# Republic of the Gambia

By Olubukola Omidiji

# REPUBLIC OF THE GAMBIA

## General Country Profile

**Olubukola Omidiji**

### Geography and Population

The Republic of the Gambia, or popularly "The Gambia" is a country in West Africa and the smallest in mainland Africa.[1] It is a small strip of land encapsulated by Senegal, except at its western coastline where it abuts the Atlantic Ocean. It is so named after the popular *Gambia River,* which meanders through the center of the country, emptying into the Atlantic Ocean. Some authors also surmise that it may be named after a sacred calabash (*Gamba*) that is beaten after the death of an elder.[2]

The climate of Gambia is tropical with two seasonal cycles – the dry or "harmattan" seasons with dry savannah winds from November to June, and the rainy or "wet" seasons from July to October. Temperatures range from 20 – 27$^{0}$C from night till daytime. [1]

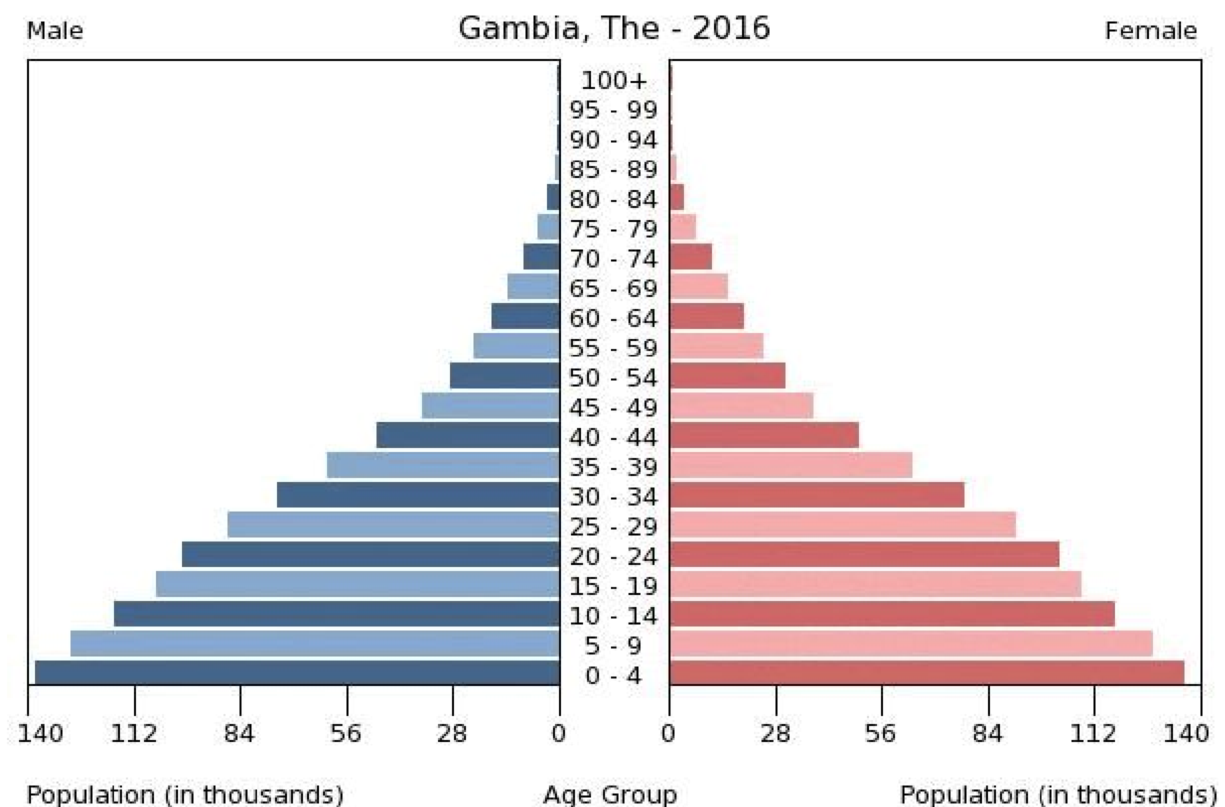
The Gambia is densely populated with about 2.09 million people (2018) in a land area of 10,689km including a 60km Atlantic front, forming about 176 people per square km.[1,2] It is the 146$^{th}$ most populous nation in the world with a population growth rate of 2.97%.[2] Main ethnic groups are Diola (Jola), Malinke, Wolof, Fulani, Soninke. The country's official language is English; its native national languages include Mandika, Wolof, Fulah, Serer and Jola.[3]

Forty-three percent of the country's inhabitants reside in rural areas.[4] The five biggest cities are Serekunda, Brikama, Bakau, Banjul and Farafenni. The capital city is Banjul. The Gambian currency is Dalasi. [3] One US dollar currently equates to 49.58 Dalasi.[5]

In Gambia, freedom of religious expression is included in the constitution. Ninety percent of people are Sunni Muslims, nine percent are Christians, and still others are traditionalists, practicing Fetishism and Animism.[6]

| General Facts about Gambia [2] | |
|---|---|
| Capital | Banjul |
| Total Population | 2,092,731 |
| Banjul Population (incl. Banjul and Kanifing LGAs) | 437,000 |
| Total Area | 10,689 square km (4,127 sq mi) |
| Banjul Area | 12 square km |
| Gross national income per capita (constant USD ($) [7] | 516.59 USD |
| Gross national income per capita (PPP$) | 1,516USD |
| Life expectancy at birth m/f | 63/67.8 years |
| Infant Mortality Rate | 58.4 deaths/1,000 live births |
| Total expenditure on health per capita (2014)[8] | 118 USD |
| Total expenditure of GDP on health (2014)[8] | 7.3% |
| Human development score (2017)[9] | 0.460 (174 of 189 countries) |

The Gambia Age Structure, from CIA Factbook



## History and Culture

Gambia's long existence is depicted by the ancient stones along the River Gambia. It was part of the Ghana Empire in the fifth to eighth century, ruled by the Serahuli. Islam was introduced when it became part of Songhai kingdom in the ninth century. [11] The Mali Empire took over in the thirteenth century and the Fula invaders in the eighteenth century.[10]

Europeans came in the fifteenth century through the river, mainly the Portuguese, exploring for gold and slaves with cooperation from the local traders. Some settled in the river bank and intermarried until the early nineteenth century.[10]

The English and French joined the trade in the seventeenth century and fought for control. The French combined Gambia and Senegal and formed the Senegambia province between 1765 and 1783, while James Island was recognized as a British settlement in a Versailles treaty in 1783.[10]

Britain established a military post on Banjul Island (Bathurst) against American and Spanish expeditors in the nineteenth century. They took over the Gambia River and adjoining land and made Gambia a standalone country when they became anxious at the French Influence on Senegal. In 1823, MacCarthy Island became the settlement for liberated slaves.[10]

Political parties emerged in the 1950s with the People's Progressive Party (PPP). The country became self-governing in 1963 and achieved independence in 1965, with Queen Elizabeth II becoming the Head of State and represented by a governor-general. A republican constitution was introduced in 1970 following a referendum, which gave the traditional chiefs a voice in the legislature.[10]

Senegal and Gambia again became a confederation when they saw benefits in union between the countries in 1982 after Senegalese troops helped Gambia deal with an attempted coup. This dissolved in 1989; both countries, however, signed a treaty of friendship and cooperation in 1991.[10]

Gambia has had three presidents so far; the first, President Dawda Jawara, served for twenty-nine years after five re-elections and was deposed in a bloodless coup by army officers in 1994- after which, Captain Yahya Jammeh became Head of State. He later became president in a civilian election in 1996 during a not-so-credible election, according to the Commonwealth Ministerial Action Group. He ruled for twenty-one years. During his rule, the Gambian Interior Minister announced their exit from the Commonwealth in 2013. Adama Barrow is the current president; elected in 2016, he immediately reapplied for their inclusion into the Commonwealth.[10,11]

## Government and Legal System

The Gambia is a democratic multiparty republic as prescribed in the 1997 constitution. It is a one party-dominant state with the United Democratic Party (Coalition 2016) currently in power, taking over from the Alliance for Patriotic Reorientation and Construction at the last election with 31 of 53 National Assembly seats and 62 of 120 seats of the local elections.[4] A universally elected President with a five-year term and an unlimited number of re-elections

heads the country. There is also the unicameral legislative arm, comprising a 53-member National Assembly, out of which the President appoints five and the other members are elected.

The Gambia has eight local government areas attached to five divisions or districts, which are the administrative units. The traditional leaders and council of elders do decision-making at each LGA, with unresolved matters sent to the district or government bodies.[10]

The judicial system is independent, comprising English, customary and Islamic courts. The highest English law court is the Supreme Court. There are also courts of appeal, high court, special criminal court, magistrate courts, and tribunals. The Sharia or Cadi court conducts marriages and divorces amongst other affairs for Muslim citizens while the traditional chiefs and leaders rule the customary courts.

Gambia is a male-dominated society, with men making decisions about health-related matters. Females are usually married at fifteen years old, especially in the rural areas; this is according to Muslim law and custom. The present government is very keen about female education.[12] Gambians fall within the affectivity dimension of communication; they often use traditional greetings and etiquette, as they view it as a way to familiarize and create new social ties. They are also communitarian in culture. When meeting a Gambian, the first fifteen minutes should be spent socializing, otherwise one would be perceived as rude. Meetings begin and end with prayers, usually by the eldest in the room and may last as long as eight to ten hours as everyone usually would want to express their opinion.[13] Handshaking is a compulsory form of greeting unless the person is bereaved. The left hand is used when going upriver for more than a day.

World Bank governance indicators (2017)[14]

| | Estimate | Percentile Rank |
|---|---|---|
| **Individual voice & accountability** | - 0.6 | 29.1 |
| **Political stability & absence of violence** | - 0.2 | 39.0 |
| **Government effectiveness** | - 0.6 | 26 |
| **Regulatory quality** | - 0.4 | 34.1 |
| **Rule of law** | - 0.4 | 34.1 |
| **Control of corruption** | - 0.4 | 34.1 |

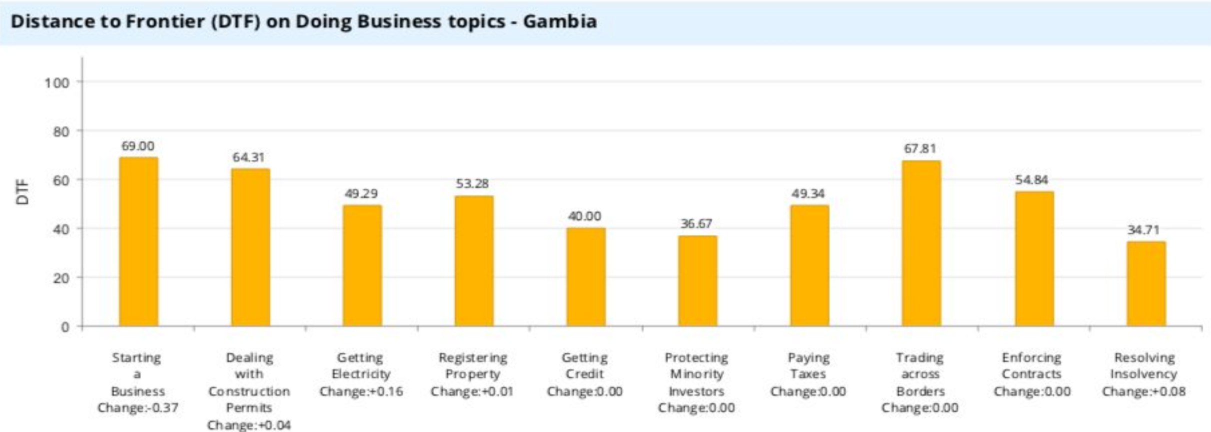
**Economy and Employment**

According to the World Bank and World Factbook, The Gambia is a small economy that relies primarily on tourism (one-fifth of Gross Domestic Product (GDP), rain-dependent agriculture (one-third of GDP), and remittances from workers overseas).[1,2] Their agricultural products include cashews, groundnuts, fish, and hides. Other industries include beverages, agricultural machinery assembly, woodworking, metalworking and clothing with sparse mineral resources. Total unemployment rate (2018) is 8.91%[16] and youth (15 – 24 years old)

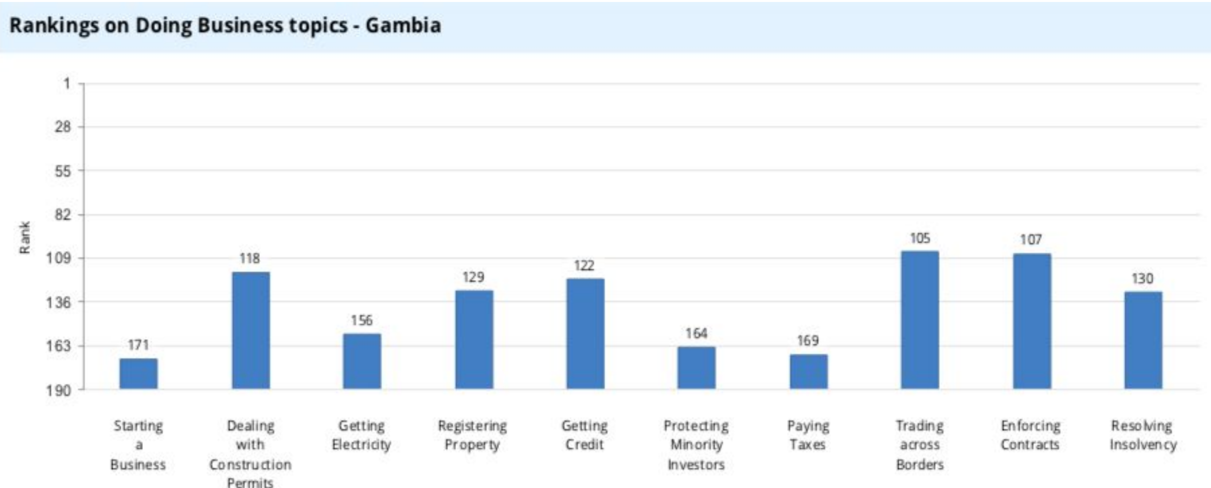
unemployment rate is 13.1%. [2] Annual inflation rate is 8.034%. [17] Gambia is ranked 146 among 190 economies in the ease of doing business, according to the latest World Bank annual ratings. [18]

The key long-term development challenges facing The Gambia are related to its undiversified economy, small internal market, limited access to resources, lack of skills necessary to build effective institutions, high population growth, and lack of private sector job creation. The country faces a limited availability of foreign exchange, weak agricultural output, a border closure with Senegal, high inflation, a large fiscal deficit, and a high domestic debt burden and high interest rates. The present government has committed to taking steps to reduce the deficit, including through expenditure caps, debt consolidation, and reform of state-owned enterprises.[1,2]

Economic progress depends on sustained bilateral and multilateral aid, on responsible government economic management, and on continued technical assistance from multilateral and bilateral donors, which include the International Monetary Fund, the World Bank, the European Union, and the African Development Bank. Other international organizations include the ACP, AU, ECOWAS, FAO, G-77, IBRD, ICAO, ICCt, ICRM, IDA, IDB, IFAD, IFC, IFRCS, ILO, IMO, Interpol, IOC, IOM, IPU, ISO (correspondent), ITSO, ITU, ITUC (NGOs), MIGA, MINUSMA, NAM, OIC, OPCW, UN, UNAMID, UNCTAD, UNESCO, UNIDO, UNMIL, UNOCI, UNWTO, UPU, WCO, WFTU (NGOs), WHO, WIPO, WMO, WTO.[1,2]




## Physical and Technological Infrastructure



Fixed telephone lines are not very common, comprising only two per one hundred inhabitants. Mobile telephone lines are more utilized at 138 per 100 inhabitants. Gambia is 140th in the ranking of countries with the highest number of mobile cellular telephone subscribers. The country has adequate microwave radio relay and open-wire network. The state-owned Gambia Telecommunications is partially privatized but still retains a monopoly; multiple mobile networks however offer effective competition while three licensed internet service providers serve the local area without much competition. Internet users make up only 18.5% of the population (2016 estimate) and broadband subscriptions serve less than 0.05% of the population at 1 per 100 inhabitants.[2]

About 47.7% of the total population of Gambia has access to electricity, comprising 69% and 15.5% in the urban and rural areas respectively, according to the 2016 estimate by World Bank. Over 97% of electricity produced is from fossil fuel and 3% from renewable sources.[2]

Transportation is via road, air, and water. The major ports are in Banjul. Gambia has one airport with a paved runway. Majority of the road networks are unpaved (2,459 km out of 2977 km); The waterways cover 390 km and small oceangoing vessels can reach 190 km. Gambia also has nine merchant marines.[2]

**National Healthcare Profile**

The health profile of the Gambia has improved over the last ten years with drops in morbidity and mortality rates. This is owing to several factors, some of which include the improvement of physical access to health care, the presence of qualified medical personnel in hospitals, and community clinics and non-health-related ones such as access to potable water, improvement in transport and road networks and education.[19] The Millennium Development Goals (MDGs) for infant and under five mortality rates, which included immunization coverage, proportion of population using an improved drinking water source, primary school enrollment, and reduction in Malaria disease burden were met in 2015. [20] Some new rates (such as maternal mortality ratio[20]) are still too elevated to meet the MDGs in spite of the observed improvement.[19]

There is also a shift in the burden of disease, now tending toward non-communicable diseases (NCDs) such as ischemic heart disease. Factors adduced to this shift include change in dietary habits and sedentary lifestyles resulting in an increased prevalence of diabetes and hypertension.[19] According to WHO's estimates, NCDs and injuries account for 41% of all deaths in Gambia and the probability of dying of NCDs between 30 and 70 years old is 19%, with risk factors such as smoking, alcohol, low physical activity, and poor fruit and vegetable intake. [20]

Several measures have been put in place to combat Malaria, such as strengthening capacity building needs and improvement of surveillance and implementation of malaria tools and guidelines. With the help of WHO, plans such as the National Malaria Strategic Plan, National Malaria Monitoring and Evaluation Plan and Seasonal Malaria Chemoprophylaxis have been created. Through the implementation of these strategies, prevalence of Malaria dropped from 4% in 2012 to 0.2% in 2014. [19]

The top ten causes of death in ascending order (2017 ranking) include maternal disorders, liver cancer, hemoglobinopathies, tuberculosis, diarrheal diseases, HIV/AIDS, stroke, neonatal disorders, lower respiratory infections, and ischemic heart disease. It is noteworthy that

non-communicable diseases rank high in the causes of mortality. As for causes of premature mortality, neonatal disorders, lower respiratory infections, and HIV/AIDS are the top three causes.[19]

Nutritional disease (dietary iron deficiency) ranks highest in the causes of disability, followed by headache disorders and low back pain, with metabolic, environmental/occupational, and behavioral risks being accountable for the most death and disability combined. [21]

| | Neonatal disorders | Ischemic heart disease | Lower respiratory infect | HIV/AIDS | Stroke | Diarrheal diseases | Tuberculosis | Hemoglobinopathies | Diabetes | Dietary iron deficiency |
|---|---|---|---|---|---|---|---|---|---|---|
| The Gambia | 3,727.8 | 3,160.5 | 2,995.2 | 2,729.2 | 2,309.5 | 1,826.7 | 1,645.7 | 1,527.6 | 1,209.0 | 1,116.6 |
| Comparison group mean (Low SDI) | 4,058.6 | 2,604.0 | 2,905.9 | 1,276.7 | 1,919.7 | 2,968.2 | 1,919.4 | 258.0 | 1,050.3 | 735.9 |
| Cote d'Ivoire | 4,592.7 | 2,798.1 | 3,777.9 | 4,611.3 | 2,269.1 | 2,817.7 | 2,006.2 | 370.2 | 1,191.5 | 730.9 |
| Eritrea | 3,627.5 | 2,350.6 | 4,085.1 | 1,607.8 | 2,378.1 | 4,249.8 | 5,418.0 | 172.1 | 1,571.2 | 808.5 |
| Kiribati | 3,249.0 | 4,250.6 | 1,752.3 | 24.2 | 4,582.0 | 1,649.7 | 2,234.5 | 134.8 | 6,287.5 | 708.2 |
| Nepal | 3,001.6 | 3,086.4 | 1,692.6 | 486.4 | 1,454.1 | 1,302.6 | 671.5 | 70.0 | 933.3 | 442.6 |
| Papua New Guinea | 2,688.5 | 6,523.5 | 3,402.4 | 825.6 | 5,091.4 | 2,342.4 | 777.7 | 124.6 | 2,899.8 | 604.6 |
| Rwanda | 2,988.4 | 1,037.7 | 2,746.0 | 1,583.0 | 1,389.8 | 1,884.3 | 2,053.5 | 81.5 | 1,098.7 | 328.1 |
| Solomon Islands | 1,593.7 | 5,125.1 | 3,698.2 | 257.5 | 3,476.8 | 657.4 | 509.6 | 92.6 | 3,267.7 | 771.2 |
| Tanzania | 3,589.8 | 1,894.0 | 3,103.4 | 3,512.9 | 1,305.9 | 1,583.5 | 2,179.7 | 513.5 | 1,095.9 | 659.8 |
| Togo | 3,702.9 | 2,481.4 | 2,781.4 | 3,101.0 | 2,077.1 | 2,721.1 | 1,740.1 | 678.4 | 1,048.2 | 606.9 |
| Uganda | 3,548.2 | 1,547.1 | 2,149.2 | 4,535.9 | 1,476.0 | 1,934.1 | 2,520.1 | 141.4 | 1,144.6 | 470.0 |

Significantly lower than mean · Statistically indistinguishable from mean · Significantly higher than mean

The table above shows the top ten causes of death and disability (DALYs). It can be used to compare DALYs across locations relative to the group average. Comparison groups were chosen based on the GBD regional classifications, known trade partnerships, and socio-demographic indicators. [21]
Rates are age standardized per 100,000, 2017

*www.healthdata.org/gambia*[21]

Main causes of mortality (age standardized death rate per 100,000 people) [24]

| Broad category | Disease | 2010 | 2016 |
|---|---|---|---|
| **Communicable diseases** | Infectious and parasitic disease | 335 | 291 |
| | Respiratory Infectious | 159 | 147 |
| | Neonatal conditions | 58 | 49 |
| | Maternal conditions | 35 | 31 |
| | Nutritional deficiencies | 30 | 26 |
| **Non-communicable diseases** | Cardiovascular diseases | 388 | 378 |
| | Digestive diseases | 77 | 75 |
| | Malignant neoplasms | 75 | 73 |
| | Respiratory diseases | 57 | 55 |
| | Neurological conditions | 43 | 44 |
| | Genitourinary diseases | 35 | 34 |
| | Diabetes Mellitus | 30 | 32 |
| | Congenital abnormalities | 14 | 13 |
| | Endocrine/blood or immune disorders | 12 | 11 |
| | Skin diseases | 5 | 5 |
| | Other neoplasms | 3 | 3 |
| | Mental and substance abuse disorders | 3 | 3 |
| | Musculoskeletal diseases | 1 | 1 |
| | Oral conditions | | |
| | Sense organ diseases | | |

Summary: As of 2016, the top causes of death were cardiovascular disease followed by infectious and parasitic diseases.

Utilization of health care services[24]

| Service | Percentage | Year |
|---|---|---|
| **Proportion of married or in-union women of reproductive age who have their need for family** | 23.9 | 2016 |

| | | |
|---|---|---|
| **planning satisfied with modern methods** | | |
| **Infants receiving doses of hepatitis B vaccine** | 97 | 2015 |
| **Diphtheria tetanus toxoid and pertussis (DTP3) immunization coverage among 1-year-olds[20]** | 95 | 2016 |
| **Births attended by skilled personnel** | 57 | 2016 |
| **Antiretroviral therapy coverage** | 30 | 2016 |
| **Tuberculosis treatment coverage[25]** | 68 (54-90) | 2017 |

*Summary:* As of 2016, only 23% of married or in-union women of reproductive age used modern methods of contraception. The tuberculosis treatment coverage is also suboptimal at 68%. More than 90% of children under one received their immunizations.

**National Healthcare Structure**

The Gambia health sector is structured as a three-tier system – the primary, secondary and tertiary levels. The primary level includes the village health services and community clinics; the secondary level has the health centers (both major and minor) while the tertiary consists of general and teaching hospitals.[22]

The health sector is managed at two levels, namely the central and regional levels. At the central level, the main government institution responsible for healthcare delivery and promotion of social welfare is the Ministry of Health and Social Welfare (MOH&SW). There are six directorates under the MOH&SW, including the Basic Health, Planning and Information, Social Welfare, Health Promotion and Education, National Public Health Laboratory, and Human Resources for Health. The MOH&SW is responsible for policy formulation, resource mobilization, regulation, setting standards, health service delivery, quality assurance, capacity development and technical support, technical advice to other government line Ministries on matters of public health importance, provision of nationally-coordinated programs, such as epidemiology and disease control, coordination of health research and monitoring and evaluation of the overall sector performance. [22]

At the regional level, the country is classified into seven health regions, each headed by a regional health director. The regional health teams are responsible for primary and secondary facilities and manpower. The primary level has 634 primary health care (PHC) village posts, supervised by community health nurses. Village health workers and traditional birth attendants also volunteer at this level. The secondary level has 47 public health facilities, with private facilities and non-governmental organization (NGO) service provision.

There are four general hospitals, two specialized public hospitals and three health training institutions in Gambia. The health training institutions produce professionals annually for the health system. The institutions include the school of Nursing and Midwifery, School of Public Health, and University of Gambia Faculty of Medicine and Allied Health Sciences. There is also the

regional ophthalmic training program that trains cataract surgeons and ophthalmic nurses annually.

Traditional medicine is still practiced and its personnel include bonesetters, herbalists, spiritualists, birth attendants and those who combine the methods.[23]

Several policy documents have been developed on Health Financing, Non Communicable Disease, Tobacco Control, Tuberculosis and HIV, Reproductive Child Health, Health Research, Human Resource for Health, Mental Health, Traditional Medicine, and Prevention of Mother to Child Transmission, Social Welfare, and Disability. [22]

**Referral System**

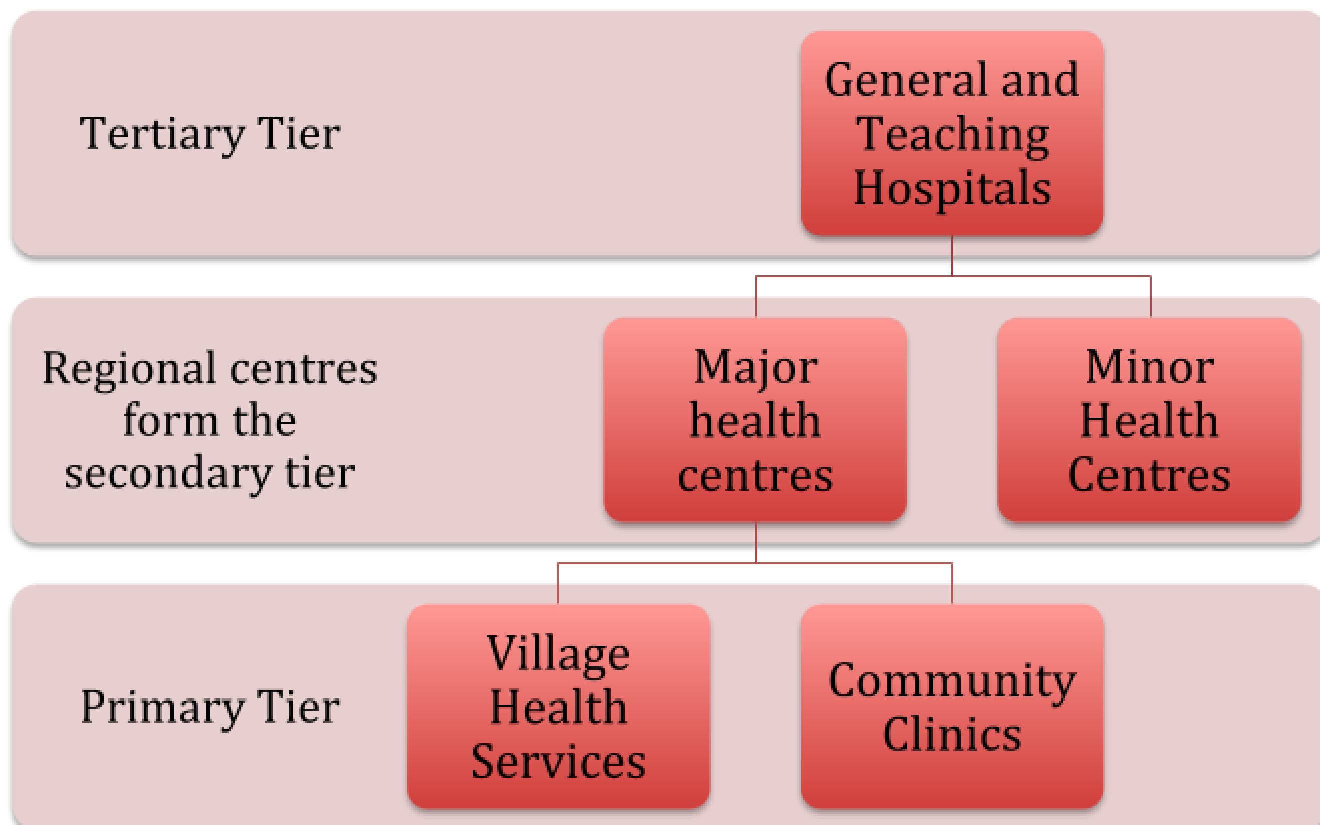
Primary health care villages are for areas with a population of 400 and above in isolated areas. Their personnel (village health workers and traditional birth attendants) are selected by the village development committee (VHWs) with six to eight weeks of formal training using a standardized curriculum by MOH&SW and partners; they are also given a start-up supply of medication and equipment. They answer to the local health facility.[22]

Basic health services are provided at the major and minor health centers (secondary tier). The major health center serves as the referral point for minor health centers for services such as family planning, maternal and child health, counseling on infant and child nutrition, antenatal and postnatal care, communicable disease management, minor surgeries, radiology, and laboratory services. They in turn refer and transport those needing tertiary care to the nearest public hospital. Standard capacity for major health centers ranges from 110 – 150 per 150,000 – 200,000 people, [22] and that for the minor health centers range from 20 – 40 beds per 15,000 people.

Private hospitals are either for profit or for non-profit. They are few (less than 20) and smaller in sizes each with bed capacity less than fifty 50. Over 90% of these are located in the urban community.[23]

The tertiary health care service serves as the referral points for all cases referred from primary and secondary levels.[23] The teaching hospital also serves as the referral point for the general hospitals.

The referral system still has major challenges comprising inadequate and ill-equipped ambulances, fuel shortage, inadequate feedback mechanism, late referrals, inadequate referral protocol and guidelines, and limited telecommunication services within the community.[22]




*The hierarchical graph above shows the referral system of The Gambia*

**Health Service Coverage**

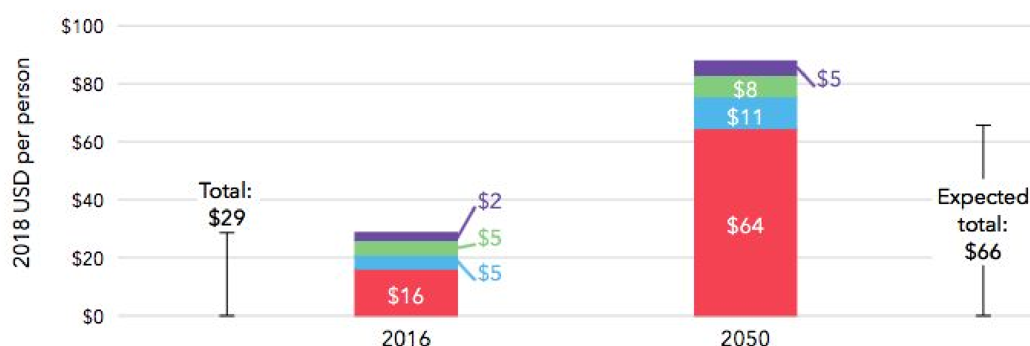
The Gambia is quite far from achieving universal health coverage as no sustained health financing reform to ensure that the system can afford universal coverage of a defined health care package has been introduced. There is no social health insurance scheme in The Gambia, nor any prepayment system to ease out-of-pocket expenditure on health. [20] The universal health coverage index (as of 2015) is 46.

Specific programs and strategies are however in place for some of the communicable diseases (malaria, tuberculosis, HIV/AIDS, STIs, diarrheal diseases, trachoma/eye disease, respiratory tract infections), non-communicable diseases, mental health, and reproductive health. These strategies are still not satisfactory, warranting review of programs often.[23]

## Healthcare Expenditures

### How much is spent on health -- now, and in the future -- and from which sources?

- Prepaid private spending
- Out-of-pocket spending
- Government health spending
- Development assistance for health




Source: Financing Global Health Database 2018

"Expected" is the future growth trajectory based on past growth.

More than half of healthcare expenditure comes from aid organizations or development assistance for health, with government and out-of-pocket spending and lastly prepaid private spending.[21]

| **Health System Expenditure** | | |
|---|---|---|
| **S/N** | Parameter | Value (%) |
| **1.** | Total expenditure on health as a percentage of gross domestic product (GDP) (2015) | 6.7 |
| **2.** | Private expenditure on health as a percentage of total expenditure (2014) | 31.26 |
| **3.** | General government expenditure on health as a percentage of total government expenditure (2014) | 15.31 |
| **4.** | Domestic health expenditure (DOM) as % of current health expenditure (CHE)[24] | 72.2 |

*Culled from Global Health Observatory May 2017*

*http://apps.who.int/gho/data/mode.cco*

**Health Workforce and Infrastructure**

Gambia has about 4,945 health personnel, with 84% of them working in the public sector, and 65% of these working in the urban sector. There is a high attrition rate of trained health staff, (medical doctors, nurses, public health officers, and laboratory technicians) with a loss of over 50% in the past 10 years. [20]

| S/N | Medical Personnel | Value |
|---|---|---|
| 1. | Physician density | 0.11 |
| 2. | Nursing and midwifery personnel | 1.62 |
| 3. | Other health workers | 0.02 |
| 4. | Dentistry | 0.01 |
| 5. | Laboratory health workers | 0.092 |
| 6. | Pharmaceutical personnel | 0.052 |

Density of medical personnel per 1000 population (2015)[24]

## National Radiology Profile

There is limited up-to-date information on the radiological profile of Gambia. Efforts at reaching the radiologists and radiographers via email and facebook proved abortive at the time of the report.

Radiology services have expanded over the years from one hospital and only X-ray machine to modern imaging modalities like Computed Tomography and Magnetic Resonance Imaging; from few imaging workers as at 2012 to 30 presently in the workforce. However radiologic service is far from adequate; according to the Health Policy 2012-2020 issued by the Ministry of Health & Social Welfare "limited services, access and affordability, provision of X-ray equipment and maintenance are still challenges to a majority of Gambians."[22] This is in spite of the increasing demand for radiologic services; about fifty patients are seen at the main referral hospital daily over a twenty-four-hour period.[22]

**Radiology Workforce and Training and Professional Representation**

The radiology workforce comprises radiologists, radiographers, radiation technologists, and assistants. There are no trained biomedical engineers, but there are staff in the biomedical

engineering department who are responsible for repairs and installations.[22] No radiologic nurses are mentioned in the studied reports.

According to The Gambia 2018 Statistical Abstract, there are thirty workers (0.1 per 10,000 people) in imaging with an uneven distribution of these workers per region. The majority of the workers (24) are in the West Coast Region, three are in the North Bank East Region, and the remaining three are in the Central River Region. This leaves four regions without radiologic services.[26] This number includes the radiologists.[22]

The Gambia National Health Strategic Plan (2014 – 2020), however, has a tabular distribution of radiographers, radiation technologists, assistants, and facilities available in various centers.[22] Data was derived from the National Health Policy from 2012 to 2020. There are three trained radiographers[22] with diplomas from radiography programs.[27]

There is professional training of radiographic assistants and technologists by the University of the Gambia, funded by the Global Funds Aids program, through the National AIDS Secretariat.[22] Through the program, nineteen Radiographic Assistants completed their training and ten radiographic technicians were yet to complete theirs as at the time of this report. The program runs for three years.[27] No course was described for radiographers.

**Professional Society**

There is the Gambia Association of Radiographers and Radiology Technologists, which had its first meeting in November 2016 and is in collaboration with the International Society of Radiographers and Radiological Technologists and the World Radiography Educational Trust Foundation.[27]

Distribution of imaging machines and staff in the Gambia (2014)[22]

| | Name of Hospital | No. of imaging machines | No. of staff | No of radiographers |
|---|---|---|---|---|
| 1 | Edward Francis Small Teaching Hospital (EFSTH) | 5, two functional, 1 static 1 mobiles, 1 CT, 1 MRI, 4 ultrasound | 1 radiographer, 4 assistants | 1 |
| 2 | Serrekunda hospital (SKH) | 3, one static, 2 mobiles, 1 CT | 2, one technician 1 assistant | - |
| 3 | Sulayman Junkung Gen. Hospital (SJGH) | None yet | - | - |
| 4 | Farafenni General Hospital (FGH) | 1 mobile, static and fluoro. Out of order | 3 | - |
| 5 | Bansang Hospital | 1 mobile | 1 | - |
| 6 | Westfield Clinic | 1 mobile | 1 | 1 |
| 7 | MRC Fajara | 1 static | 1 radiographer, 1 assistant | 1 |
| 8 | MRC Basse | 1 static | 2 assistants | - |
| 9 | Ahmadiyya Hospital | | 1 technician | - |
| 10 | Bijilo Medical Centre | 1 mobile | 1 technician | - |
| 11 | Africmed Clinic | 1 mobile | 1 technician | - |

## Equipment

The distribution of equipment is as listed above, some of which were newly acquired in 2012; namely, Computed Tomography (CT), 3T Magnetic Resonance Imaging (MRI), digital radiography equipment, and mobile x-ray machines for Ward radiography in Edward Francis State Teaching Hospital (EFSTH). Four radiologists went for MRI applications training at Taouyan hospital in Taiwan; with both the training and MRI equipment sponsored by the Taiwan government.[22-23,28]

Ultrasound equipment is available in EFSTH, however these are old and outdated. There are no mammography or radiotherapy services in the Gambia. Patients requiring mammography must travel to Dakar, Senegal.[22]

The EFSTH has the largest radiology department in the country with a small two-room department for plain radiography, apart from where the CT and MRI are sited. The government plans to enlarge the department, creating more space for fluoroscopy, orthopantomography (OPG), angiography, and mammography.[22-23]

In January 2019, a short article by Ansumana Daboe, a radiographer, stated that their CT machines had been non-functional for about four months. Daboe also mentioned that only physicians, radiologists, and gynecologists perform ultrasound.[29]

There is also an inadequate supply of consumables such as x-ray films.[22,26] Departments often shut down from lack of consumables, including films and processing chemicals.[29]

## Regulation and policy

Section 10.4 of the current policy refers to Radiology Services:

The National Health Policy 2012 – 2020 states that there is a need for improvement and expansion of radiologic services as limited services, access, affordability, provision of x-ray equipment, and maintenance are still challenges in the Gambia.

Its objectives are therefore to ensure uninterrupted supply of x-ray consumables and equipment as well as ensure affordable and accessible service delivery for prompt and accurate diagnosis. These objectives are to be achieved through the following measures: capacity building and strengthening for improved service delivery, quality control, assurance, and research for radiologic services.

The measures are expatiated in the National Strategic Plan 2014-2020 as objectives that must be achieved by 2020. They plan to establish fully functional radiology services at all public hospitals and major health centers, through provision of equipment and consumables and radiologic training. They also plan to ensure quality radiologic services through the establishment of regulatory systems and the promotion of public-private partnerships.

The Gambian Association of Radiographers plans to work with the government to ensure the development of a regulatory body for radiographers. [27]

## CONCLUSION

Gambia has many donors and multilateral and bilateral aid organizations helping with economic progress, but other than the Taiwan Government who donated the MRI machine and the Global Funds Aids program training radiation assistants and technologists, no other donor of radiology equipment or services is mentioned in the literature.

In spite of the expansion of radiology in Gambia from 1994 till date, there are still many core areas that need to be addressed. Radiology services are limited to three out of seven regions. Ultrasound appears limited to just a few centers. There are currently very few imaging workers (0.1 per 10,000 people). Biomedical engineers specifically trained for radiology equipment are absent. Many machines are broken down and some are out of date. The supply chain of consumables is inadequate. There is no regulatory body for radiation safety. The policies and strategic plan had hoped all this would be addressed by 2020, but from the articles written by Darbo, the solution is not in sight.

Organizations can help with the aforementioned problem areas, through training and capacity building of all cadre of staff, provision of equipment, and research.

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