COUNTRY PROFILE: UGANDA

Overview of Uganda's health system

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LIST OF ABBREVIATIONS

DRC	Democratic Republic of the Congo
HC	Health centre
HSD	Health sub-district
HSSP	Health Sector Strategic Plan
LRA	Lord's Resistance Army
MoH	Ministry of Health
MoLG	Ministry of Local Government
NRH	National Referral Hospital
PHP	Private health provider
PNFP	Private not-for-profit provider
RRH	Regional Referral Hospital
TCMP	Traditional and complementary medicine practitioner
US$	United States dollar
VHT	Village Health Team
WHO	World Health Organization

EXECUTIVE SUMMARY

Landlocked at the heart of central Africa, Uganda has a diverse population of 37.1 million inhabitants. Over four-fifths live in rural areas and practise Christianity and there is also a significant Muslim minority (12.1%). Uganda was notorious for human rights abuses in the 1970s and 1980s, particularly during the regimes of Idi Amin and Milton Obote. The government is currently a parliamentary democracy under the helm of President Lieutenant General Yoweri Kaguta Museveni. Economic reforms allowed the economy to grow at a robust pace during the 1990s and 2000s, but numerous challenges remain for future growth, including low levels of productivity in the agricultural and non-agricultural sectors, slow infrastructure development and vulnerability to the volatility of the global economy. Uganda has made some progress towards meeting the targets set for Millennium Development Goals 4, 5, and 6, although HIV prevalence and maternal mortality remain high. The health sector suffers gaps in both infrastructure and human resources, and geographical and socioeconomic disparities are significant contributing factors to Uganda's overall health status. Information and communication technologies have dominated the innovation landscape, with innovations also emerging in other sectors such as agriculture and health.

1. COUNTRY AT A GLANCE

Component	Details/indicator/year	Data
Population	Total population (2014)	37 782 971[a]
	Percentage of urban vs. rural (2014)	Urban: 16, rural: 84[a]
Geography	Uganda is landlocked in East-Central Africa, with a terrain that is mostly plateau, rimmed by mountains and valleys. Uganda's tropical climate is moderated by elevation and the presence of lakes, resulting in a more equable clime. Two wet seasons run in the south from April to May and from October to November with dry periods in between. In the north, wet and dry seasons run from April to October and from November to March, respectively.[b]	
Ethnic composition	Bantu speakers: Ganda, Soga, Gwere, Gisu, Nyole, Samia, Toro, Nyoro, Kiga, Nyankole, Amba, Kojo. Nilotic language speakers: Acholi, Lango, Alur, Padhola, Kumam, Teso, Karimojong, Kakwa, Sebei. Central Sudanic peoples: Lendu, Lugbara, Madi.[b]	
Government	The current Ugandan government is based on a constitution adopted in 1995, and it operates under multiparty politics. The country is divided into districts, each of which is administered by an elected chairperson and a district council. The president serves as head of state and government, and is assisted by a prime minister. Members of the unicameral parliament are elected to five-year terms. The Supreme Court is the court of highest appeal and acts as a constitutional court.[b]	
Economic and infrastructure data	GDP per capita (purchasing power parity) (2014)	US$ 1 770.9 (current international dollars)[a]
	Economic growth as percentage of GDP (2014)	4.8[a]
	Gini-index (2013)	44.3[c]
	HDI (2014)	0.483 (ranked 163)[d]
	Percentage of people below national poverty line (2012)	19.5[a]
	Unemployment (2014)	3.8[a]
	Adult literacy (2012)	70[a]
	Education gender parity index (2013)	0.99[a]
	Percentage of population with access to sanitation (2015)	Access to improved drinking water: 79 (urban: 96, rural: 76)[a] Access to improved sanitation facilities: 19 (urban: 29, rural: 17)[a]
	Percentage of population with access to electricity (2012)	18.2[a]

Health system	Health expenditure as a percentage of GDP (2014)	7.2[a]
	Annual public expenditure on health as percentage of total health expenditure (2014)	24.9[a]
	Health expenditure per person (2014)	US$ 52 (current US$)[a]
	Number of physicians per 1 000 population (2010)	0.1[a]
	Number of nurses and midwives per 1 000 population (2010)	1.3[a]
	Percentage of births with skilled attendants (2011)	57[e]
	Average life expectancy in years (2014)	58[a]
Disease burden	HIV prevalence as percentage among adults aged 15–49 (2014)	7.3[f]
	Deaths due to AIDS (2014)	33 000[f]
	Deaths due to non-communicable diseases (2012)	95 900[g]
	Deaths due to homicide (2012)	4 358[g]
	Maternal mortality rate per 100 000 births (2015)	343[a]
	Infant mortality rate per 1 000 births (2015)	38[a]
	Under-five mortality rate per 1 000 births (2015)	55[a]
Top five causes of mortality as percentage of deaths (2012)[h]	1. HIV/AIDS	17.4
	2. Lower respiratory infections	9.6
	3. Malaria	5.6
	4. Diarrhoeal diseases	5.3
	5. Stroke	3.9
Top five causes of DALYs (2012)[h]	1. HIV/AIDS	ND
	2. Lower respiratory infections	ND
	3. Malaria	ND
	4. Diarrhoeal diseases	ND
	5. Stroke	ND

GDP: gross domestic product; gini-index: measures the extent to which the distribution of income (or consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution; HDI: human development index; DALYs: disability-adjusted life years; ND: not determined.
Sources: [a] World Bank (2015b); [b] Kiwanuka (2015); [c] UNDP (2013); [d] UNDP (2015); [e] UNICEF (2014); [f] Joint United Nations Programme on HIV and AIDS (2014); [g] WHO (2015a); [h] WHO (2015b).

2. COUNTRY CONTEXT

2.1 COUNTRY HISTORY AND POLITICAL SYSTEM

Prior to British colonial rule, several monarchies co-existed in Uganda, namely the Bunyoro, Buganda, Busonga, Ankole, and Toro. Uganda became a British protectorate in 1894, gaining independence in 1962, with the Bugandan people's leader King Mutesa inaugurated as president. Prime Minister Dr. Milton Apollo Obote, leader of the Uganda People's Congress, promoted himself to the presidency in 1963 (BBC, 2015).

Obote abrogated the constitution of 1962 and in 1967 the country became a unitary republic. Kingdoms were abolished, with the president appointed head of the executive branch as well as head of state (Jones-Parry & Robertson, 2015). In 1971, Army chief Idi Amin overthrew Obote's government in a coup and subsequently deported approximately 60 000 Asians without citizenship, declaring himself president-for-life in 1976 (BBC, 2015).

Tanzanian troops, united with anti-Amin forces, invaded Uganda as a result of border clashes and in 1979, Amin was forced to flee. Yusufu Lule succeeded Amin as president but was replaced by Godfrey Binaisa, who in turn was overthrown in 1980 with Obote re-elected president. Obote was deposed in another coup in 1985 and replaced by Tito Okello. In 1986, the National Resistance Army took the capital Kampala and appointed Yoweri Museveni as president (BBC, 2015).

Museveni restored traditional kings in 1993, but did not grant them political power. In the new constitution of 1995, political parties were legalised but the ban on political activity continued. Museveni remained in power after receiving the majority vote in Uganda's first direct presidential election in 1996. Ugandan troops were sent to Zaire (now the Democratic Republic of the Congo—DCR) in 1997; helping depose Mobutu Sese Seko, who was replaced by Laurent Kabila. A year later, Ugandan troops supported rebels in the DRC who sought to depose Kabila (BBC, 2015).

Voters rejected a multi-party system in favour of a "no-party" system in 2000 and in 2001, Museveni won another five-year term. In 2002, Uganda signed an agreement with Sudan to contain the Ugandan rebel group Lord's Resistance Army (LRA). Later that year, the LRA—led by Joseph Kony—attacked villages near the Ugandan border, forcing the evacuation of more than 400 000 people. Uganda withdrew its last troops from the DRC after signing a peace agreement with the rebel group, Uganda National Rescue Front in 2002. Subsequently, tens of thousands of civilians from the DRC sought asylum in Uganda. Parliament voted to eliminate presidential term limits and impose a multi-party system, with Museveni winning a third term in 2006 against Kizza Besigye (BBC, 2015).

A ceasefire between the Government of Uganda and the LRA came into effect in August 2006 after 20 years of conflict along the country's northern border, the abduction of more than 20 000 children and displacement of some two million people (Jones-Parry & Robertson, 2015). However, due to multiple delays in signing a more permanent agreement, troops from Uganda, Sudan and the DRC led a campaign against LRA bases in 2008, with conflict continuing into the present day. Additional fighting in the DRC led to tens of thousands more civilians fleeing into Uganda in 2012 (BBC, 2015).

In 2013, the Kampala Council ousted opposition Democratic Party Mayor Erias Lukwago and some alleged it was a politically motivated attempt to undermine the opposition. In 2014, Museveni dismissed Prime Minister Amama Mbabazi, who in June 2015 challenged Museveni for nomination as presidential candidate of the current governing National Resistance Movement party (BBC, 2015).

2.2 POPULATION

Uganda's population of 37.8 million (World Bank, 2015b) is comprised mainly of Bantu speakers, Nilotic language speakers and Central Sudanic peoples. Bantu speakers include the Ganda, Soga, Gwere, Gisu, Nyole, Samia, Toro, Nyoro, Kiga, Nyankole, Amba and Kojo. Nilotic language speakers include the Acholi, Lango, Alur, Padhola, Kumam, Teso, Karimojong, Kakwa and Sebei. The Central Sudanic peoples include the Lendu, Lugbara and Madi (Kiwanuka, 2015). The population is largely rural, with only 16% living in urban areas (World Bank, 2015b). English and Swahili are official languages and, along with Ganda, are the most commonly used—though at least 29 other languages are also spoken. About four-fifths of Ugandans practise Christianity and another tenth practise Islam; many have combined beliefs in both religions with indigenous beliefs (Kiwanuka, 2015). Life expectancy is 59 years (World Bank, 2015b) and the median age is slightly less than 16 years (United Nations, 2015).

2.3 ECONOMY

Table 1. Economic measures of Uganda

Indicator/year	Data
GDP per capita (purchasing power parity) (2014)	US$ 1 770.9 (current international dollars)[a]
Economic growth as percentage of GDP (2014)	4.8[a]
Debt as percentage of GDP (2014)	31.2[b]
Gini-index (2013)	44.3[c]
HDI (2014)	0.483 (ranked 163)[d]
Percentage of people below national poverty line (2012)	19.5[a]
Percentage of unemployment (2014)	3.8[a]

GDP: gross domestic product; gini-index: measures the extent to which the distribution of income (or consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution; HDI: human development index.
Sources: [a] World Bank (2015b); [b] IMF (2015); [c] UNDP (2013); [d] UNDP (2015).

Uganda's economy was one of the fastest growing in the region in the 1990s and 2000s with an average gross domestic product (GDP) growth at 7% per annum. This was atributed to economic reforms that produced macroeconomic stability and attracted investment, despite internal conflict. In recent years, growth has slowed to approximately 5% due to increased economic volatility (World Bank, 2015a).

The government has pushed forward a public investment programme and the development of infrastructure which, coupled with expected increases in the construction and oil industries, have resulted in a forecasted 5.6% growth in 2014–2015. However, economic and social development is vulnerable to the effects of inflationary pressures, the volatility of the global economy, poor mobilisation of domestic revenue and the uncertainty of the oil industry. Additional challenges include "low levels of productivity of both agricultural and non-agricultural sectors; inappropriate urban development; the slow development of infrastructure; and the limited availability of credit" (World Bank, 2015a).

2.4 ENVIRONMENT

Uganda is landlocked in East-Central Africa and borders South Sudan, Kenya, Tanzania, Rwanda and the DRC. Most of the country sits upon a plateau rimmed by mountains and valleys. Uganda's tropical climate is moderated by elevation and the presence of lakes, resulting in a more equable climate. Most

of the country receives adequate precipitation, ranging from 500 mm to 2 000 mm. Two wet seasons run in the south from April to May and from October to November with dry periods in between. In the north, wet and dry seasons run from April to October and from November to March, respectively (Kiwanuka, 2015). Occasional flooding has caused vector outbreaks such as diarrhoea, cholera and typhoid, especially in areas where sanitation is poor. Seasons of heavy rainfall, floods and other environmental disasters impact small-scale farming activities, but also provide environments conducive to mosquito breeding, which has led to an increase in the incidence of malaria (Nannyonjo & Okot, 2013).

3. HEALTH SYSTEM

3.1 OVERVIEW

HIV and AIDS and maternal mortality constitute Uganda's main burden of disease, although other infectious diseases also persist. The health system is under-resourced, with facilities and equipment often in disrepair, staff shortages compounded by an uncoordinated training system, inequitable distribution of health care workers across the country, and the emigration of workers abroad. Socioeconomic and geographical factors contribute to disparities in health status and coverage. Most health workers, for instance, work in urban areas despite more than four-fifths of the population residing in rural regions (Government of Uganda, 2010a). The country has made some progress towards meeting Millennium Development Goals (MDGs) 4, 5, and 6, although the decline seen in the incidence of HIV has reversed and maternal mortality remains high (Government of Uganda, 2013).

3.2 ORGANIZATION

Uganda's public health sector comprises the Ministries of Health (MoH), Defence, Internal Affairs and Local Government (MoLG). The private sector mainly consists of private health providers (PHPs), private not-for-profit providers (PNFPs) and traditional and complementary medicine practitioners (TCMPs). The Ministry of Health provides leadership for the health sector, taking chief responsibility for the delivery of curative, preventive, promotive, palliative and rehabilitative services to the population in accordance with the Health Sector Strategic Plan (HSSP) II (Government of Uganda, 2005). The provision of health services is decentralised with districts and health sub-districts (HSDs) playing a key role in service delivery and management and unlike many other countries, there is no intermediate administrative level (e.g. province or region). In an attempt to increase equity in the health sector, districts were increased from 56 to 112 (WHO, 2009). Health services are divided into health centres (HCs) I, II, III, and IV as well as general hospitals, regional referral hospitals (RRHs) and national referral hospitals (NRHs). Their functions are as follows (Government of Uganda, 2010a):

1. HC I: the first level of care has no physical structure and comprises a Village Health Team (VHT) that serves as the link between formal health facilities and the community. A network of VHTs has been established to facilitate health promotion, service delivery, community participation and access to and utilization of health services.
2. HC II: these centres provide the first level of interaction between the formal health sector and communities. Comprehensive outpatient care and community outreach services are provided by an enrolled comprehensive nurse who is linked to the VHT.
3. HC III: these centres provide basic preventive, promotive, and curative care; and supervise the community and HC IIs under their jurisdiction. There are provisions for laboratory services for diagnosis, maternity care and first referral cover for the sub-county.

4. **HC IV**: this level serves as the HSD headquarters (though a general hospital may also play this role) and oversees all curative, preventive, promotive and rehabilitative health activities including those provided by PHPs and PNFPs. HC IVs are also mandated with planning, organising and budgeting.
5. **General hospitals**: these hospitals provide preventive, promotive, curative, maternity, in-patient, surgery, blood transfusion, laboratory and medical imaging services. They also provide in-service training, consultation and operational research in support of the community-based health care programmes (Government of Uganda, 2005).
6. **RRHs**: these regional hospitals offer services provided by general hospitals, in addition to specialist clinical services such as psychiatry, ear, nose, & throat, ophthalmology, higher level surgical and medical services and clinical support services including laboratory, medical imaging and pathology. They are also involved in teaching and research (Government of Uganda, 2005).
7. **NRHs**: these provide comprehensive specialist services in addition to all services offered by general hospitals and RRHs and are involved in health research and teaching (Government of Uganda, 2005).

All hospitals provide support to lower level facilities and maintain linkages with communities through Community Health Departments (Government of Uganda, 2010a). With decentralisation, the public general hospitals and health centres are managed by the MoLG through district local governments, which also supervise health activities in the private sector. RRHs have been granted self-accounting status but are still managed by the MoH at headquarters. The NRHs, namely Mulago and Butabika, are fully autonomous. All PNFP hospitals are self-accounting as granted by their respective legal proprietors. Public-private partnerships at the district level remain weak (Government of Uganda, 2010a).

TCMPs are present in both rural and urban areas, with wide variation in services. Most practitioners have no functional relationship with public or private health providers, resulting in late referrals, poor health management and increased morbidity and mortality. Non-indigenous practitioners, such as those of Chinese and Ayurvedic medicine, have emerged in recent years (Government of Uganda, 2010a).

3.3 CAPACITY

Table 2. Number of facilities and health workers per population, Uganda

Indicator/year	Data
Public sector (2010)[a]	
General hospitals	43
RRHs	11
NRHs	2
Health centres	2 242
PNFPs (2010)[a]	
Hospitals	46
Health facilities	613
PHPs (2010)[a]	
Hospitals	8
Health centres	269

Physicians per 1 000 population (2010)	0.1[b]
Nurses and midwives per 1 000 population (2010)	1.3[b]
Community health workers per 1 000 population (2005)	0.02[b]

RRHs: regional referral hospitals; NRHs: national referral hospitals.
Sources: [a] Government of Uganda (2010a); [b] World Bank (2015b).

The public and private sectors each provide approximately 50% of reported outputs. The health sector has limited capacity to provide the minimum package of health care services to Uganda's predominantly rural population (Government of Uganda, 2010a). The NRHs are intended to cover the national population, while the RRHs and general hospitals provide care for approximately two million and 500 000 people, respectively. Only 28% of the 154 HC IVs are fully operational. VHTs play an important role in health care promotion and provision and have been established in 75% of all districts, yet only 31% of districts have trained VHTs in all their villages. Furthermore, attrition is quite high due to lack of emoluments. Community health departments exist at RRHs for additional support, but are not yet fully operational. Outside of the formal health sector, TCMPs serve an estimated 60% of the population (Government of Uganda, 2010a).

Health facilities are generally under-resourced. As of 2008, only 28% of facilities had a constant supply of medicines and health supplies. Moreover, only 30% of essential medicines and supplies required for the basic package were provided in the Medium Term Expenditure Framework, due to inadequate financial and human resources, insufficient capital investment and management issues. Most facilities and equipment are in disrepair, and transport is generally inadequate—particularly in newly created districts. Medical waste disposal also poses a major challenge in the public sector. This has resulted in increased dependency on private providers who also experience challenges in obtaining adequate supplies of medicines and other medical supplies (Government of Uganda, 2010a).

The health sector also faces challenges in human resources. An estimated 22% of health workers are contracted by PFNPs, while another 21% work for PHPs. PFNPs oversee 70% of training institutions, yet are not included in national and district level decision-making for health training. The ministries of health and education as well as professional councils also govern training but lack coordinated leadership. Training also tends to focus on curative rather than preventative care. Health care workers in the country are inequitably distributed; for example, about 70% of physicians and dentists, 80% of pharmacists, and 40% of nurses/midwives work in urban areas, even though over four-fifths of the country is rural (Government of Uganda, 2010a). In addition, many health workers emigrate abroad due to financial incentives.

3.4 POLICY ENVIRONMENT

The World Health Organization (WHO) (2014) states:

> Uganda has a National Development Plan 2010/11-2014/15, National Health Policy II 2010-2020 and a Health Sector Strategic and Investment Plan 2010/11-2014/15 to guide the strategic focus for the health sector. The process of developing the subsequent National Development Plan and Health Sector Strategic and Investment Plan is underway. The overall development goal of the HSSIP is 'the attainment of a good standard of health by all people in Uganda, in order to promote a healthy and productive life'. The programme goal is 'reduced morbidity and mortality from the major causes of ill-health and premature death, and reduced disparities therein'.

WHO (2014) lists the following five strategic priorities for Uganda:

1. Promote health and prevent disease.
2. Focus on programmes of national interest.
3. Health systems strengthening.
4. Strengthen information for health planning and management for improved health outcomes.
5. Promote partnerships.

3.5 HEALTH FINANCING

Table 3. Health financing data for Uganda, 2014

Indicator/year	Data
Total health expenditure (current US$)	US$ 1 975 832 000
Public expenditure on health as percentage of total expenditure	24.9
Public expenditure on health as percentage of general government expenditure	11.0
OOP expenditure on health as percentage of total private expenditure	54.6
Private insurance expenditure on health as percentage of total private expenditure	2.7
Expenditure of non-profit institutions serving households as percentage of total private expenditure	-
External funding (current US$)	-
Health expenditure as percentage of GDP	7.2

OOP: out of pocket; GDP: gross domestic product.
Source: WHO (2015a).

Health expenditure remains high for most households, with a reported 9% of household expenditure allocated to health care costs and an estimated 2.3% of Ugandan households impoverished by medical bills. Although lower level government health units and general wings of public hospitals do not charge user fees, medicines are not always available in the public sector and patients often resort to purchasing from the private sector (Government of Uganda, 2009a).

Private health insurance, which is largely subsidised by employers on behalf of employees, only covers a small number of people. The establishment of the National Health Insurance Scheme, currently in an advanced stage of development, is intended to cater to the majority of the population. Health expenditure from public sources has increased in absolute terms in the past 10 years, but has decreased as a percentage of total government spending. In recent years, the government's allocation to health as a percentage of the total budget has been on average 9.6%, below the Abuja Declaration target of 15% (Government of Uganda, 2009a).

Currently, inadequate funding limits the provision of the National Minimum Health Care Package in all districts and the rate of population growth is likely to increase the total health envelope required. There is a lack of efficiency in the mobilisation, allocation and use of resources. Most health development partners, including the Global Fund and GAVI Alliance, channel resources through budget support; but a portion of external funding is not allocated to the health budget. Funding is often poorly aligned to the sector's priorities, resulting in expenditure on inputs not included in the HSSP and an additional burden on the MoH to manage and report on the use of these funds

(Government of Uganda, 2009a). Furthermore, late disbursement of funds from the Ministry of Finance, Planning and Economic Development to local governments hinders efficient service delivery and local governments do not always use standard guidelines in the allocation of funds to lower units.

Absenteeism has been documented as the largest source of waste, resulting in a loss of 26 billion Ugandan shillings annually (1 US$ = 3 359 Ugandan shillings at November 2015). This has partly been attributed to the lack of basic inputs that enable health workers to provide services. The distortion of development assistance by management is the second largest source of waste; while procurement and logistics management, with regard to medicines and infrastructure, constitute an additional source of waste (Okwero et al., 2010).

3.6 COUNTRY DISEASE PROFILE

Table 4. Disease profile for Uganda

Indicator/year	Data
Age-standardized DALYs per 100 000 for communicable diseases (2012)	38 378[a]
Age-standardized DALYs per 100 000 for non-communicable diseases (2012)	27 342[a]
Age-standardized DALYs per 100 000 for injuries (2012)	8395[a]
Under-five mortality rate per 1 000 live births (2015)	55[a]
Infant mortality rate per 1 000 live births (2015)	38[a]
Maternal mortality rate per 100 000 live births (2015)	343[a]
Estimated cases of malaria (2013)	8 100 000[a]
Estimated deaths due to malaria (2013)	12 000[a]
Prevalence of TB per 100 000 (2014)	159[a]
Incidence of TB per 100 000 (2013)	166[a]
Deaths due to TB among HIV-negative people per 100 000 (2014)	12[a]
Prevalence of HIV as percentage among adults aged 15–49 (2014)	7.3[b]
Deaths due to AIDS (2014)	33 000[b]
Deaths due to non-communicable diseases (2012)	95 900[a]
Deaths due to homicide (2012)	4358[a]
Percentage of top five causes of mortality (2012)[c]	
1. HIV/AIDS	17.4
2. Lower respiratory infections	9.6
3. Malaria	5.6
4. Diarrhoeal diseases	5.3
5. Stroke	3.9
Top five causes of DALYs (2012)[c]	
1. HIV/TB/malaria	ND
2. Maternal/neonatal/nutritional	ND
3. Other infectious diseases	ND
4. Unintentional injuries	ND
5. Acute respiratory infections	ND

DALYs: disability-affected life years; TB: tuberculosis; ND: not determined.
[a] WHO (2015b); [b] Joint United Nations Programme on HIV and AIDS (2014); [c] WHO (2015c).

HIV prevalence increased from 6.4% in 2004–2005 to 7.3% in 2014 (Joint United Nations Programme on HIV and AIDS, 2014). In 2006, the infant mortality rate was 76 deaths per 1 000 live births and has decreased to the current rate of 38 (World Bank, 2015b). The maternal mortality rate was estimated to be 320 deaths per 100 000 deaths in 2011, rising to 343 in 2015 (World Bank, 2015b). Overall, Uganda has made progress towards achieving key targets in MDGs 4, 5, and 6, with the exceptions being the reduction of maternal mortality and the reversal of the spread of HIV and AIDS (Government of Uganda, 2013).

Given that most of Uganda's population lives in rural areas, much of the disease profile is influenced by the geographical disparities between rural and urban areas, as well as factors such as socioeconomic status and gender. Neglected tropical diseases continue to affect many Ugandans, particularly those living in rural, impoverished communities. Additionally, the increasing number of refugees entering Uganda may put locals at increased risk of polio. Uganda has recently experienced outbreaks of viral haemorrhagic fevers (e.g. Marburg and Ebola), Hepatitis E and cholera. Efforts to prevent these infections are being scaled up, including increasing capacity to implement International Health Regulations (WHO, 2009).

4. INNOVATION ECO-SYSTEM

Information and communications technologies have dominated Uganda's innovation landscape, but innovations are also being developed in agriculture, health care, the management of refugees and entrepreneurial development (Government of Uganda, 2010b). Within the health sector, for instance, UNICEF has partnered with the Government of Uganda to develop mobile health solutions to improve maternal and child health (UNICEF, 2015). According to the government, limited capacity and a lack of resources hinder the uptake of many innovations. In addition, 75% of all registered industrial applications belong to foreign enterprises. In Uganda's National Development Plan, the government has explicitly committed to financial investment in the promotion of science, technology and innovation (Government of Uganda, 2010b).

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