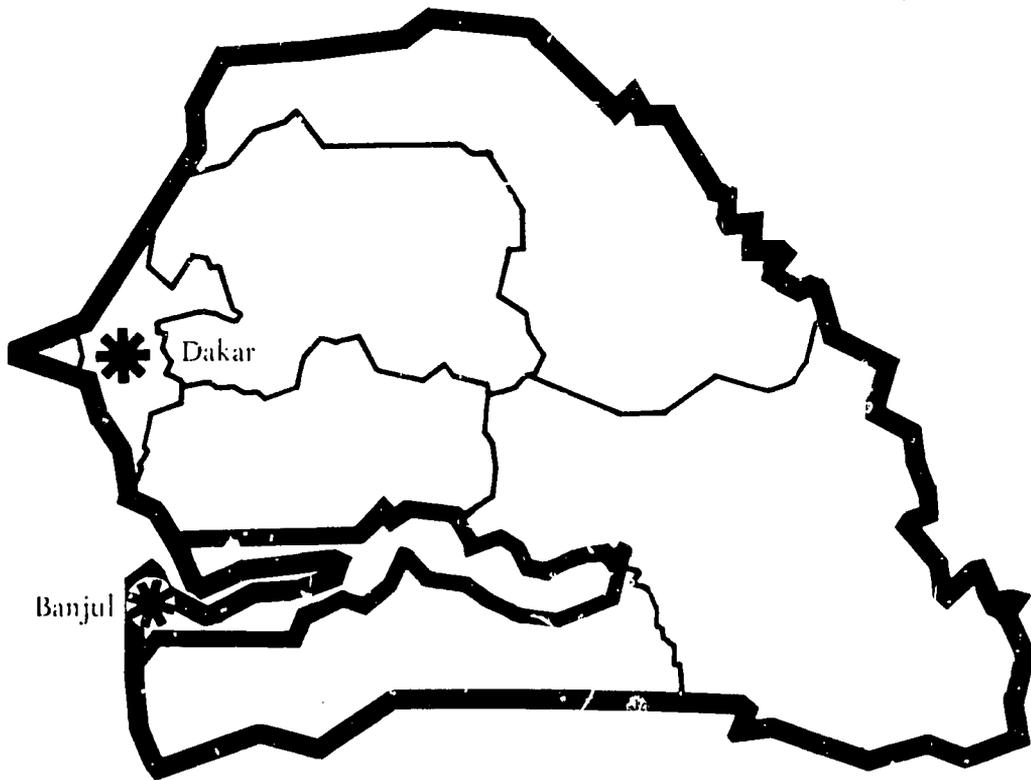


Gambia-Senegal

Country Profiles



April 1982

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

BOUNDARY REPRESENTATION IS NOT NECESSARILY AUTHORITY

Senegal and Gambia

- International boundary
- - - Region (Senegal) or division (Gambia) boundary
- ⊙ National capital
- Region or division capital
- +— Railroad
- Road

0 25 50 75 Miles
0 25 50 75 Kilometers



GAMBIA-SENEGAL: COUNTRY PROFILES

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-0283

The profiles on Gambia-Senegal are part of a series designed to provide baseline country data in support of the planning and relief operations of the Office of U.S. Foreign Disaster Assistance (OFDA). The content, scope, and sources have evolved over the course of the last three years, and no doubt will continue to do so. The relatively narrow focus is intentional. To avoid redundancy, some topics one might expect to find in a "country profile" are not covered here.

If the information provided can also be useful to others in the disaster assistance and development communities, so much the better. Every effort is made to obtain current, reliable data; unfortunately it is not possible to issue updates as fast as changes would warrant. A cautionary note, therefore, to the reader: statistics are indicators at best, and if names and numbers matter, the bibliography will point to a current source.

We invite your comments and corrections. Address these and other queries to OFDA, A.I.D., as given above.

April 1982

OFDA COUNTRY PROFILES: APRIL 1982

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1. General Information1.1 Geographic Codes

AID	635
State region	AF

1.2 Country Names

Official	Republic of The Gambia
Short	The Gambia

1.3 Calendar and Holidays

New Year's Day.....	January 1
Independence Day.....	February 18
Labor Day.....	May 1
Assumption.....	August 15
Christmas.....	December 25
Boxing Day.....	December 26

Moslem and Christian religious holidays with variable dates include: Id-al-Adha, Id-al-Fitr, Mouloud, Good Friday, and Easter Monday.

1.4 Currency

2.18 dalasi = US \$1.00 (March 1982)
100 butut = one dalasi

1.5 Time Zones

GMT or EST + 5

1.6 Host Country Embassy and Staff in U.S. (November 1981)

Embassy of the Republic of The Gambia
1785 Massachusetts Ave., N.W.
Washington, D.C. 20036
Tel: 265-3252

Ambassador.....Ousman A. Sallah
First Secretary.....Galandou Gorre-Ndiaye
Financial and
Administrative Attache.....Mustapha A. R. Jobe
Attache.....Safiatou N'Jie

1.7 U.S. Mission and Staff (September 1981)

Embassy of the United States
16 Buckle St.
P.O. Box 596, Banjul
Tel: 526-7

Ambassador.....Larry G. Piper
Labor Officer.....Eric Svendsen (resident in Dakar)
Consular.....Richard D. Broadway
Agricultural Section.....Jeanette N. Porpora
Agency for International
Development.....Thomas A. Moser

1.8 Sister Cities

Banjul - Tuskegee, AL

1.9 Treaties and Agreements with U.S.

Aviation
Economic and Technical Cooperation
Investment Guarantees
Mutual Security
Peace Corps

1.10 International Organization Memberships

African Development Bank (AFDB), British Commonwealth, Economic Commission on Africa, Economic Community of West African States (ECOWAS), EEC, FAO, Gambia River Basin Development Commission (OMVG), IBRD, IDA, IMF, International Telecommunications Union (ITU), OAU, Permanent Interstate Committee to Combat the Sahelian Drought (CILSS), Senegal-Gambia Confederation, WHO.

1.11 Travel and Visa Information

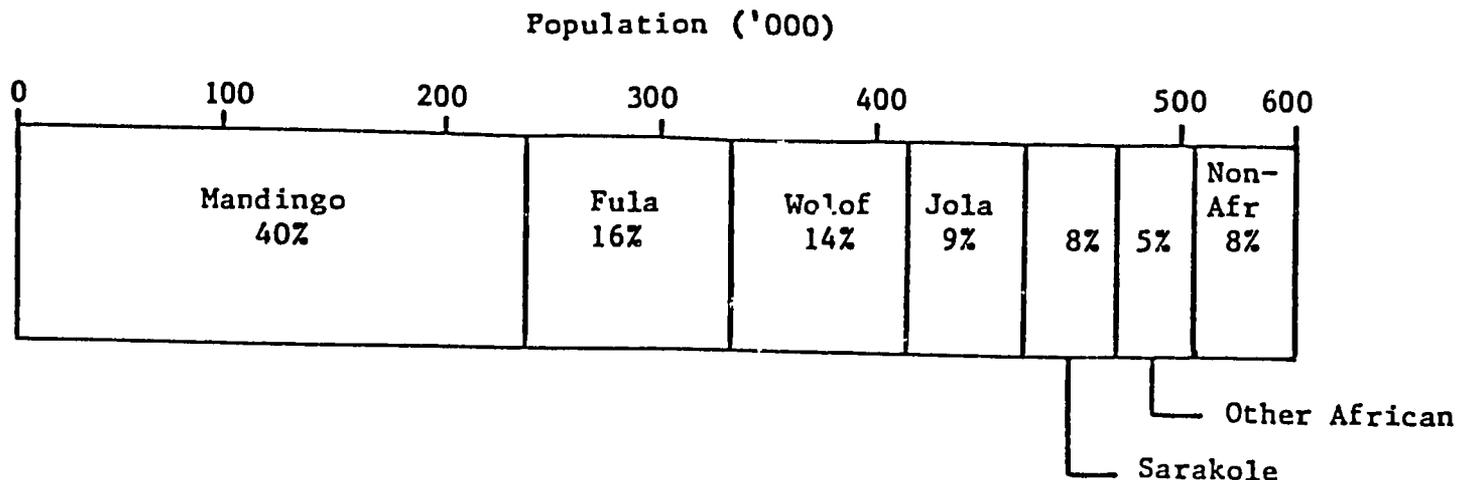
A passport and visa are required. Vaccination for yellow fever is necessary for persons arriving from infected areas. Typhoid, smallpox, and cholera immunizations and malaria suppressants are recommended. A yellow fever vaccination is required upon leaving the country.

1.12 Ethnic and Sociocultural Groups

The ethnic structure of The Gambia is diverse. The five largest ethnic groups, the Mandingo, Fula, Wolof, Jola, and Sarakole, account for 87% of the population. Other African peoples make up an additional 5%. The remainder of the population is composed of non-Africans and includes Syrians, Lebanese, and a small group of Europeans (mostly British).

The Mandingo, traditional farmers, are the largest ethnic group in The Gambia. They live throughout the country but are especially concentrated in the Lower River Division. In the capital city area, they comprise only a small proportion of the population. The Wolof are the dominant group in Banjul and environs. A smaller concentration of Wolof is found in the MacCarthy Island Division near the town of Kuntaur. The Jola, mostly farmers, are located in the western part of the country, especially in the Fonzi region of the Western Division. The Fula, semi-nomadic pastoralists, are widely dispersed throughout The Gambia. They predominate in the Upper River Division around Basse. Also located in the east are the Sarakole who account for one-third of the population in the Basse region. Most of the non-Africans reside in the Banjul area and are engaged in commerce and trade.

Ethnic Groups



Source: University of Arizona. Draft Environmental Report on The Gambia, 1981.

1.13 Languages

Twenty-one languages and dialects have been recorded in The Gambia. The most important vernacular languages are Mandinka, Fula, and Wolof. Most people speak the language of their own group and at least one other indigenous tongue. None of the vernacular languages is written. English serves as the official language and is used in government, the school system, and in foreign trade and communications. 10-15% of the adult population is considered literate.

1.14 Religions

90% of the Gambian population is Moslem. There are also a few thousand Christians (mostly Anglicans, Methodists, and Roman Catholics) concentrated in and around Banjul. The remainder of the population, mostly Jola, is animist.

2. Government

2.1 National Government

Under the provisions of the 1970 Constitution, executive authority is vested in the Presidency. The President, who serves a 5 year term, is the Chief of State and head of the government by virtue of being the leader of the majority party in the House of Representatives. The President is assisted by an appointed Vice President and Cabinet. The Vice President directs Government business in the House of Representatives.

Legislative power rests with the House of Representatives, a unicameral, 44-member assembly that is led by a Speaker and a Deputy Speaker selected by the membership. The House of Representatives is composed of 35 members who are elected by universal adult suffrage, 4 tribal chiefs chosen by the Chiefs in Assembly, 4 members appointed by the President, and the Attorney General (ex officio). Members of the House of Representatives serve for a term of 5 years. The People's Progressive Party has been in power since independence was achieved on February 18, 1965.

The legal system of The Gambia is based on English Common Law supplemented and modified by Gambian legislation. The court system consists of a Supreme Court, a Court of Appeals, and subordinate (magistrate and divisional) courts. District tribunals administer native laws and customs and have jurisdiction over issues dealing with land and property matters. Moslem courts exercise authority in cases involving Moslem law.

For most of its history since independence, The Gambia has been noted for its political stability. However, on July 30, 1981, a group of leftists attempted to overthrow the government while the President was out of the country. Under terms of a mutual defense pact, the attempted coup was put down with the help of Senegalese troops. Between 300-500 persons were reported killed. Shortly after order was restored, The Gambia approached Senegal with a request for discussions on the possibility of a confederation between the two nations. During similar talks in the past, The Gambia had always been reserved about the idea of a formal political union for fear that a loss of autonomy would result. However, after the coup attempt, The Gambia was more willing to pursue the issue of increased cooperation; the Senegambian Confederation formally came into being on February 1, 1982. Under terms of the agreement, Senegalese President Diouf will lead the Confederation. The two countries will retain their individual sovereignty but gradually merge their monetary, financial, customs, foreign, and defense policies. The question of a formal political union will be explored at a later time.

2.2 Regional Organization

For purposes of local administration, The Gambia is divided into 35 districts, each headed by a local chief who is assisted by village leaders and advisers. The districts are grouped into 6 divisions which are administered by regional commissioners, appointed by the President. Included as a division is the capital city of Banjul and the surrounding semi-urban region of Kombo St. Mary. Each division has a regional council with the majority of the members elected by universal adult suffrage. The divisions maintain their own treasuries, have the power to levy taxes, and are responsible for providing local services. Banjul is governed by an elected town council.

Political Divisions

<u>Division</u>	<u>Capital</u>
Capital Region	Banjul
Lower River	Mansakonko
MacCarthy Island	Georgetown
North Bank	Kerewan
Western	Brikama
Upper River	Basse

2.3 Key Political Figures (March 1982)

President.....	Jawara, Dawda Kairaba, Sir
Vice President.....	Camara, Assan Musa
Min. of Agriculture & Natural Resources.....	Singhateh, Seyni
Min. of Economic Planning & Industrial Dev...	Manneh, Momodou
Min. of External Affairs.....	Jabang, Lamin Kiti
Min. of Finance & Trade.....	Sabally, Salboa
Min. of Health, Labor & and Social Welfare...	Jallow, Muhamadu Cherno
Min. of Information & Tourism.....	Darbo, Bakary
Min. of Interior.....	M'Boob, Abdoulie S.
Min. of Lands & Local Government.....	Sonko, Landing Jallow
Min. of Water Resources & Environment.....	Jallow, Omar
Min. of Works & Communications.....	Kelepha-Samba, Alhaji
Min. of State.....	Ceesay, Yaya Lang
Attorney General.....	Saho, Muhamadu Lamin

3. Disaster Preparedness

3.1 Disaster Types and History

As is true in all Sahelian countries, periodic drought is the greatest potential problem in The Gambia. In addition to drought, The Gambia has also suffered from outbreaks of disease (yellow fever), occasional floods, and major power shortages. Most recently (8/81), The Gambia experienced an abortive coup attempt.

Disaster History

<u>Disaster</u>	<u>Location</u>	<u>Date</u>	<u>#Victims</u>	<u>Damage (\$000)</u>
Drought	Northwest	68	180,000	500
Drought	Countrywide	71	150,000	200
Drought		77	NA	NA
Power Shortage	Banjul	5/78	85,000	4,000
Drought		78	NA	NA
Yellow Fever Epidemic	Countrywide	10/78	200	NA
Drought	Countrywide	80	500,000	NA
Civil Strife	Banjul/Kombo St. Mary	8/81	120,000- 300,000	27,000

Source: OFDA Disaster History data base at the Office of U.S. Foreign Disaster Assistance in Washington, D.C. Covers 1900 to the present.

3.2 Host Disaster Plan

Little is known about The Gambia's capacity to respond to emergency situations. A national disaster plan does exist, but there is little activity associated with it. An Assistant Secretary in the Ministry of Lands and Local Government heads the Gambian Disaster Relief Committee. In 1975, this committee, at the urging of the United States, the United Kingdom, and the United Nations Development Program (UNDP), was charged with preparing an inventory of the country's resources and capabilities for reacting to potential disasters. Results of this effort are not known. If a disaster

were to occur, primary authority would be vested in the President's office. During the 1981 coup attempt, the Government managed to request assistance quickly and established an ad hoc Committee on External Aid to coordinate assistance activities. A thorough review of The Gambia's ability to respond to emergencies must still be conducted before disaster preparedness needs can be determined and specific projects identified.

3.3 Host Contacts

In the event of a disaster, the following members of The Gambia's Disaster Relief Committee should be contacted:

Assistant Secretary
Ministry of Lands and Local Government
Quadrangle, Banjul
Phone: 384

Administrator
Gambia Red Cross Society
Kanifing Industrial Area, Serekunda
Phone: 93 2405

3.4 U.S. Team

As of 1975, the date of the last U.S. Mission Plan, disaster responsibilities were divided as follows:

<u>Task</u>	<u>Action Officer</u>
Overall coordination	Charge d' Affaires
Field work and damage assessments	USAID Officer, Peace Corps Director
Logistics, communications, and consular matters	Administrative Officer, Secretary

This plan would be adjusted as necessary, depending on personnel available at the time of a disaster. Given the small size of the American contingent in Banjul, additional support, probably from the U.S. Embassy in Dakar, Senegal, would be needed if a disaster requiring a major relief effort were to occur.

Currently, the official U.S. presence in The Gambia consists of a full-time ambassador and staff (see U.S. Mission and Staff, section 1.7). As of December 1981, Thomas Moser, USAID Chief of Mission, was the Mission Disaster Relief Officer (MDRO), and Anthony Funicello, Program Officer, was alternate MDRO. Their tours of duty expire in February 1984, and August 1983 respectively. No other information on the composition of the U.S. team is presently available.

3.5 Peace Corps

As of January, 1982, there were 40 Peace Corps Volunteers (PCV's) working in The Gambia. Most are involved with health and nutrition programs. Other Peace Corps projects include rural training, education, food production, and the improvement of village food storage facilities.

3.6 US Volags

Africare

Supports vegetable production projects in rural areas, introduces improved seeds and agricultural methods, and supplies handtools.

Catholic Medical Mission Board, Inc.

Distributes medicines and related supplies to medical facilities throughout The Gambia.

Catholic Relief Services

Thomas O. Mulhern, Program Director
3 East Marine Parade
P.O. Box 568, Banjul
Tel: 316

Coordinates the distribution of U.S. P.L. 480 Title II food aid to 60 pre-school nutrition program sites serving 18,000 children. Provides supports projects in village sanitation, water supply, and health care. CRS is also involved with production, storage, and marketing of staple food-stuffs and extension programs in poultry, vegetable, and fruit production. CRS has 2 vehicles and could work closely with the U.S. Embassy in the event of a disaster.

Operation Crossroads Africa

Bubacarr Baldah, Director
Freedom from Hunger/Action for Development
c/o Ministry of Agriculture

Banjul

Provides teams of medical/nursing students to the Ministry of Health, Labor, and Social Welfare to assist in a tuberculosis inoculation project for 3,000 rural villagers. Also involved in school construction projects.

World Vision Relief Organization

The Reverend Manfred W. Kohl, Field Director

P.O. Box 2167

Abidjan, Ivory Coast

Trains community health nurses who will provide preventive health care instruction in 14 villages.

World Evangelization Crusade

María Robelen, Field Leader

P.O. Box 86, Banjul

Tel: 93 2226

Operates 3 rural medical centers and a poultry development program.

YMCA of the U.S.

Operates programs in social welfare.

Source: TAICH Report: The Gambia, 1978 (updated through personal communication with the American Council of Voluntary Agencies for Foreign Service, Inc., January, 1982).

3.7 Other International and Voluntary Agencies

UNDP

Regional Representative

Marina, Banjul

Tel: 599

World Food Program

Marina, Banjul

Tel: 397

3.8 Host Resources (as of 1980)

Medicine - Drugs and related medical materials are always in short supply. Most medical supplies are obtained from the U.K. and can be flown in on short notice. There is a large warehouse at the Medical and Health

Center in Banjul that could be used to store a significant amount of medical supplies. However, it is usually used for grain storage. Three smaller storerooms are located in Mansakonko, Bansang, and Basse. There are moderately sized cold storage facilities at the Royal Victoria Hospital and the Public Health Department in Banjul. The biggest problem in transporting drugs into rural areas is maintenance of an adequate cold chain. However, because the country is so small, drugs can be transported in ice packs and changed at rural health centers that have refrigerators.

Food - Emergency food stocks are virtually nonexistent. Commercial supplies are short-term and quickly sold after importation. It has been recommended that a buffer stock of 3,000 tons of rice and/or sorghum be maintained for short- to medium-term needs.

Military - There is no standing army in The Gambia. The national police force numbers 750. In addition, there is a paramilitary field force of 300.

Health Facilities - See Health, Nutrition, and Housing, section 5.

Medical Transportation - Each dispensary is supposed to have an ambulance for evacuating patients to the nearest health center. Only half of these vehicles can be expected to be working at any given time. The medical transportation capabilities of the health centers, major hospitals, private medical facilities, and major urban centers are not known.

3.9 Storage

Storage is a serious problem in The Gambia. Post-harvest losses of cereal grains through shattering, transport, and inadequate storage are estimated at between 15-20% of domestic production. An emergency food stockpile does not exist. Improvement of on-farm and other storage facilities could result in a significant increase in overall food availability.

The largest warehouse facilities are located at the port of Banjul where 4,000 tons of grain can be accommodated in covered sheds. An additional 500 tons can be stored outside. There are also a few small, privately-owned warehouses in the capital area.

In rural areas, storage facilities of 250-300 tons capacity are located in several of the major political divisions. There are approximately 200 villages with storehouses of about 100-tons capacity each. The property of

the District councils, they are used for the temporary storage of groundnuts during the harvest season. At the village and compound levels, storage facilities are poor and a considerable amount of food is destroyed by rodents or lost through spoilage. Village seed warehouses, which are empty during the growing season, could be used for storing supplemental foodstuffs for use prior to the harvest, when food supplies are low.

The Gambia



502717 9-77 (542121)

Lambert Conformal Projection
Standard parallels 8° and 32°
Scale 1:1,600,000

-  Railroad
-  Road
-  Airport

4. Population

4.1 National Demographic Characteristics

In 1981, the population of The Gambia was estimated at slightly more than 600,000 persons. Fertility (48/1,000) is high and mortality (23/1,000), while declining, is still more than twice the world average. The annual rate of increase is 2.5%. Should current rates continue unchanged, projections suggest a total population of about one million in the year 2000, an increase of 67% over current figures.

The Gambian population is very young with almost half (46%) under 15 years of age. Infant mortality (217/1,000 live births) and child mortality are very high. For the country as a whole, life expectancy is 41 years, among the lowest in the world. In the rural areas where health and sanitary conditions are very poor, average life expectancy is only 35 years. (See Health, Nutrition, and Housing, section 5.)

The Gambia is a rural nation. Only 20% of the population is classified as urban. The largest settlement, with a population of 50,000, is the national capital, Banjul.

Each year, the Gambian population is augmented by between 10-20,000 seasonal migrants from neighboring Senegal. Searching for employment, these migrants work as sharecroppers or hired farm laborers, helping The Gambia produce the annual groundnut crop. Most of these temporary workers are between 15-34 years of age.

Source: Population Reference Bureau, 1981 World Population Data Sheet, 1981.

4.2 Regional Distribution

The Gambia is one of the most densely settled countries in Africa. Overall density (1980) is about 150 persons/sq. mile (60/sq. km). Agricultural density is estimated at 260 persons/sq. mile (100/sq. km). The largest population concentration is in the Banjul/Kombo St. Mary urban region located in the western part of the country. In the rural areas, most of the population reside on the interior plateau, back from the mangrove swamps and banto faros that border the river, where flooding and disease are significant problems. Many rural villages are situated on the boundary between the upland and the river flats. Riverside habitation occurs only along the upper reaches of the Gambia River where the valleys are deeper and less subject to flooding.

Population by Region

<u>Region</u>	<u>1980 Population</u>	<u>Total Area</u>		<u>Population Density</u>	
		<u>sq. miles</u>	<u>sq. km</u>	<u>sq. mile</u>	<u>sq. km</u>
Capital Area	89,602	34	88	2,635	1,018
Lower River	53,004	625	1,618	85	33
MacCarthy Island	124,307	1,117	2,895	111	43
North Bank	115,473	871	2,256	133	51
Upper River	107,901	799	2,070	135	52
Western	140,713	681	1,764	207	80
TOTAL	631,000	4,127	10,691	153	59

Note: Population figures are based on projections from the 1973 Gambian Census, 1978 electoral registration data, and estimates of the urban population.

Source: Republic of The Gambia, Medical and Health Department Annual Report, 1980.

4.3 Urban Population

The urban population, while still relatively small, has been increasing during the fifteen years since independence was achieved. Comprising an estimated 20% of the total population (1980), urban growth is occurring at an annual rate of 4.2%, considerably faster than the overall rate of population increase. Rural-urban migration is an important component of this growth.

Banjul is the only true city in The Gambia. Many of the other towns are little more than oversized villages. Banjul and the surrounding area of Kombo St. Mary, with only 15% of the total population, account for two-thirds of the country's urban population; this capital area is growing at a rate of 7% per year.

Other relatively large towns include the administrative/marketing centers of Kerewan, Brikama, Mansakonko, Georgetown, and Basse. Farafenni,

located in the west-central part of The Gambia, is becoming an increasingly important center of economic activity due to its location along the Trans-Gambian Highway and its proximity to the Senegalese border.

5. Health, Nutrition, and Housing

5.1 Overall Health Status

Health conditions in The Gambia are considered poor. The country lacks an adequate system of vital statistics registration and there have been no national epidemiological surveys on the incidence and distribution of disease. Existing data indicate very high rates of morbidity and mortality. This is especially true for infants, young children, and rural women. In 1980, the infant mortality rate (217/1,000 live births) was one of the highest in the world. Half of the children die before their fifth birthday. Infections and nutritional diseases, together with complications of pregnancy and childbirth, account for most of the illnesses and deaths in the country. Poor hygiene and inadequate sanitation are contributing factors. Only 12% of the population has access to safe drinking water. However, there are striking differences between the urban and rural areas. Close to 90% of the urban population has access to potable water. In the rural countryside, the equivalent proportion is only 3%.

Health facilities and medical personnel are concentrated in the Banjul area and in a few of the larger towns. While rural health care facilities are fairly evenly distributed throughout the country, the lack of sufficient staff and supplies precludes their functioning effectively. As a result, many rural areas do not have access to even basic health care. Nearly 70% of the population must walk at least 6 miles to reach the nearest health facility.

Until the 1970s, the medical/health care sector was neglected. Since 1970, emphasis has been on curative versus preventive health care. The Government's two general hospitals in Banjul and Bansang receive most of the health care funds. In spite of this support, they still lack adequate supplies and equipment. Concentration of expenditures in the two main hospitals has retarded the extension of medical care to the countryside. 70% of the health care budget is for salaries, only 16% is reserved for purchasing equipment and supplies, and 14% is for administration.

Preventive health care is limited to immunizing young children against the major endemic diseases. However, the success of the immunization programs is questionable. In 1977, only 5% of the children under 3 years of age had been vaccinated against measles, 28% had received the first of 3 doses of DPT vaccine, 32% were immunized against tuberculosis, and 68% were immunized against tetanus.

The Gambia has finally begun to focus some attention on extending adequate health and medical services to the rural areas. As part of its general development program, the government is planning to build more local

health units, train additional community health nurses, and improve nutrition, rural water supplies, village sanitation, and basic hygiene. The distribution of facilities appears to be less of a problem, however, than the lack of qualified medical and advisory personnel, medical supplies and equipment, laboratories, and trekking vehicles.

5.2 Summary of Diseases

The most common diseases are malaria, intestinal parasites, respiratory tract infections, tuberculosis, neonatal tetanus, measles, whooping cough, and influenza. Malnutrition in infants and young children is a major health problem. Also prevalent are yellow fever, leprosy, venereal disease, schistosomiasis, trypanosomiasis, onchocerciasis, and meningitis.

Patterns of disease reflect both environmental and socioeconomic conditions. The hot, humid climate is favorable to the development of insect vectors. Ignorance, poor nutrition, inadequate sanitation, and lack of effective curative and preventive medical programs also contribute to the spread of disease. The incidence of disease appears to be lowest in the Western Division and the urban areas of Banjul and Kombo St. Mary, and highest in the Upper River, Lower River, and MacCarthy Island Divisions. The occurrence of illness and mortality is highest during the rainy season (June–November) when vector-borne diseases are most prevalent. During this season, food supplies are also at their lowest level. 68% of all child deaths occur during this time of the year.

Malaria - is the most serious health problem in The Gambia. It is endemic throughout the country and the entire population is at risk. 90% of the people are carriers of this disease. Malaria is one of the primary causes of death in children under 3 years of age. By age 20, adults have built up sufficient immunity that illness is infrequent. The incidence of malaria peaks at the end of the rainy season when the number of mosquitos is greatest. Breeding occurs in irrigated rice fields, ponds, and other bodies of standing water. As the total amount of irrigated land increases, the number of mosquitos will probably also increase. Currently, 80% of the population reside in areas without effective mosquito control.

Measles - is an important health problem and a major cause of death in young children. In 1965, 25% of the children under 5 years of age died during a measles epidemic. Measles is also thought to be related to the high incidence of blindness in The Gambia.

Diarrhea - and related diseases affect children between 6 months and 2 years of age. This group of diseases is prevalent throughout the year

but increases during the rainy season. Beyond age 2, the incidence of diarrhea is low.

Leprosy - There is a high prevalence rate for leprosy (5/1,000 population) in The Gambia. At the beginning of 1981, 2,258 patients were being treated for this disease. During 1980, 186 new cases of leprosy were identified. A leprosy control program has existed for two decades.

Schistosomiasis - is widespread, becoming most severe during the rainy season. It is an especially important problem in the MacCarthy Island Division. This disease is spread by snails which breed in calm freshwater ponds and creeks during the rainy season. Schistosoma eggs in human excreta are passed into the water supply because of inadequate sanitation. The eggs hatch and the larvae infest the snails. The snails then reinfect the human population. Improved sanitation is the best means of control. As irrigation increases, the number of snails is also likely to increase.

Trypanosomiasis - or sleeping sickness, is spread by the tse-tse fly. This insect, which breeds in moist sand shaded by low bushes, is found throughout the entire country. Transmission of trypanosomiasis to humans is highest at the end of the dry season when the flies are concentrated around water holes that are used for bathing. Environmental degradation and the destruction of vegetation is constricting the habitat of the tse-tse fly.

Whooping Cough - may sometimes reach epidemic proportions. Outbreaks of whooping cough during the mid-1960s affected two-thirds of the children under 5 years of age.

Yellow fever - Many different strains of this disease have been identified in The Gambia. A 1978 outbreak of yellow fever killed more than 200 people.

5.3 Vital Statistics

Crude birth rate	48/1000 population
Crude death rate	23/1000 population
Rate of natural increase	2.5%/year
Life expectancy at birth	41 years
Infant mortality rate	217/1000 live births
Child mortality rate (0-5 yrs)	500/1000 children
% under 15 years	46%

Source: Population Reference Bureau, 1981 World Population Data Sheet, 1981.

5.4 Health Facilities

Most health care service in The Gambia is provided by the Government through the Ministry of Health, Labor, and Social Welfare. The Government operates 2 general hospitals (365 beds), 4 specialized health/nursing facilities (120 beds), a network of rural medical centers, and several specialized rural health units.

The largest and best equipped medical facilities are the two general hospitals, the Royal Victoria Hospital (265 beds) in Banjul and the Bansang Hospital (100 beds) located in the eastern part of the country. Specialized health/nursing facilities include a tuberculosis sanitorium (39 beds), a mental hospital (28 beds), a leprosarium (31 beds), and a home for the aged and infirm. A nursing school has been operating in Banjul since 1964. At the end of 1977, a new school for training community health nurses was established in Mansakonko.

Rural medical centers are fairly evenly distributed throughout the country. The rural medical infrastructure consists of 12 health centers (104 beds), 20 dispensaries, and 55 subdispensaries. Health centers are large clinics staffed by at least one registered nurse, one nurse-midwife, lower level nurses, and other support personnel. Each health center has some beds for maternity and in-patient care. Only a few have sufficient laboratories to do even simple analyses. Several health centers do not have electricity or running water.

Dispensaries are staffed by a registered nurse who is usually assisted by an orderly and, sometimes, by a community health nurse. Subdispensaries have no permanent staff. They are supposed to be visited periodically by a registered nurse who provides basic medical care to the population in the surrounding area. All dispensaries have ambulances for evacuating patients to the nearest health center. Only half of these vehicles can be expected to be working at any given time. As a result of limited transportation and the chronic problems of insufficient staff and supplies, many subdispensaries are not visited regularly by the nursing staff.

Eight mobile maternal and child health teams travel throughout the country providing services at 68 rural sites, including existing dispensaries and subdispensaries and at locations without any health or medical facilities. A leprosy control unit treats patients in their villages and conducts surveys to detect new cases. Mosquito control units are also active.

Most of the private medical facilities and personnel are concentrated in the capital area. The Medical Research Council of Great Britain operates a 40-bed hospital near Fajara and a nutrition field station at Keneba. Another small private hospital is located in Serekunda.

Health Facilities, 1981

<u>Type</u>	<u>Number</u>	<u>Number of beds</u>
Public		
General hospitals	2	365
Specialized health/ nursing facilities	4	120
Health centers	12	104
Dispensaries	20	NA
Subdispensaries	55	NA
Total Government	93	589
Private		
Hospitals	2	40
Grand Total	95	629

Note: ratio of beds per population = 1:1,000

Source: Republic of The Gambia, Medical and Health Department Annual Report, 1980.

5.5 Health Personnel

At the end of 1980, there were only 43 physicians in The Gambia and more than half were non-Gambians. For the country as a whole, there is one doctor per 14,000 people.

Most of the medical personnel are concentrated in the Banjul/Kombo St. Mary region. Only a few doctors are practicing medicine elsewhere in the country. These include a team of Chinese doctors working under the supervision of a Gambian physician at the hospital in Bansang, a missionary doctor at a clinic in the Lower River Division, and a leprosy specialist in Mansakonko. There are 5 dentists in The Gambia.

Nationwide, there is one nurse for every 2,000 persons. However, 80% of the estimated 300 nurses and auxiliary nurses are located in the Banjul area. Similarly, 90% of the health inspectors are concentrated in the Banjul/ Kombo St. Mary urban complex.

5.6 Nutrition

Per capita caloric intake for the adult population averages 1,800 calories per day, except prior to the harvest when it declines by 20%. Daily protein consumption is estimated at 58 grams per person. Caloric intake appears to be adequate for the urban population.

In rural areas, caloric intake is only about 75% of the recommended norm (2,230). Custom and tradition dictate that men and older boys eat first and get the best food; women and young children must make do with the remainder. By western standards, most of the children are underweight and anemia and nutritional diseases are common.

During the four month "hungry season" (June-October), the condition of the entire rural population deteriorates sharply. Caloric intake declines because food stores are low and the new crops are not yet ready to be harvested. Adults may experience a weight loss of up to 5%. During this season, children are neglected because the demand for agricultural labor is high and both men and women must work long hours in the fields.

The Gambia has no specific nutrition policy or program, although on paper, the maternal and child health program is responsible for nutrition and health education. Improving nutritional standards is one goal of the Government's overall development strategy; however, there is no staff or budget to address the problem.

5.7 Diet

The Gambian diet is predominantly vegetarian and lacks sufficient nutritional quality to maintain adequate health for most of the population. Rice is the main staple, supplemented by other cereals and some fruits and vegetables. Millet is an important staple in the western part of the country, while sorghum production/consumption is highest in the east. Vegetables, including manioc, maize, beans, lentils, yams, tomatoes, and peppers, are minor crops grown for local consumption. Maize is grown primarily as a garden crop, except among a few ethnic groups residing in the Upper River Division who market small quantities. Fruit is collected from wild trees. Beef and goat meat may be eaten occasionally. Fish and chicken are becoming more popular, especially in the Banjul area. A small amount of pork is consumed by non-Moslems (e.g., Jolas). (See also Agriculture, section 7.)

5.8 Food Cycle

Because of seasonal variations in rainfall, almost all crop production is confined to the rainy season and the subsequent two months. Crops are planted in July, after the first rains. The bulk of harvesting occurs in late autumn. Food is plentiful from late autumn through the winter months. During the spring and early summer, people subsist on their food stores. Toward the end of the summer, food stocks are depleted and there is a serious gap in food supplies until the main harvest. The pre-harvest period is known as the hungry season. (See also Storage, section 3.9.)

Traditional subsistence agriculture is not sufficient to cover domestic food needs. The Gambia must rely on imports (mostly rice) for about one-third of its food requirements. In an average year, imports include 20,000-25,000 tons of rice plus smaller amounts of other cereals. Food represents 22% of all imports. (See also Agricultural Imports, section 7.5.)

5.9 Housing

Urban - Traditional urban houses are made of mud and wood. Brick and cement block housing can be found in wealthier areas.

Rural - Village housing is arranged in family compounds. Most houses are built with mud walls and thatched roofs braced with bamboo sticks. More prosperous families may build homes of palm frames with walls of plaited palm fronds (crinting). In some of the larger villages, houses may be constructed of cement blocks with corrugated iron roofs. Family compounds are separated from each other by high walls of crinting.

5.10 Water and Sanitation

Water - All water supply systems in The Gambia are managed by The Gambia Utilities Corporation (GUC). 90% of GUC's activities are concentrated in the Banjul area. Safe drinking water is available in Banjul and environs and in some secondary centers. Banjul's water supply comes from 14 wells drilled in a shallow aquifer near Yundum. The water is treated at a modern facility and distributed through a 65 km. long network of pipes to Banjul and its immediate suburbs. Water quality is good. Demand is increasing and new pumping and delivery capacity will have to be developed. Care must be taken to avoid overpumping or saline intrusion may occur.

In the rural areas, shallow uncovered wells are the main source of water for domestic use. Very little water is obtained directly from the Gambia River. The number of rural wells is not sufficient to meet demand. Most rural wells are dug by hand and are subject to collapse or become polluted with silt. Water quality is low and most wells are highly contaminated. Even where well water is clean, it usually becomes contaminated by the time it is used because water buckets, utensils, and storage containers are not clean. Boiling water before use is not a common practice.

Sewerage - There are no modern public sewerage systems in The Gambia, including the capital city. Waste disposal in Banjul consists of septic tanks, night pails, and open sewers. Sanitation is inadequate as a result of poor drainage, seepage, improper flushing, and overflow. In the villages, human waste disposal and sanitation are totally inadequate and are recognized as contributors to the spread of disease. The Government is planning a sewerage system for Banjul which will serve 30% of the city's population by the mid-1980s. Most likely, direct ocean outflow will be used. This could result in serious environmental pollution.

6. Economy

6.1 Overview of Economy

Following a period of rapid economic growth in the late 1960s, the Gambian economy began to stagnate after 1970 as a result of Sahelian drought. Since 1975, the economy has fluctuated due to several poor crop years and/or unfavorable world commodity prices, and real growth has slowed to about 1.5% per year. Inflation in excess of 10%, due in part to the increased costs of imported foodstuffs and petroleum products, contributes to the tenuous economic situation.

The economy of The Gambia is primarily agrarian. With little development potential, the economic health of the country is based upon the annual performance of a single crop, groundnuts. A large proportion of Government revenues is derived from taxes on agricultural exports and import duties. However, even in good crop years, the value of imports exceeds that of exports.

Although the Government has increased its development activities and is encouraging diversification, the modern sector of the economy, supporting only about 10-15% of the population, is highly concentrated in the capital area. Industry and mining contribute little to the gross domestic product (GDP). There are virtually no exploitable minerals in The Gambia and most industry consists of food (groundnuts and fish) processing.

The only growing sectors in the economy are tourism, which has increased substantially to 8% of GDP, and fishing, both of which have the potential for further expansion. Livestock production, although important culturally, is relatively unexploited and contributes very little to the economy. Herds are maintained as measures of wealth and social prestige, and not for the commercial production of meat or hides and skins.

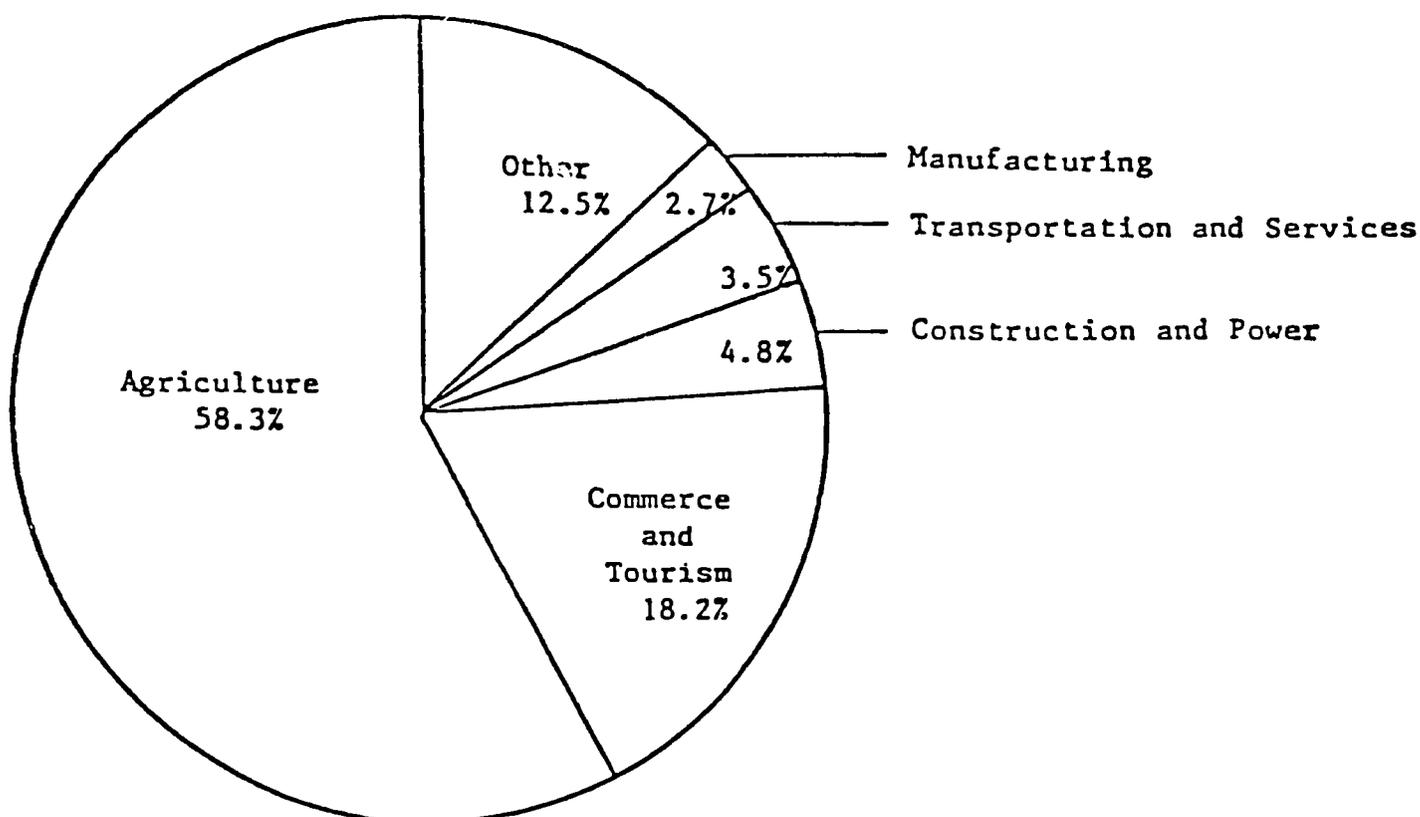
In 1979, a fairly good crop year, GDP was estimated at \$132 million or \$250 per capita. However, national per capita income figures mask the tremendous difference between urban and rural areas. Urban income (\$550 per capita) is 4 times higher than comparable income levels in the rural areas (\$140 per capita).

1979 Gross National Product
(U.S. \$ million)

GNP at market prices	\$132.2
Gross domestic investment	37.8
Gross national savings	4.8
Current account balance	-38.4
Exports of goods, NFS	86.4
Imports of goods, NFS	131.7

Source: World Bank, The Gambia: Country Economic Memorandum, 1980.

1979 GROSS DOMESTIC PRODUCT BY SECTOR



Source: Rake, New African Handbook, 1981-82, 1981.

6.2 Balance of Payments

The economic health of The Gambia is directly affected by the value of groundnut exports and the amount of Government spending on development. Several poor crop years and unfavorable world commodity prices since 1975 have led to a deterioration in economic conditions. Fluctuations in revenues have coincided with a rapid increase in development expenditures. By 1979, public investment had increased to 28% of GDP. Domestic savings did not keep pace and the Government was forced to borrow from the Central Bank. This combination of factors resulted in a sharp decline in the balance of payments and depletion of most of the country's foreign exchange reserves. By the end of 1979, the balance of payments deficit had grown to \$41 million and foreign reserves were negative for the first time since independence. The Gambia was forced to resort to EEC stabilizing funds to relieve IMF repayment pressures. 1980 was another bad crop year with groundnut production dropping to its lowest level in 12 years. The result was another sharp decline in foreign revenues.

In order to avoid unmanageable balance of payments problems in the future, The Gambia has instituted a more conservative financial policy. The Government is trying to cut spending and increase savings through a program of fiscal austerity. Public spending is being adjusted to the level of available revenues. Development expenditures are being limited to what can be obtained through foreign grants and loans. The Gambia is also trying to rebuild its foreign reserves. The success of these efforts is contingent upon favorable weather conditions and the overall performance of the agricultural sector, especially the groundnut crop.

Balance of Payments (U.S. \$ million)

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
Merchandise exports f.o.b.	44.34	52.93	40.09	53.75
Merchandise imports f.o.b.	-60.38	-62.00	-81.01	-94.42
TRADE BALANCE	-16.04	-9.07	-40.92	-40.67
Export of services	12.88	14.21	15.20	24.52
Import of services	-16.42	-17.65	-30.83	-41.33
BALANCE OF GOODS AND SERVICES	-19.58	-12.51	-56.55	-57.48
Private unrequited transfers (net)	1.29	0.97	0.07	- 0.88

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
Government unrequited transfers (net)	1.39	3.84	12.87	17.07
CURRENT BALANCE	-16.90	-7.70	-43.61	-41.29
Direct capital investment (net)	0.95	--	2.00	11.69
Other long-term capital (net)	1.56	4.30	8.15	4.95
Short-term capital (net)	1.26	-1.65	2.71	3.83
Net errors and omissions	5.90	6.23	16.10	2.87
TOTAL (net monetary movements)	-7.22	1.18	-14.65	-17.95
Allocation of IMF Special Drawing Rights	--	--	--	1.22
Valuation changes (net)	-0.70	-1.68	7.68	2.70
IMF Trust Fund loans	--	--	1.45	2.17
CHANGES IN RESERVES	-7.92	-0.50	-5.52	-11.87

Source: Europa Publications, The Europa Year Book, 1981.

6.3 Prospects

The Gambia's development plans stress improving infrastructure, agricultural diversification, health, tourism, and fishing. Over the long term, however, the economic situation of The Gambia cannot be viewed with a great deal of optimism. With so small a tax base and domestic market, development options are limited. The economy will continue to be heavily dependent on groundnuts, despite efforts to diversify the economic base. There are few prospects for expanding industry and virtually no exploitable mineral resources. Drought will continue to be a problem and the economy will remain vulnerable to fluctuations in weather conditions and world demand for groundnuts. Increases in population will place additional pressures on the already limited resource base. Construction of a salinity barrage/bridge at Yelitenda will permit irrigation of an additional 24,000 hectares for rice cultivation by the mid-1980s and assist The Gambia in achieving self-sufficiency in this staple food crop. Only tourism and fishing provide any potential for major economic expansion. But growth in both of these areas is likely to be constrained by lack of infrastructure. The debt service ratio will probably rise as a result of increased borrowing. New development projects will, most likely, continue to be financed through foreign aid.

6.4 Exports

Exports account for most of The Gambia's foreign exchange earnings and a substantial portion of Government revenues. In 1978 exports were valued at \$52 million. Agricultural commodities dominate export activities. The most important group of products is groundnuts, groundnut oil, and groundnut cake, a processing by-product that is used as cattle feed. Other exports include processed fish, palm kernels, and hides and skins. The transshipment of goods from other countries (re-exports) was an important generator of revenues in 1978/79. The Gambia's main trading partners are the United Kingdom, France, Switzerland, the Netherlands, and Portugal. (For additional information see also Agricultural Exports, section 7.4.)

6.5 Imports

In 1978, imports were worth more than \$84 million. Food, machinery and transportation equipment, manufactured goods, and petroleum products and chemicals were the most important commodities. Major suppliers included the United Kingdom, the Federal Republic of Germany, France, the U.S., the Netherlands, and Japan.

7. Agriculture

7.1 Overview of Agriculture

Farming and related rural activities contribute 60% of the GDP and support 80% of the population. 45% of the land is suitable for agriculture but only about 11% is under cultivation in any year. Considerable area must be left fallow in order to restore soil fertility and maintain productivity. As population pressures increase, however, the fallow period will likely be shortened and lower yields can be expected.

Most agriculture is of the rainfed variety and, therefore, subject to periodic drought. Due to saline intrusion, irrigated agriculture is restricted to a few locations in the middle and upper Gambia River valley. The total area currently under irrigation is only about 800 hectares. Development plans include construction of a salinity barrage/bridge across the Gambia River, thereby permitting irrigation of an additional 24,000 hectares.

Groundnuts are the main cash crop. More than half the cultivated area, approximately 16,300 hectares, is devoted to this one crop. Grown on the sandy upland soils, groundnuts are the principal source of foreign exchange revenue and form the base for the country's largest industry, the processing of agricultural commodities. Each year, between 40-60% of the groundnut crop is processed as oil for export. Groundnuts and processed groundnut products account for nearly 90% of export earnings. The Gambia Product Marketing Board, a Government-owned and operated agency, has a monopoly on buying, processing, and exporting groundnuts and other agricultural commodities. A small amount of cotton is produced but the total acreage is small, yields are low, and farmers are reluctant to switch from more traditional crops. Palm kernels, collected from wild trees, are a minor cash crop and export item.

The remainder of the cultivated area is devoted to subsistence crops. Rice, millet, and sorghum are the main staples. Rice cultivation is concentrated on alluvial (swamp) soils not subject to saline intrusion in the central part of the Gambia River valley, especially in the North Bank, Lower River, and MacCarthy Island Divisions. A small amount of irrigated rice is grown further upstream. 27% of the cultivated land is devoted to millet and sorghum, the other major cereals. Grown on the plateau, millet is a main cereal grain in the western part of the country. Sorghum is grown mostly in the east.

Other crops include cassava, maize, beans, onions, peppers, and fruits. Most are minor crops grown for local consumption on small garden plots around the village compounds. Maize is considered a garden crop except in

Principal Rainfed Crops, 1976

<u>Crop</u>	<u>'000 hectares</u>	<u>Percent</u>
Groundnut	98.4	52%
Millet/Sorghum	51.1	27
Rice	28.4	15
Malze	9.5	5
Cotton	1.5	1
<u>Total</u>	<u>188.9</u>	

Source: University of Arizona, Draft Environmental Report on The Gambia, 1981.

the Wuti region of the Upper River Division where it is cultivated on a larger scale. (See also Land Use, section 8.4.)

7.2 Production

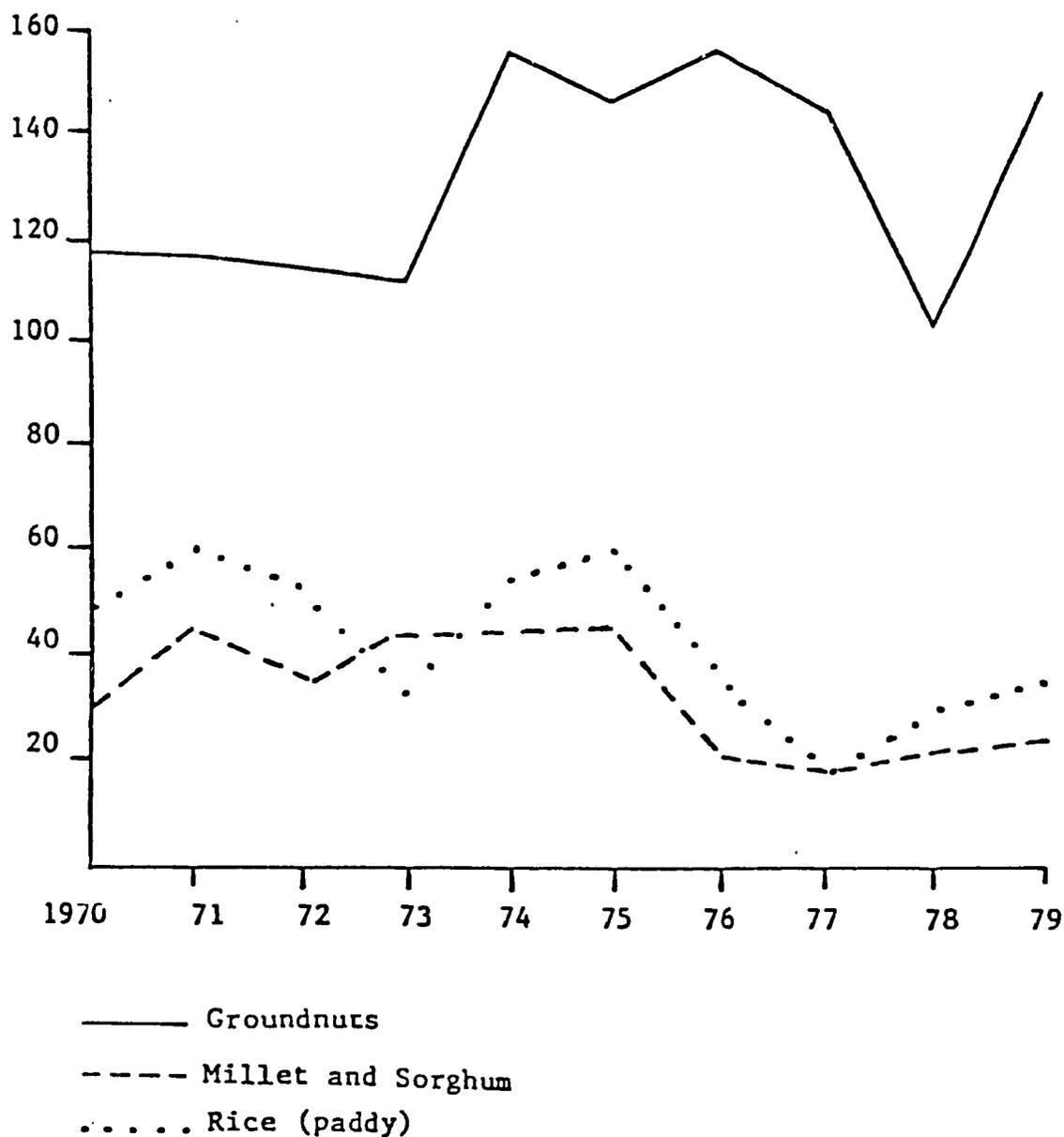
Almost all crop production is confined to the rainy season and the several months immediately thereafter. The area planted in groundnuts versus subsistence cereals depends on the market price for groundnuts and the availability and price of cereals. Most crops are grown on the sandy, upland soils of the plateau. Alluvial soils with tolerable salt levels may be used for rice production and dry season grazing.

Small scale, rainfed farming accounts for virtually all agricultural activity. Crops are cultivated on small plots by members of extended families or compounds. Farm size averages 9.5 hectares per compound, but holdings are usually fragmented and some fields may be as far as 4-5 km. from the village. There are virtually no large agricultural estates.

Traditional methods of cropping are used. Almost all of the work is done by hand. The hoe is the basic agricultural implement. Plots close to the village are often under continuous cultivation. Further away from the village, a bush fallow method is followed. Manure is used in the rice fields and on upland plots intended for use during the next crop year. However, the manure is not worked into the soil and much of its mineral content is lost through oxidation. There is little use of commercial fertilizer. Mechanization is limited to a few small areas of irrigated rice production; only a small proportion (10-15%) of the villages use even ox-drawn equipment. If, as a result of increased population pressure, the fallow period is shortened, there will need to be more effective use of manure or an increase in the use of commercial fertilizer if productivity is to be maintained.

In 1981, gross cereal production was estimated at 95,000 tons, up considerably from 1980 which was a very poor crop year. The groundnut crop also rebounded sharply from the previous year.

Crop Production
1970 - 1979
('000 metric tons)



Source: Europa Publications, Africa South of the Sahara, 1972-1981.

<u>Crop Calendar</u>		
<u>Crop</u>	<u>Planting</u>	<u>Harvesting</u>
Groundnuts	July	Nov.-Dec.
Millet		
Early millet	July	September
Late millet	late July	November
Sorghum	July	November
Rice		
Upland rice	July	October
Swamp rice	July	January
Irrigated rice	July	December
Maize	July	September
Palm kernels	--	April-June

Source: World Bank, Basic Needs in The Gambia, 1980.

Estimated Agricultural Output Per Average Compound of 22 People

<u>Crop</u>	<u>Land Area (hectares)</u>	<u>Yield kg./ha.</u>	<u>Output kg.</u>
Groundnuts	5.25	1,345	7 061
Millet/sorghum	2.88	550	1,584
Rice	1.42	1,100	1,562
Total	9.55		

Source: World Bank, Basic Needs in The Gambia, 1980.

7.3 Current Status

The 1981 cereal crop, including paddy rice, is estimated at 96,500 tons versus 43,000 tons in 1980. The food supply situation in 1981/82 is satisfactory. Rice imports will continue as the local crop does not meet the demand. Groundnut production has more than doubled, increasing from 45,000 tons in 1980 to 100,000 tons in 1981. At the end of November 1981, the EEC granted aid amounting to US \$1.7 million to compensate The Gambia for losses in earnings from groundnut product exports in the previous year.

7.4 Agricultural Exports

Agricultural products, both raw and processed, account for the majority of The Gambia's exports. Most important are groundnuts, groundnut products, and processed fish. The volume and value of exports fluctuates from year to year reflecting the size of the harvest, which is determined to a large degree by weather conditions, and world commodity prices.

<u>Commodity</u>	<u>Exports</u> ('000 dalasi)			
	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
Groundnuts (shelled)	39,811	50,224	26,177	40,067
Groundnut meal & cake	6,361	14,002	19,868	5,941
Groundnut oil	23,348	33,974	16,912	16,727

<u>Commodity</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
Palm kernels & nuts	414	159	1,067	784
Fish & fish preparations	2,640	3,658	5,972	3,651
Hides and skins	52	58	217	247
Other	378	67	1,993	1,916
Re-exports	<u>2,528</u>	<u>4,571</u>	<u>8,011</u>	<u>25,004</u>
Total	75,532	106,713	80,217	94,343

Source: Europa Publications, Africa South of the Sahara, 1981.

7.5 Agricultural Imports

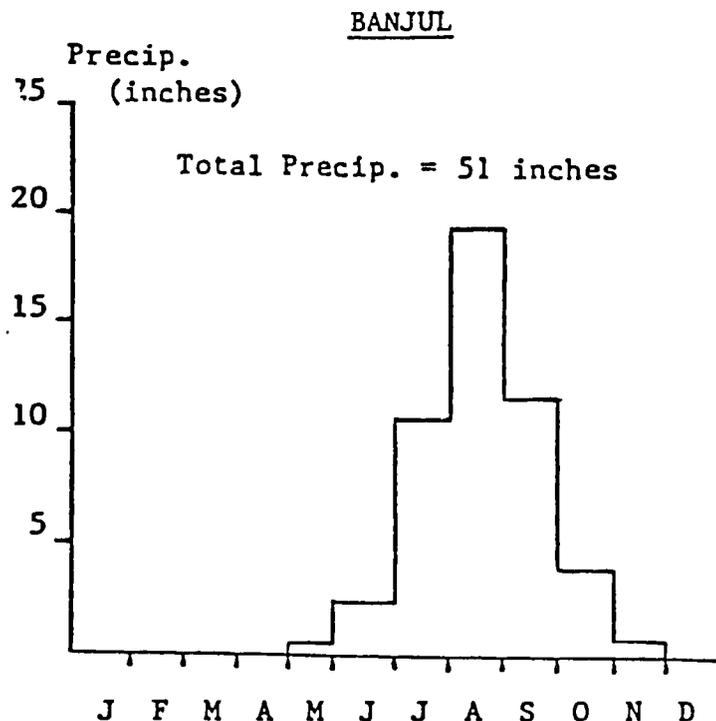
Traditional agricultural production is insufficient to meet The Gambia's domestic food requirements. In a good year, it is necessary to import almost one-third of the food supply. Imports average 30-35,000 tons/year and include rice (20-25,000 tons) and other coarse cereal grains (millet and sorghum).

8. Physical Geography

8.1 Climate

The climate of The Gambia is classified as Sudano Sub-Saharan with a single wet season. This type of climate is characterized by warm temperatures, a long dry season, and large annual variations in the amount of rainfall. Annual temperatures range from 60°F-110°F (10°C-44°C). It is cooler along the coast because of the moderating effect of the adjacent ocean waters. Banjul, with an average annual temperature of 80°F (27°C) receives ameliorating sea breezes throughout the year. Further inland, temperatures are higher, often rising above 100°F (44°C). The weather is slightly cooler during the dry season from November-April.

A warm rainy season occurs between June-October. Average annual precipitation is between 35-50 inches (890-1,270 mm). The rainy season is longer and heavier in the coastal region. At Gunjur, located along the southwest coast, annual rainfall is approximately 54 inches (1,400 mm). Yundum, also in the western part of the country receives 51 inches (1,300 mm) of rain annually. Inland total rainfall is lower and annual variability increases, particularly in the north. At Basse, 160 miles (270 km) from the coast, average annual precipitation is only 37 inches (1,100 mm).



Source: U.S. Department of Commerce, *Climates of the World*, 1972.

The rainy season is the result of the northward movement of the inter-tropical convergence zone (ITC), a broad zone of contact between areas of subtropical high pressure located in each hemisphere. The clashing of moist tropical maritime and dry Saharan air masses produces a region of atmospheric instability and results in a wet season characterized by heavy rains and oppressive humidity. The amount of rain depends on how far the ITC moves from its position along the equator. During the winter months (December-April), the ITC shifts southward and dry conditions prevail. The dry season is characterized by the harmattan, a dry, dusty northeast wind that blows from the Sahara, desiccating vegetation and evaporating pools of water that have collected during the rainy season.

8.2 Topography

The Gambia is a small, narrow strip of territory 15-30 miles (25-50 km) wide along the lower reaches of the Gambia River. Located on the bulge of West Africa between 13°-14°N. latitude, The Gambia extends inland for approximately 200 miles (320 km). An enclave, The Gambia is surrounded by Senegal on three sides. With a total area of about 4,300 square miles (11,000 sq. km), The Gambia is about four-fifths the size of Connecticut.

The Gambia River, the main geophysical feature in the country, is one of the most navigable waterways in Africa. Back from the river, the country consists of low, flat plains. Narrow valleys with broad inter-fluves and sand hills characterize the eastern part of the country. Lower hills with large sand-filled depressions are common in the west. Low dunes are found along the immediate coast. Rarely does the elevation exceed 120 feet (35 meters) above sea level. The vegetation consists of wooded savanna with a lower stratum of shrubs and grasses. Tall mangrove swamps are found along the lower reaches of the Gambia River.

8.3 Geographic Regions

Mangrove Swamps - Dense mangrove swamps line the first 100 miles (130 km) of the Gambia River from the Atlantic Ocean to Kaur. Further upstream, the mangrove swamps give way to more open savanna and, in some places, to red sandstone bluffs. The mangrove swamps are subject to salt water flooding and, therefore, are not suitable for agriculture.

Banto Faros - Behind the mangrove swamps are narrow strips of river flats known as banto faros. These flats are flooded during the rainy season. The alluvial soils of the river flats are high in silt and clay content, are much deeper, and, in general, more fertile than other soils in

The Gambia. In the lower reaches of the Gambia River, the banto faros are inundated by salt water. The soils are heavy and have a high clay content. Because of the high concentration of salts, the estuarine banto faros are not suited for agriculture. Further upstream beyond the limits of the saline intrusion, the banto faros are flooded by fresh water. The soils are lighter and contain more loam. The combination of fertile alluvial soils plus the availability of fresh water makes the upper river banto faros ideal areas for rice cultivation.

Plateau - Back from the river, the land rises to a low plateau of sand hills and gently rolling plains. The plateau is an extension of the terrian in neighboring Senegal. From the middle part of the Gambia River valley on upstream, the elevated upland often rolls down to the river's banks as a series of red sandstone spurs. The soils on the plateau are light and high in iron content, ideal for growing groundnuts; millet and sorghum are also grown on the upland soils. To avoid the problems of flooding and disease, most of the rural population reside on the plateau. Villages are often built on the boundary between the upland and the river flats.

8.4 Land Use

Land Use by Region
('000 hectares)

<u>Category</u>	<u>Western*</u>	<u>Lower River</u>	<u>N. Bank</u>	<u>MacCarthy Island</u>	<u>Upper River</u>	<u>Total</u>
Cultivated	17.0 10%	7.6 5%	40.9 19%	31.4 11%	20.5 10%	117.4 11%
Fallow	56.5 32%	37.7 24%	90.1 41%	103.9 36%	63.0 32%	351.3 34%
Uncultivated	92.8 53%	104.1 68%	86.1 39%	150.2 52%	110.1 56%	543.3 52%
Non-agricul- tural	8.4 5%	4.7 3%	3.9 2%	4.3 1%	3.1 2%	24.4 2%
Total	174.8 100%	154.1 100%	221.0 100%	289.8 100%	196.7 100%	1036.4 100%

<u>Category</u>	<u>Western*</u>	<u>Lower River</u>	<u>N. Bank</u>	<u>MacCarthy Island</u>	<u>Upper River</u>	<u>Total</u>
% of total land area	17%	15%	21%	28%	19%	100%

* Figures for Western Division exclude Banjul and Kombo St. Mary.

Source: University of Arizona, Draft Environmental Report on The Gambia, 1981.

8.5 Rivers

The Gambia River is the only major river. Rising on the Fouta Djallon Plateau in Guinea, it flows 700 miles (1,100 km) across a sandstone plateau until it empties into the Atlantic Ocean in a broad estuary. For the last 300 miles (470 km) of its course, the river flows through The Gambia. The Gambia River is tidal and subject to salt water intrusion as far as Kuntaur, 150 miles (250 km) upstream. The intrusion of salt water reaches its maximum extent during the dry season when river flow is lowest.

The river is navigable for its entire length in The Gambia and, therefore, is a major transportation artery. However it also acts as a barrier to road transport because of the absence of bridges and the reliance on slow, inefficient ferries. A cooperative effort is under way with Senegal to construct a bridge/salinity barrage at Yelitenda. The project will not only provide a bridge across the river but also permit the irrigation of 24,000 hectares for rice production. (See also Transportation and Logistics, section 9.)

9. Transportation and Logistics

9.1 Overview of Transportation

The Gambia does not have a fully integrated transportation network. There is no railroad and only one commercial airport. The main roads parallel the river. There are no bridges spanning the river and, aside from a few ferry crossings, the two banks are cut off from each other. 75% percent of downcountry commodity movements are by river, including most of the groundnut crop. 80% percent of the upcountry flows and almost all passenger trips are by road. In 1977, roads accounted for 60% of all flows and 98% of all passenger traffic.

There is no transportation ministry in The Gambia. Planning, operating, and regulating the transportation system is the responsibility of several different government agencies. The Ministry of Economic Planning and Industrial Development is concerned with large scale investments and development programs. The Public Works Department (PWD), a part of the Ministry of Works and Communications, is responsible for the construction and maintenance of roads, buildings, the airport at Yundum, and ferry docks. River transportation is the concern of the Gambia River Transport Company. The Gambia Ports Authority operates the port of Banjul. A public transit company provides some local bus service in Banjul and the surrounding area. Additional bus service and truck transportation are part of the private sector.

9.2 Road Network

Unofficially, the road network of The Gambia is divided into principal, secondary, and feeder roads. Principal roads parallel the Gambia River. The south bank road, linking Banjul with the Trans-Gambian Highway is paved as far as Soma, where the two roads intersect. It then continues on to Basse 240 miles (385 km) from Banjul. The north bank trunk road connects Barra with Georgetown. From these two main roads, numerous feeder roads and tracks lead toward the border with Senegal. The Trans-Gambian Highway is the principal road connecting central and northern Senegal with Casamance. This north-south road serves as a major distribution route for the port of Dakar. Because there are no bridges spanning the river, the Trans-Gambian Highway crossing must be made by ferry.

In 1977, the road network totaled 1,858 miles (2,960 km). Included were 190 miles (304 km) of paved roads and 330 miles (528 km) of laterite gravel. An additional 1,068 miles (1,696 km) were all-weather dirt roads.

Many of the roads in and near Banjul are paved. In outlying areas, some of the roads are impassable during the rainy season.

<u>Class</u>	<u>Road Network 1977 (km)</u>				
	<u>Paved road</u>	<u>Gravel road</u>	<u>Earth road all-weather</u>	<u>Earth road dry-weather</u>	<u>Total by Class</u>
Primary roads	227	425	---	174	876
Secondary roads	27	103	---	---	130
Feeder roads	---	---	1,696	258	1,954
Total by type	304	528	1,696	432	2,960
Maintained by PWD	304	528	---	---	832
% of total network	10%	18%	57%	15%	100%

Source: Berger, Road Maintenance Diagnostic Study for the Sahel, 1977.

Responsibility for road maintenance is divided between two government agencies. The Public Works Department (PWD) within the Ministry of Works and Communications is responsible for paved and gravel roads. The Ministry of Local Administration, through regional commissioners, handles the remainder of the network. Maintenance standards do not exist. Budgetary constraints, lack of equipment and personnel, and inadequate organization contribute to the maintenance problems. Private contractors do much of the work.

65% of the repair fleet is over 10 years old. The equipment comes from nine different countries, making standardization nearly impossible. A central workshop is located in Banjul and a temporary field site is at Bakko (near the airport). In addition, there is a regional workshop in Mansakonko and two small shops in Georgetown and Basse.

9.3 Vehicles

In the mid-1970s, 5,831 vehicles were registered in The Gambia. While they were not classified by type, it is estimated that 80% were for passenger transportation. A small, privately-owned trucking industry also exists.

The Gambia Public Transportation Corporation provides local bus service in Banjul and the surrounding area and some inter-city service with a fleet of 55 buses. Private bus operators also provide unscheduled local and inter-city service.

9.4 Railroads

The Gambia does not have a railroad and is, therefore, dependent on road and river transportation.

9.5 Ports

The port of Banjul, the only deep water port in The Gambia, is run by the Gambia Ports Authority (GPA). Banjul handles all of The Gambia's imports and exports. The port underwent expansion in 1974 with construction of a deep water wharf. Plans for additional expansion were announced in 1979. 300 ships call at Banjul each year. 700,000 tons of cargo are handled annually. Port traffic is increasing at a rate of 5% per year. The Gambia River estuary provides a good harbor.

Banjul

Coordinates: 13° 27' N; 16° 04' 35" W.

Authority: The Gambia Ports Authority, Wellington Street, P.O. Box 617, Banjul. Tel: 266/7/8. Telex: GV 235 GAMPORTS

Stevedoring: 07:30 to 19:00 hours. 48 hours notice must be addressed to the Agent. For Monday, the latest preferable notification is Friday.

Accommodation: Depth at entrance 8.5 m. LWOST; anchorage close to town in 14.6 to 27.45 m. Tidal rises 1.83 m. spring tide, and 1.22 m. neap tide. Maximum length of vessel is 182.9 m. in wharves and unlimited at anchorage. 1000 horsepower berthing tug available. Depth at Govt. Wharf, 6.46 m. LWOST; 89.60 m. berthing face; four 6-30-ton mobile cranes; mooring dolphin at N end. Bow and stern mooring bollards on foreshore; fresh water available. Banjul Wharf, length 121.9 m., depth alongside 9.14 m. LWOST; is flanked by a mooring dolphin at each end, set back from the face of the Wharf.

Berth for small vessels up to 5.5 m. depth on the inside of Banjul Wharf. Two transit sheds available. Jetty for shallow-draft vessels available. The foreshore north and south of the Government Wharf has been reclaimed, giving a large open space area for further development. There are three government-operated lighters, each 280 cubic m. capacity. Lighters may be hired for discharging ship at anchor. A private company operates a large fleet of lighters mainly for transporting groundnuts from river ports to Banjul.

Water: Available from Government and Banjul wharves; requirement must be notified with ETA.

Bunkers: Gas and oil are available.

Shiprepairs: Small jobs only undertaken by GPA dockyard workshop. Slipway capable of handling 400-ton vessels.

Pilotage: Compulsory for vessels entering Gambia River at No. 5 Buoy; obtainable at any point on Fairway by request. E.T.A. and draft to be communicated to "Harbour Master Banjul" 48 hrs. before estimated arrival and confirmed 12 hrs. before. Vessels arriving Monday, E.T.A. preferably given no later than Saturday morning. Radio call sign "CSG". The Pilot station has VHF facilities, calling channel 16 (156.8); working channels 12 (156.6) and 14 (156.7). Continuous listening watch kept 08:00-15:00 hrs., Monday to Friday and 08:00-13:00 hrs. on Saturday. Listening watch on weekends if vessels are expected. Reception within a radius of 100 sea-miles. Pilot boat exhibits usual signals.

Working Hours: 07:30 to 12:30; 13:30 to 19:00 hours. Overtime payable at time-and-a-half from 15:30 to 19:00; a night-shift can be arranged from 19:30 to 07:00. Saturday is an ordinary working day. Double rates payable on Sundays and holidays.

Airport: Yundum International Airport. 14 miles from port.

9.6 Inland Waterways

The Gambia River serves as a major transportation artery and is navigable for almost its entire length in The Gambia. Ocean ships with drafts up to 18 feet (5.5 m.) can navigate as far as Kuntaur, 150 miles

upstream. River vessels with shallower drafts call regularly at Fatoto, near the eastern border with Senegal. Weekly river service is maintained between Banjul and Basse. There are 33 river ports ("wharf towns") that can be reached by ships of various sizes.

The Gambia River carries 90% of the groundnut crop. Its importance for passenger travel has declined, however, in favor of road transport. The river also acts as a barrier to road transportation because of the absence of bridges; ferries are the only means of crossing the river. The two main ferry crossings are between Banjul and Barra and at the Trans-Gambian Highway connection near Yelitenda. Other ferry crossings are at Kerewan, Kaur, Georgetown, Basse, and Fatoto. Most of the equipment is old and delays and breakdowns are common.

9.7 Airports

An International airport is located at Yundum, 17 miles (25 km.) from Banjul. There are direct flights from London and from other points in West Africa. Air Senegal links Banjul with Dakar and Bissau. Air Mali provides flights to Bamako, Conakry, Abidjan, and Dakar. Yundum International Airport is being improved and expanded. There is no internal air service.

Note: For up-to-date information, consult the latest issue of the weekly International Notams, International Flight Information Manual, and/or ICAO's Air Navigation Plan for the appropriate region.

BANJUL/Yundum

Location Coordinates	Eleva- tion M/ Temp C	<u>Runway Characteristics</u>				Aircraft/ Strength (1,000 kg)	Fuel/ Octane
		NR/Type	Slope %	Length M	CL		
13° 21' N	29.6 26.2	14/32 INSTR	0.17	2,600	A	B747/148	100 JA1

Remarks: Alternate aerodromes-CONAKRY/Gbessia, DAKAR/Yoff, FREETOWN/Lungi.

Aids: ILS, VOR, RL, LPA, LSA, LVA, LTX, LB, LO, MD, MC, MT, MTD, MS, MFD, MTX, MO. No telex.

KeyAbbreviations

INSTR	Instrument Approach Runway
N-INSTR	Non-Instrument Runway

Radio Aids

ILS	Instrument Landing System
VOR	VHF Omni-Directional Range
RL	Radio Locator

Lighting Aids

LPA	Precision Approach Lighting System
LSA	Simple Approach Lighting System
LVA	Visual Approach Slope Indicator System
LTX	Taxiway Lighting
LB	Aerodrome or Identification Beacon
LO	Obstruction Lighting

Marking Aids

MD	Runway Designation Markings
MC	Runway Center Line Markings
MT	Runway Threshold Markings
MTD	Runway Touchdown Markings
MS	Runway Sidestripe Markings
MFD	Fixed Distance Markings
MTX	Taxiway Center Line & Holding Position Markings
MO	Obstruction Markings

9.8 Aircraft Entry Requirements

All private and non-scheduled commercial aircraft overflying or landing for commercial or non-commercial purposes must obtain prior approval from the Director of Civil Aviation, Banjul, Gambia (telegraphic address: CIVILAIR; BANJUL) far enough in advance to permit processing and reply. A request must include all details pertinent to the flight and provision for prepaid reply. A flight plan must be on file.

9.9 Airlines

Gambia Airways, P.O.B. 268, Banjul, is operated in partnership by The Gambia and British Caledonian Airways. The Gambia is the majority share-

holder. Gambia Airways is a handling agency only, and does not own or operate any planes.

The Gambia is served by the following foreign airlines: Air Guinea, British Caledonian Airways, Ghana Airways, Air Mali, Nigeria Airways, and Air Senegal.

9.10 Distances

<u>Destination</u>	<u>Statute Miles</u>
Banjul to:	
Conakry	290
Dakar	97
Freetown	250
Geneva	2,681 (via Dakar)
Guam	11,041 (via Rome and Dakar)
Lagos	1,577
London	2,418
Monrovia	567
New York	3,924 (via Dakar)
Nouakchott	366 (via Dakar)
Panama	5,045 (via Caracas and Canary Islands)
Paris	2,726 (via Dakar)
Rome	2,696 (via Dakar)
St. Louis (Senegal)	162
Stockholm	3,158
Washington, D.C.	4,127 (via New York and Dakar)
Ziguinchor	53

10. Power and Communications

10.1 Electric Power

The Gambia Utilities Corporation (GUC), a government-owned company created in 1972, is responsible for providing electric power. The electric system consists of 7 non-interconnected power grids. Total capacity is about 10 MW with 80% concentrated in the Banjul/Kombo St. Mary area. Smaller generating facilities are located in Brikama, Mansakonko, Farafenni, Georgetown, Bansang, and Basse. The Gambia Product Marketing Board's groundnut oil mills and the Banjul brewery have their own power plants. Most of the hotels in the capital area have standby emergency generators. In 1977, 30 million kWh of electricity (50 kWh per capita) were produced.

All of the power is thermally generated from expensive light fuel oil. Most of the generating units are old and in need of replacement. The transmission system is often overloaded, equipment breakdowns are frequent, and power failures common. Power disruptions seriously tax GUC's ability to provide service.

During 1977/78, the electric system experienced major difficulties. The largest generating unit in the country broke down in November, 1977, affecting 85,000 people and causing an estimated \$4 million worth of damage. The Gambia bought three 800 kW generating units to restore power to Banjul. Soon after, the Government purchased three additional 775 kW power units to meet the electricity needs of the capital area. However, because none of these units is designed or intended for continuous use, equipment failures and power outages still occur.

One of the country's 2.2 MW generators malfunctioned in late 1979, cutting electricity production in half. The Gambia obtained a loan from the African Development Bank to build a new power station and purchase two new 3 MW generators. Part of the loan will be used to rehabilitate existing generators and to train staff. The new power units, which were scheduled to begin operating in 1981, will use cheaper heavy oil. With these new generators, the system's capacity will be sufficient until the mid-1980s, at which time an additional 3 MW generator will be needed.

GUC suffers from managerial and financial difficulties and lacks an efficient and experienced staff. The power units are old and poorly maintained. Fuel and repairs are costly. In 1979, GUC operating losses were D 10.5 million (42% of equity). The continuous need to spend money on restoring power and repairing equipment has retarded expansion of the electric system to rural areas. It is estimated that only 30% of the activities

targeted for the electric system in the 1975-1980 five year development plan were actually implemented.

10.2 Telecommunications

In 1980, there were 3,000 telephones in The Gambia. The telephone network is interconnected with the Senegalese system. There is also satellite telephone service to Europe and the U.S. Telex services are maintained with Europe, the U.S., and Dakar. Radiophone connections are available to the West Coast of Africa, the United Kingdom, and most of Europe.

10.3 Radio Network

There are two radio stations, Radio Gambia and Radio Syd. At the beginning of 1977, there were 100,000 radio receivers in the country.

Radio Gambia (mile 7, Cape Road, Banjul, Tel: 210) is the government-owned, non-commercial station run by the Gambia Broadcasting Service. Founded in 1962, Radio Gambia broadcasts for 15 hours each day in English, Mandinka, Wollof, Fula, Jola, and Serahulay from 2 MW transmitting stations. Programming includes general information, education and entertainment. A second channel was scheduled to begin broadcasting in 1981. Plans are to broadcast English and educational programs on one channel and vernacular languages and rural programs on the second channel.

Radio Syd (P.O.B. 279, Banjul) is a privately-owned, commercial station that broadcasts 20 hours per day. Broadcasts are in English, French, and the main vernacular languages. Also, tourist information is broadcast in Swedish and German. Programming is mostly music.

10.4 Television

There is no television service in The Gambia. However, programs can be received from neighboring Senegal.

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1. General Information1.1 Geographic Codes

AID	685
FIPS	SG
State region	AF

1.2 Country Names

Official	Republic of Senegal
Local	Republique du Senegal
Short	Senegal

1.3 Calendar and Holidays

New Year's Day.....	January 1
Independence Day.....	April 4
Labor Day.....	May
French National Day.....	July 14
Assumption.....	August 15
All Saints' Day.....	November 1
Christmas.....	December 25

Moveable Christian and Moslem religious holidays include: Id al-Fitr, Id al-Adha, Milad al-Nabi, Easter Monday, Ascension, and Pentecost Monday.

1.4 Currency

290.00 francs CFA = US \$1.00 (February, 1982)
100 centimes = one franc CFA

1.5 Time Zones

GMT or EST + 5

1.6 Host Country Embassy and Staff in U.S. (November 1981)

Embassy of the Republic of Senegal
 2112 Wyoming Avenue, N.W.
 Washington, D.C. 20008
 Tel: 234-0540 (0541)

Ambassador.....Andre Coulbary
 Counselor (Press).....Emile J. Senghor
 First Secretary.....Tamsir Lo

1.7 U.S. Mission to Senegal and Staff (September 1981)

Embassy of the United States
 Boite Postale 49
 Avenue Jean XXIII
 Dakar
 Tel: 21-41-96
 Telex: 517 AMEMB SG

Ambassador.....Charles W. Bray III
 Deputy Chief of Mission.....Edmund T. DeJarnette
 Economy/Commerical Officer.....William H. Memler
 Labor Officer.....Eric Svendsen
 Consular.....Joseph B. Nowell
 Administrative Officer.....Stanley H. Robinson
 Regional Security Officer.....Arthur A. Maurel
 Agricultural Section.....Walter A. Stern
 (resident in Abidjan)

Agency for International
 Development.....David Shear
 Public Affairs Officer.....Arthur S. Giuliano
 Defense Attache.....LtC. Roy H. Shelton, USMC

1.8 Sister Cities

Dakar	Washington, D.C.
Kaolack	Ypsilanti, MI
Linguere	Woodbridge, CT
Ziguinchor	New Haven, CT

1.9 Treaties and Agreements with U.S.

- Agricultural Commodities
- Aviation
- Defense
- Economic and Technical Cooperation
- Investment Guarantees
- Peace Corps

1.10 International Organization Memberships

African Development Bank (AFDB), Afro-Malagasy and Mauritian Common Organization (OCAM), Agency for Cultural and Technical Cooperation of French Speaking People, EEC, European Investment Bank (EIB), FAO, Gambia River Development Commission (OMVG), IBRD, IDA, IFC, ILO, IMF, International Civil Aviation Authority (ICAO), International Telecommunications Union (ITU), Interstate Committee to Combat the Sahel Drought, OAU, Senegal-Gambia Confederation, Senegal River Development Commission (OMVS), UNDP, UNESCO, West African Economic Community (CEAO), WHO.

1.11 Travel and Visa Information

Passport and visa are required. Yellow fever certificate required of all arrivals over the age of one year but no certificate required if arriving from non-infected area and if stay is less than 2 weeks. A transit visa, valid up to three days, is available for \$2.40; an entry visa (tourist or business), valid for 3 days to 3 months, is available for \$4.75, with two photographs, from the Embassy of Senegal, Washington, DC 20008, or the Permanent Mission of Senegal to the U.N., New York, NY 10017.

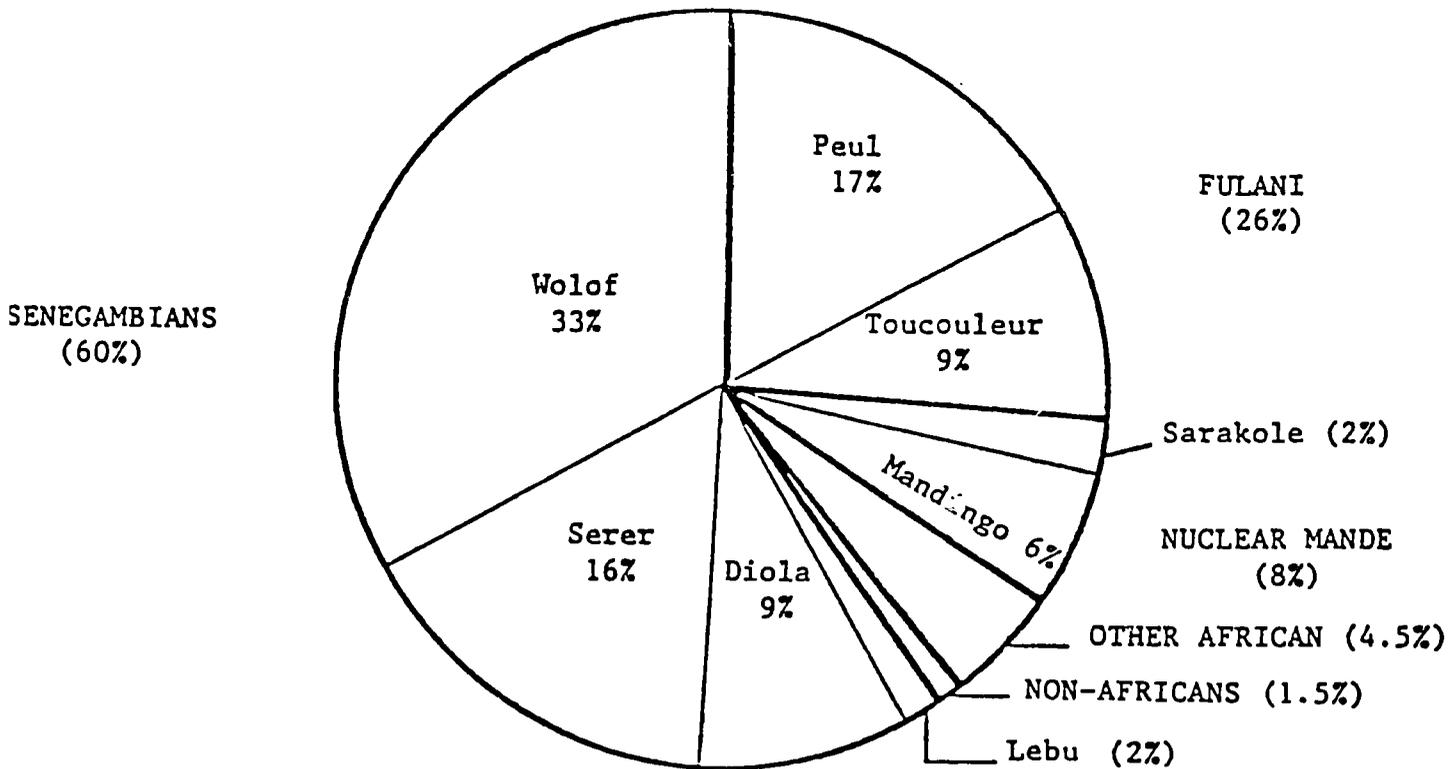
1.12 Ethnic and Sociocultural Groups

Senegalese society is characterized by a highly complex ethnic structure. There are three main ethnic groups in Senegal: the Senegambians, the Fulani, and the Mande. Each is divided into several major subgroups and many smaller ones. However, because of common dress, diet, language, religion, and extended family structure, the culture is fairly homogeneous with little ethnic conflict or religious tension.

The six largest subgroups - Wolof, Peul, Serer, Diola, Toucouleur, and Manding - account for 90% of the population. Many of these subgroups are located in specific parts of the country.

Senegambians are the largest ethnic group, comprising 60% of the total population. The original inhabitants of the coastal areas, they are still concentrated in the western half of the country. The Wolof, peanut and millet farmers and numerically the most important subgroup, predominate in the sandy western and northwestern regions. The Serer, farmers and stockmen, are concentrated in the west-central regions of Sine-Saloum and Thies. The Lebu, fishermen and landowners, inhabit the Cap Vert Peninsula near the capital city of Dakar. The Diola are located in the lower reaches of the Casamance and Gambia River valleys. Farmers, they grow rice in the humid areas near the coast and peanuts and millet in drier inland locations.

Ethnic Groups



Source: Nelson, Area Handbook of Senegal, 1974; Europa Publications, The Europa Year Book, 1981.

The Fulani constitute the second largest group of peoples. A mixture of Toucouleur and Berbers, they are thought to have originated in the Sene-

gal River valley. Currently, the Fulani are widely dispersed in all of West Africa. In Senegal, the two main Fulani groups are the Peul, nomadic pastoralists and sedentary agriculturalists, who are geographically scattered throughout the country, and the Toucouleur, who are found in the Middle Senegal River valley with lesser concentrations located along the Saloum River and in the extreme southern section of the country.

Mande peoples make up 8% of the population. Inhabiting the grasslands, they consist of the Manding, farmers and traders who are concentrated in the southern and southeastern parts of the country, and the Sarakole, a minority group of Berber descent who inhabit marginal agricultural areas along the eastern border with Mali and Mauritania.

Other African peoples include the Maures (northern pastoralists), the Bassari (localized in the foothills of the Fouta Djallon mountains), and the Cape Verde Islanders. Europeans, mostly French and Lebanese, comprise about 1.5% of the total population.

1.13 Languages

French is the official language in Senegal and is used in education, government administration, and technical and foreign communication. Approximately 12% of the Senegalese population is literate in French, but many others understand and speak it. In addition, there are many indigenous languages and dialects. All of the vernacular languages are part of the Niger-Congo linguistic family; most belong to the western branch of the West Atlantic subfamily.

Eighty percent of the population speaks Wolof and the percentage is increasing. Other indigenous tongues include Sere (in Thies and the Sine-Saloum regions), Pulaar (along the Senegal River), Diola (in Casamance), and Manding and Sarakole (in eastern and southeastern areas). Wolof is usually the second language for most non-Wolof ethnic groups. Adult literacy is estimated at 12%.

1.14 Religions

Approximately 90% of the Senegalese population is Muslim, 5% is Christian (mostly Roman Catholic) and 5% is animist. The Serer and the Diola are the only major ethnic groups that have not been fully converted to Islam.

The Islamic population is divided into brotherhoods which partly coincide with ethnic group membership. 95% of the Muslim population belongs to brotherhoods, the two largest of which, the Tidjaniya and the Muridiya, represent 57% and 26% of the total membership respectively. Other brotherhoods include the Layennes and the Qadiriya. The brotherhoods wield enormous political, social, and economic influence through various enterprises including groundnut cultivation, transportation, and the operation of cooperatives. The leaders, often known as Saints, exact labor and a percentage of crop sales from their members.

2. Government

2.1 National Government

The Constitution of 1963 provides for a President elected by direct universal suffrage to a 5-year term. The President appoints and is assisted by a Prime Minister and a Cabinet. The President controls foreign policy, the military, and the judiciary.

Legislative power is vested in a unicameral 100-member National Assembly whose members are elected by direct universal suffrage to a 5-year term concurrent with that of the President. Proportional representation in the National Assembly was introduced in 1978. Majority rule is retained for presidential, municipal, and rural elections.

The judicial system comprises a Supreme Court, whose members are appointed by the President, a High Court of Justice appointed by the National Assembly from among its members, a court of Appeals, and magistrates' courts

A recent constitutional amendment (1981) permits 5 political parties. They are the Socialist (ruling), Liberal, Marxist-Leninist, Conservative, and Progressive parties.

On February 1, 1982, a Senegambian Confederation uniting Senegal and The Gambia came into being. Senegalese President Diouf will lead the confederation. Under terms of the agreement, the two states will retain their individual sovereignty but gradually merge their monetary, financial, customs, foreign, and defense policies.

2.2 National Organization

Senegal is divided into eight administrative regions under the overall jurisdiction of the Minister of the Interior. Each region is administered by a governor who is appointed by the President. The governor is assisted by two deputies (one for administration and one for development) and a regional assembly.

The regions are divided into 28 departments which, in turn, are organized into 90 districts. Each region is headed by a prefect who sees to the implementation of local laws and supervises the local administrative units. The districts are headed by subprefects.

The basic administrative unit in the countryside (excluding some towns) is the Rural Community (Communaute Rurale). Rural Communities, usually composed of groups of villages with a total population of 10,000, elect Rural Councils which have budgetary autonomy. Representatives from the Rural Councils serve on departmental and regional assemblies. Several Rural Communities may join together and cooperate on specific development projects. Also, there are several towns that operate autonomously with elected municipal councils. This rural political/administrative structure, instituted in 1972, is not yet operational in all parts of the country.

Political Regions

<u>Region</u>	<u>Capital</u>
Cap Vert	Dakar
Casamance	Ziguinchor
Diourbel	Diourbel
Fleuve	Saint-Louis
Louga	Louga
Senegal-Oriental	Tambacounda
Sine-Saloume	Kaolack
Thies	Thies

2.3 Key Political Figures (March 1982)

- President.....Diouf, Abdou
- Prime Minister.....Thiam, Habib
- Min. of State for Equipment.....Seck, Assane
- Min. of State for Foreign Affairs.....Niasse, Moustapha
- Min. of State for Justice, Keeper of
the Seals.....M'bengue, Alioune Badara
- Min. of Armed Forces.....Sow, Daouda
- Min. of Commerce.....Kane, Fallou
- Min. of Culture.....Mathiam, Joseph
- Min. of Economy & Finance.....Seck, Ousmane
- Min. of Higher Education & Scientific
Research.....Sene, Djibril
- Min. of Industrial Development & Crafts.....Kane, Cheikh Amidou
- Min. of Information and Telecommunications.....Ka, Djibo
- Min. of Interior.....Fall, Medoune
- Min. of National Education.....Fall, Abdel Kader

Min. of Plan & Cooperation.....Toure, Mamadou
Min. of Public Health.....Diop, Mamadou
Min. of Public Offices, Work &
Employment.....Diagne, Alioune
Min. of Rural Development.....Diop, Serigne Lamine
Min. of Social Welfare.....Diagne, Babakar
Min. of Urban Affairs, Housing &
Environment.....Wele, Oumar
Min. of Water Resources.....Diop, Samba Yella
Min. Without Portfolio In Prime
Minister's Office.....Diop, Caroline

3. Disaster Preparedness

3.1 Disaster Types and History

Senegal has experienced at least one disaster in twelve of the past seventeen years. Due to variability of rainfall, drought represents the greatest potential threat to health and well-being. The timing of precipitation during the course of the year is as important as the total amount, especially in marginal areas. However, deficient rainfall can affect the entire country as evidenced by the 1968-73 and 1977-78 droughts which were severe and widespread. In addition to drought, Senegal has also suffered from epidemics, floods, storms, civil strife, and damaging brush fires.

Disaster History

<u>Disaster</u>	<u>Location</u>	<u>Date</u>	<u># Killed</u>	<u># Victims</u>	<u># Homeless</u>	<u>Damage (\$000)</u>
Civil Strife	Casamance Area	7/64	0	30,000	20,000	n/a
Drought	Northwest	66	0	5,000		n/a
	Casamance	8/68	0	375,000		5,000
	Countrywide	71	0	5,000		1,500
	Northeast	73	0	1,400,000		74,800
		74	n/a	n/a		n/a
		75	n/a	n/a		n/a
	Countrywide	77	0	3,175,000		300,000
	Senegal-Oriental	80	0	1,000,493		n/a
Storm	St. Louis	2/66	0	2,000	2,000	50
Tornado	Casamance	9/64	n/a	n/a		n/a
Yellow Fever	Diourbel Region	10/65	60	210		n/a
Cholera	Cap Vert Region	12/78	5	298		n/a

Source: OFDA Disaster History data base at the Office of U.S. Foreign Disaster Assistance in Washington, D.C. Covers 1900 to the present.

3.2 Host Disaster Plan

Senegal has no disaster plan. However, there is a Disaster Relief Coordinator and a national disaster organization. Appointed in 1974 in response to Sahelian drought, the Disaster Relief Coordinator heads a Disaster Relief Department within the Ministry of Planning and Cooperation. This department continues to be responsible for coordinating relief activities. Should a disaster occur, an interministerial meeting will be called with representatives from each government ministry in attendance. Specific responsibilities include the distribution and transportation of all relief supplies within the country and payment of transportation and warehousing expenses.

Note: Recently the United Nations Office of the Disaster Relief Coordinator (UNDRO) offered technical assistance to the Government of Senegal (GOS) to review its national disaster planning and organizational capabilities. No results of this effort are currently available. (Brown and LeBeau, Survey of Disaster Preparedness Needs and Development Activities in the Sahel, 1981)

3.3 U.S. Disaster Relief Team

<u>Name</u>	<u>Title</u>
Paul Rusby (Tour ends 6/82)	Regional Food for Peace Officer Mission Disaster Relief Officer (MDRO)
John Ballis (Tour ends 9/25/82)	Agricultural Officer Alternate MDRO
Larry Grant	Embassy Administration
Stephen Nolan	General Services Officer (GSO)
Warren Duerbeck	General Services Officer (GSO)
Mark Burns	Military
Dr. Arnold Weber	Medical (MD)
Mary Flynn	Secretary
Victor Rotundo	USICA, Public Affairs Officer (PAO)

3.4 Mission Disaster Relief Team/Functions

<u>Function</u>	<u>Action Officer</u>
Food and Water Preparation, Treatment, and Distribution	MDRO/MD
Medical Services	MD
Shelter and Survival Supplies	GSO(s)
Engineering, Communications	RDO and US Engineer
Building Inspection and Condemnation	TDY from REDSO/WA, Abidjan
Transportation, Logistics, Fuel Supplies, and Distribution	GSO(s)
Rescue and Relief Assessment	---
Coordination and Monitoring Activities	MDRO
Security	Embassy Administration
Administration and Reporting	Alternate MDRO
Information	USICA, PAO
Clerical and Typing	Secretary DCM

3.5 Peace Corps

The Peace Corps has 104 volunteers (PCVs) working in Senegal who might be called upon for assistance in the event of a disaster. The PCVs are involved in a variety of development programs and projects including rural development, health, nutrition, education, forestry, and fishing.

3.6 US Volags

Africare

B.P. 1792 Bamako, Mali

Provides medicines and medical supplies to villages and assists agricultural cooperatives with materials and equipment. Program is administered from Mali.

American Friends Service Committee

Involved with food production and agriculture projects.

Baptist World Relief

Supports well digging programs in remote rural villages and engages in some food relief activities.

Catholic Medical Mission Board

Sends medicines, equipment, and materials to medical facilities throughout Senegal.

Catholic Relief Services - United States Catholic Conference

Norbert Clement, Director

Office address: 140 Rue Blanchot; [REDACTED]
[REDACTED]

Office Tel: 211-02, 269,02; [REDACTED] [REDACTED]

Distributes U.S. Government-donated food to preschool health and nutrition programs, food-for-work projects, community development projects, and school lunch programs. Also distributes medical supplies and materials and is involved in agricultural development and demonstration projects.

CRS usually stocks quantities of food, medicines, and clothing. However, callforwards are made quarterly with items arriving in September, December, March, and June. One month is usually required to clear and distribute supplies. CRS vehicles include 2 Volkswagen buses and 4 Peugeot station wagons. CRS is on extremely good terms with GOS, resulting in excellent collaboration in emergencies.

Church World Service

Involved in food production and agriculture projects.

National Council of Catholic Women

Provides grants for the purchase of equipment for 2 maternity centers.

New Tribes Mission, Inc.

Mission Evangelique Simbandi-Brassov par Sedhiou, Casamance

Staffs medical dispensaries for the provision of basic medical care in rural Casamance. Also conducts literacy campaigns and linguistic studies.

Southern Baptist Convention

Involved in programs in community development.

Pathfinder Fund

Renovates and provides equipment for six family planning centers. Also trains family planning and paramedical staff.

United Church Board for World Ministries

Supports agricultural development and training programs.

United World Mission

B.P. 3103, Dakar

Operates a children's home and sponsors social programs/clubs for teenagers in Dakar.

World Vision Relief Organization, Inc.

B.P. 1574

Abidjan, Ivory Coast

Sets up programs for immunizing children in eight villages against diphtheria, whooping cough, and polio.

Y.M.C.A.

Union Chretienne des Jeunes Gens

Point E (opposite police station)

B.P. 12013, Dakar (offices also at Deni Malick Gueye)

Programs in community development, child care, and youth services. Vehicles include one 404 Peugeot truck, one 2 CV Citroen, and one Volkswagen van.

Source: TAICH Report: Senegal, January 1977 (updated through personal communication with the American Council of Voluntary Agencies for Foreign Service, Inc., January, 1982).

3.7 Other International and Voluntary Agencies

United Nations Development Program (UNDP)

Mr. Martin Borna

Regional Representative
2, Avenue Roume, Dakar
Tel: 502-04, 502-08



World Food Program (WFP)
Mr. Paul Westdal
2, Avenue Roume, Dakar
Tel: 502-04 and 262-20



UNICEF
Mr. Knud Christensen, Representant de l'A.O.
43, Avenue Albert Sarraut
B.P. 429, Dakar
Tel: 229-22, 269-70



CARITAS
Frere Picard (or Pere Charles Dieme)
Km 11, Rte de Rufisque, Thiaroye
B.P. 439
Tel: 600-20, 600-28

Food & Agriculture Organization
Mr. Van-Den Aneele
2, Avenue Roume, Dakar



O.M.S.
Mr. Ralinoro
55, Avenue Albert Sarraut
Dakar
Tel: 269-62

Senegalese Red Cross
(President Rito Alcantara)
Comite National
Boulevard Roosevelt, B.P. 299
Dakar
Phone: 227-75

None of above organizations have any trucks except UNICEF (one 5-ton vehicle). All others above have 2 to 3 Landrovers for personnel to use on project inspection trips.

Note: At the present time, there is no formal plan among international volags to coordinate activities or exchange information. If there is a disaster, the U.S. MDRO will set up a committee of international volag representatives at which time there would be an exchange and coordination of information and action. It has been proposed that a conference be held to discuss creation of a coordinating body. However, in the past, volags have strongly resisted establishment of such coordinating efforts.

3.8 Host Resources

Senegal is not likely to have sufficient supplies of such items as tents, blankets, and medicines to meet the needs of more than 15,000 persons.

Medicine - The GOS keeps only a one or two month supply of drugs on hand believing that excellent air transport to Dakar from Europe and the U.S. makes larger stocks unnecessary. The importation of drugs and medical supplies is handled by the Ministry of Public Health. Private importation of medical supplies is the responsibility of the Pharmacie Nationale d' Approvisionnement. Such activities must be approved by the Ministry of Public Health. Senegal's capacity to handle certain refrigerated drugs and materials is insufficient. The cold chain is inadequate and there are difficulties in replenishing containers.

Shelter - Shelter supplies are inadequate. There are only enough blankets and tents to meet the needs of 15,000 persons.

Food - Flour mills in Dakar keep a 3 month supply of wheat and corn. Sorghum, millet, and rice are the emergency foodstuffs that would most likely be needed after a disaster. Consumption of imported rice averages about 14,000 MT per month. Government policy is to maintain a 3 month supply. As a result of a good harvest in 1981, the GOS is planning to purchase locally 70,000 tons of millet/sorghum. (See Grain Storage, section 3.10.)

Military - The Senegaise armed forces total 8,350. The Army (7,500) is made up of 4 infantry battalions, 1 engineering battalion plus parachute and commando companies. Equipment includes 12 armoured cars and 12 personnel carriers. The Navy numbers 650 and has 5 large patrol craft, 13 coastal patrol craft, and 3 landing craft. The naval base is at Dakar. The Air Force consists of 200 men. Equipment include 5 C-47s and 6 F-27s, one

Caravelle transport plane and several small helicopters. Paramilitary forces number approximately 2,000. France provides technical and material aid and maintains a small military force in Dakar.

Health Facilities - See Health, Nutrition, and Housing, section 5.

Medical Transportation - The Senegalese and French Armies, the Senegal Navy, the Dakar Fire Department, and each rural hospital have at least one ambulance. The hospitals in Dakar maintain a pool of 5 ambulances.

3.9 Host Contacts

The following organizations under the Ministry of Health can be contacted regarding any medical supply requirements during a disaster.

Croix Rouge Senegalaise
Comite National
Boulevard Roosevelt, Dakar
B.P. 299
Tel: 227-75

Pharmacie Nationale d'Approvisionnement du Senegal
Dakar, Hann
Tel: 327-14 and 316-14

Institut Pasteur
Avenue Pasteur, Dakar
Tel: 266-21

Union Pharmaceutique Inter-Africaine
Km 2, Route de Rufisque
B.P. 187
Tel: 341-66/67, 368-39

3.10 Grain Storage

Grain silos and food storage warehouses are concentrated in urban areas. In the mid-1970s, the National Cooperative and Development Assistance Office (ONCAD) began implementing a storage capacity expansion project after both increased millet/sorghum production and the 1973 drought intensified demand. Most existing facilities, designed for bag storage, have walls that are not resistant to lateral pressure from bulk grain. It is estimated that 85% of millet/sorghum stocks is stored on farms.

ONCAD Grain Storage Centers

<u>Regions</u>	<u>Location</u>	<u>Capacity*</u>
Casamance	Bignona	10,000
	Kolda I	8,000
	Kolda II	8,000
	Velingara	10,000
	Diannah I	5,000
	Diannah II	5,000
		<u>46,000</u>
Diourbel	Bambey I	10,000
	Bambey II	10,000
	Mbacke I	10,000
	Mbacke II	10,000
	Darou Mousty	10,000
	Kebemer	10,000
	Louga	10,000
	Darah	10,000
		<u>80,000</u>
Senegal-Oriental	Tambacounda	10,000
	Koussanar	8,000
		<u>18,000</u>
Sine-Saloum	Kaffrine	20,000
	Gossas	8,000
	Buinguineo	10,000
	Niora Du Rip	10,000
	Keur Madiabel	10,000
	Fatick	10,000
	<u>68,000</u>	
Thies	Base Aerienne (Air Base)	<u>30,000</u>
Total Central Storage		242,000 MT

* In metric tons

Source: ONCAD, November 24, 1975.

Note: The development infrastructure of Senegal is undergoing reorganization. ONCAD may no longer exist in its present form.

Senegal



502736 9-77 (541834)
 Lambert Conformal Projection
 Standard parallels 8° and 32°
 Scale 1:3,800,000
 Boundary representation is
 not necessarily authoritative

-  Railroad
-  Road
-  Airport

4. Population

4.1 National Demographic Characteristics

In mid-1980, the population of Senegal was estimated at 5.8 million. With a crude birth rate of 48/1000 and a crude death rate of 22/1000, the annual rate of growth was 2.6%. About 30% of the population was classified as urban and 70% as rural. The urban growth rate was 4.1%. Rural areas are growing at a much lower rate (1%), probably as a result of out-migration to the cities. Dakar, the capital and largest city with a 1976 population estimated at 800,000, is increasing at a rate of almost 7% per year. At current rates of increase, the population of Senegal will double in 27 years. Projections for the year 2000 suggest a total population of 9.7 million.

The Senegalese population is very young with 44% under 15 years of age. Only 3% of the population is 65 years of age or older. Life expectancy at birth is estimated to be 44 years. However, there are tremendous differences in life expectancy between Dakar (60 years) and the countryside (38 years).

Mortality rates are high for all age groups. The crude death rate (22/1000) is twice as high as the world average in 1980. The 1980 infant mortality rate (160/1000 live births) is also very high. Here, too, the rural rate (181/1000) exceeds that of the country as a whole.

Source: Population Reference Bureau, 1981 World Population Data Sheet, 1981.

4.2 Population Distribution

Population distribution in Senegal is uneven with 40% of the population residing on less than 4% of the total land area. Most of the population is concentrated in the western part of the country. Sixty-five percent of all urban residents live in Dakar and 60% of the rural population live in the Cap Vert region and in the Groundnut Basin (Sine-Saloum, Thies, Diourbel) within 200 miles of Dakar.

Overall population density (1980) is 76 persons/sq. mile (30/sq. km); agricultural density is 182 persons/sq. mile (72/sq. km). In the western areas of more concentrated settlement, densities can exceed 1,000 persons/sq. mile (385/sq. km). The central and eastern regions of the country are only sparsely populated.

Population by Region

<u>Region</u>	<u>Population</u>	<u>Total Area</u>		<u>Population Density</u>	
		<u>sq. miles</u>	<u>sq. km</u>	<u>sq. mile</u>	<u>sq. km</u>
Cap Vert	984,660	212	550	4,645	1,790
Casamance	736,527	10,946	28,350	67	26
Diourbel*	425,112				
Louga*	417,137	12,952	33,547	65	25
Fleuve	528,473	16,988	44,127	31	12
Senegal-Oriental	286,148	25,792	59,602	11	5
Sine-Saloum	1,007,736	9,245	23,945	109	42
Thies	698,994	2,549	6,601	274	106
TOTAL	5,085,388	78,684	196,722	65	26

*Note: Area and density figures for Diourbel and Louga are combined.

Source: Senegalese Census, April 1976 as cited in The Europa Year Book, 1981.

4.3 Urban Population

Urban migration has greatly accelerated since World War II. Many migrants are seasonal workers from inland areas and neighboring countries (10,000-50,000/year); most are farm laborers.

Most migrants from the countryside are seeking better health facilities, social services, and employment opportunities. Periodic droughts and fluctuations in world peanut prices (the main cash crop) also encourage rural-urban migration.

<u>Urban Centers</u>		
<u>Provincial Capitals</u>	<u>Province</u>	<u>Population 1976 (000)</u>
Dakar	Cap Vert	798.8
Thies	Thies	117.3
Kaolack	Sine-Saloum	106.9
Saint-Louis	Fleuve	88.4
Ziguinchor	Casamance	72.7
Diourbel	Diourbel	50.6
Louga	Louga	35.1
Tambacounda	Senegal-Oriental	25.1
<u>Department Capitals</u>		
M'bour	Theies	37.7
M'backe	Diourbel	25.0
Kolda	Casamance	19.3
Tivaouane	Thies	17.4
Fatick	Sine-Saloum	12.5
Kaffrine	Sine-Saloum	11.2
Dagana	Fleuve	10.5
Bambey	Diourbel	10.0
Matam	Fleuve	10.0

Source: World Bank, The Economic Trends and Prospects of Senegal: Volume IV, 1979.

5. Health, Nutrition, and Housing

5.1 Overall Health Status

Health conditions in Senegal are less than adequate. The country lacks an effective infrastructure to combat disease; infectious diseases and malnutrition are major problems. The crude death rate and the infant mortality rate are high, and life expectancy is low. Only 37% of the total population has access to safe drinking water. Conditions in the rural areas are considerably worse than in the urban centers. Adequate sanitation and access to health facilities and trained personnel are lacking in the countryside. As a result, only about 30% of the population can be said to have access to adequate health care.

Health data for Senegal are scarce. Most of the country's health care facilities and personnel, and a disproportionate share of the health care expenditures, are concentrated in the urban centers, especially the Cap Vert region and the capital city, Dakar. With only 20% of the Senegalese population, the Cap Vert region receives 45% of the health budget. Total health expenditures are difficult to estimate because service delivery is fragmented between the public and private sectors. Inadequate health care in the rural areas has resulted in an increase in the number of urban referrals.

5.2 Summary of Diseases

The Senegalese population suffers from a variety of diseases. Some are caused by polluted water supplies. Others are the result of pathogens transmitted by insect vectors that spend a part of their life cycle in water. The most prevalent diseases are malaria, tuberculosis, measles, schistosomiasis, dysentery, influenza, venereal disease, trachoma, trypanosomiasis, and gastrointestinal diseases in children. Other diseases that present chronic problems, but are either regional or limited to cyclical outbreaks include hepatitis, yaws (Casamance), onchocerciasis (Senegal-Oriental, east and south of Tambacounda), leprosy, typhoid, diphtheria, cholera, yellow fever, polio (over 500 cases in 1974-76), meningitis, and tetanus.

The Senegal River basin is an area of serious endemic and epidemic disease. Water supply development projects underway here threaten to expand the size of the area and population exposed to water borne vectors. As a result, there could be a dramatic increase in the incidence of malaria, cholera, schistosomiasis, onchocerciasis, yellow fever, Guinea worm (dracunculiasis), and other zoonotic diseases.

Malaria - is considered the most serious health problem in Senegal. It is endemic in all parts of the country. More than 550,000 cases of malaria were reported in 1974. Tests for malaria are positive in 76% of the population under 30 years of age. The rate of infection is 56% in the Fleuve region and 48% in the Ferlo. Only one quarter of the population is covered by control programs. Contributing to the incidence of malaria are the use of natural vegetation for housing materials, poor sanitation, poor drainage, and good vector breeding grounds. Breeding occurs during the rainy season (July-September) but transmission is year round. Also, immigrants passing through the Senegal River basin contribute to endemicity.

Tuberculosis - the number of reported cases of tuberculosis appears to be declining. (In 1973 almost 2,000 cases, including 115 deaths, were reported.) It is uncertain whether the actual rate of infection is decreasing or if there is less active/complete case reporting. However, TB remains a major health problem.

Measles - are a major cause of death in young children. Overall the case mortality rate is 13%. In 1974, more than 35,000 cases of measles were reported. Peak incidence occurs during May and June. Endemicity is wide-spread. Despite considerable progress with vaccination programs, the number of inoculations fluctuates significantly from one year to the next. Shortages of vaccine and the lack of an adequate cold chain are the main reasons.

Gastroenteritis - one of the leading causes of death in children under 5 years of age, gastroenteritis results, in part, from the common practice of weaning children on brews and porridges made with polluted water or unboiled milk.

Tetanus - is generally widespread throughout Senegal. Umbilical tetanus is most common with extremely high mortality rates. Overall case mortality is 39%. A massive inoculation program was conducted in the early 1970s.

Veneral disease - is endemic, especially in the urban areas. Considered a major health problem, venereal disease contributes to infant and child mortality and is a major cause of sterility in men and women. Gonorrhea is highly prevalent and syphilis is endemic in the Fleuve region.

Schistosomiasis - a common disease throughout Senegal, schistosomiasis is spread through a snail host. In the early 1960s an infection rate of nearly 100% was evident in eastern Casamance. Currently it is estimated that 10% of the population of the Senegal River delta and 40% of the persons residing along the Mali border are affected by this disease. The main route

of dispersion appears to be along the Senegal River. Almost 10,000 cases were reported in 1973.

Onchocerciasis - or river blindness infects all parts of the country. Particularly high incidences occur in Senegal-Oriental, east and south of Tambacounda. As a result of infestation, many fertile river valleys cannot be permanently settled or effectively exploited. Needed agricultural expansion is, therefore, retarded.

Trypanosomiasis - or sleeping sickness is fairly wide-spread in Senegal. The disease is endemic in the Cap Vert region, the Gambia River basin, Casamance, and Senegal-Oriental.

Sources: Brown and Lebeau, A Survey of Disaster Preparedness, 1981; Office of Arid Lands Studies. Draft Environmental Report on Senegal, 1980; LICROSS Fact Sheet, Basic Facts on Senegal, 1978.

5.3 Vital Statistics

Crude birth rate	48/1000 population
Crude death rate	22/1000 population
Rate of natural increase	2.6%/year
Life expectancy at birth	44 years
Infant mortality rate	160/1000 live births
% under 15 years	44%

Source: Population Reference Bureau, 1981 World Population Data Sheet, 1981.

5.4 Health Facilities

Most of the health facilities and services in Senegal are financed and operated by the Government. The health services delivery system follows the political/administrative structure of the country.

In 1977, Senegal was divided into seven health service regions with at least one government-run hospital located in each. The three largest and best equipped hospitals are located in Dakar which, with almost 40% of the 5,800 hospital beds in the country, has a higher ratio of beds to people than the national average. Dakar and the Cap Vert region also receive a disproportionate share of the health care budget. The other six major hos-

pitals are located in the regional capitals of Thies, Tambacounda, Saint-Louis, Diourbel, Kaolack and Ziguinchor.

These health service regions are subdivided into 27 departments with at least one primary health center (34 in the country as a whole) headed, in principal, by a physician. The departments are divided into 85 administrative districts (arrondissements) containing 428 secondary health posts and dispensaries (with an additional 5,800 beds) staffed by nurses, sanitarians, and midwives. The remaining health care infrastructure is composed of maternities (60) and maternal and child health centers (PMIs). The main function of the PMIs is to provide pre/post-natal care and, when necessary, make referrals. Institutional care is supplemented by mobile health teams. However, these generally focus on very narrow health problems such as leprosy control.

The fourth Four Year Plan gives priority to improving rural health services. Because secondary health posts constitute the furthest extent of the health services delivery infrastructure, most rural areas are without basic or regular health care. Local facilities, where they do exist, have limited capabilities. It is estimated that only 20% of the rural population has access to adequate health care. Chronic problems, including a shortage of trained personnel at all levels, poor sanitary conditions, shortages of medicines, and heavy case referrals to Dakar beset the health care delivery system. Laboratory and dental services, for example, are virtually nonexistent. The private sector includes a hospital in Dakar, approximately 80 dispensaries, and about 60 physicians.

Distribution of Facilities

Region	Hospitals		Health Centers		Mater-nities		Health Posts		Endemic Sectors
	No.	Beds	No.	Beds	No.	Beds	PMI's		
Cap Vert	4	2,207	1	94	17	613	62	24	1
Casamance	1	70	6	249	8	159	86	7	2
Diourbel	1	176	6	102	9	155	44	6	1
Fleuve	1	548	4	61	6	134	65	6	1
Senegal-Oriental	-	---	3	95	3	29	30	3	1
Sine-Saloum	1	250	8	114	10	238	83	10	-
Thies	1	116	5	139	7	173	57	10	1
TOTAL	9	3,367	33	854	60	1,501	428	66	7

Source: Government of Senegal, 1974

Health Posts or Dispensaries as of December 31, 1974

<u>Region</u>	<u>AD</u>	<u>MD</u>	<u>PD</u>	<u>Operating as of 12/31/74</u>
Cap Vert	18	23	21	62
Casamance	68	2	17	86
Diourbel	39	2	3	44
Fleuve	56	5	4	65
Senegal- Oriental	27	1	2	30
Sine-Saloum	61	6	16	83
Thies	<u>33</u>	<u>4</u>	<u>20</u>	<u>54</u>
TOTAL	302	43	83	424

AD - Administrative Dispensaries PD - Private Dispensaries
 MD - Municipal Dispensaries

Source: Government of Senegal, 1974

5.5 Health Personnel

Most of the physicians and other health personnel are concentrated in Dakar and the Cap Vert region. For the country as a whole, there is one doctor/15,500 people. However, this varies from a ratio of 1/4,000 in Cap Vert to a ratio of 1/44,000 elsewhere in Senegal. In December 1974, 119 of the 307 physicians in the country were Senegalese. 19% of all physicians were engaged in private practice.

Number and Distribution of Medical
 Personnel and Inhabitants per Unit, 1975

<u>Category</u>	<u>Medical Personnel</u>			<u>Cap Vert as % of Senegal</u>	<u>Inhabitants Per Unit</u>		
	<u>Senegal</u>	<u>Cap Vert</u>	<u>Other Provinces</u>		<u>Senegal</u>	<u>Cap Vert</u>	<u>Other Provinces</u>
Doctors	307	225	82	73.3	14,044	3,732	42,339
Pharmacists	37	34	3	91.1	116,527	24,697	1,157,267

Category	Medical Personnel			Cap Vert as % of Senegal	Inhabitants Per Unit		
	Senegal	Cap Vert	Other Provinces		Senegal	Cap Vert	Other Provinces
Nurses	2,563	936	1,627	36.5	1,686	897	2,134
Midwives	329	225	117	64.4	13,014	3,960	29,674
Tech. Personnel	1,761	1,174	587	66.7	2,448	715	5,914

Source: World Bank, The Economic Trends and Prospects of Senegal: Volume IV, 1979.

More recent data indicate that, in 1977, there were 334 physicians, 350 midwives, and 2,600 nurses in Senegal.

Distribution By Region

Regions	Inhabi- tants/MD	MD	Pharm.	Dent.	Midwives	Nurses	Agents sociaux
Cap Vert	3,760	214	72	23	211	864	108
Casamance	65,000	10	3	1	16	320	11
Diourbel	66,800	10	2	1	19	250	7
Fleuve	27,300	15	4	1	19	310	6
Senegal- Oriental	52,000	5	1	-	5	127	1
Sine-Saloum	61,000	14	4	-	26	297	7
Thies	<u>45,000</u>	<u>13</u>	<u>5</u>	<u>3</u>	<u>34</u>	<u>289</u>	<u>12</u>
All Senegal	15,000	281	91	29	330	2,457	152

Source: Government of Senegal, 1974.

5.6 Nutrition

The average daily intake of calories and protein is significantly above minimum requirements, but geographic, social, and seasonal factors contribute to gross deficiencies of secondary nutrients, especially vitamin A. Malnutrition is a serious problem in rural areas and among recent urban

migrants in the shantytowns around each city. Average caloric intake for rural Senegalese is estimated at 2,300 cal./day. WHO estimates that 9-14% of the children under 5 suffer from kwashiorkor or marasmus. Anemia is common; goiter is also present but localized, with an average rate among adults of 3.6%. The present focus of GOS nutrition programs is on high-protein supplements, especially niebe beans and pulses, but results are discouraging. The best local protein sources, peanut and cotton-seed flour, are too vulnerable to contamination. Beri-beri has been found in Dakar among recent migrants from Basse Casamance.

5.7 Diet

General - Millet/sorghum and rice are the staples of most people in the rural areas. The crops are planted in May-June, after the first rains, and the first cereal is available in autumn when stocks are low. Other foods, varying in importance by region/season, include corn, beans, groundnuts, potatoes, citrus, cassava, green vegetables, and baobab leaves. Groundnuts are not generally popular as a food and are primarily used as a cash crop although there is considerable use of peanut oil. Wheat, rice, and sugar are the main imported foodstuffs. Fish, where available, is used in sauces, and eaten with rice, sorghum, or millet. Meat is eaten once a week or less, even among livestock herders. Little pork is consumed because of the high proportion of Muslims in the population. Milk and butter are traded, and consumed only in limited quantities. Roasted yams or manioc are eaten as a between-meals snack. Palm toddy is a main alcoholic beverage.

Urban - Breakfast is eaten between dawn and 7:00 a.m. and usually consists of a porridge (couscous) eaten with milk, sugar, and bread. Some people drink heavily sweetened tea or coffee. Lunch and dinner are primarily the same foods, but prepared differently. Fish or meat may be added occasionally. Urban cereal consumption consists almost exclusively of rice and wheat bread.

Rural - Cereal consumption is mostly millet/sorghum. Breakfast is usually leftovers from the previous meal. Lunch is often flour balls fried in, or moistened by sauce. Dinner seldom includes meat.

5.8 Dietary Preferences of Selected Ethnic Groups

Serer - live in the western coastal areas. Millet is a staple. Peanuts are used as a cash crop for non-food purchases. They also raise cattle, goats, and sheep.

Toucouleurs - live in the mid-Senegal River Valley. Their diet, based on cereals, fish, and milk, is one of the most balanced in the country.

Diolas - live in the Casamance River basin. They eat rice with beans, fish, or oysters. Millet, sorghum, and tubers are eaten occasionally. They raise cattle, but not for meat, although they do drink curdled milk.

Note: A common practice in the rural areas is to distribute food by sex, age, and productivity. Men and boys over 8 eat first, then women and children. The sexes also eat separately, as do the elderly and the very youngest.

5.9 Food Cycle

Rural subsistence agriculture versus urban food demands results in importation of 1/3 of all nutrients. Geographic and seasonal limitations of food supplies are also a problem. In a normal year, Senegal is self-sufficient in millet and sorghum but must import 50% of the rice that is consumed. During periods of drought, millet and sorghum production is not sufficient to satisfy domestic needs. In the north, the food cycle is dependent upon the Senegal River. Between November and January, sorghum, corn, and sweet potatoes are plentiful. From February to May, people live on their stocks. Crops are planted during June and July on dry terrain in anticipation of August rains and floods. By the end of the summer, stores are exhausted and a diet of wild leaves and berries is common. Cereals and beans are plentiful in August, bridging the gap until the main harvest. The pre-harvest period is known as soudure, a time of serious rural hunger. The Casamance region south of Gambia is an exception with greater seasonal variety than in the drier north.

Food storage varies by region and type of food. Paddy rice is often stored communally in large (12 ton) cribs made of millet stalks and bamboo. Crib dimensions also vary. See also section 3.10, Grain Storage.

5.10 Housing

Urban - Traditional urban houses are made of mud and wood. Heavy urban migration after World War II gave rise to sprawling shantytown areas around all of the urban centers. Houses are often made of reed or millet stalks. Others are made from packing cases or gasoline tins covered with roofing paper held on by stones. Water is hand-carried from public fountains.

Candles or kerosene lamps are the most common lighting source. Few houses have electricity. Sanitation services are limited. Brick and cement houses with iron or tile roofs can be found in wealthier areas.

Rural - Wolof houses are arranged in family compounds along the main paths through the villages. Compounds are often enclosed by a 5 foot high fence of reeds, millet stalks, or thornbush. Most houses are built with natural materials (earth or straw) and have earthen floors. Housing is usually abandoned after deterioration. Chiefs and the well-to-do use bricks and corrugated iron roofs. Traditional huts on the coast are round with walls made of swamp rushes. Living areas are usually small and cramped. The number of rooms varies, but men usually have their own section or partitioned area. Animals are sheltered within the compound. Harvested food is stored in huts clustered at the edge of the village. Toucouleur, Diola, and other groups build houses similar to the Wolofs'. Serer houses in west-central areas are separated by family fields. The Diola and Manding of the Casamance area have scattered, formless villages with houses in compounds built around a courtyard or other central meeting place.

5.11 Water and Sanitation

Water: All household water for the towns and cities in Senegal is pumped untreated from the environment (lakes, rivers, depressions). The only exception is Dakar's supply, part of which is pumped from Lake Guiers and treated at a modern facility. However, the distance between the treatment plant and Dakar is 280 km. and the water is often repolluted in transit. There is an impending water shortage for all urban areas unless their water systems are drastically extended. In Saint-Louis, water is drawn from marigots, natural surface depressions where water collects. There, shallow seasonal lakes often become polluted and serve as breeding grounds for malarial mosquitos and schistosomiasis transmitting snails. Overall, 75% of the urban population obtains water from public taps. Shallow wells, heavily polluted by underground leaching from contaminated surface water, are the most common source of water in rural areas. Shallow aquifers are recharged by rainfall.

Sewerage - Only Dakar and Saint-Louis have even limited sewerage systems. In Dakar, only two thirds of the houses with water connections are joined to the disposal system. Drainage in Dakar is also inadequate. Large areas are periodically flooded by polluted water, disrupting roads and traffic. Open sewers drain directly into the ocean.

6. Economy

6.1 Overview of Economy

After stagnating during the 1960s and experiencing healthy growth rates during the early to mid-1970s (except the 1972/73 drought years), the growth rate of the Senegalese economy is once again slackening. Depressed markets/prices for phosphates and groundnut oil, the two main exports, keep earnings low, nearly offsetting any growth of real output. Real income from exports is further limited by rising oil imports and food prices. Also, bad crop years in 1977/78 and 1979/80 exacerbated the situation.

The industrial sector accounts for approximately 30% of GNP. Phosphate production was 1.8 million tons in 1978; however, declining world prices have lowered earnings in this sector. Other major industries include textiles, food processing, and fuel refining. To attract foreign business, a duty-free industrial zone 18 km. from Dakar was opened in the mid-1970s. Services, including transport and state-owned commerce, are still the largest fiscal sector of the economy, accounting for 39% of the GNP in 1977. Tourism has also become an important foreign exchange earner.

Although the GOS encourages decentralization, the modern sector of the economy is still centered in Dakar, bolstered by excellent port facilities and the rapid growth of tourism. Other ongoing GOS endeavors include the modernization of rainfed agriculture (successful during good rain years), irrigation and hydroelectric developments along the Senegal, Casamance, and Gambia Rivers, and expansion of the fishing sector. This sector is now Senegal's third most important source of income with a total catch of 394,000 tons in 1980.

1977 GNP was \$1.9 billion or \$390 per capita. The GNP grew 7% in 1977, but was offset by even higher inflation. Per capita figures are deceptive, however, because the average income in Dakar is five times higher than that in the rural areas. Rapid population growth and reliance on one cash crop continue to imperil the subsistence of the rural population. (For analysis of the agricultural sector and its vital role in economy, see Agriculture, section 7.1.)

GOS long-term goals include improving the balance of payments by slightly expanding phosphate mining, reducing food imports, and developing both light export industry and tourism. The sixth Five Year development plan (1981-85) includes plans to invest \$1.6 billion, of which 33% will be in industry, 25% in the primary sector (agriculture, livestock, and fishing).

6.3 Balance of Payments

Because of several bad crop years and a dramatic increase in the price of imported oil, Senegal's balance of payments situation severely deteriorated during the late 1970s. In 1980, the debt service ratio rose to 30% of export earnings (from 13% in 1978) and Senegal had to request assistance from her creditors. France provided aid worth \$105 million, half of which was to avoid default on current debt payments that were coming due. The International Monetary Fund (IMF) gave Senegal access to \$300 million in special drawing rights. In return, Senegal undertook a program of fiscal austerity.

Gross National Product

	1977 (US \$ Millions)	Annual Growth Rate 1975-79
GNP at market prices	906	2.0
Gross domestic investment	315	4.7
Gross national savings	220	3.9
Current account balance	-95	1.4
Exports of goods, NFS	750	4.8
Imports of goods, NFS	880	4.4

Source: Economic Trends and Projects of Senegal, World Bank, 1979.

Balance of Payments and Trade

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Exports - Goods + NFS	693	706	750	623
Imports - Goods + NFS	-793	-852	-880	-950
Resource Gap (-)	-100	-146	-130	-327
Interest (net)	-22	-21	-25	-35
Other Services (net)	-33	-4	-	2
Transfers (net)	67	73	60	80
Current Account	-88	-98	-95	-280

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Private Capital	12	13	11	10
Capital Grants	22	23	24	27
Public MLT Capital				
Disbursements	77	83	114	246
Amortization	-22	-25	-37	-75
Subtotal	<u>55</u>	<u>58</u>	<u>77</u>	<u>171</u>
Other Capital (net)	<u>-11</u>	<u>-6</u>	<u>-26</u>	<u>-19</u>
Increase in Reserves	-10	-10	-9	-91
Net Foreign Assets	-48	-45	-53	-144

* All values in US \$ millions and represent period averages unless otherwise indicated

Source: Economic Trends and Projects of Senegal, World Bank, 1979.

6.4 Exports

Major exports are phosphates (lime and aluminium), groundnut oil, refined petroleum products, fish and fish products, and cotton and textiles. Principal export recipients include France, the Netherlands, the United Kingdom, Ivory Coast, and Mauritania. (See also Agriculture, section 7.)

6.5 Imports

Foodstuffs is the largest single category of Senegal's import bill (see Agricultural Imports, section 7.7). Industrial imports include heavy machinery, transport equipment, petroleum and petroleum products, and metal manufactures. France is the source of over 50% of these imports followed by West Germany, the United States, and Italy.

7. Agriculture

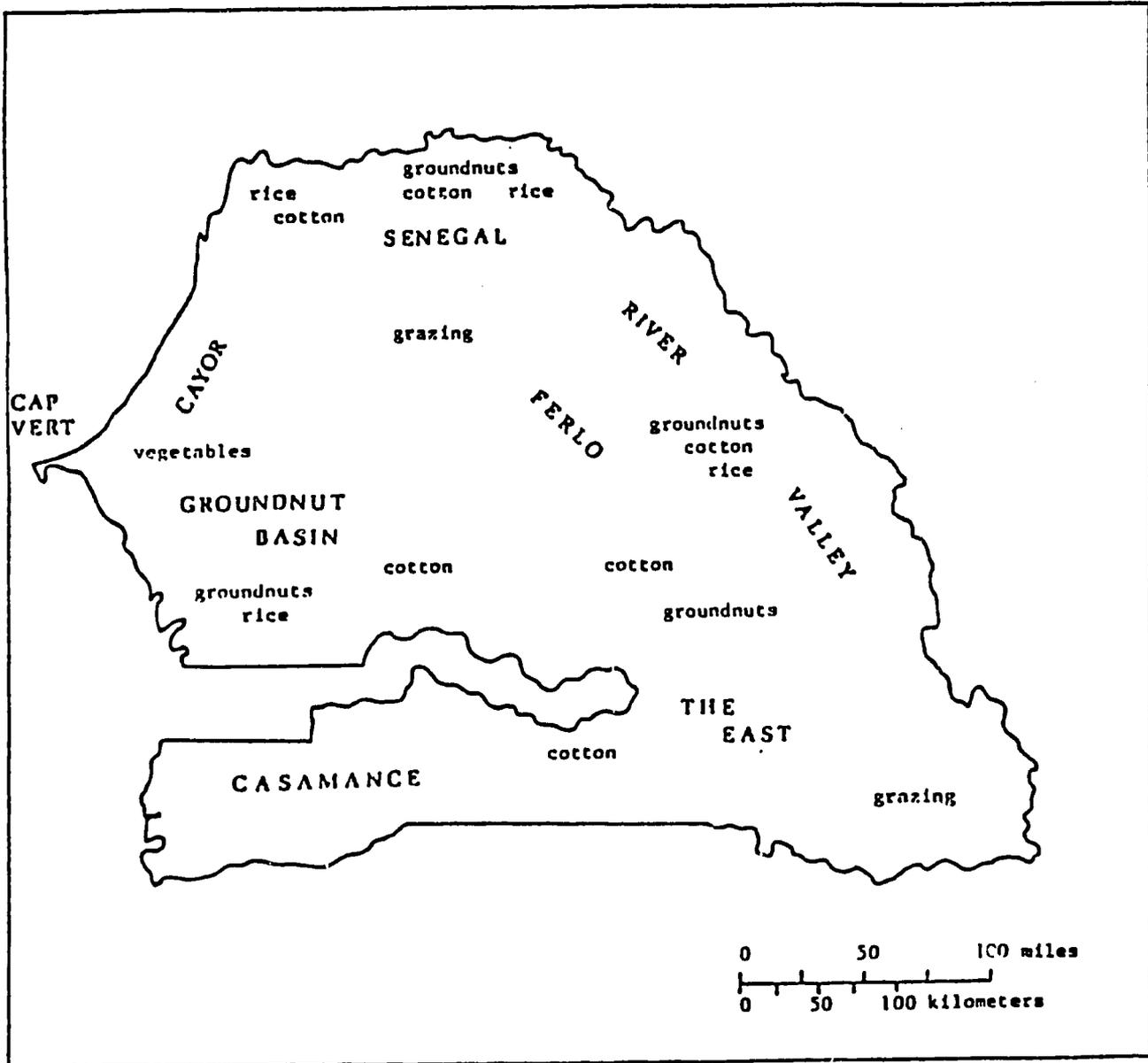
7.1 Overview of Agriculture

Although contributing only 35% of the GDP, agriculture is still the mainstay of the Senegalese economy employing 70% of the labor force and exercising considerable leverage via its impact on exports and on purchasing power for local goods and services. Most of the agriculture in Senegal is rainfed and, therefore, subject to periodic droughts. Agricultural production is divided nearly equally between groundnuts for export, and millet and sorghum for domestic consumption. Groundnuts represent 60% of agricultural value added and 35-55% of exports, depending on the year. Other crops (maize, wheat, rice) are also grown, but in quantities grossly insufficient to meet demand, resulting in large supplemental food imports. In addition to food grains, livestock production contributes 7% of the GNP. The herds were decimated by drought in the early 1970s, but recovered in 1975 and 1976. However, lack of rainfall in 1977-78 once again reduced herd size.

Overall, small scale rainfed farming accounts for 95% of the agricultural production. There are 360,000 total farm units, each farmed by 5-10 family members. The use of fertilizer and animal traction implements is fairly common. In general, Senegal can be divided into two growing regions: 1) the heavily populated Groundnut Basin with 215,000 farms (averaging 2.4 ha. each), and 2) outlying regions isolated from the Groundnut Basin by semi-desert areas and The Gambia. Commercial farming is limited to a few urban entrepreneurs and agribusinesses on the west coast with vegetables and sugarcane the main crops. Cooperatives also play a sizeable role in production; of the 2,200 co-ops, 1,700 are engaged in groundnut production. The co-ops are important in distributing inputs/credit and for collecting produce from their 200,000 members.

Erratic rainfall patterns in most of the country and generally poor soils contribute to the fact that the agricultural sector is operating below potential. Major constraints are inadequate input distribution channels, high transport costs, and few feeder roads, especially in developing areas. These factors also account for the reluctance of the population in the Groundnut Basin to settle elsewhere, and thereby relieve pressure on already overcropped soil. In addition, historic disincentives to growing millet and storing surpluses favor groundnut production, and thereby perpetuate Senegal's increasing dependence on foreign food grains. GOS long-term agricultural strategy is aimed at crop diversification, particularly cotton, maize, and upland rice in areas of less rainfall fluctuation (Casamance and Eastern Senegal). Major irrigation schemes in the Senegal River Basin and Casamance are also part of diversification efforts.

AGRICULTURAL REGIONS



7.2 Crops by Region

Groundnut Basin - The most important agricultural region of Senegal. 65% of the rural population and 80% of total agricultural production is concentrated in this area. The region encompasses the areas of Sine-Saloum, Thies, Diourbel, and Kaolack. The main crops are groundnuts, millet, sorghum, cassava, and cowpeas. Groundnuts are sown at the start of the rainy season. Seedling blight and rosette infestation are common.

Senegal River Valley (Fleuve)- An area of relatively poor soils and rainfall patterns. Rice, millet, sorghum, maize, and cowpeas are the main crops. Most are grown along river banks.

Eastern Senegal (Oriental) - One of the few regions with relatively favorable rainfall. Millet, sorghum, cotton, and maize are the principal crops.

Casamance - Agriculturally, the most underutilized of all regions. However, substantial quantities of millet and sorghum are grown here. 80% of domestically produced rice, as well as some maize, is grown here.

Cap Vert - As the major urban center, little cereal is produced here, however, most of the commercial vegetable production is centered here. Peppers, lettuce, cabbage, onions, melons, cucumbers, and string beans are the main crops. There is a great demand for rice and wheat in the densely populated capital.

7.3 Selected Crops

Groundnut Production by Region

<u>Region</u>	<u>Area (ha.)</u>	<u>Yield (kg./ha.)</u>	<u>Production (tons)</u>
Groundnut Basin			
Diourbel	296,126	897	265,719
Thies	154,813	905	144,407
Sine-Saloum	430,000	925	398,080

<u>Region</u>	<u>Area (ha.)</u>	<u>Yield (kg./ha.)</u>	<u>Production (tons)</u>
Senegal-Oriental	41,065	850	34,929
Fleuve	5,890	650	3,830
Casamance	122,219	1,190	146,067
Cap Vert	2,000	600	1,200
Total - Groundnut Basin	880,939	917	808,206
Grand Total:	1,152,113	862	994,222

Millet/Sorghum Production by Region

<u>Region</u>	<u>Area (ha.)</u>	<u>Yield (kg./ha.)</u>	<u>Production (tons)</u>
Groundnut Basin			
Diourbel	290,000	376	109,000
Thies	153,000	386	59,000
Sine-Saloum	300,000	533	160,000
Senegal-Oriental	70,000	642	45,000
Fleuve	70,000	400	28,000
Casamance	95,000	863	82,000
Cap Vert	1,500	467	700
Total	979,000	493	483,000

Rice Production by Region

<u>Region</u>	<u>Area (ha.)</u>	<u>Yield (kg./ha.)</u>	<u>Production (000 tons)</u>
Groundnut Basin			
Diourbel	---	---	---
Thies	500	910	.5
Sine-Saloum	1,700	507	.9
Senegal-Oriental	5,600	1,100	6.2
Fleuve	10,000	1,936	19.0
Casamance	65,000	1,152	75.0
Cap Vert	---	---	---
Total	85,000	1,220	101.0

Cotton Production by Region

<u>Region</u>	<u>Area (000 ha.)</u>	<u>Yield (kg./ha.)</u>	<u>Production (000 tons)</u>
Groundnut Basin			
Diourbel	---	---	---
Thies	---	---	---
Sine-Saloum	6	866	5.2
Senegal-Oriental	17	1,000	17.0
Fleuve	---	---	---
Casamance	16	1,006	17.0
Cap Vert	---	---	---
Total	39	1,005	39.2

Source: Plan Quadriennal de Developpement Economique et Social, July 1976.

7.4 Production

1980-81 was a very good year with cereal production estimated at about 950,000 MT, up more than 200,000 MT from 1977 levels.

Principal Crops
(000 metric tons)

	<u>1977</u>	<u>1978</u>	<u>1979*</u>
Rice (paddy)	63	140	130*
Maize	33	53	50*
Millet and sorghum	420	803	500*
Potatoes*	5	5	5*
Sweet potatoes*	6	6	7*
Cassava (manioc)	125*	137*	149*
Pulses	16*	15	15*
Groundnuts (in shell)	596	1,070+	1,000*
Cottonseed	28+	33*	35*
Cotton (lint)	14+	12+	13+
Palm Kernels*	5	5	5*

	<u>1977</u>	<u>1978</u>	<u>1979*</u>
Tomatoes	30*	30*	31*
Dry onions*	26	27	28*
Other vegetables*	28	28	28
Mangoes*	29	31	33
Oranges*	18	18	18
Bananas*	5	5	5
Other fruit*	14	14	14
Coconuts*	4	4	4
Sugar cane*	304	300	300

* FAO estimates

+ Unofficial figures

Source: FAO, Production Yearbook as cited in The Europa Yearbook, 1981.

7.5 Current Status (1982)

The 1981 cereal production (including millet, sorghum, maize, and paddy rice) is estimated at about 95 million tons, close to the 1978 record crop of one million tons. The food supply outlook for 1982 appears adequate for millet and sorghum and the rice deficit will be made up through imports. The GOS plans to purchase locally 70,000 tons of the millet and sorghum crops.

7.6 Agricultural Exports

Major agricultural export items include groundnuts and groundnut oil, fish and fish products, hides and skins, and gum arabic.

7.7 Agricultural Imports

The average annual importation of food grain includes 150,000-200,000 tons of rice, 80,000-110,000 tons of wheat, and 50,000 tons of other cereals (millet, sorghum, and maize). Sugar is also a major import commodity. Food imports absorb 15-20% of total export earnings and account for 40% of basic food supplies. Imports were valued at \$880 million in 1977 and \$950 million

In 1978. 1978 food aid requirements were estimated by the FAO Multi-Donor Mission at 150,000 tons (mainly sorghum, wheat, rice, and maize). The food outlook for 1981/82 is much improved. FAO estimates that millet and sorghum production are adequate and that only a normal amount of rice will need to be imported.

8. Physical Geography

8.1 Topography

With a total area of 76,000 sq. mi., Senegal is about the size of South Dakota. The country is bordered by Mauritania in the north, Mali in the east, Guinea in the southeast, and Guinea Bissau in the south. The Gambia, an elongated enclave surrounded by Senegal, extends eastward from the Atlantic coast encompassing the Gambia River basin. The Cap Vert peninsula, near the center of the coastline, is the westernmost point in all of Africa. Most of the country is flat plains -- the western section of a broad savanna extending across Africa at the southern edge of the Sahara and less than 300 feet above sea level. The landscape is dominated by a flat expanse of sparse grasses, woody shrubs, and the near total absence of natural landmarks and changes in elevation.

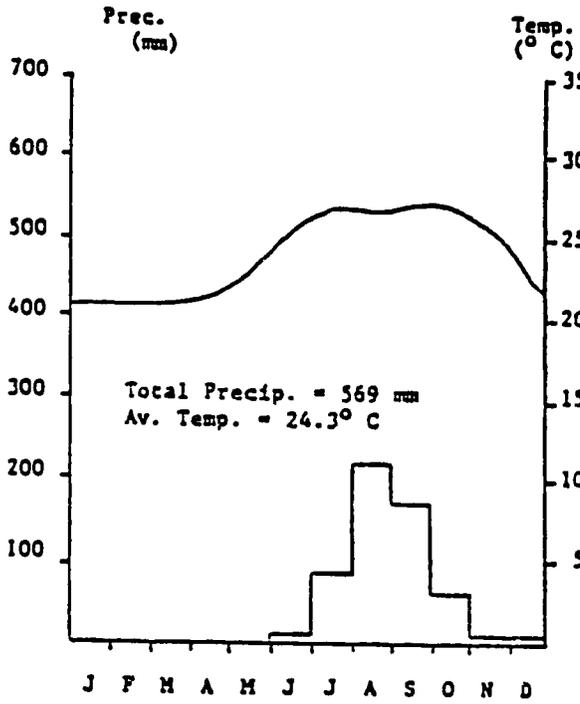
8.2 Climate

The climate of Senegal is classified as tropical wet and dry. 25% of the country is arid and 70% is semiarid. The dominant characteristics of Senegal's climate are relatively high annual daytime temperatures and a long dry season. Temperatures in the coastal areas rarely fall below 60° F; daily, monthly, and annual temperature ranges are small. Inland and north in the Sahel zone, temperatures often rise above 100° F; the monthly temperature range may be 35° F, while daily ranges are often more than 40° F. Cooler weather prevails from January-March. A warm rainy season occurs from June-October. It is shorter in the north and longer in south. The average number of rainy days and the amounts of rainfall per year varies from an average of 30 days and 350 mm. (13 inches) in the north to 100 days and 1,300 to 1,500 mm. (55-60 inches) along the southwest border.

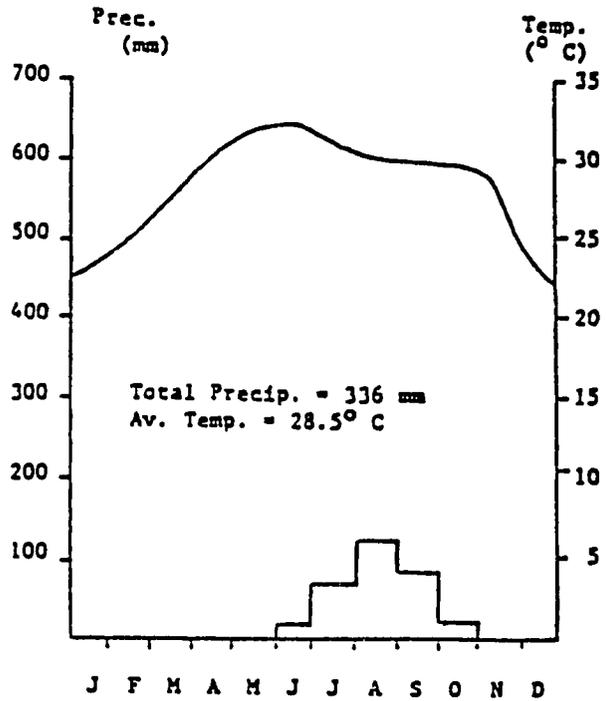
Rainfall is generated in a broad contact zone by warm equatorial and maritime air masses that shift northward in first half of year. Moisture from equatorial land and sea areas rides northward on warm winds from the south and southwest. Cooler air masses that prevail in the temperate latitudes then interact with the warm, moist, maritime air to produce a broad belt of instability and rain that shifts northward during the late winter and early spring, retreating southward again in the autumn. For most of the year, the prevailing wind is from the northeast, a dry, dusty wind from the central Sahara known as the harmattan. After the rainy season, the harmattan desiccates vegetation and evaporates the remaining surface water. Along the northwestern coast gale strength winds occur at the beginning and end of the rainy season. These "tornadoes" move rapidly from east to west accompanied by lightning and thunder. Tornadoes may exceed 50 mph and are usually of short duration. Often they are followed by one or two hours of torrential rains.

Select Climatic Stations

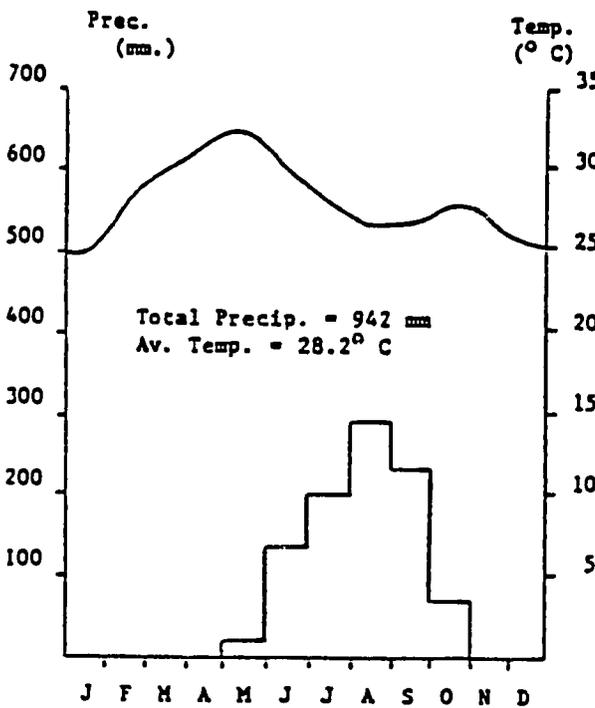
Dakar



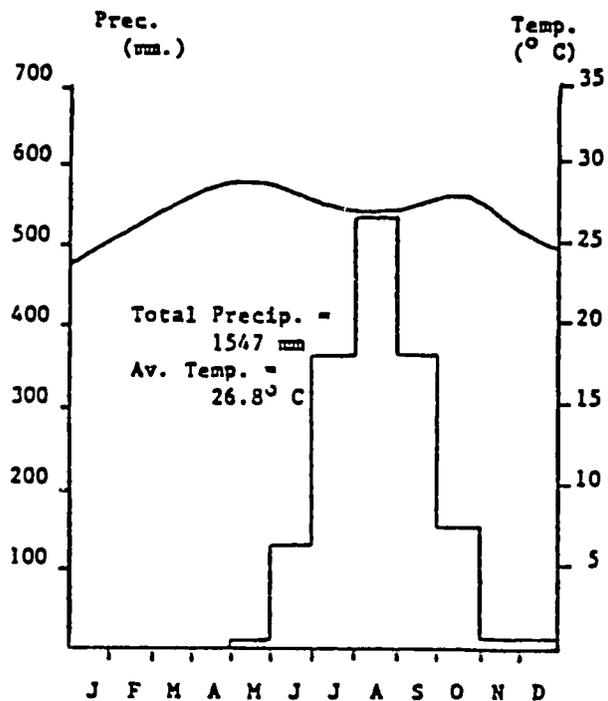
Podor



Tambacounda



Ziguinchor



8.3 Geographic Regions

Coastal Belt - This area, called Cayor, sweeps southwest from the estuary of the Senegal River to the westernmost point of land near Dakar. It is covered by small swamps or pools separated by old dunes. Swampy areas extend inland for as much as 15 miles. Sandy beaches on the coast are backed by dunes, some 100 feet high, and interspersed with clay soil depressions. Freshwater swamps and lakes, formed in depressions during the rainy season, become fertile bottomlands of luxuriant growth in the dry season. Discontinuous beach dunes are found near the Cap Vert peninsula with marshes and lagoons frequently invaded by the sea. Cap Vert is a peninsula of volcanic origin. South of Dakar the coast is low and sandy with numerous drowned river estuaries and flooded stream valleys. The coastal belt narrows sharply, and the ground behind the beaches rises to low, wooded hills. Between the latter, seasonal streams run to the sea, often through muddy, mangrove-lined marshes. North of the Sine-Saloum River estuary, the coastal belt becomes a maze of creeks, channels, and swampy islands choked with mangrove thickets. South of the Gambia and Casamance estuaries, the creeks are clogged by silt and sand in a wide area of salt flats.

Senegal River Valley - A narrow strip of land containing the Senegal River on its course from the Mali border to the Atlantic, the north bank of the main channel forms the border with Mauritania. Between low, parched ridges the river moves sluggishly through a green, alluvial flood plain, 10-12 mi. wide in its upper reaches and over 40 mi. wide approaching the sea. The floodplain is broken by channels and marshes. Downstream from Dogana, the channels form a maze in the silt-choked plain. When the river level is high, the area resembles a delta. In the valley above Dogana, a narrow island several hundred miles long (Ile a Morfil) lies between the main channel and the sluggish Doue channel on the opposite bank. Annual floods that renew the soil and provide water for agriculture are the lifesource of the region. Salt water moves upstream in the dry season, reaching Dogana in June.

Western Plains - Except for coastal dunes, the only noteworthy feature is small hills (elevation to 200') northwest of Thies. Lowlands extend southeast from Thies to Kaolack and contain Senegal's main agricultural region. The original vegetative cover is nearly gone and the land is barren in the dry season except for clumps of dry grass and stunted bushes. After the first rains in June, the landscape turns dramatically green with new grass and field crops.

The Ferlo - A semi-desert, inland continuation of the Western Plains, the Ferlo is generally a featureless savanna covering the region between the Senegal and Gambia rivers. Rainfall is scant and the soil is porous. Water in the dry season is taken from wells dug in shallow depressions. Nomads and their herds get forage during the short rainy season. Dry grasses,

scrub, and thorn trees dominate most of the year.

Casamance - Separated from most of Senegal by The Gambia, the inland valleys are flat and subject to yearly flooding, but separated by elevations high enough to escape inundation. In the southeastern corner, a divide rises to 200' south of the Casamance and Gambia river basins. Vegetation in the coastal areas is markedly different from the rest of country and includes mangroves, thick forests, and oil palms. The latter shades into wooded or open savanna in central and eastern Casamance where the soils are poor and the population is sparse.

The East - A poorly defined plain extending southeastward toward the Mali and Guinea borders. It straddles a north-south divide separating the watershed of the Gambia River on west from Faleme River basin on the east. The Faleme, the Gambia, and their tributaries are the only perennial watercourses in the area. Rainfall and climate are the same as in the Ferlo except at the southern end where rainfall is substantially higher. Most of the region is poor seasonal pastureland covered with forests. Wooded savanna in the north (dotted with acacias and scrub growth) becomes thicker in the south. The East is one of the least developed regions.

Total land usage: 13% forested, 40% agricultural (12% cultivated),
47% built-up areas, waste etc.

8.4 Rivers

Senegal River - 2,500 miles long, its main upper tributary is the Bafing River until joined in eastern Mali by the Bakoy River to form the Senegal. As it enters Senegal, it is joined by the Faleme River. There are no falls or rapids downstream. Annual flood crests arrive in mid-September and take 6 weeks to reach the sea. Maximum annual average flow is 45 feet above the minimum at the Mali border, decreasing to well under 12 feet within 100 mi. of its mouth at Saint-Louis. Above the latter, the river forms an estuary divided southward by a long sandbar, Lagune de Barbarie (1/2 mi. wide) whose length varies between 10 and 20 mi. There is also a dangerous, shifting bar where the river meets the open sea, sometimes preventing ship passage for several weeks. River navigability is seasonal. During periods of high water flow, the river is navigable as far as Keyes in Mali. At low water, navigation is limited to the lower portion of the river between Saint-Louis and Podor (150 mi. upstream).

Saloum River - Located in western Senegal with the Sine River as its major affluent. Both are sluggish streams feeding extensive tidal swamps north of The Gambia. Only the lower reaches of both carry water, albeit brackish, year round.

Gambia River - Rising in the mountains of Guinea, the middle reaches are within Senegal, entering the country in the southeastern corner, then swinging northwestward and winding 200 mi. to the Gambian border. It receives the flow of the perennial Koulountou River, running between the Guinean and Gambian borders.

Casamance River - In southwestern Senegal, it drains a narrow basin less than 20 mi. wide between Gambia and Guinea-Bissau. The Casamance is sluggish and swampy for most of its 200 mi. length. The Songrougrou is its main tributary, joining the Casamance from the north, 65 mi. from the sea. Downstream from this point, the Casamance has a broad estuary 6 mi. wide at its mouth. Smaller outlets are separated by flat islands. The Casamance is saline in its lower reaches and tides penetrate approximately 100 mi. inland.

Note: The Senegal, Saloum, and Casamance rivers are navigable for most of year, but traffic volumes are only modest, declining in favor of road transport.

9. Transportation and Logistics

9.1 Road Network

Several unique features have shaped Senegal's overall transportation system: 1) economic activity and population are concentrated in the Cap Vert peninsula and the Groundnut Basin, resulting in short travel distances and a substantial flow of agricultural commodities from rural to urban areas, 2) the strategic location of Dakar as an international port facility, and 3) a transportation infrastructure that was relatively well developed at independence in 1962.

The road network in Senegal is well developed in comparison with other Sahelian countries. Most of the roads are concentrated in the western regions with few links to eastern areas. There is one partially paved road which parallels the Dakar-Bamako railroad; the Government planned to have it fully paved from Dakar to Tambacounda by the end of 1978. Most roads were built before independence. Subsequent deterioration is due mainly to truck overloading above legal axle limits, particularly trucks carrying phosphates from Taiba and Thies to Dakar. Traffic levels on rural roads vary by season. Groundnut evacuation between mid-December and mid-May nearly doubles the traffic load average. However, sandy tracks in the Groundnut Basin are easier to negotiate in the rainy season (higher bearing capacity) than in the peak-traffic dry season. Projects are underway to improve and maintain a feeder road network in the main agricultural regions as well as in Eastern Senegal.

In 1978, the total road network was 13,300 km including 2,775 km paved and 3,300 km all-weather gravel. The rest are partly improved earth roads and ill-defined tracks. There is a lack of roads in rural areas and poor maintenance of existing ones.

Note: For more detailed statistical information on transportation and logistics, see Berger, Road Maintenance Diagnostic Study for the Sahel, 1977 and U.S. Department of Transportation, The Role of A.I.D. in the Development of Sahel Transportation Infrastructure, 1978.)

9.2 Major Routes

Paved roads:

Dakar to Saint-Louis (via Rufisque, Thies, Louga)
Dakar to Mboro (via M'bayeck, Sao)

Dakar to Joal (via Mbour)
Dakar to Kaolack (via Mbour)
Dakar to Kaffrine (via Kaolack)
Dakar to Ziguinchor (via Kaolack, Bignona)
Dakar to Linguere (via Diourbel, Touba, Dahra)
Dakar to Rosso (via Saint-Louis)
Ziguinchor to Kolda (via Tanaff)
Saint-Louis to Matam (via Dagana, Podor)
Touba to Tiougoune (via Sagata, Kebemer)

Gravel roads:

Thies to Sinndia
Mekhe to Foundiougne (via Bambey)
Diourbel to Kaolack
Khombole to Baba-Garage
Diourbel to Fatick

Ziguinchor to Oussouye
Bignona to Sedhiou
Sedhiou to N'diama
Tamindala to Guinea border

Kedougou to Niokol Koba (via Mako)
Kedougou to Salemata (via Bandafassi)

9.3 Road Administration

The Ministry of Public Works, Urbanism, and Transport (MPWUT) regulates the various transport modes and administers the national highway system. A Road Maintenance Division within MPWUT is responsible for construction/maintenance of highways.

The Central Equipment Fleet (PCM) controls road maintenance equipment. Its central workshop is in Dakar with regional shops in Saint-Louis, Thies, and Tambacounda. The majority of the road maintenance equipment is between 4 and 10 years old. 10% is over 10 years old.

9.4 Vehicles

Roads carry 75% of the commercial inter-urban passenger and freight traffic, excluding phosphates. In the mid-1970s, there were approximately

75,000 motor vehicles registered in Senegal including 50,000 passenger cars, 4,300 buses, and 20,000 trucks and pickups. Of the 20,000 trucks and pickups, 2,000 specialized in transporting agricultural products. 1,500 of these specialized carriers are owned by private transporters.

9.5 Railroads

The railroad infrastructure is fairly well developed. One main line runs from Dakar to the Mali border. Another major branch runs from Dakar to Saint-Louis (262 km). There are minor branches from Dakar to Diourbel, Touba, Kaolack (via Diourbel), and Linguere (via Louga). The total network is 1,186 km and includes 1,034 km of meter gauge, but only 70 km of double track between Dakar and Thies.

During the last decade freight demand has exceeded traffic capacity due mainly to the inefficient use of equipment. There are also frequent delays and bottlenecks at the Dakar-Bel Air marshalling yard. Derailments are a problem due to poor track condition.

9.6 Railroad Agency

Regie des Chemins de Fer du Senegal (CFS), established in 1960, operates all sections and branch lines of the Dakar-Bamako railroad. CFS is a state-owned public corporation under MPWUT (see Road Administration, section 9.3). CFS infrastructure is in poor condition, reflected in revenue/passenger traffic losses. However, CFS carries 70% of Mali's imports and exports, nearly all domestic phosphate production, and part of the groundnut crop. In 1977, CFS had 30 locomotives and 716 freight cars. An additional 171 freight cars were privately owned. 75 more freight cars were on order.

Rolling Stock, 1977

<u>Number</u>	<u>Locomotives</u>	<u>Horsepower</u>
	<u>Type</u>	
1	100	610
7	500	740
3	600	800
9	1,100	1,050
6	1,200	1,100
4	2,400	1,950
<u>30</u>		

<u>CFS Freight Cars</u>	<u>Number</u>
Covered Box Cars	478
Open Cars	166
Flat Cars	54
Tank Cars	18
	<u>716</u>

<u>Privately-Owned Freight Cars</u>	<u>Number</u>
Hopper Cars	127
Tanker Cars	43
Refrigerator Cars	1
	<u>171</u>

9.7 Ports

The port system consists of a major international facility at Dakar, supplemented by secondary ports at Saint-Louis, Kaolack, and Ziguinchor. The port of Dakar has an excellent sheltered location. It is free from heavy swells and siltation, has 46 well-equipped berths, and good road/rail access. A public enterprise, the Port Autonome de Dakar (PAD), operates and maintains the port. Cargo tonnage handled at Dakar doubled during the last decade and is now 6 million tons per year. Major traffic includes petroleum, phosphates, and most of the traffic for Mali and Mauritania.

Dakar

Coordinates: Lat. 14° 40' N; long. 17° 24' W.

Accommodation: A safe harbor formed by two jetties. Water area: 216 hectares. Quays: 7,618 m. Good anchorage for any size vessel. Depth at entrance, 10.35 m. (being dredged to 10.97 m.); at quays 6.40 to 11.89 m. Wharves and berths as follows -- Southern zone: Mole I, 460 m. by 150 m.; four berths with 10 m. water and five with 8 m. Mole II, 290 by 100 m.; five berths with 8.5 m. water. Median bank wharf, two berths, one of 10 m. depth and one of 6.5 m. Mole III, three berths, length 350 m. for large steamers, depth 10 m. Eastern bank wharf, length 200 m., one berth with 10 m. water. Northern zone: Mole IV, three berths (length 460 m.) with depth of 10 m. Mole V, two berths, length 180 m., depth 11 m. on W side, 8 m. on E side. Mole

VI: two berths, length 180 m., depth 9 m. North bank wharf, one berth (200 m.) depth 8.5 m. Mole VII (for fuel) 400 m. long; western side: two berths at wharf for colliers and, oil bunkering, depth 10 m. Table and Eastern Side: three berths with 10 m. depth. Wharf Louis Tascher, 260 m., chiefly used for tankers; depth is 12 m. on W side, 12 m. on E side. Northern Jetty: two berths for oil bunkering and tankers, depth is 10 m. One water barge.

Development: In W zone, a fishing quay is under construction with 1,104 m. of berths, draft 7 m., and 370 m. of berths, draft 10 m.

Shiprepairs: Available.

Pilotage: Compulsory in and out.

Working Hours: 08:00 to 12:00; 14:00 to 18:00 hours. Overtime possible on request. Saturday work after noon at overtime rates.

Airport: Aeroport de Dakar, Yoff. 12.8 km. from the port.

Kaolack

Coordinates: Lat. 14° 08' N; long. 16° 04' 30" W. Approx. 112 km. up the Saloum River. Maximum length of ship navigating river: 105 m.

Accommodation: Whistling and luminous buoy at the mouth of the river. Depth at entrance is 3 m. plus tide (tidal range is 1.2 to 1.9 m.). (All depths based on French hydrographic zero). Maximum length of ship permitted to enter is 105 m. One concrete wharf, 630 m. long with 4 m. alongside. No equipment. Five warehouses with 4,500 sq. m. storage and open storage platforms of 150,000 sq. m. Fresh water available on quay at 15 tons/hr. Rail connections with Dakar. Winds E from January to May, SW to W from August to October; other months variable.

Shiprepairs: Minor repairs carried out by local craftsmen

Pilotage: Compulsory. For this port and for Ziguinchor, pilots embark in Dakar and must be returned there. Embarking and disembarking may be effected on the roads in order to save

berthing dues. For Saint-Louis, pilots are taken on at sea in front of the Senegal River entrance.

Working Hours: 07:00 to 13:00; 14:00 to 18:00

Airport: 5 km. from port.

Ziguinchor

Coordinates: Lat 12° 35' N; long 16° 20' W.

Accommodation: on River Casamance. Depth on bar varies; maximum 5.18 m., being dredged to 9.14 m. A middle channel (depth 4.42 to 5.03 m.) marked by buoys. Passage by day only. Navigable channel (maximum depth 9.14 m.) marked by beacons as far as Ziguinchor. Vessels load and discharge alongside private and government jetties. Depth at jetties 5.18 m., three berths 8.23 m.

Pilotage: Pilots may be taken in Dakar roads.

Airport: 8 km. from port.

9.8 Airports

NB: For up-to-date information consult latest issue of the weekly International Notams, International Flight Information Manual, and/or ICAO's Air Navigation Plan for appropriate region.

BAKEL/Bakel

Location Coordinates	Elevation M/ Temp °C	<u>Runway Characteristics</u>				Aircraft/ Strength (1,000 kg)	Fuel/ Octane
		NR/Type	Slope %	Length M	CL		
NA	NA	07/25 N-INSTR	NA	700	E	DH6/6	NA

Remarks: alternate aerodromes - KAYES/Kayes, TAMBACOUNDA/Tambacounda

Aids: MD, MC, MT, MTX, MO.

CAP SKIRING/Cap Skiring

<u>Location Coordinates</u>	<u>Elevation M/Temp°C</u>	<u>Runway Characteristics</u>				<u>Aircraft/Strength (1,000 kg)</u>	<u>Fuel/Octane</u>
		<u>NR/Type</u>	<u>Slope %</u>	<u>Length M</u>	<u>CL</u>		
NA	NA	15/33 N-INSTR	NA	1450	C	HS74/20	NA

Remarks: alternate aerodromes - BANJUL/Yundum Intl., BISSAU/Bipoint-Bissau, ZIGUINCHOR/Ziguinchor,

Aids: VOR, RL, LSA, LVA, LR, LTX, LO, MD, MC, MT, MS, MTX, MO.

DAKAR/Yoff

<u>Location Coordinates</u>	<u>Elevation M/Temp°C</u>	<u>Runway Characteristics</u>				<u>Aircraft/Strength (1,000 kg)</u>	<u>Fuel/Octane</u>
		<u>NR/Type</u>	<u>Slope %</u>	<u>Length M</u>	<u>CL</u>		
14°44'41" N	27	01/19	0.18	3490	A	B747/330	100JA
17°29'59" W	28.5	INSTR				DC8-62/152	

Remarks: alternate aerodromes - BAMAKO/Senou, BANJUL/Yundum Intl., CONAKRY/Gbessia, FREETOWN/Lungi, LAS PALMAS/Las Palmas de Gran Canaria, MONROVIA/Roberts Intl., NOUADHIBOU/Nouadhibou, NOUAKCHOTT/Novakchott, SAINT-LOUIS/Saint-Louis, SAL I/ Amilcar Cabral.

Aids: ILS(01-11), DME, VOR, RL, LPA(2), LSA LVA, LR, LC, LT, LTX, LB, LO, L4, L5, L9, MD, MC, MT, MTD, MS, MFD, MTX, MO. Stopway 01 & 19-60. Clear-way 10-240. B747, DC-10 acceptable. No telex.

KAOLACK/Kaolack

<u>Location Coordinates</u>	<u>Elevation M/Temp°C</u>	<u>Runway Characteristics</u>				<u>Aircraft/Strength (1,000 kg)</u>	<u>Fuel/Octane</u>
		<u>NR/Type</u>	<u>Slope %</u>	<u>Length M</u>	<u>CL</u>		
14° 09' N	NA	NA	NA	NA	NA	NA	NA
16° 03' W							

Remarks: aerodrome available upon prior approval only.

Aids: longest runway estimated at 5,200 ft. No telex.

MATAM/Ouro Sogui

Location Coordinates	Eleva- tion M/ Temp°C	<u>Runway Characteristics</u>				Aircraft/ Strength (1,000 kg)	Fuel/ Octane
		NR/Type	Slope %	Length M	CL		
15° 36' N 13° 19' W	26 29	14/32 N-INSTR	NA	1600	C	DC3/12	NA

Remarks: alternate aerodrome - KAEDI/Kaedi.

Aids: DC4 acceptable. MC, MD, MT, MTX, MO.

PODOR/Podor

Location Coordinates	Eleva- tion M/ Temp°C	<u>Runway Characteristics</u>				Aircraft/ Strength (1,000 kg)	Fuel/ Octane
		NR/Type	Slope %	Length M	CL		
16° 41' N 14° 58' W	6 29(EST)	15/33 N-INSTR	NA	1250	C	DC3/12	NA

Remarks: alternate aerodrome - KAEDI/Kaedi.

Aids: MD, MC, MT, MTX, MO. DC3 acceptable.

SAINT-LOUIS/Saint-Louis

Location Coordinates	Eleva- tion M/ Temp°C	<u>Runway Characteristics</u>				Aircraft/ Strength (1,000 kg)	Fuel/ Octane
		NR/Type	Slope %	Length M	CL		
16° 02' 30" N 16° 27' 30" W	4 29.4	01/19 INSTR	0.048	1900	B	B737-200/47 HS74/20	NA

Remarks: alternate aerodromes - DAKAR/Yoff, NOUADHIBOU/Nouadhibou, NOUAKCHOTT/ Nouakchott.

Aids: VOR, RL, LSA, LVA, LR, LTX, LO, L4, MD, MC, MT, MFD, MTX, MO. Caravelle and DC6B acceptable. No telex.

TAMBACOUNDA/Tambacounda

Location Coordinates	Elevation M/ Temp°C	<u>Runway Characteristics</u>				Aircraft/ Strength (1,000 kg)	Fuel/ Octane
		NR/Type	Slope %	Length M	CL		
NA	NA	06/24 INSTR	NA	2,000	B	SE210/49	NA

Remarks: alternate aerodromes - KAYES/Kayes, ZIGUINCHOR/Ziguinchor.

Aids: VOR, RL, LSA, LVA, LR, LTX, MD, MC, MT, MTX, MO.

ZIGUINCHOR/Ziguinchor

Location Coordinates	Elevation M/ Temp°C	<u>Runway Characteristics</u>				Aircraft/ Strength (1,000 kg)	Fuel/ Octane
		NR/Type	Slope %	Length M	CL		
12° 33' N	25	10/28	NA	1345	C	FK 27/18	100
16° 17' W	32.6	N-INSTR					

Remarks: alternate aerodromes - BANJUL/Yurdum Intl., BISSAU/Bipoint-Bissau, CAP SKIRING/Cap Skiring.

Aids: VOR, RL, LSA, LVA, LR, LTX, LB, LO MD, MC, MT, MTX, MO. Stopway 10-300, 28-200. Clearway 10-550. DC4 acceptable. No telex.

Key

Abbreviations

- INSTR Instrument Approach Runway
- N-INSTR Non-Instrument Runway
- PA I Precision Approach Runway Category I
- PA II Precision Approach Runway Category II

REG-NS Intl Non-Scheduled Air Transport, Regular Use
 REG-S International Scheduled Air Transport, Regular Use

Radio Aids

ILS Instrument Landing System
 DME Distance Measuring Equipment
 VOR VHF Omni-Directional Range
 RL Radio Locator

Lighting Aids

LPA Precision Approach Lighting System
 LSA Simple Approach Lighting System
 LVA Visual Approach Slope Indicator System
 LAV Abbreviated Approach Slope Indicator System
 LR Runway Edge, Threshold & Runway End Lighting
 LC Runway Center Line Lighting
 LTD Runway Touchdown Zone Lighting
 LTX Taxiway Lighting
 LB Aerodrome or Identification Beacon
 LO Obstruction Lighting

Marking Aids

MD Runway Designation Markings
 MC Runway Center Line Markings
 MT Runway Threshold Markings
 MTD Runway Touchdown Markings
 MS Runway Sidestripe Markings
 MFD Fixed Distance Markings
 MTX Taxiway Center Line & Holding Position Markings
 MO Obstruction Markings

Runway Surface and Length

H Hard Surface (numbers = ft. in hundreds)
 S Non-Hard Surface (number = ft. in hundreds)

Additional Lighting

L1 Portable Runway Lights (electrical)
 L2 Boundary Lights
 L3 Runway Flood Lights
 L4 Low Intensity Runway Lights
 L5 Low Intensity Approach Lights
 L6 High Intensity Runway Lights
 L7 High Intensity Approach Lights
 L8 Sequenced Flashing Lights
 L9 Visual Approach Slope Indicator (VASI)

9.9 Personal Entry Requirements

Both visa and passport required. See Travel and Visa Information, section 1.11 for health requirements.

9.10 Aircraft Entry Requirements

All private and non-scheduled commercial aircraft overflying or landing for non-commercial purposes must obtain prior permission from the Chief de la Division de L'Aviation Civile, Ministere des Travaux Publics de L'Urbanisme et des Transports, Division de L'Aeronautique Civile, Immeuble Administratif, Avenue Roume, B.P. 549, Dakar, Senegal (telegraphic address: AVIACIVIL DAKAR. TELEX: None) at least 15 days prior to departure (5 days if by commercial telegraph with prepaid reply).

All requests must include (a) name of aircraft operator, (b) type of aircraft and registration marks, (c) route of flight, (d) date and times of arrival or entry into the airspace of Senegal, (e) name of pilot and number of crew, (f) number of passengers, (g) type and amount of cargo, and (h) purpose of flight.

Non-scheduled commercial flights landing for commercial purposes must obtain permission from the Ministere des Travaux Publics at least 45 days prior to departure. All requests must include the above information as well as (a) a copy of the operator's license, (b) the number of flights involved, (c) charges assessed to passengers, and (d) the origin and destination of passengers and cargo.

9.11 Air Carriers

SONATRA (Air Senegal) - 50% owned by GOS, 40% by Air Afrique; provides extensive internal service linking Dakar and outlying areas. Fleet of 3 DC 3's, 2 Twin Otters, 1 Aztec, 1 Cherokee, 3 Pawnees.

Senegal is also served by following airlines: Aeroflot, Air Algerie, Air Zaire, Air France, Air Mali, Air Mauritaine, Alitalia, British Caledonian, Cameroon Airlines, CSA, Ghana Airways, Iberia, LIA, Lufthansa, Nigeria Airways, PAA, Pan American, Royal Air Maroc, Sabena, Swiss Air, and TACV.

9.12 Distances

Dakar to:	Statute <u>Miles</u>
Gibraltar	1,662
Guam	10,929 (via Rome)
Houston	5,233 (via New York)
Kaedi	284
Kaolack	105
Lagos	1,640
London	2,703
Manila	9,333 (via Rome)
Miami	4,904 (via New York)
Nairobi	4,002
New Orleans	4,983 (via New York)
New York	3,812
Nouadhibou	428
Nouakchott	252
Panama	5,316 (via New York)
Paris	2,614
Rome	2,584
Saint-Louis	115
Singapore	8,856 (via New York)
Thies	37
Washington, D.C.	4,015 (via New York)
Ziguinchor	172

10. Power and Communications

10.1 Electric Power

Electric power generation is entirely thermal with a capacity of 183,850 kw. In 1977, 603 million kwh were produced (115 kwh per capita). The power network is centered on two lines running from Dakar to Thies, a thirty-kilovolt line from Thies to Saint-Louis, and another thirty-kilovolt circuit from Thies to Mbour, Fatick, Kaolack, Guinguineo, Diourbel, and back to Thies. There are three regional power centers located at Diourbel, Tambacounda, and Ziguinchor.

10.2 Electricity Agency

Electricity generation is controlled by the Senegalese Company for the Distribution of Electric Energy (SENELEC). SENELEC installations are leased from Electricity of Senegal (EDS), a private French company until 1972, now state-owned.

10.3 Radio and Telecommunications

ORTS, BP 1765, Dakar is the GOS radio and TV organization. Radio broadcasts are in French and 6 vernacular languages from Saint-Louis, Ziguinchor, Kaolack, and Tambacounda. There are 10 medium wave (AM) stations, and 6 shortwave stations. In 1979, an estimated 300,000 radio receivers were in use (56 receivers/1,000 population). ORTS also operates the Senegalese television system. TV transmitters are located in Dakar and Thies. There were an estimated 40,000 television receivers in the country in 1979.

10.4 Telephones

The telephone communications network is relatively well developed, but costly. Most of the telephones are in Dakar; 76% of the main lines and 89% of the secondary lines are located within the Cap Vert Peninsula. There are approximately 39,000 telephones and one Atlantic Ocean satellite station.

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