RWANDA VITAL STATISTICS

REPORT 2020

National Institute of Statistics of Rwanda

REPUBLIC OF RWANDA

NATIONAL INSTITUTE OF
STATISTICS OF RWANDA

Rwanda Vital Statistics

Report 2020

May, 2021

Preface

This report is produced based on data collected in 2020 to showcase the progress made by Rwanda in improving civil registration and vital statistics system and to assess how far we are toward attaining the targets set under the Civil Registration and Vital Statistics (CRVS) strategic plan elaborated in 2017. It will therefore be a useful tool to inform related policies and decisions and guide strategic interventions aimed at boosting implementation of the strategic plan. Ideally, vital statistics are used to derive the fundamental demographic and epidemiological measures that are needed in national planning across multiple sectors such as education, labour and health. They are also critical for a wide range of government activities (e.g. population registers and other administrative registers) and commercial enterprises (e.g. life insurance, marketing of products).

The data used in this report were mainly generated by CRVS web-based system, an online platform initiated to ease the collection of civil registration data and facilitate the timely production of vital statistics reports. This system was launched in 2015 to collect data from the information source immediately by the time of occurrence of the event. The CRVS web-based system-generated data were indeed combined with data from NCI-CRVS system and the outputs were compared with survey-based data and data from administrative sources to pinpoint the level of reliability of the results obtained.

The report compilation was mainly performed by National Institute of Statistics of Rwanda (NISR) staff in charge of regular monitoring of CRVS data collection who provided the first draft, under the direction of NISR leadership. The draft was thereafter technically reviewed and validated in collaboration with CRVS key stakeholders.

The 2020 Vital Statistics report extends to births, deaths and causes of deaths, and marriages collected countrywide. It is the Rwanda's second vital statistics report, which is expected to be a benchmark for the following reports and a reference source for future publications within the same scope.

MURANGWA Yusuf
Director General
National Institute of Statistics of Rwanda
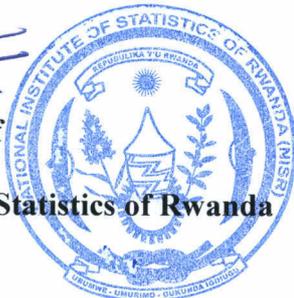
Acknowledgments

The completion of this report is a joint effort of different staff from various institutions and organizations. Therefore, NISR wishes to acknowledge the efforts of several organizations and individuals who contributed in one way or another, to the successful process of strengthening civil registration and vital statistics system in Rwanda that led to the production of this vital statistics report. First, we would like to acknowledge the financial support from the government of Rwanda, the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), and the United Kingdom Department for International Development (DFID).

We would like also to express a word of appreciation to the key CRVS stakeholders namely: MINALOC, NIDA, MoH, RBC, MINIJUST and MIGEPROF for their sustained contribution to the journey of strengthening civil registration and vital statistics system in Rwanda. Special appreciation goes to health facilities' data managers and sector civil registration officers as day-to-day CRVS data providers as well as district statisticians and directors of good governance for their important role in coordinating civil registration data collection activities at the district level.

We gratefully acknowledge Vital strategies, United Nations Economic Commission for Africa, United Nations Economic and Social Commission for Asia and the Pacific, and the Statistics Norway for availing the template for the production of a vital statistics report, revision 1 that has been helpful in terms of conceiving the content and structure of the current report. We also acknowledge the technical support provided by Bloomberg Philanthropies Data for Health (D4H) and WHO in the collection and reporting of mortality statistics following international standards and guidelines as well as in capacity building of NISR technical staff. Their contribution has been a cornerstone for improvement of data collection tools, especially at the health facilities level.

Finally, a word of appreciation goes to NISR's CRVS technical team and technical staff from key stakeholder institutions who provided all they had in terms of technical skills to compile and produce this report in partnership with Bloomberg Philanthropies D4H.

Contents

List of tables

List of figures

Acronyms and abbreviations

ANACONDA	**Analysis of National Causes of Death for Action**
APAI-CRVS	Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics
ASBR	Age-Specific Birth Rate
ASFR	Age-Specific Fertility Rate
ASMR	Age-Specific Mortality Rate
CBR	Crude Birth Rate
CDR	Crude Death Rate
COD	Cause of Death
CR	Civil Registrar
CRO	Civil Registration Officer
CRVS	Civil Registration and Vital Statistics
D4H	Data for Health
DHIS2	District Health Information Software 2
ENMR	Early Neonatal Mortality Rate
GFR	General Fertility Rate
HBCP	Home-Based Care Practitioner
HMIS	Health Management Information System
ICD-10	International Classification of Causes of Deaths, Version 10
IECMS	Integrated Electronic Case Management System
LNMR	Late Neonatal Mortality Rate
MAS2	Second Mortality Assessment Survey
MCCOD	Medical Certification of Cause of Death
MIGEPROF	Ministère du Gerne at de la Promotion de la Famille (Ministry of Gender and Family Promotion)
MINALOC	Ministère de L'Administration Locale (Ministry of Local Government)
MINIJUST	Ministry of Justice
MOH	Ministry of Health
NGO	Non-Governmental Organizations
NIDA	National Identification Agency
NISR	National Institute of Statistics of Rwanda
NMR	Neonatal Mortality Rate

NSDS	National Strategy for Development of Statistics
RBC	Rwanda Biomedical Centre
RPHC	Rwanda Population and Housing Census
TFR	Total Fertility Rate
UN	United Nations
UNECA	United Nations Economic Commission for Africa
UNICEF	United Nations Children's Fund
VS	Vital Statistics
VSR	Vital Statistics Report
WHO	World Health Organization
EICV	Enqête Intégrale sur le conditions de vie des menages
RDHS	Rwanda Demographic and health survey
NCI-CRVS	National Centralized and Integrated Civil Registration and Vital statistics System

Definitions of key concepts

Age-specific fertility rate (ASFR): The annual number of births to women of a specified age or age group per 1,000 women in that age group.

Age-specific mortality rate (ASMR): A mortality rate limited to a particular age group. The numerator is the number of deaths in that age group; the denominator is the number of persons in that age group in the population.

Cause of death: All those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries.

Child mortality rate: The probability (expressed as a rate per 1,000 live births) of dying between the first and the fifth birthday.

Civil Registration: UN defines civil registration as "the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events pertaining to the population as provided through decree or regulation in accordance with the legal requirements of a country. This process establishes and provides legal documentation for such events.

Completeness of registration: The proportion of vital events that are registered. It is the number of registered vital events divided by the 'actual' number of vital events that occurred in the same population during a specific period of time.

Crude Birth Rate (CBR): The number of live births relative to the size of that population during a given period, usually one year. It is expressed in numbers of births per 1,000 population per year.

Crude marriage rate: The crude marriage rate is the ratio of the number of marriages in a population during a reference period over the person-years lived by the population during the same period. It is expressed as marriages per 1,000 population.

Crude Death Rate (CDR): The number of deaths relative to the size of the population during a given period, usually one year. It is expressed in numbers of deaths per 1,000 population per year.

Death: The permanent disappearance of all evidence of life at any time after live birth has taken place (postnatal cessation of vital functions without capability of resuscitation). This definition excludes foetal deaths, which are defined separately.

Delayed registration: is a registration that arrives too late for inclusion in the annual (or monthly or quarterly) statistics; after one year of occurrence of the event, according to the law of the country.

Ill-defined cause of death: Any code that cannot or should not be used for the underlying cause of death (generally referring to 'R codes' in the International Classification of Diseases). For instance, a 'mode of death' such as heart failure or kidney failure; symptoms such as back pain or depression; and risk factors such as high blood pressure, are all uninformative codes for public health purposes.

Infant Mortality Rate (IMR): Probability (expressed as a rate per 1,000 live births) of a child born in a specific year or period dying before reaching the age of one, if subject to age-specific mortality rates of that period.

Late registration: is vital events that are registered after the deadline for registration according to the law of the country, but before exceeding one year.

Life expectancy at birth: The average number of years that a newborn could expect to live if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country, territory, or geographic area.

Live birth: The complete expulsion or extraction from the mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born (all live-born infants should be registered and counted as such, irrespective of gestational age or whether alive or dead at the time of registration, and if they die at any time following birth, they should also be registered and counted as deaths).

Low Birth Weight (LBW) refers to the weight at birth of fewer than 2,500 grams (5.5 lbs.) as per World Health Organization definition.

Marriage is a special contract of permanent union between a man and a woman entered into in accordance with law for the establishment of conjugal and family life.

Neonatal Mortality Rate (NMR): Number of deaths during the first 28 completed days of life per 1,000 live births in a given year or period.
Place of Occurrence refers to the place where the vital event took place,

Sex ratio at birth: The number of male births for a specific area and during a specified period divided by the number of female births for the same area and period.

The General Fertility Rate (GFR) is the number of resident live births for a specific area during a specified period divided by the female population age between 15 and 49 years (usually estimated at mid-year) for the same area and period multiplied by 1,000.

Timely registration: is the registration effected within the time stipulated by the law (30 days for births and death in Rwanda).

Total Fertility Rate (TFR): The sum of age-specific fertility rates for females aged between 15 and 49 years during a specified period, usually one year. It is an estimate of the average number of children a cohort of women would bear if they went through their child-bearing years experiencing the same age-specific fertility rates.

Under-five mortality rate (U5MR): Is the probability for a new-born to die before his/her fifth anniversary. Under-five mortality rate is the probability of dying between birth and exactly 5 years of age, expressed per 1,000 live births.

Underlying cause of death: The cause of death to be used for primary statistical tabulation purposes has been designated as the underlying cause of death. The underlying cause of death is defined as "(a) the disease or injury which initiated the train of events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury" (ibid., sect. 4.1.2).

Vital statistics system: A vital statistics system is defined as the total process of (a) collecting information by civil registration or enumeration on the frequency of occurrence of specified and defined vital events, as well as relevant characteristics of the events themselves and the person or persons concerned, and (b) compiling, processing, analysing, evaluating, presenting and disseminating theses data in statistical form.

Executive summary

The National Institute of Statistics of Rwanda (NISR) within the third National Strategy for Development of Statistics (NSDS3), which is being implemented from 2019/20 to 2023/24, committed to strengthen administrative data collection system including Civil Registration and Vital Statistics System (CRVS) in Rwanda to complement official statistics from surveys and censuses.

To facilitate the collection, storage and use of vital statistics data; an electronic web-based system was initiated and started to be operational in 2015. This system was later on in December 2020, integrated to the National Centralized and Integrated CRVS system (NCI-CRVS) that is currently used for official registration of vital events at all health facilities. The main purpose of collecting data via electronic system is to enable the timely production of vital statistics reports. The current report is mainly based on data collected via electronic CRVS systems in 2020.

The report is organized within 7 chapters namely: 1) Introduction and background; 2) Rwanda's civil registration system; 3) data quality, timeliness and completeness of registration; 4) births statistics, 5) deaths statistics 6) causes of death statistics; 7) marriages statistics. To assess the reliability of results obtained, a comparative analysis involving data from other sources was performed. Only vital events that occurred in 2020 were considered for analysis in this report.

Birth statistics:

The comparison of registered births with estimated live births at national level showed a slight decrease in birth registration completeness rate, from 87.0% in 2019 to 85.8% in 2020. The shares of births registered within 30 days also underwent a downward shift, from 78.0% in 2019 to 72.3% in 2020. Hypothetically, this was due to COVID-19 prevention measures that forced the closure of businesses including registration offices in March 2020, followed by frequent restriction of citizens' movements in the following months, and the transition of birth registration in health facilities since 10th August 2020, has also contributed some births leave unregistered due to limited awareness of the public about the amended law for registration of vital events.

The computation of fertility indicators in 2020 adopted the use of adjustment practice where the results showed a crude birth rate (CBR) equivalent to 28.8‰, general fertility rate (GFR) equivalent to 108.7‰ and total fertility rate (TFR) equivalent to 3.7 live births per woman. CRVS computed fertility indicators returned small values in 2020 when compared to RDHS 2019/20 that showed a CBR equivalent to 31.8, GFR equivalent to 134 and a TFR equivalent to 4.1 births per woman. Further analysis of CRVS data showed an average weight at birth equivalent to 3108 grams in 2020, up from 3100 grams in 2019; and a share of low birth weight equivalent to 7.1%, down from 7.4% in 2019. The sex ratio at birth was found to be 103 male births per 100 female births.

Death statistics:

Vital statistics on deaths showed a total of 22,634 deaths registered in 2020 of which 60.6% occurred in the community. The comparison of registered deaths with expected deaths gives 29.9% completeness of death registration in 2020 down from 31.4% in 2019. Mortality statistics showed a high number of deaths among males compared to females with a sex ratio at death equivalent to 124.1 males' deaths per 100 females' deaths, slightly down from 124.4 in 2019. Due to the low completeness rate of death registration, adjustment techniques were used to obtain country representative estimates where the crude death rate was found to be 6.0‰.

Causes of deaths:

Analysis of causes of death data highlights an issue of data quality regarding death certification and reporting where the proportion of causes of deaths that are usable for policies and proper decision-making stands at 43.8% of the total causes reported by health facilities in 2020, significantly down from 48.4% of usable causes of death in 2019. Across age groups, analysis shows that among institutional deaths, below age of 50 years old most of death causes are due to a group of communicable diseases, maternal, perinatal and nutritional conditions while the group of non-communicable diseases is more prominent after the age of 50 and above. The external causes and injuries were found to be more frequent among males than females. Generally, a group of communicable diseases, maternal, perinatal and nutritional conditions represents 63% of the total usable causes while the group of non-communicable diseases and external causes represents 64.7% and 3%, respectively.

Marriage statistics:

Vital statistics on marriages were computed based on legal marriages registered in 2020 where CRVS system generated data show a total of 30,859 legal marriages registered in 2020, down from 48,526 in 2019; giving annual crude marriage rate equivalent to 2.4‰ in 2020. Further analysis shows that below age of 30, females are more frequently married than their counterparts males while at age of 30 and above, males predominate. The most frequently chosen matrimonial regime is "Community of property" representing 98.1% of the total marriage regimes recorded. This report did not manage to release divorce statistics as the system that could provide accurate information on divorces is under revision.

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1.   Background

An effective civil registration and vital statistics system provides essential data, rates and other quantitative measures for the accurate planning of programmes designed to promote the wellbeing of the citizens. The data collected from vital events registration are essential to planning for social development, including the design and implementation of public health measures, maternal and child care, family planning, social security, education, housing and economic development. Accurate information is essential for proper planning for the needs of the community, particularly for health and education facilities, as well as for housing and the labour market. Accurate and comprehensive vital statistics generated from civil registration provide for comparison and evaluation of differences among regions, between districts and wards within a region, and at the international level between countries. Death records are of particular importance in public health, for identifying the magnitude and distribution of major disease problems, epidemics and pandemics. Data from these records can be used for epidemiological studies. Cause of death information is essential for medical research for major causes of death such as cancer and heart diseases.

As a source of vital statistics, civil registration has important uses for individuals, societies and the government. For individuals, copies of registration records can be used as legal documents for evidentiary purposes. Information compiled from registration records is needed for administrative applications such as national identity programmes and the electoral roll. It also serves as the starting point for several operational programmes, particularly in family planning, medical research, maternal and child care programmes, historical demography, genetic studies and so forth. The establishment of the vital events registration system is in-line with the national development plan of Rwanda.

Civil registration has administrative and legal use on one hand, and statistical, demographic and epidemiological use on the other. Vital statistics are used to get precise and up-to-date measurements of demographic changes and for the study and analysis of trends. Vital statistics are also primary data sources for the health sector in the implementation, monitoring and evaluation of different health interventions and epidemiological studies.

Measuring the progress towards the realization of Sustainable Development Goals requires a sustained source of data that speaks to the outlined indicators. The global 2030 development agenda implicitly recognizes and underlines the importance of individual and aggregate records and data on birth and death in the realization of basic human and civil rights as well as in the monitoring of development. The Sustainable Development Goals (SDGs), anchored on the vision of eradicating extreme poverty from the face of the earth by the year 2030, have as the first of its five transformative shifts to "Leave no one behind." They emphasize on the need to ensure that no person is excluded or denied universal human rights and access to basic economic opportunities. Several SDGs indicators require data from civil registration to measure progress. The domestication of SDGs in Rwanda re-emphasized the crucial role of CRVS data in monitoring a successful implementation and measuring achievements.

The African Agenda 2063 similarly re-echoes social inclusiveness as a prerequisite to the continent's growth and development. A fundamental challenge to the realization of these visions remains the fact that civil registration systems are largely very weak in most of the developing world; hence a majority of the population remain legally "invisible" in the eyes of the state, denying them the right to be known and planned for by their governments, access to fundamental opportunities and services, as well as the ability to claim their rights or to participate in governance processes.

Individual identity records and documents generated from a CRVS system help to fulfill the first fundamental human right that every individual is entitled to upon birth i.e. the right to a name and an identity; from which other human and civil rights are founded. The recognition

of the existence of persons by their governments, and the ability of individuals to transact with each other and with the state, through legal identity documents, are fundamental attributes good governance that can only be realized by states where complete civil registration systems exist. Records of birth, marriage, divorce and death derived from civil registration systems also provide a permanent, continuous, universal and reliable source of vital statistics for accurate and timely planning, resource allocation and for good governance. Measurements and monitoring of many of the SDG's indicators require vital statistics data on a continuous and timely basis.

Civil registration and vital statistics system in Rwanda are still under development and as a result, like in many other African countries, some of our people have come into this world and left without leaving a trace on official records. However, efficient civil registration and vital statistics system is a precondition for enabling regular production of vital statistics reports that are essential for informing policies and programs for various purposes. In its place, the need for vital statistics was met by conducting expensive periodic surveys and decennial population censuses; something that produces reliable data but late compared to the CRVS system.

Despite that, an efficiently working CRVS system enables a continuous supply of reliable data on vital events to support informed policy-making, implementation and monitoring of development plans. Also, in the absence of reliable information on causes of death there is no solid basis to determine which diseases have major impacts on the population.

The production of this report adopted the vital statistics report production template, revision 1 jointly developed by Vital Strategies, United Nations Economic Commission for Africa, United Nations Economic and Social Commission for Asia and the Pacific, and Statistics Norway (2020). The template serves as a comprehensive document which provides detailed background information that is useful and recommended by the UN in the preparation of the Vital Statistics Reports.

Vital events that are covered in this report are births, deaths, and marriages that took place in 2020 and reported via the CRVS system. The annual vital statistics report presents a great opportunity to learn from experience in terms of registration of births, deaths and causes of death and evaluate the quality of the available data in the country. This report is also expected to be a benchmark for the next reports and a reference source for further publications in the same scope.

1.2. Objectives, Scope and organization of the report

1.2.1. General Objective

The main objective of producing this vital statistics report is to showcase the current status of vital events registration for informing policies and decisions in this regard, identifying gaps and strengths within the system, and to track the progress made toward achieving the target set under the CRVS strategic plan elaborated in 2017.

1.2.2. Specific objectives include:

i.   To assess the level of completeness in birth and death registration;
ii. To highlight limitations/challenges in the data in terms of coverage, quality and timeliness for registration of civil events;
iii. To assess the level of reliability of demographic indicators obtained from CRVS data through comparison with indicators from other sources

1.2.3.   Scope of the report

The United Nations recommends that countries should register and collect information on the following vital events for civil registration and vital statistics purposes: birth; death; foetal death; marriage; divorce; annulment; judicial separation; adoption; legitimization (acknowledgment); and recognition (judicial declarations of paternity) (UN, 2014). However, some of the vital events recommended by the UN are not yet recorded in Rwanda foetal deaths and judicial separation, although it remains to be the eventual goal. The African Ministers responsible for civil registration have also recommended the recording of the four vital events. In September 2016, the law No 32/2016/ of 28 August 2016 governing persons and family assigned an order of registration priority by selecting most of the internationally recommended vital events and by dropping some which were considered less important. In line with these recommendations, the scope of the CRVS improvement process has been set to address births, deaths, and marriages. In this regard, the top priority vital events to be recorded are births, marriages, and deaths. Therefore, taking into consideration the aforementioned background and the relative weight attributed to vital events in terms of policy orientation for our country context, the content of this report is limited to the registration of birth; death and causes of deaths; and marriages that occurred in 2020.

1.2.4.   Organization of the report

The report is organized in seven chapters namely (1) Introduction and background; (2) Rwanda's civil registration system; (3) Data quality, timeliness and completeness of registration (4) Birth's statistics (5) Death's statistics (6) Cause of deaths statistics (7) Marriage's statistics. Descriptive narratives were made to clarify the results.

- Chapter 1 presents the introduction and the general overview of the role of vital statistics, objectives and scope of the report.
- Chapter 2 describes Rwanda's civil registration system including history, legal background, administrative structure; organizational structure, registration process and the flows of information; organization of vital statistics production and dissemination plan; incentives and disincentives for civil registration, and plans for further improvement of CRVS.
- Chapter 3 describes the quality and coverage of civil registration data
- Chapter 4 gives statistical data on births, disaggregated in accordance with various aspects and with explanatory narratives;
- Chapter 5 gives disaggregated statistics on deaths with explanatory narratives
- Chapter 6 gives a summary statistic on causes of deaths;
- Chapter 7 gives disaggregated statistics on marriages with explanatory narratives.
- Finally, the appendix showcases references and other informative attachments that are meaningful to the process of vital statistics data collection.

1.3. Country profile

1.3.1. Geography

Rwanda is located in central Africa, immediately in south of the equator between latitude 1°4' and 2°51' S and longitude 28°63' and 30°54' E. The country lies 75 miles South of the Equator in the Tropic of Capricorn, 880 miles 'as the crow flies' west of the Indian Ocean and 1,250 miles East of the Atlantic Ocean - literally in the heart of Africa.

Rwanda is a mountainous country with the lowest point about 950 meters above sea level and the highest point about 4,507 m. The terrain is hilly and the country is often referred to as "the land of a thousand hills". Rwanda has a surface area of 26,338 square kilometers. It is bordered by Uganda to the North, Tanzania to the East, the Democratic Republic of the Congo to the West, and Burundi to the South.

Figure 1: Map of Rwanda by administrative divisions

1.3.2.   Business and economy

Rwanda's economy has tremendously recovered over the last two decades. Rwanda's Gross Domestic Product (GDP) has risen from $752 million in 1994 to $9.5 billion in 2018. In 2020, GDP at current market prices was estimated to be Frw 9,746 billion, up from Frw 9,315 billion in 2019. The country registered an average GDP growth of around 8 percent per year over the last two decades, with a double-digit growth recorded in the last two quarters of 2019 (12% growth in the 2nd quarter, and 11.9% in the 3rd quarter). Rwanda's GDP growth rate has however undergone a decrease in the year 2020 due to public health catastrophe of COVID 19 as in 2020, estimates calculated in 2017 prices show that GDP decreased 3.4 percent compared to 2019. While the GDP per capita has grown from $125.5 to $787 in 2018; In the year 2020, GDP per Head in current US Dollars was estimated at 816 down from 836 in the previous year of 2019.

The agriculture sector contributes about 35% to the national GDP, employing about 70% of the population in Rwanda. The sustained economic growth has led to one million people being lifted out of poverty (between 2000 and 2017) while the life expectancy has risen from 29 years in 1994 to 67.7 years in 2020. Inflation has fallen from 101% in 1995 to 1.1% in 2018.

Over the last ten years, Rwanda has implemented a successful doing business reform agenda in order to create a favourable and competitive business environment. As a result, Rwanda jumped over 100 places in the World Bank Doing Business Index, today ranking the 2nd in

Africa and 38th easiest place to do business globally (Doing Business Report, World Bank 2020). The value of investments registered more than tripled from US$400 million in 2010 to US$2.006 billion in 2018.

In 2019, Rwanda registered investments worth US$ 2.46 billion, an increase of 22.6% from the previous year. Energy and manufacturing accounted for 75% of all investments registered (45% and 30% respectively). Other sectors that attracted significant investments were construction, agriculture, services including ICT as well as mining.

1.3.3. Country demographic and social profile

The Rwandan population is essentially young, with 43.4 percent of all Rwandans under age 15 according to the RPHC4. According to the 2014/15 Rwanda Demographic and Health Survey, only 56 percent of children under 5 years of age were officially registered.

The fourth population and housing census in 2012 showed that 52 percent and 48 percent of the Rwandan population were female and male, respectively. According to projections, Rwanda's population would grow to 12,663,116 in 2020; the population more than doubled between 1978 and 2012. The increase was essentially due to rapid population growth, which remains high despite the progressive decreases in the natural growth rate and the total fertility rate. In fact, according to census estimates, the natural growth rate was 2.6 percent between 2002 and 2012 and 3.1 percent between 1978 and 1991. The low natural growth rate of 1.2 percent between 1991 and 2002 is due to the high number of deaths caused by the 1994 genocide committed against Tutsi. The population density is high across the country and has increased steadily over the years, up to 500 inhabitants per square kilometer in 2020. The population is largely rural; according to the RPHC4, almost 84 percent of the country's residents live in rural areas.

Figure 2: 5-Years Age-group Population Pyramid (Projected population, 2020)
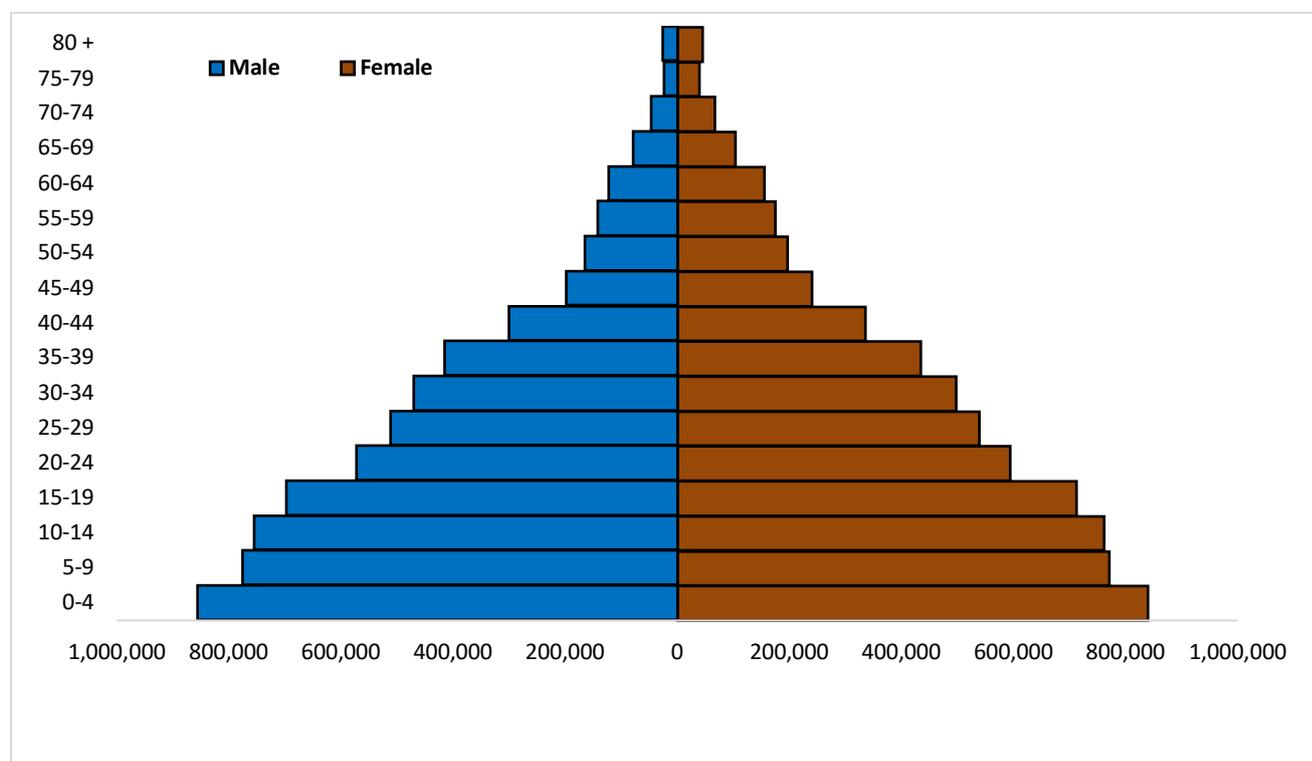
Source: 4th PHC Population projections, 2020

The illiteracy rate in Rwanda has significantly declined for the past years. As per the fifth Integrated Households Living Conditions Survey (EICV5), men in the older age range (15 years and above) continued to have the highest literacy rate in EICV5 compared to women (78% and 69% respectively). On the contrary, in younger age cohort (15-24 years) females registered again the highest literacy rate in EICV5 (89% for females against 84% for males). Although numerous religions are practiced in Rwanda, the 2012 census showed that Christianity is by far the dominant faith, practiced in some form by 93 percent of the population (44 percent are Catholic, 38 percent are Protestant, and 12 percent are Adventist). The Muslim population remained steady at 2 percent from 2002 to 2012. Only 0.4 percent of the population profess to have no religion. Nearly all Rwandans speak the same language, Kinyarwanda, which is the country's official first language, followed by English and French. Kiswahili, the third most common foreign language, is generally spoken in some areas of the districts bordering other countries where this language is widely spoken, such as the Democratic Republic of the Congo and Tanzania. The sixth RDHS has shown that maternal mortality ratio has declined significantly to 203 deaths per 100,000 live births in 2019/20 down from 1,071 in 2000 while under-five mortality dropped to 45 deaths per 1000 in 2019/20 from 196 deaths per 1000 in 2000.

CHAPTER 2: RWANDA'S CIVIL REGISTRATION SYSTEM

2.1. History and Legal Background

In Rwanda, as in most African countries, registration of vital events started during the colonial period. However, the registration laws were only for the nationals of the colonial powers. The laws which were regulating civil registration in Rwanda evolved in connection with the stages of its political and administrative history. During the colonial period, from 1931 up to the end of 1961, under the decree of May 4, 1895, on the civil code of persons-book one, all Rwandans aged 18 years and above were issued identity cards known as identity booklet or "Ibuku". This card was written in Dutch and Kinyarwanda languages. Information entered into the booklet was a set of characteristics such as names, approximate date of birth, parents' names, sex, and marital status, height, names of descendants, profession and ethnic or clan affiliation (NISR, November 2016).

In the early days of independence, the registration of the civil status of the population in Rwanda was governed by the order issued by the Belgian Governor on the 25th of July 1961. This order continued to be used after independence in 1962 with few amendments such as assigning the civil registration responsibilities to the Ministry of Internal Security. From the 27th of October 1988, the order was repealed and replaced by Law N° 42/1988 which instituted the Preliminary Title and Book One of the Civil Code. This law made registration of vital events compulsory on the Rwandan territory and was in place until the 28th of August 2016 when the new law No 32/2016 governing persons and family was enacted; the same law was amended on 17th February 2020. After the publication of the new law N° 32/2016 governing persons and family, the mandate of civil registration was transferred from the Ministry of Justice to the Ministry of Local Government (NISR, November 2016).

The law No 32/2016 of 28/08/2016 governing persons and family determines Presidential and Ministerial orders allowing its implementation namely: 1) the Presidential Order N° 056/01 of 16/02/2017 determining fees paid for a civil status record 2) Presidential Order **N° 092/01 of 21/09/2020** determining responsibilities of the Executive Secretary of Cell; 3) Ministerial Order N° 002/07.01 of 27/07/2020 determines the number, types, formats and use of civil status registers 4) The Ministerial Order N° 001/07.01 of 17/01/2017 determines modalities and procedures for change of name 4) The Ministerial Order N° 001/MIGEPROF/2017 of 16/01/2017 determines conditions to be considered in intercountry adoption and the procedure thereof 5) The Ministerial Order N° 002/MIGEPROF/2017 of 17/01/2017 determines procedures for guardianship of minors by the state 6) Ministerial Order N° 001/07.01 of 27/07/2020 determining the officer of the health facility with powers of civil registrar.

The mandate of civil registration was also transferred to the former National Identification Project which later became the National Identification Agency established by Law N°43/2011 and charged with population registration, civil registration, and issuance of the national identity card.

National Institute of Statistics of Rwanda has been established by law No 09/2005 of 14/07/2005 with the mandate of coordinating activities of the national statistical systems among others (Republic of Rwanda, 2013). Concerning the process of strengthening vital statistics data production system, NIDA and NISR have been working hand-in-hand to improve and strengthen the CRVS systems in Rwanda. Despite the progress achieved concerning civil registration, it is yet to be universal and able to produce reliable and continuous vital statistics. For instance, according to the fifth Rwanda Demographic and Health Survey, almost half of births are not registered and about 70 percent of deaths go unrecorded each year. Registration of other civil status is unacceptably low (NISR, November 2016).

From independence until 2006 the lowest office for civil registration was District. With the second phase of the decentralization process in 2006, the responsibilities of civil registration were extended down to the sector level, where the sector Executive Secretary was added to the list of civil registrars in the country to bring most needed services closer to the population (NISR, November 2016).

On 1st January 2015, NISR launched and deployed in all public and private Rwandan health facilities and in all sectors and districts the CRVS web-based application, a system used to collect vital statistics data and to facilitate the transfer of information from health facilities to sector offices under the form of vital event notification with the ultimate purpose of facilitating the regular production of vital statistics reports.

Figure 3: CRVS improvement timeline and key actions
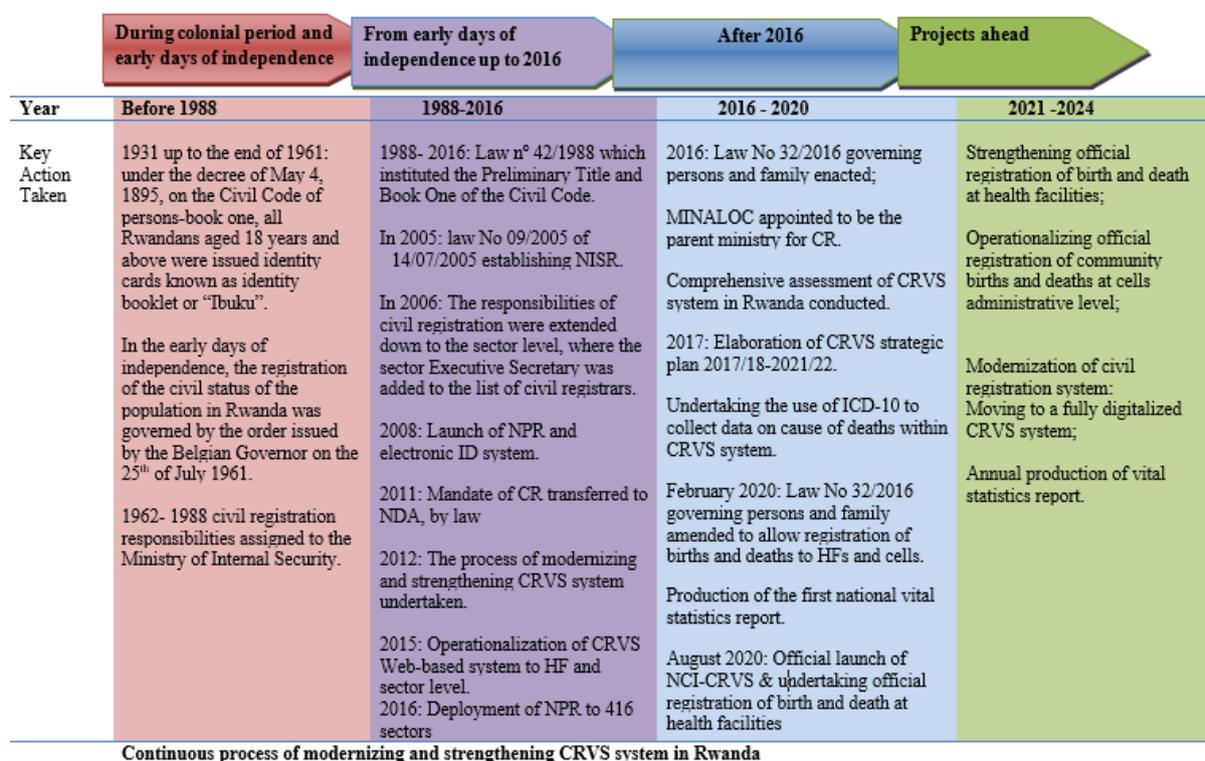
2.2. Legal and Administrative Issues

Rwanda has a decentralized system of governance with 4 provinces and the City of Kigali, 30 districts; 416 sectors; 2,148 cells and 14,837 villages. From independence until 2006 the lowest office for registration was District. With the second phase of the decentralization process in 2006, the responsibilities of civil registration were extended down to the sector level, where the sector Executive Secretary was added to the list of civil registrars in the country to bring most needed services closer to the population.

As described in the earlier sections, the United Nations recommends that countries should register and collect information on the following vital events for civil registration and vital statistics purposes: birth; death; foetal death; marriage; divorce; annulment; judicial separation; adoption; legitimation (acknowledgment); and recognition (judicial declarations of paternity) (UN, 2014).

Though the amended law catered for some of the legal issues, one the of the persisting legal issues in 2019 is that the law No 32/2016 of 28/08/2016 governing persons and family

(amended in 2020) did not provide for the registration of foetal deaths as recommended by UN as only nine events (birth, deaths, marriages, divorces, adoption, recognition, guardianship, legitimization and marriage annulment) are currently declared to the civil registrar (art. 62). Second, though the registration of vital events is free of charge, the certificate is paid for and is provided on demand. Third, the law provides for 30 days for timely birth and death registration but it is silent on late and delayed registration. The law doesn't provide for penalties for non-compliance to legal registration time but provides for presenting a court judgment before registering a death declared after 30 days of occurrence.

2.3. Organizational structure, registration processes and information flows

2.3.1. Organization structure

The success of the CRVS system in a large measure would hinge on systematic and active coordination among all Ministries and organizations that directly or indirectly support or benefit from the system. Coordination of activities must be built into the CRVS systems from the start. While coordination at the national level is crucial for smooth management and operations of the CRVS system in a country, coordination at various other levels of administration is also important for efficient maintenance of the system.

In Rwanda, the National Identification Agency (NIDA) currently under the Ministry ICT is mandated to supervise and coordinate the civil registration system at the national level while the National Institute of Statistics of Rwanda (NISR) is concerned with coordinating the collection of vital statistics data and is one of the major beneficiaries of the CRVS system.

Table 1 below shows the coordination mechanisms of the CRVS system at different administrative levels that provides details of the composition of the committees and their main functions.

Table 1: CRVS organization and coordination mechanism in Rwanda, 2020

Coordination committee	Composition of committee	Main functions
High-level Coordination Committee on Civil Registration and Vital Statistics To meet once a year	Chaired by Minister of Local Government Members: Minister of Health, Minister of Finance and Planning, Minister of Justice, Ministry of gender and family promotion	Provide oversight and policy guidance to the work of civil registration and vital statistics
National CRVS Steering Committee To meet once every Quarter	Chaired by Permanent Secretary of Local Government Members: PS Ministry of health, PS Ministry of justice, PS Ministry of gender and family promotion, DG/NIDA, DG/NISR, DG/RBC, ES/NCC and special invitees depending on the nature of the meeting	Resource mobilization, Organize and conduct annual development partners meeting and approve reports from CRVS Core Technical Team.

Coordination committee	Composition of committee	Main functions
CRVS Core Technical Team	Technicians in charge of civil registration and vital statistics from MINALOC, MINIJUST, MOH, MIGEPROF, NIDA, NISR, RBC and NCC	Coordinate the implementation of all policies related to CRVS and advise the CRVS steering committee on all matters related to CRVS.
National mortality technical committee	Chaired by Director General of Clinical and Public Health services in the MoH and Co-Chaired by Chairman of Rwanda Medical and Dental Council. Members: MoH, RBC Heads of programs, RBC Epidemiologists, NISR, NIDA, MINALOC, Senior clinicians from Referral hospitals, WHO, CDC, Epidemiologists from Universities, Rwanda National Police, National Forensic Laboratory of Rwanda.	Coordinate all mortality activities and review mortality reports and ensure high quality of causes of death statistics are reported in compliance with global standards.

Source: NISR, National strategic plan, 2017/18-2021/22

2.3.2. The state of CRVS system in Rwanda as is in 2020

The status of CRVS system in 2020 was characterized by existence of multiple systems set for different purposes but with almost similar data capture and a transition from a paper-based registration system to a digitized registration where there was an introduction of a new digitized CRVS system (NCI-CRVS) set for enabling official registration of vital events electronically. The process of integrating all relevant CRVS related systems was however undertaken to cater for effort duplication and is well on track.

2.3.2.1. National Centralized and Integrated Civil Registration and Vital Statistics system (NCI-CRVS)

One of the major recommendations from the first National CRVS Strategic plan elaborated in 2017 was to develop a national centralized and integrated CRVS system that will respond to the needs of various institutions in CRVS data collection; to cater for existence of multiple systems working in silos and reduce a related duplication of effort. Thus, to enforce implementation of the strategic plan, a new system (NCI-CRVS) was developed and initiated. This system has indeed the benefit of capturing vital events information on real time and directly at the site of occurrence where official registration of event is done. It quiet reduces the multiple recording of the same events into different systems as it provides for a single data entry point taking into consideration the requirements of other existing systems. The same system is linked to other legacy systems including the national population registry (NPR) for back up of national identity production; CRVS web-based system for vital statistics production; HMIS for public health and epidemiological related needs; and the linkage with Irembo for issuance of certificates is still under process. Operationalization of NCI-CRVS was officially launched in August 10th, 2020 where it started with all public and private hospitals with incremental scale up rollout plan. By end of 2020, the system was operational at all hospitals, health centres, clinics and polyclinics; both public and private.

2.3.2.2. CRVS paper-based system

Under the transition towards a fully digitized CRVS system, a paper-based system continued to be operational at sector offices as a digitized system currently captures only on time births and deaths occurring at health facilities. Altogether there are seven registers of civil status (Article 74 of the law N° 32/2016 of 28/08/2016): 1) Register of birth records; 2) Register of death records; 3) Register of marriage records; 4) Register of guardianship records; 5) Register of acknowledgment of children born out of wedlock; 6) Register of adoption records; and 7) Register of other records. With an introduction of NCI-CRVS at all health facilities; the paper-based system only captures late and delayed registrations of births and deaths as well as all other events that are still reported to sector offices for official registration in conformity with the law. These include marriages, divorces, adoptions, guardianship and recognition.

2.3.2.3. CRVS web-based application

In Rwanda, reliable vital statistics were mainly available from national census and other demographic and heath surveys that are periodically conducted. Recognizing importance of timely vital statistics and in line with the second National Strategy for the Development of Statistics (NSDS II), where strengthening the civil registration system, as a source of vital statistics was one of its strategic objectives, the NISR initiated a web-based system since 2015 to ease the collection and storage of vital events registration data and enable the production of vital statistics reports. However, with introduction of NCI-CRVS system and under the prevailing transition from a paper-based system to a fully digitized registration system, NISR's

CRVS web-based system was linked to NCI-CRVS to facilitate existence of a single data entry point and reduce a duplication of effort to data entry staff. Under the transition period, CRVS web-based system is pulling on time birth and death registrations from NCI-CRVS since December 2020 and is still being used at it is own to capture information regarding other vital events registered by sector offices such as Marriage, divorce, recognition and Adoption.

2.3.2.4. Health Management Information System (HMIS)

The Health Management Information System (HMIS) countrywide operates under the management of the Ministry of Health (MoH) to collect technical data for epidemiological and other health related use. With introduction of NCI-CRVS, HMIS is expected to continue capture aggregated information on births and deaths to provide denominators for counter verification of NCI-CRVS records. This will facilitate the monitoring and improvement of both systems.

2.3.2.5. National Population Registry

The national population registry (NPR) was developed by NIDA to facilitate the issuance of the national identity card with 2D technology to those aged 16 years and above as well as hosting electronic population registration forms: first registration, change of marital status, change of address and death registration. Since 2015, the National Population Registry has been decentralized up to the Sector level where all 416 Civil Registration Officers (CROs) access and use it to serve people who need different population registration-related services and capture vital events mentioned above. With the development of NCI-CRVS, the NPR was linked to the civil registration system where each event registered is instantly captured in NPR and to help validating and authenticating identification of recorded people.

2.3.3. Registration processes and information flows

Figure 4 below summarizes registration process and information flow, taking into consideration the 10 milestones[1]

---

[1] *Refer to: https://gh.bmj.com/content/bmjgh/3/2/e000673.full.pdf for more information*

Figure 4: Ten CRVS Milestones' framework with a working definition of each milestone
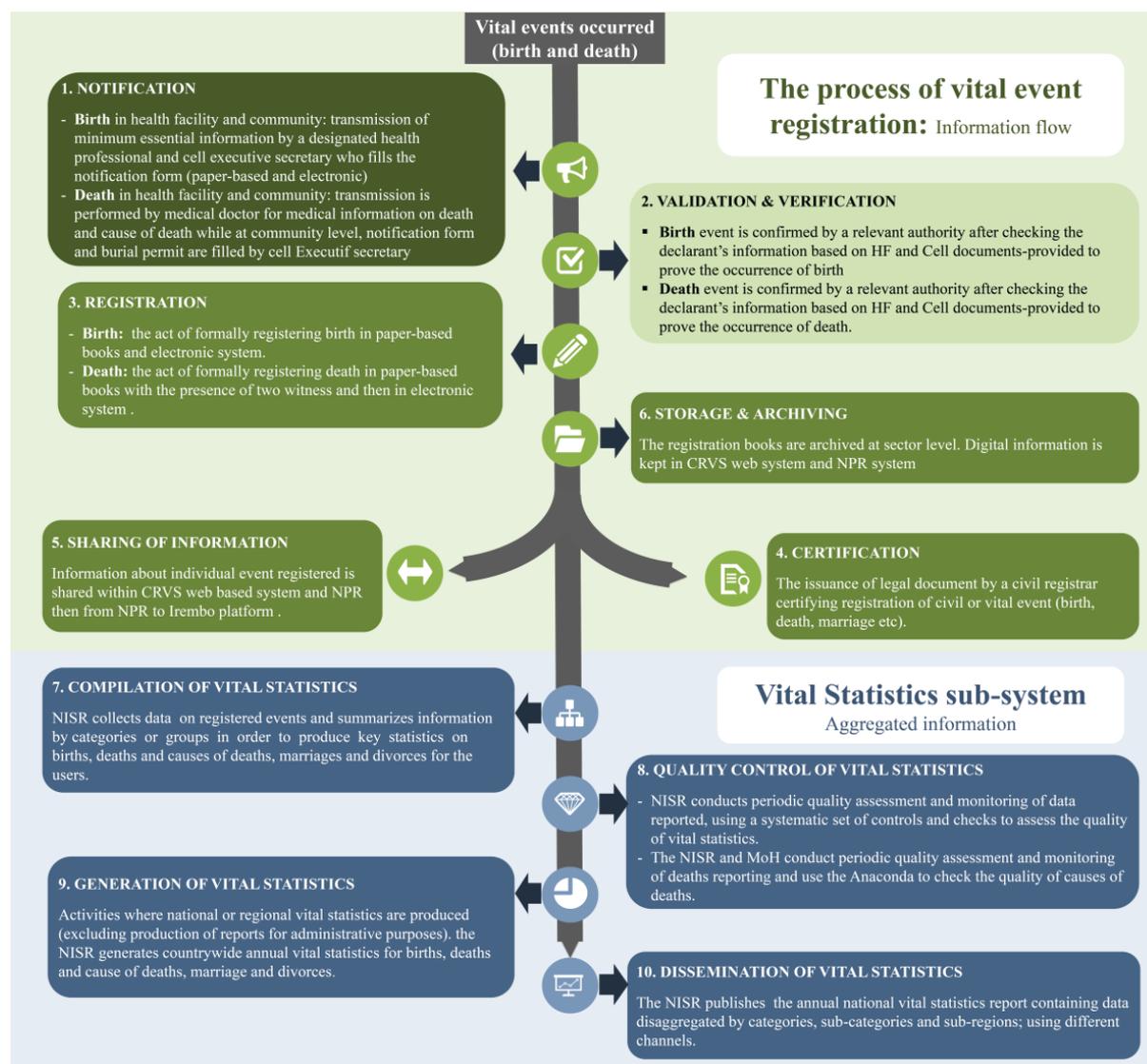
2.3.4. Timeliness of Registration

According to the law No 32/2016 of 28/08/2016 governing persons and family in Rwanda; that was amended in February 2020, registration of birth and death must be done within 30 days of occurrence (art, 100 and 106). The same law provides for a ministerial order determining modalities for late and delayed registration but the order is not yet enacted. For reporting purposes, late registration was considered to be an event (birth or death) registered after 30 days of occurrence but without exceeding one year while delayed registration was considered to be an event (birth or death) registered after one year from its occurrence.

By current practice, marriage is celebrated at sector office after 20 days of notice made to the public and is immediately registered. The consensual cohabitation (unions) and forms of marriages other than those solemnized by a civil registrar (monogamous) are not accepted by law and thus not registered. Nevertheless, such marriages are still taking place.

2.4. Organization of vital statistics production and dissemination

In Rwanda vital statistics are collected regularly via the recording of registered vital events (births, deaths, marriage etc.) in a digitized CRVS system. Each year (starting by 2019), countrywide vital statistics report is produced and disseminated through the NISR website and

other platforms. More information on CRVS system coordination and implementation with involved stakeholders is displayed in Figure 5 below.

Figure 5: Organization of CRVS system and production of vital statistics, 2020
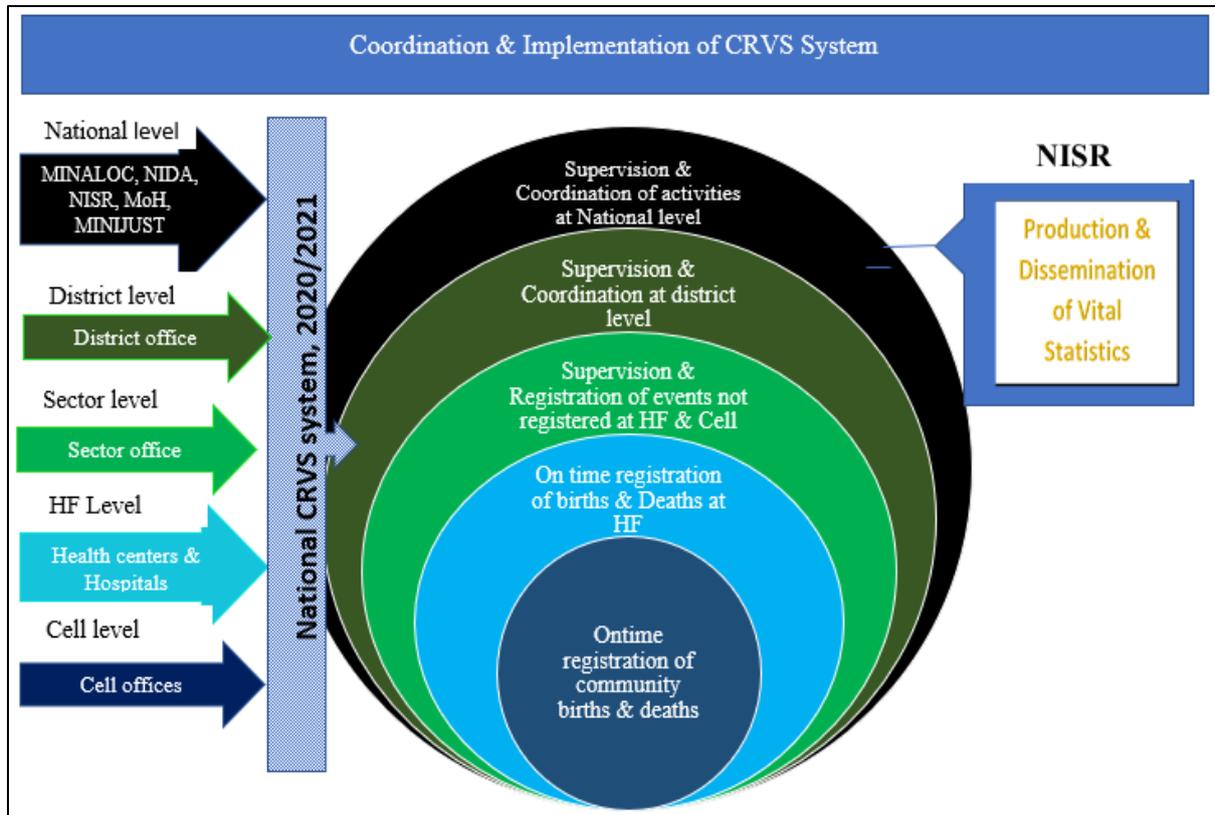
CHAPTER 3: DATA QUALITY, TIMELINESS AND COMPLETENESS OF REGISTRATION

3.1. Data and methods

3.1.1. Data source

Vital events used in this report are outputs of different sources, but mainly CRVS web-based system and National Centralized and Integrated CRVS (NCI-CRVS) system recently operationalized countrywide to enable official registration of birth and death at health facility level. However, as a way of assessing the reliability of CRVS released data and to enable the computation of indicators requiring existence of denominators, CRVS system-generated data were triangulated with data from other sources including: Second Mortality Assessment Survey (MAS2), and Fourth Rwanda Population and Housing Census (4th RPHC). Due to the under-reporting of deaths, especially community deaths, the low number of deaths was obtained at the national level when compared to expected deaths. In this regard, adjustment techniques were used to estimate country-representative mortality statistics.

Regarding the timeframe, only events that occurred in 2020 were considered for analysis at all events. However, data entry period was extended to end of January 2021 to cater for interruptions caused by COVID-19 prevention measures throughout data collection process in 2020. In this report, the term marriage refers to legally celebrated marriage as provided for by the law N° 32/2016 of 28/08/2016 governing persons and family in Rwanda as amended in February 2020. The report does not therefore include other forms of unions not recognized by the law as marriage.

3.1.2. Data quality assessment

According to United Nations *Principles and Recommendations*, "The quality of vital statistics is measured according to completeness, correctness or accuracy, availability and timeliness" (UN, 2014). Therefore, quality control measures must be put in place in terms of four quality dimensions mentioned above. In this report, data quality issues observed were mainly duplicates, typing errors on date of occurrence of an event when compared to the registration date, erroneous or missing information, especially on causes of death.

Duplicate entries on births were detected based on mother's ID number. On all datasets, the respective unique identifier was used to check for duplicated entries. Some duplicates were obvious and easy to detect while some others were difficult to detect. All erroneous entries were dealt with in accordance with the nature of errors. For example, missing values were replaced with a word missing or not stated in order to run pivot tables in Excel. However, for the most complex cases to handle, respective records were removed from the datasets.

3.1.3. Desk review

The process of compiling this report was preceded by assembling the materials available regarding the setup and operations of the systems as well as vital statistics reports from other countries. Some of the reports consulted in this regard include but not limited to: Alaska Vital Statistics Annual report 2017, Namibia Vital Statistics Report for data collected from 2011-2015, Philippines Vital Statistics report 2013-2014, Georgia Vital Statistics report 2015, Missouri Vital Statistics Report 2018, U.S National Vital Statistics Reports, Vol. 68, No. 13, November 27, 2019; Maryland Vital Statistics Annual Report 2018; etc. The compilation indeed conformed to the Rwanda vital statistics report 2019 and consulted the production of vital statistics report: template, revision 1 developed by Vital Strategies et al (2020).

3.1.4. Dialogue with registration officers

CRVS actors at both sectors and health facilities levels were contacted through phone calls to clarify on suspected erroneous records and provide clear information on them. The general observation was that most of errors were related to the mistyping of information during data entry.

3.2. Timeliness of registration

Figure 6 shows the birth registration timeliness. As per the law governing persons and family, timely registration of birth or death is done within 30 days of occurrence. However, the law is silent on late and delayed registration. For the purpose of reporting, a late registration was considered to be a vital event (birth or death) registered after 30 days of occurrence but without exceeding one year, while delayed registration was considered to be a birth or death registered after one year. The current report shows 312,678 live births registered in 2020 of which 226,120 births (72.3%) were registered within 30 days of occurrence. The comparison with the 2019 results shows a decrease in share of timely registered births as a percentage of total registered births, from 78.0% to 72.3% as displayed here below. Hypothetically, this can be attributed to the COVID-19 preventions measures including total lockdown that disturbed the usual pace of timely births registration.

Figure 6: Birth registration timeliness, 2019 compared to 2020
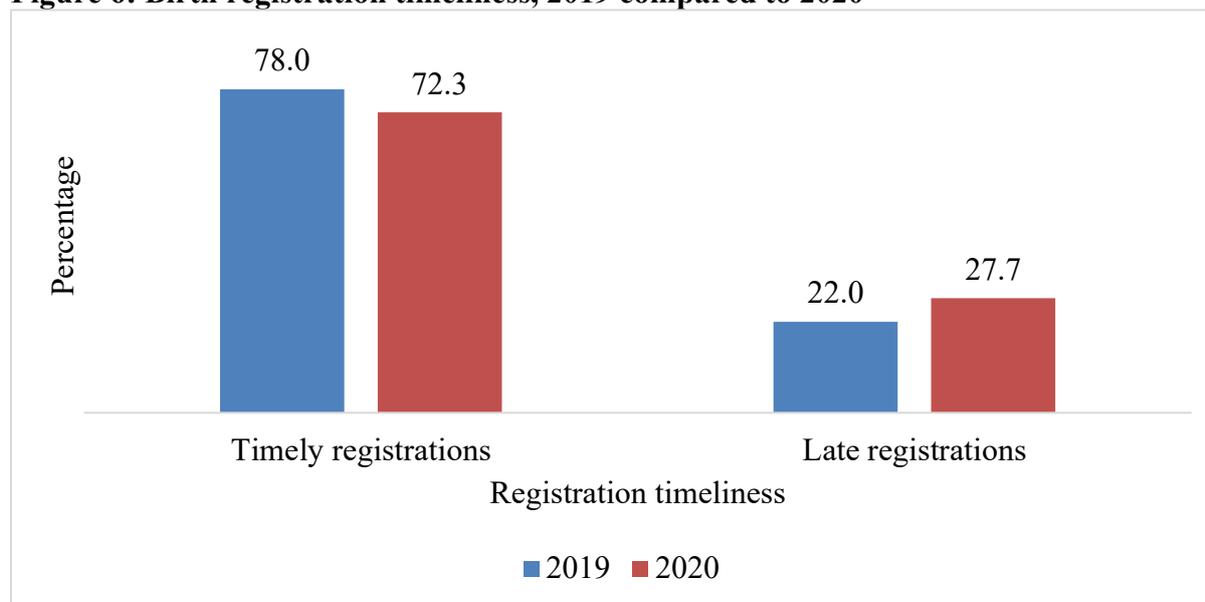
Source: Data from CRVS system, 2020

3.3. Completeness of birth and death registration

Calculating the completeness of registration can be used to monitor the performance of the CRVS system in capturing all vital events and allows for adjustment of incomplete data. Completeness is defined as the proportion of actual vital events in a population that are registered, divided by the estimated number of vital events that occurred in the same year.

$$Completeness = \frac{Number\ of\ vital\ events\ registered}{Estimated\ number\ of\ vital\ events} \times 100$$

To compute birth and death registration completeness, the denominators were obtained from the 4th population and housing census projections report (medium scenario). According to that report, the projected CDR in 2019 is 6.0 deaths per 1,000 populations while CBR is 28.8 births per 1,000. The numerators were generated by CRVS system. Table 2 shows the results of 2020 compared to 2019.

Table 2: Completeness of birth and death registration, 2020 compared to 2019

Events	Live births		Deaths	
	2019	**2020**	**2019**	**2020**
Registered number	313,398	312,678	23,791	22,634
Males	158,826	158,450	13,188	12,659
Females	154,572	154,228	10,603	9,975
Expected number	360,389	364,342	75,712	75,624
Males	182,857	184,863	38,760	38,803
Females	177,532	179,479	36,952	36,821
Registration completeness	87.0	85.8	31.4	29.9
Males	86.9	85.7	34.0	32.6
Females	87.1	85.9	28.7	27.1

Source: Data from CRVS system and 4th RPHC projections, 2020 (NISR)

3.4. Adjustment for incomplete registration

3.4.1. Fertility statistics

Achieving complete vital registration remains a challenge. As mentioned via Table 2 above, births registration completeness stands at 85.8% in 2020 at country level with insignificant difference between males and females. For the sake of minimizing the effect of low birth registration completeness rate on the resulting fertility indicators, the numbers of registered births were first adjusted before computation of indicators such as ASFR, TFR, GFR, CBR. Based on denominators sourced from 4th PHC, medium scenario projections 2020 that helped in finding out birth registration completeness rate, adjusted birth numbers were obtained by dividing existing numbers by the completeness rate. However, due to unavailability of census estimates at subnational levels, data adjustment was not performed at any subnational level. The following table 3 demonstrates an example.

Table 3: Adjustment for fertility statistics

Mothers' age groups	Unadjusted		Adjusted	
	Number of births	**ASFR per 1,000 populations**	**Number of births**	**ASFR per 1,000 populations**
10-14	89	0.1168	104	0.1362
15-19	13185	18.5245	15367	21.5903
20-24	67162	113.0354	78277	131.7429
25-29	77987	144.6287	90894	168.565
30-34	72791	146.1928	84838	170.3879
35-39	54642	125.9084	63685	146.7464
40-44	22962	68.3261	26762	79.6341
45-49	3258	13.5269	3797	15.7656
50+	602		702	
Total	**312,678**		**364,427**	

Source: CRVS system and 4th PHC projections, 2020

By considering information here above mentioned in Table 3, and with prior knowledge of denominators from 4th PHC projections 2020 where the total population number is estimated to be 12,663,116 and the number of females aged 15-49 is estimated to be 3,353,961; adjusted TFR and GFR becomes 3.7 and 108.7 respectively (up from 3.2 and 24.7 when unadjusted) while adjusted CBR becomes 28.8 (up from 93.2 when unadjusted).

3.4.2. Mortality statistics

There exist several methods used in determining total population estimates in the presence of under-reporting. This report uses one of the non-parametric methods used by Maina et al. (2017) to estimate the number of deaths and enable the calculation of approximately country representative indicators as the reporting completeness is low (29.9%). The adjustment can be expressed as follows (Maina et al 2017):

$$n\left(adjusted\right) = n + n\left(\frac{1}{c} - 1\right)*k \qquad (1)$$

Where:
n = is the output number
c = reporting completeness
k = the adjustment factor

k is between 0 and 1. If we assume that deaths occurred at the same rate in the reporting and non-reporting incidences then, k = 1. On the other hand, if the non-reporting means that no deaths occurred, then k=0 in that case and so no adjustment is required. The selection of the most likely value of k is done through a comparison of CRVS data with the survey results (MAS), and by selecting a value of k that brings the adjusted CRVS statistic close to the survey statistic. A k of 0.7 was considered and used. Reporting completeness was computed as:

$$Unreported\ deaths\ (\%) = \frac{Census\ estimate - CRVS\ statistic}{Census\ estimate} \times 100\% \qquad (2)$$

And therefore:

$$reporting\ completeness\ (c) = 100\% - unreported\ deaths(\%) \qquad (3)$$

The choice of adjustment factor (k) was made by applying aforementioned formula (1) to the CDR results from 2 sources; namely MAS2 and CRVS 2020 and then, the results were plotted on a graph, as shown in Figure 7. The k value was thereby determined by the coordinates that are very close to the intersection between the resulting two lines of the scatter plot giving a k value of 0.7 as here below displayed.

Figure 7: Trends of CDR from CRVS and MAS under different values of k
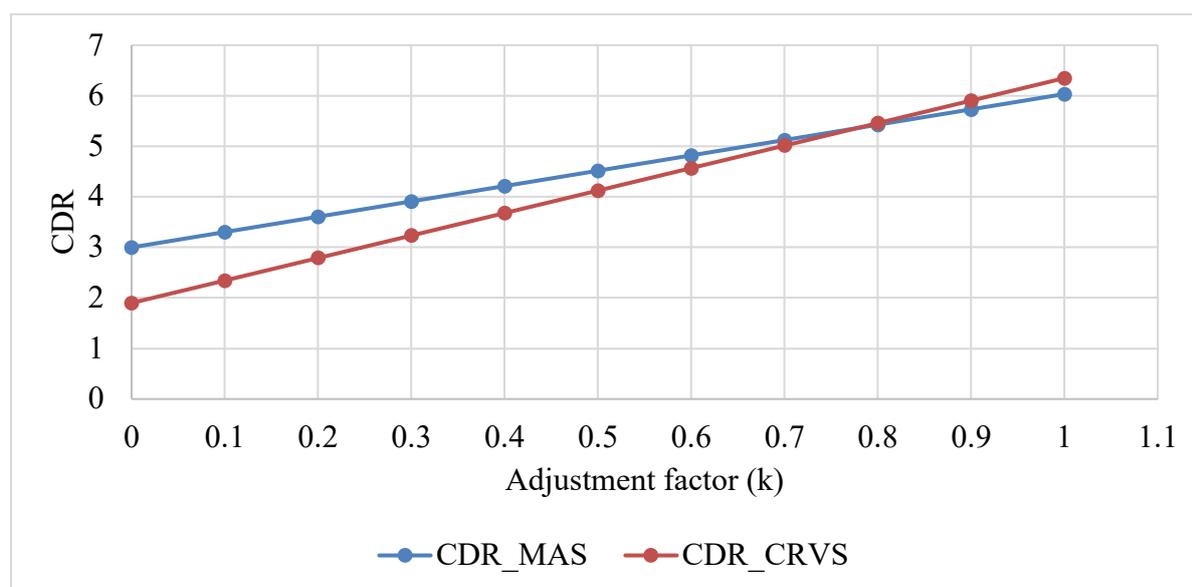
By applying aforementioned technique (non-parametric method) to the CRVS results (with k=0.7), the adjusted CDR becomes the here below shown in Table 4. Due to limitation in data available on populations estimates, subnational mortality indicators in 2020 were not calculated.

Table 4: Adjusted values of CDR

Indicator	2019	2020
Estimated population[2]	12374397	12,663,116
Registered deaths (number)	23,771	22,634
Adjusted number of deaths	70518	75,570
Adjusted CDR	5.9	6.0

Source: Data from CRVS system and 4th PHC Projections, 2020

3.5. Comparison with data from other sources

As a way of assessing the reliability of CRVS data, the results were compared with indicators from other sources. Table 5 shows the comparisons for selected mortality indicators.

Table 5: Comparing CRVS death indicators (adjusted) with the results from other sources

Indicator	CRVS 2020	CRVS 2019	RDHS 2019/20	RDHS 2014/15	MAS 2018	4th PHC (Proj. 2019)
Crude death rate	6.0	5.9	-	-	3.2	6.0
Neonatal (0-27 completed days)	23.0	23.5	19	20	14.1	-
Infant mortality rate (0-<1 year)	30.0	31.5	33	32	23.3	38.4
Under five mortality rate	37.1	38.5	45	50	32.3	53.8

Source: Data from CRVS system 2019 and MAS, 2018 & RDHS 2014/15

---

[2] *Estimated population published in the 2019 Vital Statistics report (11,867,607) was sourced from the second mortality assessment survey report. Figures mentioned in table 5 were sourced from 4th RPHC projections.*

CHAPTER 4: BIRTH STATISTICS

Following the law governing person and family in Rwanda, all live-born infants should be registered and counted as such, irrespective of gestational age or whether alive or dead at the time of registration. This chapter gives an in-depth analysis of data on births recorded via the CRVS system with occurrence date ranging from January to December 2020. Table 6 gives a summary of statistics on births obtained. The same table shows a small decline on the completeness of birth registration in 2020 compared to 2019. Hypothetically, that decrease may be due to the effect of COVID-19 prevention measures including the lockdown (which lasted more than one month) that affected people's movements and obliged a temporally closure of registration offices. Moreover, the transition aimed at operationalizing birth and death registration at health facilities and cells level that started in August 2020 in compliance with amended law governing persons and family, affected the usual pace of birth and death registration in one way or another.

Table 6: Summary statistics on births

Indicator	2019	2020
Registered live births (number)	313,398	312,678
Males	158,826	158,450
Females	154,572	154,228
Expected live births (number)	360,388	364,342
Males	182,857	184,863
Females	177,531	179,479
Registration completeness (%)	87.0	85.8
Males	*86.9*	*85.7*
Females	*87.1*	*85.9*
Sex ratio at birth	103	103
Adjusted Crude birth rate (per 1,000 population)	29.1	28.8
Total fertility rate (births per woman)	3.8	3.7

Source: Data from CRVS system and 4th PHC Projections, 2020

4.1. Completeness of birth registration

The current report considers officially registered births (numerator) which were compared with the projected number of live births sourced from the 4th population and housing (denominator) to obtain the completeness. As shown in table 7, overall birth registration completeness rate was found to be 85.8% with an insignificant difference between males and females (85.7% and 85.9%, respectively). Further disaggregation regarding completeness of birth registration was not made as the sub-national data (province, district, urban/rural etc.) on the population projections are not available.

Table 7: Birth registration completeness 2020

Live births	Registered number	Expected number	Registration completeness
Both sexes	312,678	364,342	85.8
Male	158,450	184,863	85.7
Female	154,228	179,479	85.9

Source: Data from CRVS system and 4th PHC Projections, 2020

4.2. Timeliness of birth registration

By the law currently in force, birth registration must be done within 30 days of occurrence and this was considered to be timely registration in this report. For reporting purpose, late registration was considered to be a birth registered after 30 days but before exceeding one year. As the report considers registered live births whose year of occurrence is 2020, delayed registrations were excluded from analysis. The comparison of registered births taking into consideration registration timeliness shows a decrease in the share of timely registered births in 2020 compared to 2019, from 78% to 72.3%, something that resulted in an increase in late registrations, from 22.0 to 27.7%. This is again hypothetically attributed to the COVID-19 prevention measures where for example, children born during the lockdown period found themselves forced to wait for the reopening of registration offices to get registered.

Figure 8: Timeliness of birth registration in %, 2020 compared to 2019
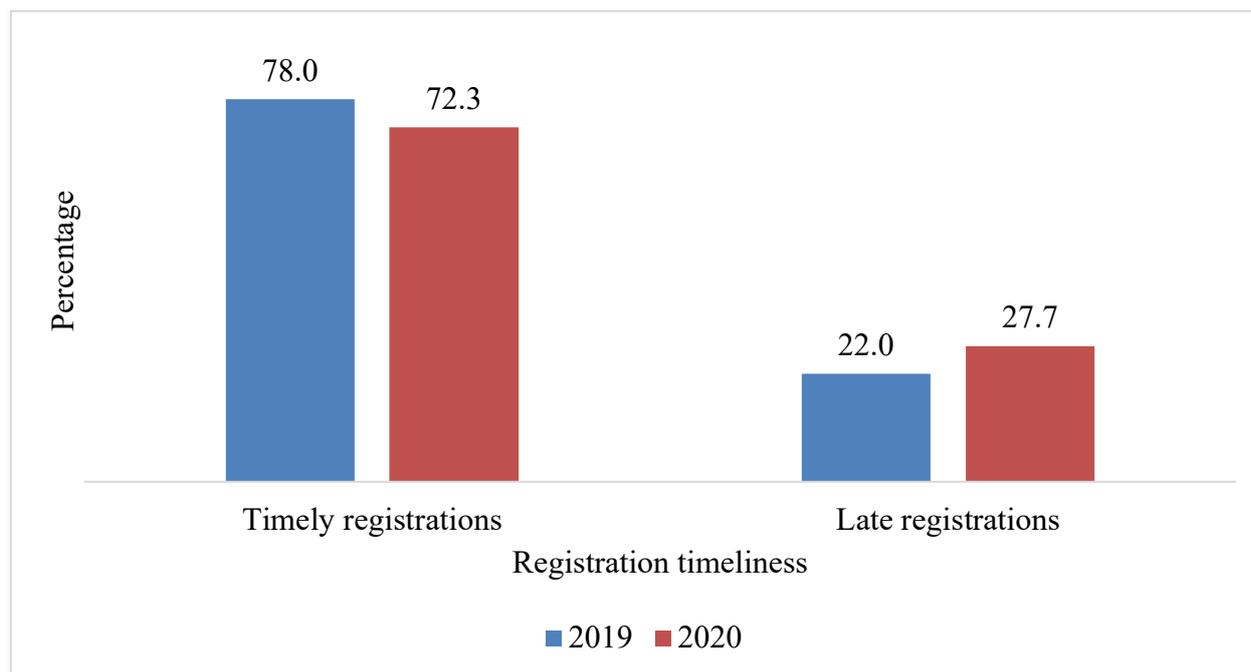
Source: CRVS system, 2020

4.3. Live births registered by residence of mothers

As presented in Table 8, there has been diversity in numbers of births recorded taking into consideration their mothers' residence districts whereby a high number of births is observed in Gasabo and Nyagatare districts while low numbers are in Ngororero District. The sex ratio at birth is high in Gasabo, Nyagatare and Nyaruguru districts and low in Gisagara and Kamonyi districts.

Table 8: Live births registered by residence districts

| District | Number of live births | | | sex ratio at birth |
	Both sexes	Females	Males	
All	**312,678**	**154,228**	**158,450**	**103**
Gasabo	22,231	10,780	11,451	106
Nyagatare	15,611	7,572	8,039	106
Gatsibo	14,425	7,060	7,365	104
Kicukiro	13,694	6,690	7,004	105
Kirehe	13,418	6,674	6,744	101
Bugesera	13,028	6,467	6,561	101
Rubavu	12,565	6,293	6,272	100
Gicumbi	12,362	6,052	6,310	104
Rusizi	11,684	5,769	5,915	103
Rwamagana	11,504	5,727	5,777	101
Ngoma	10,909	5,260	5,649	107
Nyamasheke	10,642	5,273	5,369	102
Gisagara	10,620	5,400	5,220	97
Kayonza	10,155	5,007	5,148	103
Nyarugenge	10,129	4,997	5,132	103
Huye	9,605	4,765	4,840	102
Kamonyi	9,181	4,627	4,554	98
Nyanza	9,098	4,455	4,643	104
Nyaruguru	8,961	4,342	4,619	106
Musanze	8,938	4,352	4,586	105
Ruhango	8,508	4,181	4,327	103
Rulindo	8,313	4,133	4,180	101
Nyamagabe	8,240	4,127	4,113	100
Rutsiro	7,913	3,930	3,983	101
Gakenke	7,283	3,643	3,640	100
Karongi	7,168	3,533	3,635	103
Burera	6,978	3,460	3,518	102
Muhanga	6,896	3,425	3,471	101
Nyabihu	6,570	3,252	3,318	102
Ngororero	5,941	2,929	3,012	103
Foreign	108	53	55	104

Source: CRVS system, 2020

4.4. Registered births by place of occurrence and by the usual residence of mothers

Table 9 shows the level of variations between the place of birth occurrence and the usual residence of mothers across districts where the results show that for a big share of births (82%), the place of birth occurrence and the place of mothers' usual residence are the same. At a national level, 18% of the mothers gave birth in a place other than their usual residence districts in 2020. Across districts, high shares of mothers who gave birth in places other than their usual

residence districts are observed in Nyarugenge and Kicukiro districts (50% and 42% respectively) while the low shares are observed in Rusizi, Nyaruguru, Nyagatare and Kirehe districts (0.7%; 1.3%; 1.3% and 2% respectively). The following table displays more details.

Table 9: Registered live births by place of occurrence and by place of usual residence of mother, 2020

District of occurrence	Place of usual residence of mother (count)				Place of usual residence of mother (%)			
	Same place as place of occurrence	Other location	Not stated	Total live births	Same place as place of occurrence	Other location	Not stated	Total live births
All	**256506**	**56064**	**108**	**312678**	**82.0**	**17.9**	**0.0**	**100.0**
Bugesera	11061	346	14	11421	96.8	3.0	0.1	100.0
Burera	5393	958	2	6353	84.9	15.1	0.0	100.0
Gakenke	6308	1710	1	8019	78.7	21.3	0.0	100.0
Gasabo	16668	10616	10	27294	61.1	38.9	0.0	100.0
Gatsibo	13283	1174	0	14457	91.9	8.1	0.0	100.0
Gicumbi	11476	947	1	12424	92.4	7.6	0.0	100.0
Gisagara	8935	705	1	9641	92.7	7.3	0.0	100.0
Huye	8383	2444	15	10842	77.3	22.5	0.1	100.0
Kamonyi	6095	156	1	6252	97.5	2.5	0.0	100.0
Karongi	5631	1232	1	6864	82.0	17.9	0.0	100.0
Kayonza	8799	638	1	9438	93.2	6.8	0.0	100.0
Kicukiro	6118	4396	3	10517	58.2	41.8	0.0	100.0
Kirehe	12711	259	1	12971	98.0	2.0	0.0	100.0
Muhanga	5558	1914	0	7472	74.4	25.6	0.0	100.0
Musanze	7745	1544	3	9292	83.4	16.6	0.0	100.0
Ngoma	9968	499	0	10467	95.2	4.8	0.0	100.0
Ngororero	4967	990	0	5957	83.4	16.6	0.0	100.0
Nyabihu	5331	2208	1	7540	70.7	29.3	0.0	100.0
Nyagatare	12350	161	0	12511	98.7	1.3	0.0	100.0
Nyamagabe	7587	1016	3	8606	88.2	11.8	0.0	100.0
Nyamasheke	9803	416	0	10219	95.9	4.1	0.0	100.0
Nyanza	7576	3711	6	11293	67.1	32.9	0.1	100.0
Nyarugenge	7751	7621	14	15386	50.4	49.5	0.1	100.0
Nyaruguru	7549	100	0	7649	98.7	1.3	0.0	100.0
Rubavu	10776	1167	4	11947	90.2	9.8	0.0	100.0
Ruhango	6761	3345	7	10113	66.9	33.1	0.1	100.0
Rulindo	6285	938	3	7226	87.0	13.0	0.0	100.0
Rusizi	11058	82	2	11142	99.2	0.7	0.0	100.0
Rutsiro	6404	272	0	6676	95.9	4.1	0.0	100.0
Rwamagana	8176	349	14	8539	95.7	4.1	0.2	100.0
Not stated	0	4150	0	4150	0.0	100.0	0.0	100.0

Source: Data CRVS system, 2020

4.5. Registered live births by age group of mothers

Analysis of CRVS system released data shows variations in the number of births registered per age groups of mothers. The number of registered births has been high among females aged 25-29 compared to the remaining ages and low among females aged 50 and above or less than 15. More details are displayed in Figure 9.

Figure 9: Registered live births by age of mothers (unadjusted)
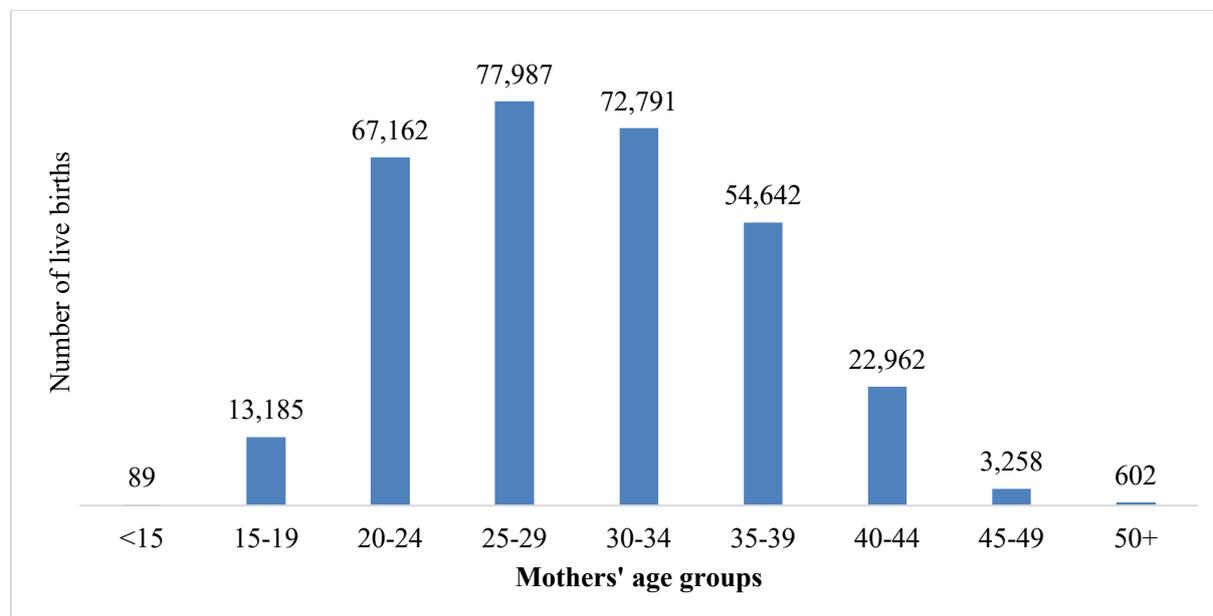
Source: CRVS system, 2020

4.6. Registered live births by type of pregnancy

CRVS system-generated data were analyzed to find out the rate of multiple births and the results revealed that out of 312,678 live births registered, only 1.6% were multiple births (twins, triplet, etc.) while the remaining share was singleton births. Table 10 below shows the frequency of single and multiple births across age groups of mothers.

Table 10: Registered live births by age of mothers and pregnancy type

Mothers' age groups	Type of birth (count)			Type of birth (%)		
	Single	Multiple	Total	Single	Multiple	Total
<15	89	-	89	100	-	100
15-19	13,051	134	13,185	99	1	100
20-24	66,370	792	67,162	98.8	1.2	100
25-29	76,802	1,185	77,987	98.5	1.5	100
30-34	71,414	1,377	72,791	98.1	1.9	100
35-39	53,607	1,035	54,642	98.1	1.9	100
40-44	22,564	398	22,962	98.3	1.7	100
45-49	3,217	41	3,258	98.7	1.3	100
50+	596	6	602	99	1	100
Grand Total	307,710	4,968	312,678	98.4	1.6	100

Source: CRVS system, 2020

4.7. Registered live births by weight at birth

Weight at birth is a meaningful indicator on the health status of live-born infant. Figure 10 shows variations in the weights of the new born by weight ranges where in 2020, the weight range with a high number of births was the 3000- 3500 grams. The same range contains an average. The percentage of low birth weight (<2500 grams) and very low birth weight (<1500 grams) were relatively small (7.1% and 0.7%, respectively) while the average weight at became 3,108 grams.

Figure 10: Live births recorded by health facilities by weight at birth
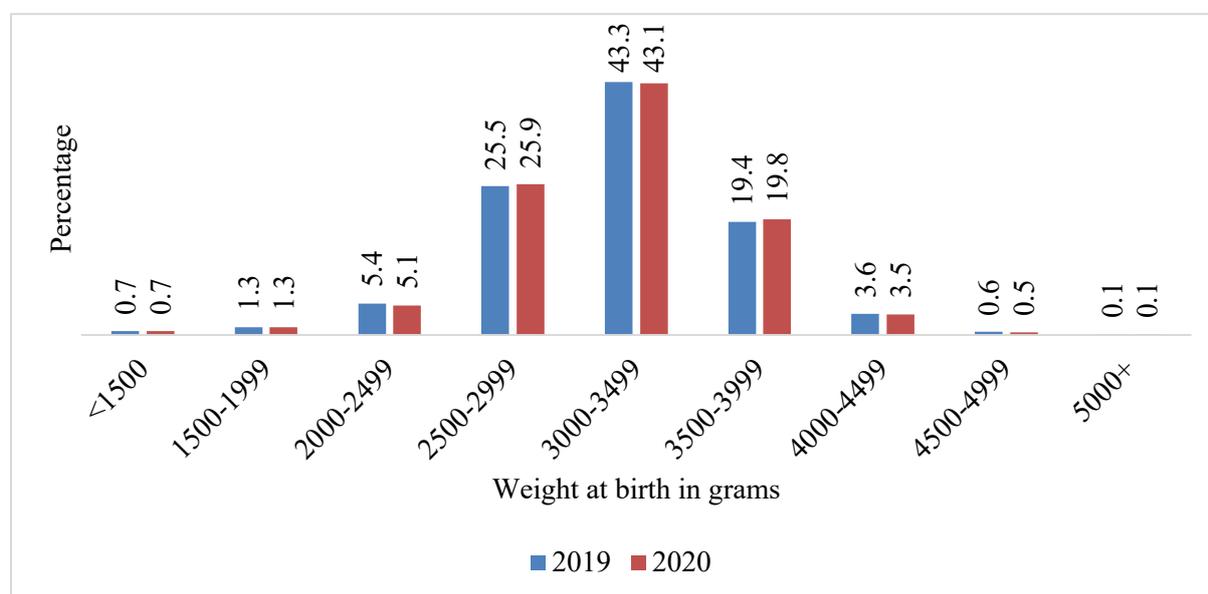
Source: CRVS web based-system, 2020

The distribution of weight at birth shows a remarkable difference among births from urban compared to rural resident mothers. As mentioned through the Figure 11 below, the shares of rural live births are generally high among births whose weight at birth fall in ranges that are below 3000-3999 (a range that contains average weight) while above that range, the shares of births from urban resident mothers become generally higher than rural residents' shares.

Figure 11: Frequency (in %) of weight at birth among urban and rural live births recorded by health facilities, 2020
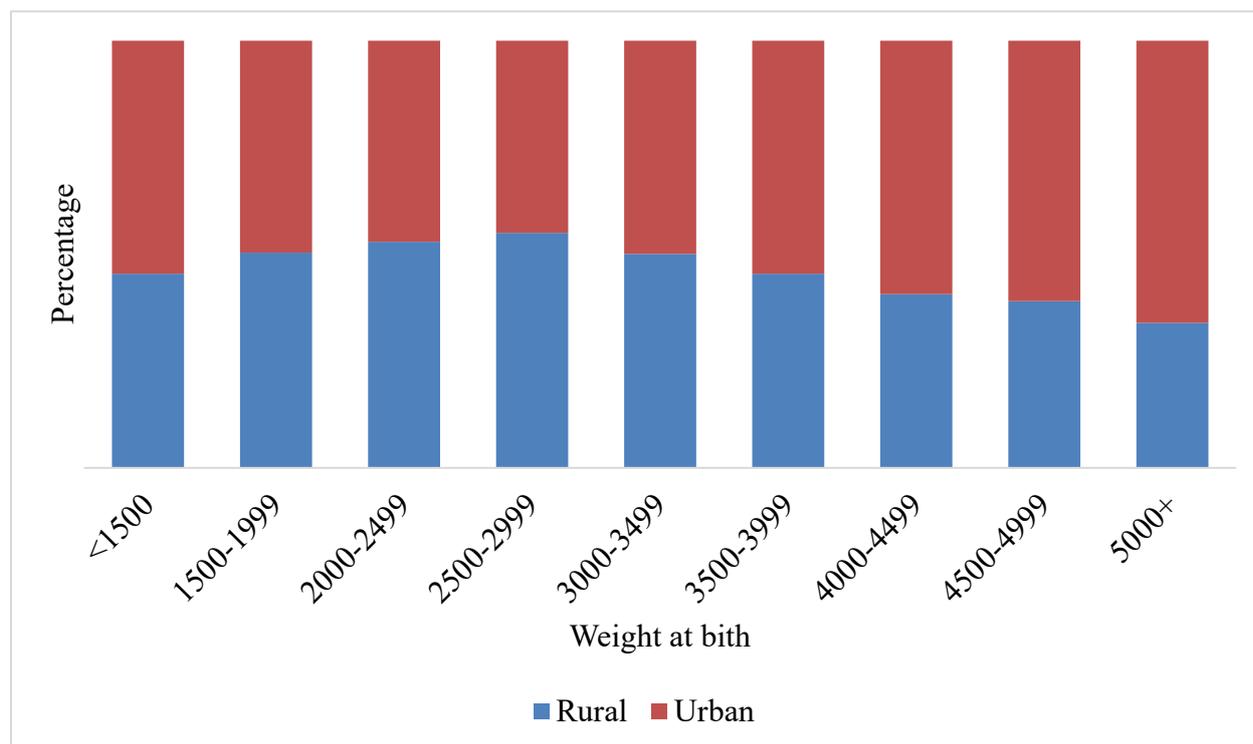
Source: CRVS system, 2020

4.8. Registered live births by birth order

Birth order refers to the order a child is born in the family; first-born and second-born are examples. Birth order is often believed to have a profound and lasting effect on psychological development. To some extent, it may play an impactful role in orientation and initiation of family planning related policies and laws. CRVS system generated data show dissimilarities in birth order among rural residents compared to urban residents. The general picture reflected is that the shares of live births are high in urban compared to rural from first to second birth, and low in urban compared to rural from the fourth to the highest birth order, with an intersection to the 3rd child. Figure 12 below shows details.

Figure 12: Frequency of birth order (%) within Urban compared to Rural resident mothers
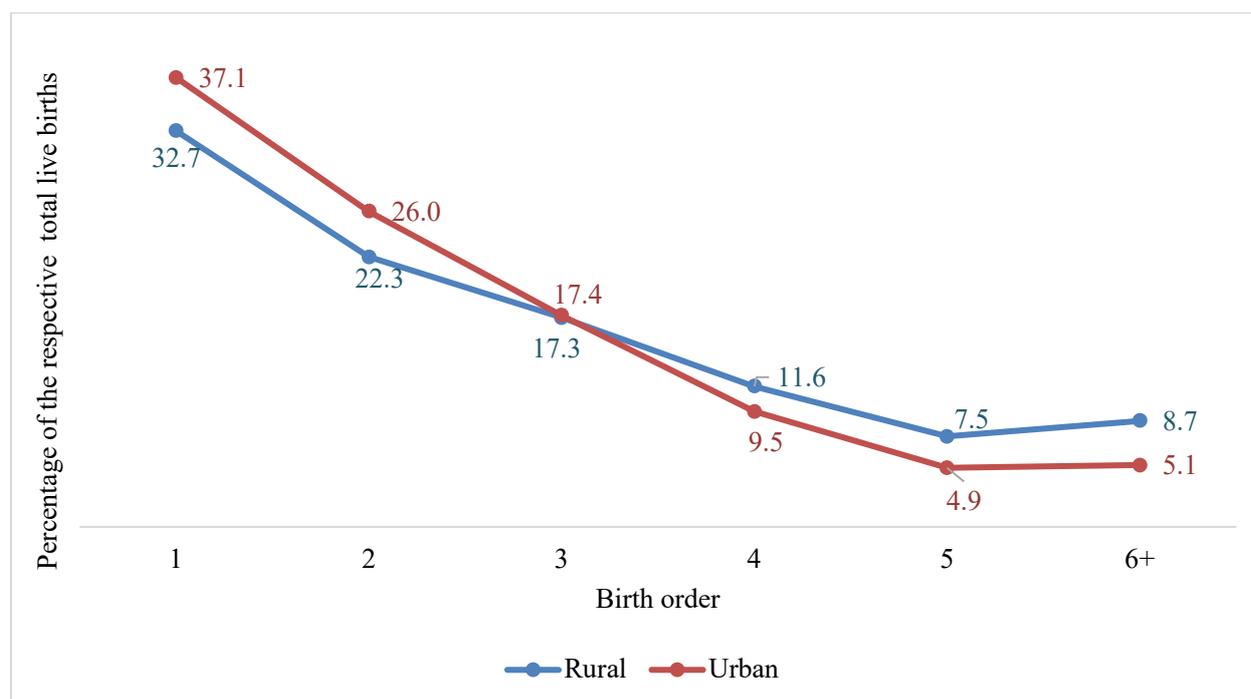
Source: Data from CRVS web-based system, 2020

4.9. Key fertility indicators

This section shows fertility indicators computed using CRVS system-generated data in 2020 including: crude birth rate (CBR), sex ratio at birth, general fertility rate (GFR) and total fertility rate (TFR). Some indicators like CBR, TFR and GFR were computed based on adjusted data as the completeness of birth registration in 2020 is not good enough. Indeed, as one way of assessing the reliability of indicators computed from CRVS data, a comparison with data from other sources is performed. Table 12 provides a summarized situation.

Table 11: Summary comparison of fertility indicators from CRVS with other sources

Indicator	CRVS 2020 (Adj.)	CRVS 2019 (Adj.)	CRVS 2019[3] (Unadj.)	MAS 2018	RDHS 2019/20
TFR	3.7	3.7	3.8	3.7	4.1
GFR	108.7	110.8	103.3	108.7	134
CBR	28.8	29.1	27.2	27.6	31.8
Sex ratio at Birth	103	103	102	102	
low birth weight (%)	7.1	7.4	7.4	-	-

Note: sex ratio at birth and low birth weight are based on unadjusted data.

4.9.1. Sex ratio at birth

The sex ratio at birth is the number of male live births for a specific area during a specified period divided by the number of resident female live births for that area and period multiplied by 100. In the human species the ratio between males and females at birth is slightly biased towards the male sex. The natural "sex ratio at birth" is often considered to be around 105. This

---

[3] *Unadjusted values in 2019 were obtained by using denominators from MAS2. That's why some indicators like TFR appear to have high value in 2019 compared to the adjusted TFR value in 2020.*

means that at birth on average, there are 105 males for every 100 females. A sex ratio that is less than 100 means that male births are less than female births something that doesn't often happen. CRVS web-based system-generated data show the sex ratio at birth equivalent to 103 in 2020 something implying 103 new males born for every 100 new females born. Details regarding sex ratio by districts are displayed in Table 8.

4.9.2. Crude birth rate (CBR)

The crude birth rate is the number of live births occurring among the population of a given geographical area during a given year, per 1,000 mid-year total population of the given geographical area during the same year. The crude birth rate is called "crude" because it does not take into account age or sex differences among the population. However, the indicator is widely used to indicate the overall effect of fertility and that it could be estimated easily with minimum data requirements. When combined with the crude death rate and net migration, crude birth rates can tell us how much our population is increasing or decreasing. They can also help with planning and resource allocation by providing important information such as how many infants will require vaccinations and child health care, how many will be entering school in the coming years, or how many adults will be entering the workforce. The calculation of crude birth rate requires having both the number of live births within a specific period and the total population located in the area under consideration for a period of time under consideration. Usually, the mid-year population is used as an estimate of the total population. CRVS system-generated data show adjusted CBR of 28.8‰ in 2020 something implying 28.8 live births per 1,000 population annually, regardless of age and sex differentials. More details are here below displayed in Table 13.

Table 12: Unadjusted and Adjusted crude birth rate, 2019-2020

Year	Unadjusted		Adjusted	
	Total registered live births	CBR (Per 1,000 population)	Total estimated live births	CBR (Per 1,000 population)
2020	312,678	24.7	364,427	28.8
2019	313,398	25.3	360,228	28.4

Source: CRVS system & 4th PHC, Projections 2020

4.9.3. General fertility rate

The general fertility rate is the number of live births for a specific area during a specified period divided by the female population aged between 15 and 49 years (usually estimated at mid-year) for the same area and period multiplied by 1,000. CRVS web-based system-generated data show that the adjusted value of GFR was 108.7 in 2020, something implying 108 live births for every 1,000 women in childbearing age (15-49) annually.

4.9.4. Age-specific birth rate (ASFR)

The age-specific birth rate is the number of live births to women in a specific age group for a specific area during a specified period divided by the total population of women in the same age group for that area and period multiplied by 1,000 to obtain the rate. As shown in figure 13, ASFRs are high to mothers aged 25-39 at the national level as well as in rural areas, while

in urban areas, ASFR is high to mothers aged 30-34. The shares of births occurring from females aged under 15 and females aged 50 and above are relatively small, but a little bit high in urban compared to rural residents.

Figure 13: Unadjusted ASFR (per 1,000 women) per usual residence of mothers
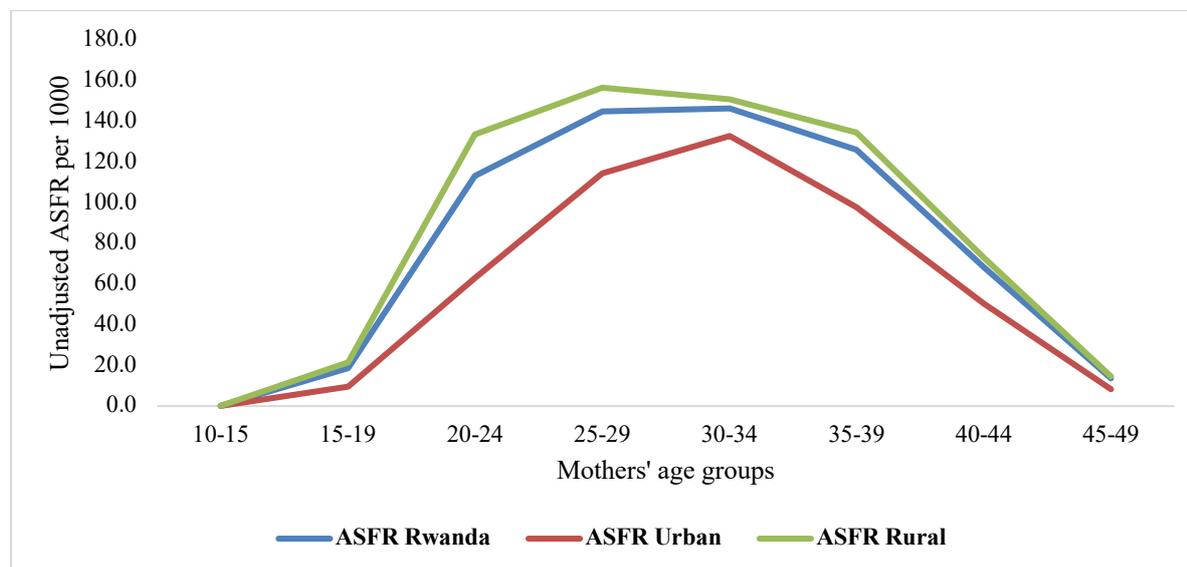
Note: population data were sourced from 4th PHC projections, 2020

4.9.5. Total fertility rate (TFR)

TFR represents the number of children who would be born per woman (or per 1,000 women) if she/they were to pass through the childbearing years bearing children according to a current schedule of age-specific fertility rates. The computation of TFR is the sum of the age-specific birth rates (usually for 5-year age groups between 15 and 49) for female residents of a specific area during a specified period multiplied by 5 (where the age-specific birth rates are 5-year birth rates). It can also be calculated as the sum of a 1-year age-specific birth rate for females aged between 15 and 49. TFR is also interpreted as the average number of children a hypothetical cohort of women would have at the end of their reproductive period during their lifetime if they were subject to experiencing the ASFRs of a given period. CRVS generated data (adjusted) in 2020, showed a TFR equivalent to 3.7. Details on computation of TFR are displayed in Table 3.

CHAPTER 5: MORTALITY STATISTICS

5.1. Background

Rwanda adopted the United Nations Sustainable Development Goals (SDGs) that are also founded on leaving no one behind in health. Goal three of the SDGs aims to improve maternal and child health outcomes, end infectious diseases, reduce premature mortality from non-communicable diseases and injuries and ensure universal health coverage by 2030. The Africa Agenda 2063 envisages a continent characterized by universal access to healthcare, zero communicable deaths, zero maternal deaths, zero child deaths and countries capable of mobilizing domestic funding for preventing, detecting and responding to public health threats such as non-communicable diseases, health needs of the youth population and malnutrition by 2063.

Information on the number of deaths and their causes is invaluable in evaluating and tracking progress towards the national, regional and international goals. The information on the mortality levels, trends and differentials is important for the identification of emerging diseases and conditions, formulation of evidence-based health policies and tracking of the population health status.

Mortality data are generated from the civil registration system that permit the production of mortality statistics continuously and contribute to the understanding of the burden of diseases at national and sub national levels. Given the huge importance of a well-functioning civil registration system in the production of complete, accurate, and timely statistics, the system needs to be anchored in an up-to-date legal and regulatory framework to ensure both continuity and consistency of data generation.

This vital statistics report is covering the registration of both community and health facility deaths reported at sector office for civil registration and the cause of death that are reported by the hospitals via the CRVS system. Due to under reporting of deaths, the total number of deaths registered in 2020 was 22,634 deaths that were considered for analysis to produce mortality statistics in this report and must therefore be used with caution. It is important to mention that Health facility deaths are electronically notified and registered in presence of declarant. Since December 2020, all health facilities adopted the use of a digital known as National Centralized and Integrated CRVS system (NCI-CRVS) for official registration of births and deaths at place of occurrence to improve both registration completeness and service delivery.

5.2. Death registration

5.2.1. Death registration completeness

As noted in section 3.3 of this report, knowing about the completeness of death registration is essential for several reasons. From a civil registration perspective, knowing completeness of death registration is important for improvement of the system. From a statistical perspective, estimating registration completeness enables adjustments to be made when calculating mortality rates and computing demographic indicators such as population projections, age-and-sex-specific mortality rates and population dynamics.

As shown in Table 14, death registration completeness is 29.9% at national level. The computation is based on the number of deaths registered (22,634 deaths) over the expected deaths from the projection of the recent Rwanda population and housing census that gives a total of 75,624 deaths in 2020. Given this relatively low level of completeness, it would be meaningless to use registration data directly to calculate key mortality indicators and therefore, adjustments must be made to estimate the key indicators to be more accurately. Adjustment for incompleteness is a common practice and guidance from the UN Principles and

Recommendations for a Vital Statistics System (2014) as described in section 3.3. Table 12 shows registered deaths and adjusted values for key mortality indicators. For further information on adjusted mortality indicators see chapter 3; section 3.5.

Table 13: Summary statistics on mortality

Indicator	2019	2020
Registered deaths (number)	23,791	22,634
Male	13,188	12,659
Female	10,603	9,975
Expected number of deaths (number)	75,712	75,624
Male	38,760	38,803
Female	36,952	36,821
Death registration completeness (%)	31.4	29.9
Male	34.0	32.6
Female	28.7	27.1
Crude death rate per 1,000 (Adjusted)	5.9	6
Under-5 mortality rate per 1,000 live births (Adjusted)	38.5	37.1
Sex ratio at death	124	124.1

Source: Data from CRVS system and 4th PHC (NISR), 2020

5.2.2. Timeliness of death registration

By the law currently in force, death registration must be done within 30 days of occurrence and this was considered to be timely registration in this report. As the current report consider deaths whose year of occurrence is 2020, delayed registrations of deaths are not mentioned in this section. For reporting purposes, late registration was considered to be a death registered after 30 days but before exceeding one year. Figure 14 below shows that 62% of the total registered deaths were registered within 30 days of occurrence (timely registration) while the remaining share was registered after 30 days of occurrence. The same figure indicates a decline in shares of timely registered deaths, from 68.6% in 2019 to 62.0% in 2020. This is hypothetically due to COVID-19 prevention measures, which restricted the physical presence of declarants to the registration points.

Figure 14: Timeliness of death registration, 2019-2020
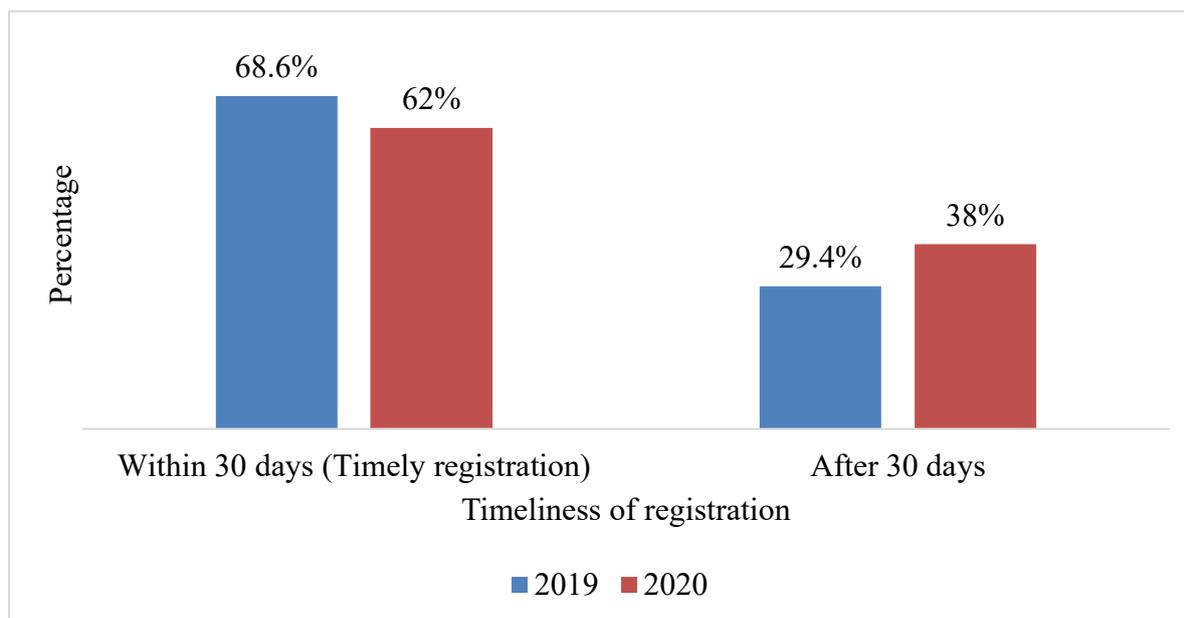
Source: Data from CRVS system, 2020

5.2.3. Registered Deaths by place of usual residence

Table 15 shows the numbers of deaths registered in civil registration system by province of usual residence in comparison with estimated total number of populations residing in that province. The high numbers of deaths were registered in the Southern followed by the Western province whereas the lowest were found in the city of Kigali. Given the low completeness of death registration, information regarding the numbers of registered deaths is to be used with caution as much efforts are still being used to raise up the completeness.

Table 14: Registered deaths by provinces with estimated population and by decedent 'sex

Province	Estimated population[4]	Both sexes	Female	Male	Sex ratio at death
Rwanda	12,663,116	22,634	10,098	12,536	124.1
Eastern Province	3,258,954	5,102	2,166	2,936	135.5
Kigali city	1,503,540	2,843	1,328	1,515	114.2
Northern Province	2,042,771	3,734	1,717	2,017	117.5
Southern Province	2,942,240	5,801	2,532	3,269	129.1
Western Province	2915613	5,154	2,365	2,789	117.9

Source: Data from CRVS system, 2020

5.2.4. Deaths registered by age and sex

Figure 15 shows the distribution of registered deaths by sex and age groups. Given the large proportion of young children in Rwanda's population and high risk of death at early age at birth, it is not surprising that most deaths occur in the under 5-year-old age group. Despite high females' proportion among the total population compared to males (51.4% against 48.6% respectively), the number of registered deaths is high among males compared to females across all age groups except at too old ages (80+). It is important also to mention here that a high

---

[4] *Estimated numbers of population by provinces were obtained by multiplying the respective proportion of resident populations reflected under MAS2 by the number of projected populations in 2020 as per 4th PHC*

number of infant male deaths compared to female deaths was observed. Despite low completeness of reporting, the figures indicated here portrays the mortality structure with respect to age and sex.

Figure 15: Age-Sex structure of deaths registered, 2020
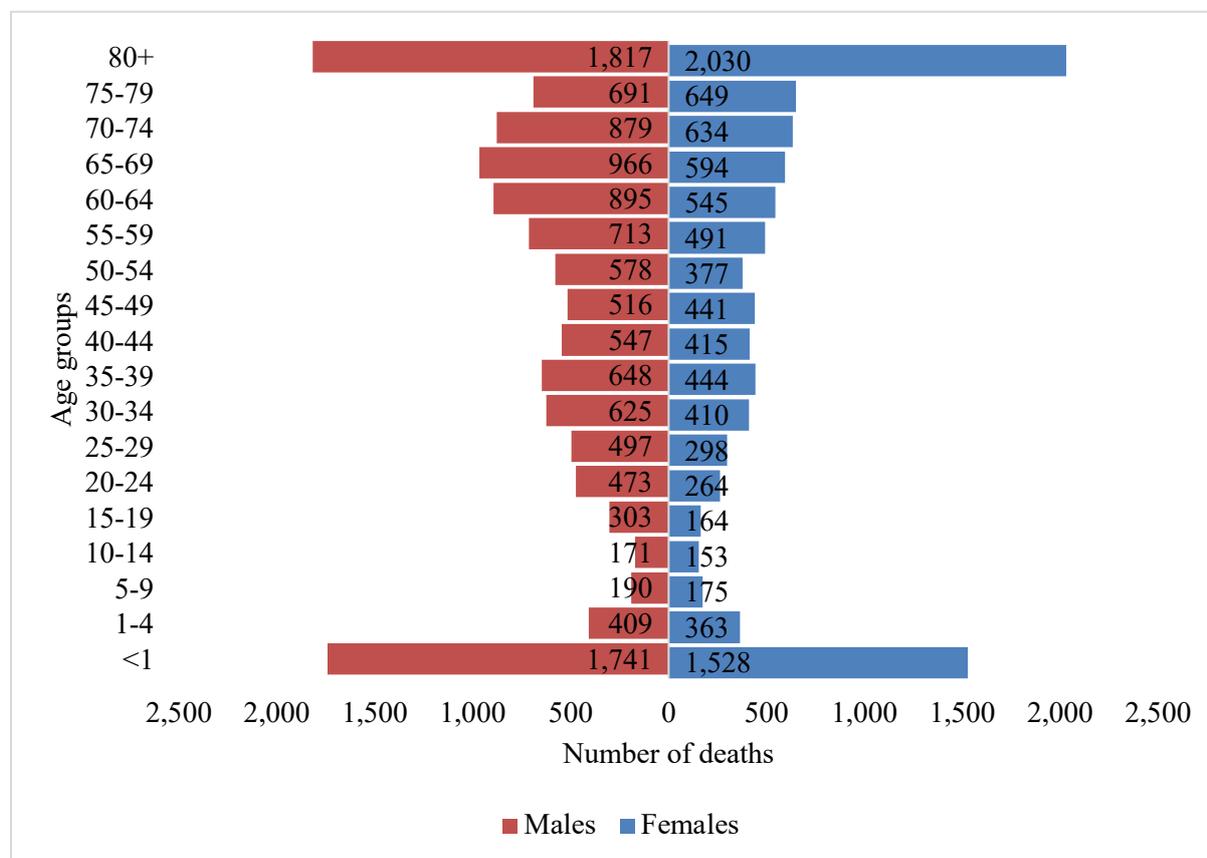
Source: Data from CRVS system, 2020

5.2.5. Age-sex distribution of registered deaths by place of residence

The patterns of age-sex distribution across age groups differ slightly in urban areas compared to rural areas as displayed on figure 16 and 17. The small difference is observed at old ages where the share of males' deaths is higher than females' deaths in rural areas while in urban areas, the share of males' deaths is less than females' deaths at the same age range.

Figure 16: Shares of registered deaths in rural areas by age and sex
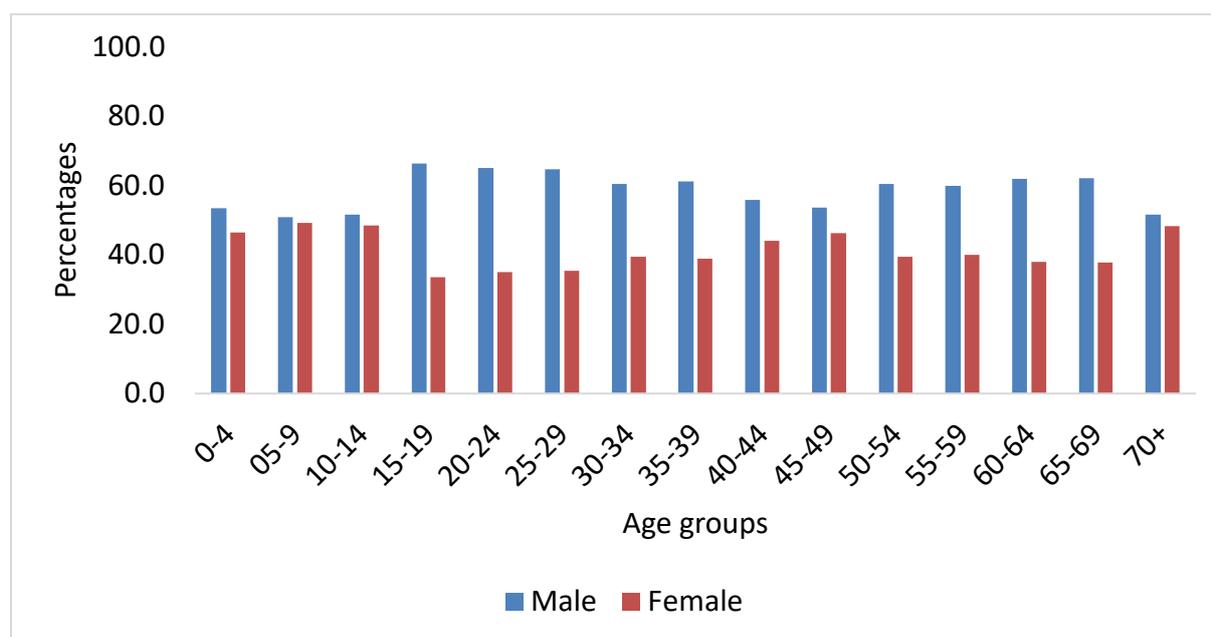
Figure 17: Shares of registered deaths in urban areas by age and sex
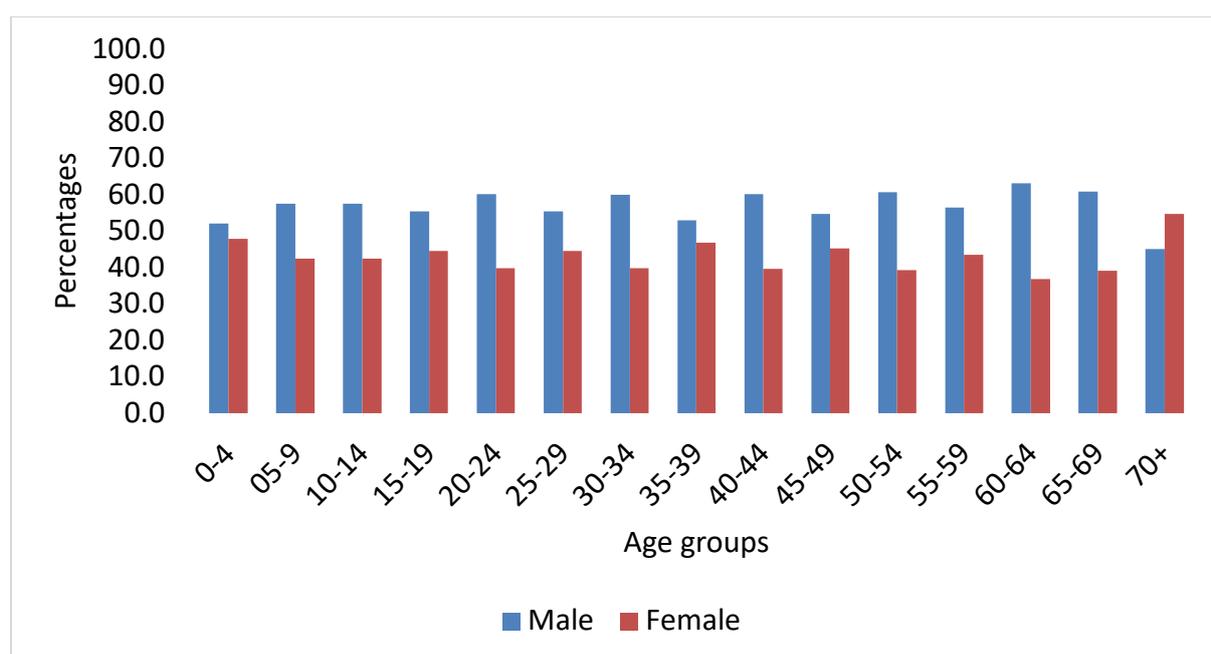
5.2.6. Registered deaths by place of death and place of residence

The CRVS system generated data show a high percentage of deaths occurring in community compared to deaths occurring at health facilities. The share of community deaths occupies 60.6% of the total number of registered deaths in 2020 (up from 56.5% in 2019) while health facilities' deaths represent 39.4% (down from 43.5% in 2019). This shows the need for improving death registration completeness and reporting of causes of death that occurred in the community. The disaggregation of registered deaths based on place of occurrence and place of

residence of decedent shows that in rural areas, the share of community deaths is higher than health facilities (65% Vs 35%, respectively); while in urban areas, the share of deaths occurring in health facilities is higher than community deaths' share (58% Vs 42%). More effort in improving community deaths reporting is to be put in rural areas. Figure 18 shows details.

Figure 18: Deaths registered by place of residence (urban and rural) and place of occurrence
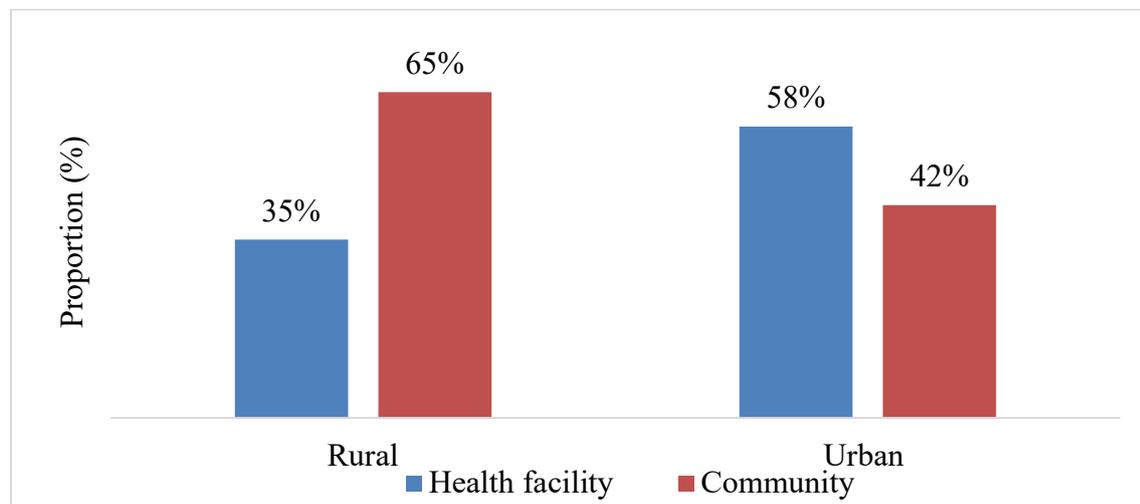
Source: Data from CRVS web-based system, 2020

5.3. Key mortality indicators

Vital statistics on deaths provide for the reliable source of mortality indicators such as crude death rates, infant and under-five mortality rates, and age- and sex-specific mortality rates. These data permit the calculation of life expectancy at birth and at other ages. Due to low completeness in death registration, adjustment techniques were used in this report to enable the computation of more accurate indicators as described in section 3.3. Table 16 compares key mortality indicators derived from unadjusted registration records and following adjustment; and then shows results obtained with a comparison with the data from other sources.

Table 15: Comparison of key mortality indicators from CRVS (adjusted) with indicators from other sources

Indicator	CRVS 2020	CRVS 2019	RDHS 2019/20	RDHS 2014/15	MAS 2018	PHC (Proj. 2019)
Crude death rate	6.0	5.9	-	-	3.2	6
Neonatal (0-27 completed days)	23	23.5	19	20	14.1	-
Post neonatal (28-364 completed days)	7	8.1	14	13	9.2	-
Infant mortality rate (0-<1 year)	30	31.5	33	32	23.3	38.4
Under five mortality rate	37.1	38.5	45	50	32.3	53.8

Source: Data from CRVS system, 4th PHC projection, MAS and DHS, 2020

5.3.1. Crude death rate

The crude death rate (CDR) is the simplest measure of mortality that can provide insights into the health status of a population over time. In addition, the CDR provides a useful indicator of possible problems with the completeness of mortality data. The CDR is a measure of the number of deaths relative to the size of the population at a given point in time, usually at the mid-year. It is expressed in numbers of deaths per 1,000 populations per year.

The CDR is called a 'crude' rate because it does not take into consideration the age and sex structure of the population. In practice, the risk of death in a given population group varies according to age and sex as well as patterns of socioeconomic status, and environmental and other factors. For example, populations with a large proportion of young children – as is the case in Rwanda – or a high proportion of elderly people – as in Japan – will, other things being equal, have relatively higher CDRs. This is because mortality risks are highest at youngest and the oldest ages. In general, mortality rates are higher among males than females as illustrated in figure 15 above.

The CDR can also be indicative of registration data quality, as in a system where not all deaths are registered, the CDR will underestimate the true level of mortality. The calculated CDR using the observed data from CRVS was as small as 2 deaths per 1000 population in 2019 (see Table 14); as a result of low death registration completeness. However, the literature shows that CDR very rarely falls below 4 per 1000 populations even in populations with very high life expectancy. Against this background, adjustment techniques described under chapter 3 of this report were adopted to produce a more accurate estimate of CDR where the adjusted value of CDR at national level became 6 per 1,000 populations.

5.3.2. Infant mortality rate

Infant mortality rate represents the number of infant deaths (deaths before one year of age) per 1,000 live births in a given population and at a specific period of time, usually a year. The IMR calculated using the CRVS system-generated data showed a value of 10 per 1000; a small value due to low completeness. By adjusting observed data, the IMR became 30 infant deaths per 1,000 live births, a value that is close to the IMR value obtained under RDHS 2019/20 (33 per 1000). Refer to chapter 3, section 3.4. For details on adjustment techniques used.

5.3.3. Under-five mortality rate

Under-five mortality rate represents the number of deaths occurring among children before reaching the age of 5, per 1,000 live births in a given population during a specific period of time (usually a year). The UMR computed using CRVS system-generated data returned a value of 13 deaths per 1,000 live births in 2020. The adjusted CRVS data showed UMR equivalent to 37.1 deaths per 1000 live births, a low value when compared to RDHS 2019/20 results of 45 deaths per 1000 live births. Refer to chapter 3, section 3.4. For details on adjustment techniques used.

5.3.4. Age-specific death rate

The age-specific death rate (ASDR) is the number of deaths for a specific age or age group in a specific area during a specified period divided by the population of the same age or age group in the same area. The ASDR is a specific indicator of deaths among a given population that reflects mortality behavior across different age ranges. Figure 19 shows the death rates in Rwanda according to the data recorded via the CRVS which generally shows high death rates among males compared to females. A small exception is observed to young children aged under 5 where death rates for males and females are almost the same.

Figure 19: Distribution of age specific death rates for registered deaths by sex, 2020

Age-specific mortality rates
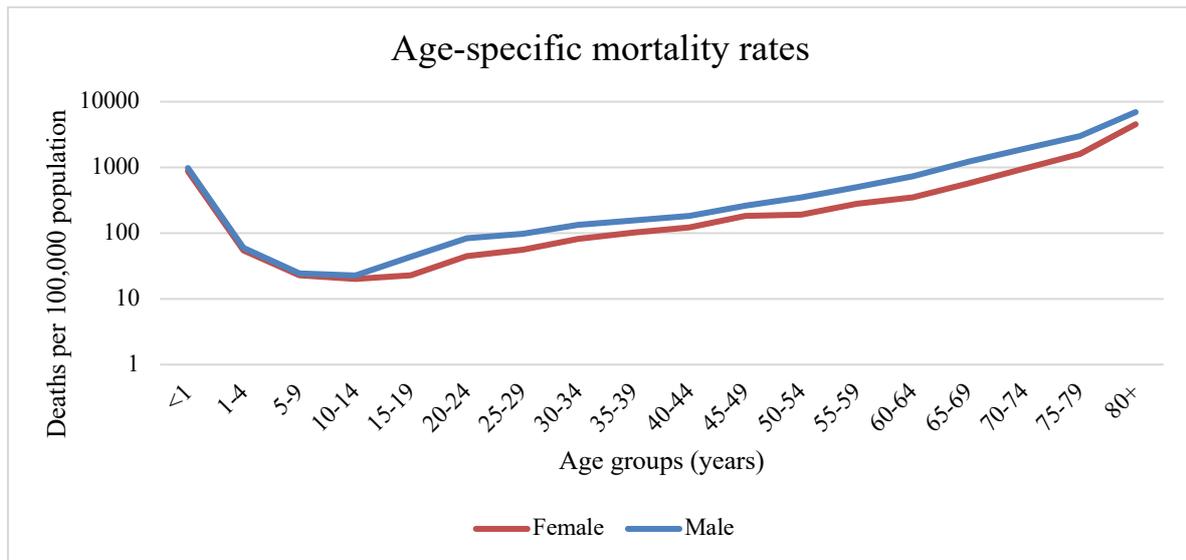
Source: Data from CRVS system, 2020

CHAPTER 6: CAUSE-OF-DEATH STATISTICS

6.1. Background

Prior to October 2017, medical doctors in Rwanda had not been trained on certifying causes of death according to international standards. The 2016 World Health Organization's (WHO) International Medical Certificate of Cause of Death (MCCD) was not used in health facilities and the quality of cause of death data was poor with many deaths attributed to ill-defined causes which are of little utility for public health decision making.

In response, the Ministry of Health issued a ministerial order to all health facilities requesting them to correctly certify and report deaths using the MCCD form, in line with the International Classification of Diseases (ICD), 10th Revision. Since 1st January 2018, this has been the standard reporting diseases and health conditions and enables the comparison and sharing of health and mortality information. The WHO has recommended the countries to use the standardized tools in District Health Information System (DHIS 2) mortality module that has been linked to the CRVS system for better reporting and comparability with other mortality statistics.

Recording cause of death is the subset of mortality module in the civil registration system in Rwanda. The amended law N° 001/2020 of 02/02/2020 replacing law N° 32/2016 governing person and family states that the declaration of death is done at sector level, in the health facility, and at the Cell level and other designated registration points upon presentation of death notification form (other than MCCoD) which obtains the causes of death or manner of death to register death. The national centralized integrated CRVS system is used to collect, transmit and store death and causes of death information to be used in the production of vital statistics.

The use of the ICD facilitates storage, retrieval and analysis of data and enables the systematic and standardized recording, analysis, interpretation comparison and sharing of morbidity and mortality data within a population and across countries.

ICD-10 causes of death are organized into 21 chapters covering three broad groups of causes:

- Group 1: Infectious and parasitic diseases (i.e., tuberculosis, pneumonia, diarrhoea, malaria, measles); maternal/perinatal causes (i.e., maternal haemorrhage, birth trauma); and malnutrition.
- Group 2: Non communicable diseases (i.e., cancer, diabetes, heart disease, stroke); and mental health conditions (i.e., schizophrenia).
- Group 3: Injuries (i.e., road accidents, homicide, and suicide).

6.2. Medical certification of cause of death

To improve the quality of causes of death statistics in Rwanda, the government initiated two major interventions namely: the introduction of verbal autopsy to gain a better understanding of the patterns of causes of death when people die out side health facility where there is no physician to certify death (see section 6.3.2); and the integration of Medical Certification of Causes of Death (MCCOD) and International Classification of Disease (ICD 10) 2016 Edition into Health care settings to determine underlying causes of death that occur in Health facilities.

In this report, cause-of-death statistics are compiled from the health information system using the ICD-10 full list to record the underlying cause of death (UCOD) that were reported by trained physicians on medical certification of causes of death (MCCOD) for deaths occurred

in Health facilities. Currently, all hospitals and clinics certify causes of death using the standardized MCCOD form and statistical coding according to the ICD-10 coding system. In 2020, 9,151 deaths were reported using standardized WHO tools in the DHIS2 mortality module. In principle, every death should have a medically defined cause. However, when the quality of medical certification is imperfect, some deaths will be assigned to ill-defined causes of limited value for public health purposes (sometimes designated as "unusable" or "garbage" codes). For this report, ANACONDA version 4.01 (Analysis of National Causes of Death for Action) was used to check the quality of causes of death and assess the plausibility of national mortality and cause of death statistics.

6.2.1. Data quality and usability

The first year of experience in medical certification of cause of death according to international standards shows that quality improvements continue to be required. It is important to continue the capacity building of certifiers using WHO standardized tools and quarterly MCCOD quality assessment on individual death certificate using the death certificate quality assessment tool (Appendix 3) to improve the quality of causes of death reported.

The ANACONDA tool provides a detailed information about the quality of cause-of-death information from the Health information system. This indicates that the proportion of causes of death assigned to usable causes declined from 48.4% in 2019 to 43.8% in 2020. In part, this reflects issuing arising during the COVID-19 pandemic, which adversely affected efforts to improve the quality of causes of death certification in the health facilities. Figure 20 shows details.

Figure 20: Distribution of causes of death by usability, 2020
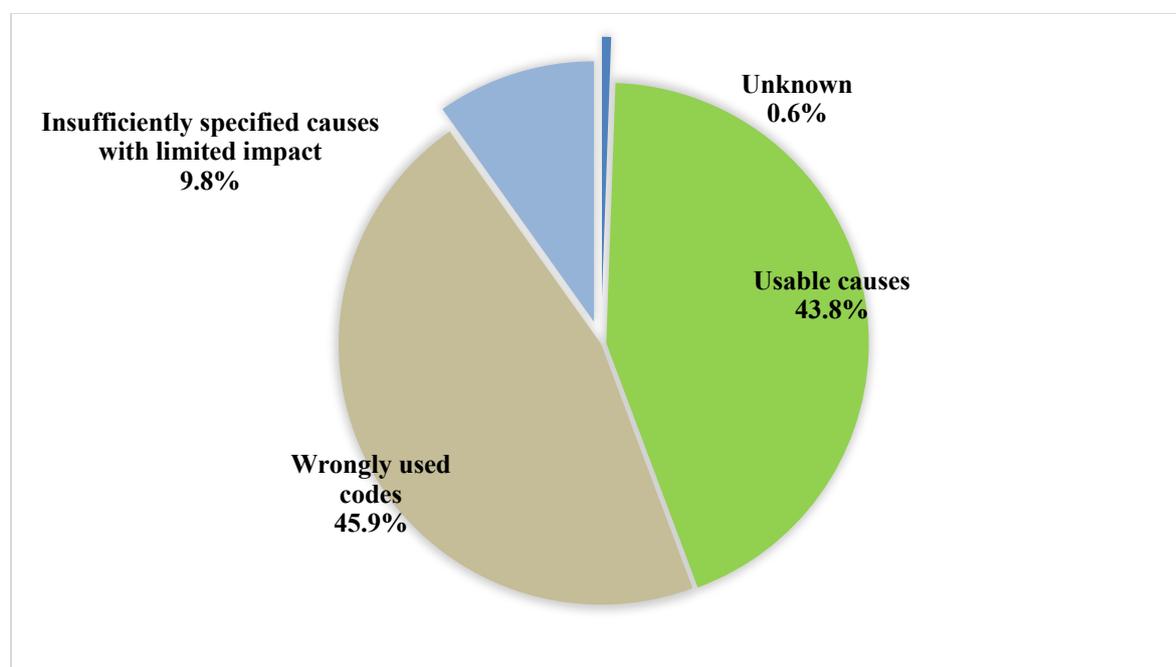
Source: Data from CRVS system, 2020

6.2.2. Distribution of usable death causes by three broad groups

Considering the distribution of usable codes in three broad groups as shown in figure 21, the causes of death are dominated by communicable diseases with 62.3% (down from 70.0% in 2019) followed by Non-communicable diseases with 34.7% (up from 27.9% in 2019) and group of injuries and external causes with 3.0% (up from 2.1% in 2019).

Figure 21: Distribution of usable causes of deaths by three broad groups
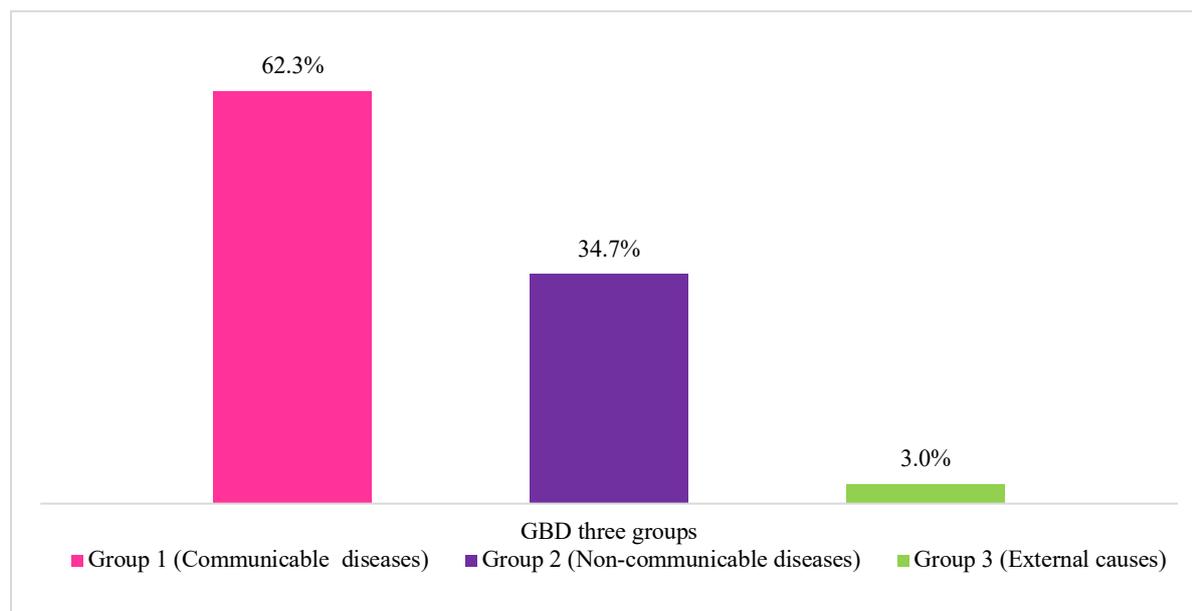
Source: Data from CRVS system, 2020

6.2.3. Distribution of deaths with defined causes in three broad groups by age and sex

The three main groups (Global Burden of Diseases groups) of causes of deaths were considered for the reported data with causes of deaths in broad groups namely the group of communicable diseases, maternal and perinatal, nutrition conditions; the group of non-communicable conditions/diseases and the group for all other external causes and injuries. Mortality due to these groups was tracked across the age groups for both males and females. At the early stages of life, most of death causes are due to the group of communicable diseases while the group of non-communicable takes over after the age of 55 for males and age50 for females. The external causes and injuries were also predominant among males than females but lower than expected, possibly due to the wrongly used codes. More details are found in the figures 22 and 23 below and annexes.

Figure 22: Death causes in broad groups by age of males
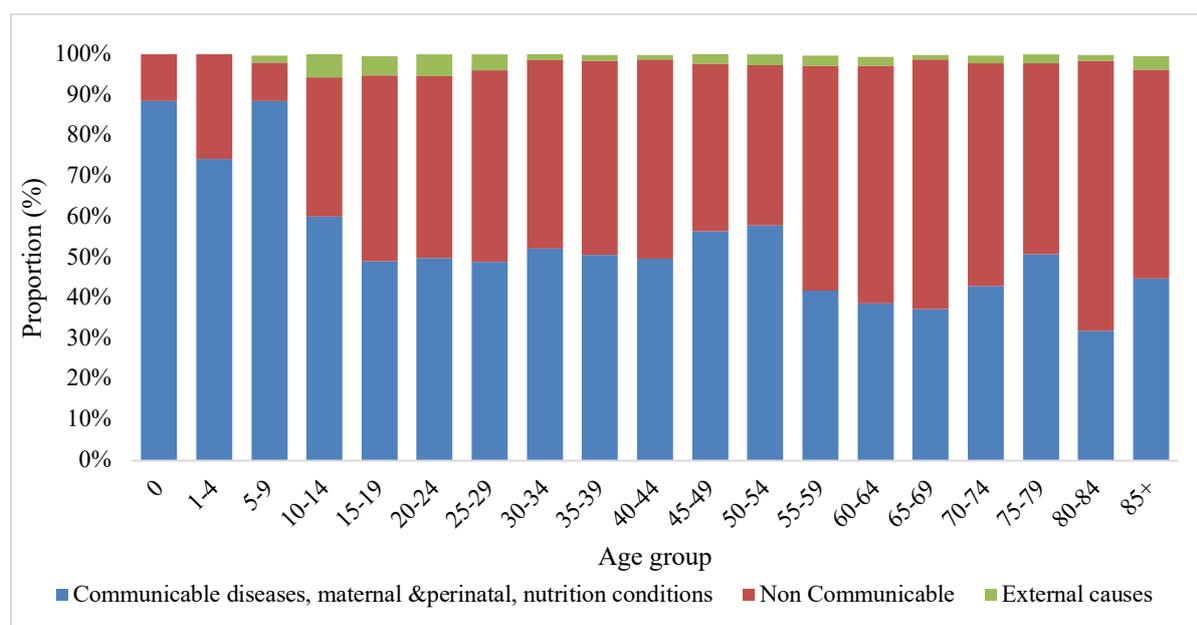
Source: Data from CRVS system, 2020

In Figure 22; communicable diseases, perinatal and nutrition conditions is high until age of 50 and low thereafter. Non communicable diseases are predominant after age of 50 years old age while the high in the old age for male. The external causes more frequently appear among the young children at school age but very low in general for females compared to males.

Figure 23: Death cause in broad groups by age of females
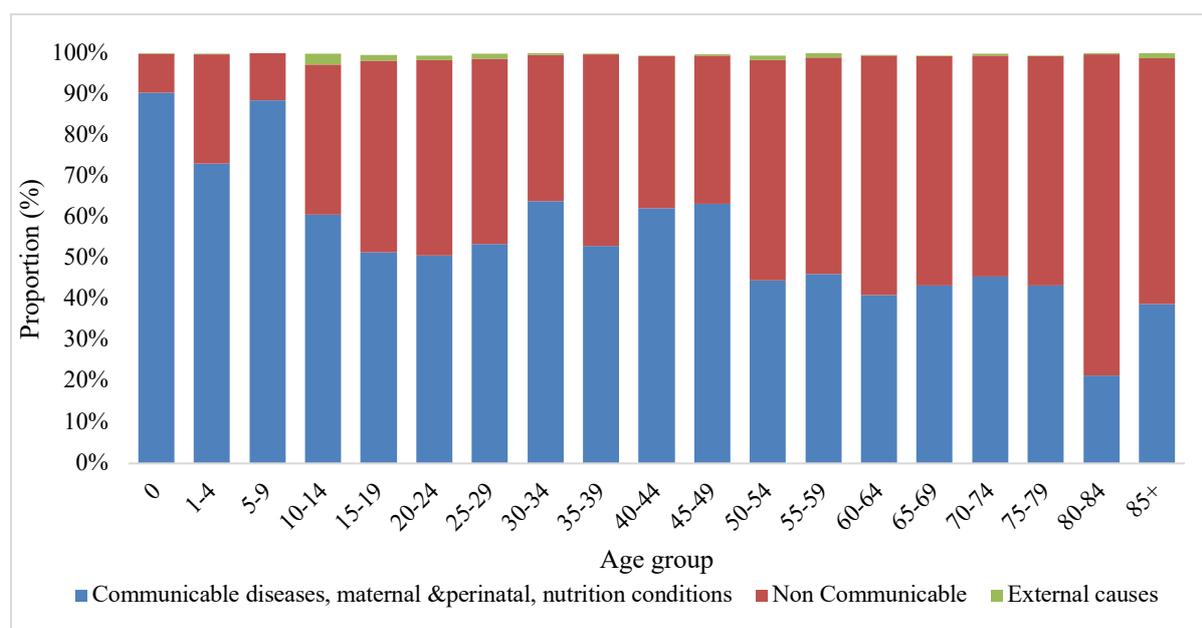
Source: Data from CRVS system, 2020

6.3. Priorities for action improvements

6.3.1. Data quality for institutional deaths

According to the results, a great percentage of causes of death coding were related to the garbage codes and unspecified codes which are not well used. This shows the need to continue the capacity building of certifiers using recommended WHO standards. Figure 23 illustrates priority policy actions for improving the quality of causes of death according to the ANACONDA tool. Efforts are required on improving completeness of cause of death reporting for community deaths where causes of death are not reported, and there is high ranking of garbage codes dominated by ill-defined conditions and low level of cause specific details available for external causes which shows the need of improving the quality of causes of deaths reported in CRVS system. Efforts are currently underway to implement verbal autopsy to address the gap in terms of cause of death information for community deaths.

Figure 24: Priority action areas for improving data quality, 2020
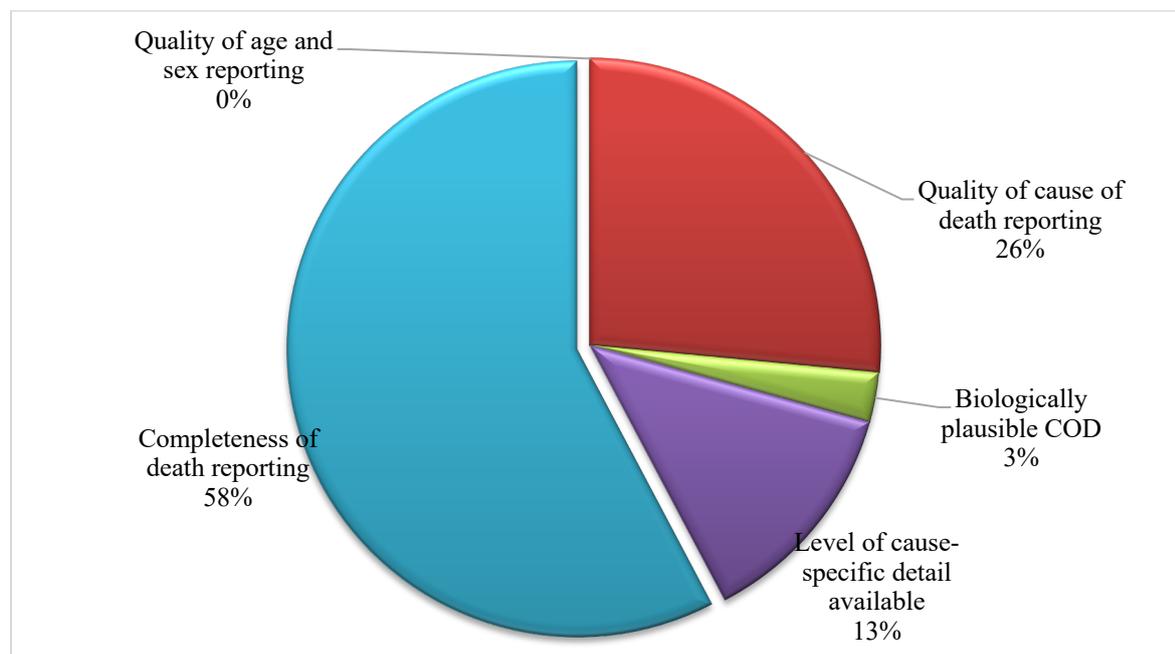
Source: Data from CRVS system, 2020

In response, the Government of Rwanda is focusing on key priority actions to improve the completeness of mortality and cause of death reporting in the national centralized and integrated civil registration and vital statistics (NCI-CRVS) system, as shown in Figure 24. A major effort will be directed to improving registration completeness in order to permit calculation of key mortality indicators. In addition, ongoing capacity development will be supported in order to improve the quality of causes of death determination.

6.3.2. Verbal autopsy for community death notification in CRVS

It has been realized that a large number of deaths occur outside health facilities and are often not notified and recorded in CRVS system in a timely way, resulting in under-reporting of deaths and causes of death and incomplete vital statistics on mortality. As a solution to this, the regulation allows cell civil registrar to register community deaths and conduct verbal autopsy for deaths that occurred outside hospitals where there are no physicians to certify death using MCCOD form. There are ongoing efforts to train cell civil registrars to register community deaths and conduct verbal autopsy to achieve the universal civil registration and quality vital statistics. Boosting the reporting of community deaths and probable causes of death using internationally recognized verbal autopsy techniques will improve death registration completeness for informed policies and decisions.

CHAPTER 7: MARRIAGE STATISTICS

This section provides details on marriages registered by sectors from January to December 2020. The main data source in this regard is CRVS web-based system. As in our country context, only legal marriages are registered, other forms of consensual unions are not covered within the content of this section. This report did not manage to release divorce statistics as the system that could provide accurate information on divorces is under revision.

6.1. Legal marriages registered

Marriage is the act, ceremony and process by which the legal relationship of spouses is constituted. The legality of the union may be established by civil, religious or other means as recognized by the laws of each country. By law, marriage is celebrated at sector office in Rwanda. The CRVS web-based system shows a decrease in the number of marriages registered in 2020 compared to 2019, from 48,526 to 30,859 marriages, implying a decrease equivalent to 17,667 marriages. This is hypothetically due to the ant COVID-19 measures where many forms of social gatherings, including marriage celebration ceremonies were often prohibited to reduce the spread of the pandemic.

Table 16: Registered marriages, 2019-2020

Year	Number of marriages	Population	Crude marriage rate (0/00)
2019	48,526	12,374,398	3.9
2020	30,859	12,663,116	2.4

Source: data from CRVS web-based system (NISR), 2020.

6.1.1. Marriages registered by districts

CRVS web-based system-generated data show a total of 30,859 marriages registered in 2020. The same data show high numbers of marriages celebrated in Gasabo (2,746) and Nyarugenge (1,964) districts. Low numbers were observed in Kirehe (465) and Burera (508) districts.

Figure 25: Marriages registered by districts
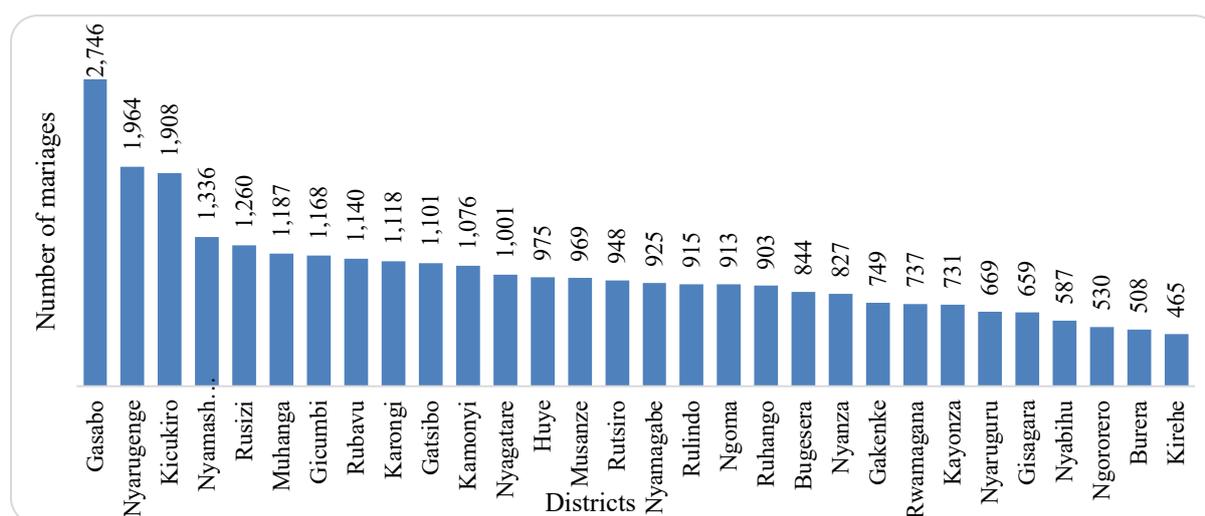
Source: Data from CRVS web-based system (NISR), 2020.

6.1.2. Marriages registered by age of bride and groom

CRVS web-based system-generated data show variations in marriage celebrations across ages of brides and grooms at marriage date. In the age interval of 21–29 years, the number of brides

is higher than the number of grooms; while there is a reversed situation at age of 30 and above. The following Figure 26 gives a picture.

Figure 26: Marriages registered in 2020 by age of bride and groom
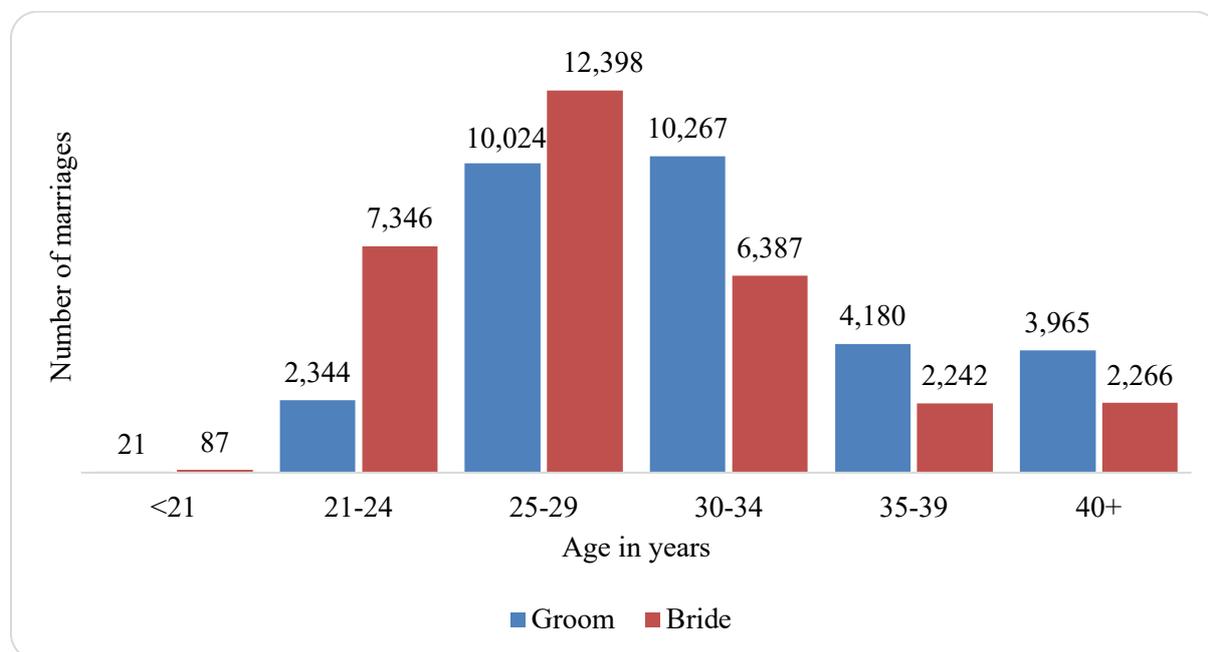
Source: data from CRVS web-based system (NISR), 2020.

CRVS Web based system generated data were also used to correlated age of brides to age of grooms to depict the picture of age differences among married partners. The resulting matrix shows that marriage is most likely to happen when both partners are aged 25-29. The numbers of marriages are also high between males aged 25-29 and females age 21-24 and between males aged 30-34 and females aged 25-29. Generally, the numbers of marriages are high among males aged 25-34 on one side, as well as among females aged 21-29 on the other side.

Table 17: Groom and Bride age relationship at marriage date

		Age of Bride							Grand Total
	Age groups	< 21	21-24	25-29	30-34	35-39	40+	Not stated	
Age of Groom	<21	2	13	4	1	1	0	0	**21**
	21-24	17	1,244	829	189	40	17	8	**2,344**
	25-29	47	3,691	4,804	1,133	222	85	42	**10,024**
	30-34	18	1,838	4,844	2,876	488	156	47	**10,267**
	35-39	1	410	1,407	1,468	698	172	24	**4,180**
	40+	2	133	489	706	790	1,836	9	**3,965**
	Not stated	0	17	21	14	3	0	3	**58**
	Grand Total	**87**	**7,346**	**12,398**	**6,387**	**2,242**	**2,266**	**133**	**30,859**

Source: Data from CRVS web-based system (NISR), 2020.

6.1.3. Marriages registered by matrimonial regime

By the law currently in force, three type of matrimonial regimes. The ***community of property***: a contract by which the spouses opt for marriage settlement based on joint ownership of all their property-movable as well as immovable and their present and their future charges; it is also a primary-default-regime. The ***limited community of property***: a contract by which spouses agree to pool their respective properties owned on the day of marriage celebration, to constitute the basis of the acquests as well as the property acquired during marriage by a common or separate activity, donation, legacy or succession. The ***separation of property*** which is a contract by which spouses agree to contribute to the expenses of the household in proportion to their respective abilities while retaining the right of enjoyment, administration and free disposal of their personal property.

The CRVS web-based system-generated data show that most of couples in Rwanda choose "community of property" as their matrimonial regime as it occupied 98.1 % of marriages registered in 2020. Refer to the following Table 19 for more details.

Table 18: Marriages celebrated by matrimonial regime

Marriage regime	Count	Percentage
All	**30,859**	**100**
Community of property	30,259	98.1
Limited community of property	466	1.5
Separation of property	134	0.4

Source: data from CRVS web-based system (NISR), 2020.

6.1.4. Marriages by previous marital status of the bride and of the groom

The law currently in force doesn't allow for simultaneous marriage contracts per individual. CRVS web-based system-generated data show disparities in the numbers of married persons in accordance with their previous marital status. As here described in table 20; the results show that 99.5% of the brides were previously single while this percentage was 98.5% for grooms. The shares of previously divorced and widowed ladies and gents are relatively quite small.

Table 19: Marriages registered by previous marital status

Previous marital status	Number of Brides	Number of Grooms	Percentage of brides	Percentage of grooms
All	**30,859**	**30,859**	**100.0**	**100.0**
Single	30,699	30,395	99.5	98.5
Widow(er)	82	270	0.3	0.9
Divorced	78	194	0.3	0.6

Source: data from CRVS web-based system (NISR), 2020.

Looking at the previous marital status by age of groom, the results show that among grooms who were previously single, marriages are most frequent to those aged 25-34; while among widows, marriages are most frequent to those aged 60 and above. High number of marriages among previously divorced grooms occurred to those aged 35-49. Generally, the more people's age goes up, the little the number of marriages among grooms who were previously single is

observed. In contrast, the more the people get aged, the number of grooms who were previously widowed is observed. More details are displayed in Table 21.

Table 20: Marriages by age of groom and previous marital status

| Age groups (years) | Previous marital status | | | |
	Single	Widowed	Divorced	Grand Total
<21	21	0	0	21
21-24	2,342	2	0	2,344
25-29	10,007	9	8	10,024
30-34	10,247	7	13	10,267
35-39	4,117	25	38	4,180
40-44	1,522	27	39	1,588
45-49	708	22	36	766
50-54	436	29	19	484
55-59	306	27	11	344
60-64	244	37	13	294
65-69	161	32	11	204
70+	226	53	6	285
Not stated	58	0	0	58
Grand Total	**30,395**	**270**	**194**	**30,859**

Source: data from CRVS web-based system (NISR), 2020.

The status of previous marital status against their respective age at marriage looks a little bit different among brides when compared to their counterpart grooms as among brides who were previously single, marriages are most frequent to those aged 21-29 while among those who were previously widowed, marriages are most frequent to those aged 30-54. While 53 grooms who were previously widowed were observed at age 70 and above; only 1 bride who was previously widowed were observed at that age. Previously divorced brides are most frequent among those aged 30-39. More details are shown in Table 22.

Table 21: Marriages by age of bride and previous marital status

| Age groups (years) | Previous marital status | | | Grand Total |
	Single	Widowed	Divorced	
<21	87	0	0	87
21-24	7,337	2	7	7,346
25-29	12,382	7	9	12,398
30-34	6,367	5	15	6,387
35-39	2,211	10	21	2,242
40-44	908	17	12	937
45-49	511	10	5	526
50-54	262	17	7	286
55-59	187	9	0	196
60-64	146	4	1	151
65-69	76	0	1	77
70+	92	1	0	93
Not stated	133	0	0	133
Grand Total	**30,699**	**82**	**78**	**30,859**

Source: data from CRVS web-based system (NISR), 2020.

6.1.5. Crude marriage rate

The crude marriage rate is the number of marriages occurring among the population of a given geographical area during a given year, per 1,000 mid-year total population of the given geographical area during the same year. Crude marriage rate was 2.4‰ in 2020 down from 3.9 % in 2019, something that is hypothetically attributed to the COVID-19 prevention measures that restricted many types of ceremonies including marriage celebrations.

Conclusion

Birth's statistics:

The findings show a decrease of birth registration completeness from 87.0% in 2019 to 85.8% in 2020 and a downward shift in timely registrations of birth, from 78.0% in 2019 to 72.3% in 2020. Hypothetically, this can be attributed to anti COVID-19 measures that imposed frequent restrictions of people's movements and a temporally closure of registration offices. However, in spite of the COVID-19 pandemic, children will still need to benefit from the legal protection and all other rights associated with birth registration. This therefore calls for enhanced sensitization for parents to prioritize registration of their new born at any occasion when anti COVID-19 measures permit the movements to registration offices. Additionally, the undertaken initiative for operationalizing official birth and death registration at health facilities and cells needs to be strengthened to boost both the timeliness and completeness of birth registration.

Death statistics:

The findings show a very low completeness of death registration in addition to undergoing a downward shift from 31.4% in 2019 to 29.9% in 2020. Additionally, the share of timely registered deaths dropped from 68.6% in 2019 to 62.0% in 2020. Further analysis of deaths registered shows a high %age of deaths taking place in community compared to deaths taking place at health facilities (60.6% Vs 39.4% of the total registered deaths). This informs on two important things. First, there is strong need for a sustained effort to boost death registration coverage, especially community deaths, by strengthening aligned initiatives including verbal autopsy and official registration of community deaths at cells offices. Second, there is a need to recognize the effect of COVID-19 prevention measures on timely registration of vital events and therefore think on administrative way of facilitating registration of deaths that exceeded 30 days due to the lockdown effect; without passing by the court as provided for by the law.

Cause-of-death statistics:

Regarding cause-of-death statistics, the findings show a diminishing share of deaths due to communicable diseases with increasing population age. Considering institutional deaths, communicable diseases are generally the main causes of death among persons aged below 50 while at age of 50 and above, non-communicable diseases become the major causes of death. This calls for enhancing public health policies for the prevention and management of diseases responsible for high mortality in specific population groups.

However, analysis of causes of death data shows that there are some significant data quality weaknesses; many deaths are ascribed to vague and ill-defined causes and only 43.2% of cases have a cause of death that is sufficiently informative to be used to guide health policies and decisions. This shows the effort required to improve the quality of causes of deaths by strengthening a sustainable training framework for in service and pre-service medical doctors (death certifiers) and data managers (cause of death coders).

Marriage's statistics:

The findings show high frequency of marriages among person aged 21 to 40, something inspiring the need to plan taking into consideration the implications of potential new families founded in this regard.

References

1. **NISR.** Rwanda CRVS Systems, CRVS comprehensive assessment final report. Kigali : NISR, November 2016.

2. **Republic of Rwanda (2013).** Official Gazette no Special of 16/06/2013. Retrieved from http://statistics.gov.rw/sites/default/files/Official_Gazette_no_Special_of_16.06.2013.pdf.

3. **Murray, CJL and Lopez, AD (eds).** The Global Burden of Disease. A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Boston : Harvard School of Public Health on behalf of the World Health Organization and The World Bank, 1996.

4. **Mikkelsen, Lene and Lopez, Alan D.** Guidance for assessing and interpreting the quality of mortality data using ANACONDA. Melbourne : University of Melbourne, 2017.

5. **United Nations** (2014). Principles and Recommendations for a Vital Statistics System - Revision 3. Statistics Division, Statistical Papers, Series M No. 19/Rev.3. http://unstats.un.org/unsd/demographic/standmeth/principles/M19Rev3en.pdf

6. **Government of Rwanda.** (2008). Rwanda Five-Year Decentralization Implementation Programme, (March 2004), 2004–2008.

7. **Government of Rwanda.** (2016). Rwanda Demographic Health Survey. Retrieved from http://www.statistics.gov.rw/publication/demographic-and-health-survey-20142015-finalreport.

8. **NISR** (2012). National Strategy for the Development of Statistics 2014/15-2018/19. Kigali.

9. **NISR** (2012). Fourth Population and Housing Census, Rwanda, 2012. Rwanda, 226 (4676), p.782.

10. **UN Department of Economic and Social Affairs - Statistics Division** (2014). Principles and Recommendations for a Vital Statistics System - Revision 3, Available at: http://unstats.un.org/unsd/Demographic/standmeth/principles/M19Rev3en.pdf.

11. **UNECA et al.** (2014). Civil Registration and Vital Statistics Systems in Africa Report, (October).

12. **UNECA et al,** (2012). Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics. Second Conference of African Ministries Responsible for Civil Registration.

13. **UNECA& AfDB.** (2012). Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics. Second Conference of African Ministries Responsible for Civil Registration, (September).

14. **UN Department of Economic and Social Affairs - Statistics Division** (2014). Principles and Recommendations for a Vital Statistics System - Revision 3, Available at: http://unstats.un.org/unsd/Demographic/standmeth/principles/M19Rev3en.pdf.

15. **World Health Organization** (2014). Improving Mortality Statistics as part of Strengthening Civil Registration and Vital Statistics Systems Background Discussion Paper for a Technical Meeting. November 4-5, 2014. Geneva.

16. **World Health Organization and University of Queensland (WHO/UQ).** 2010. Improving the quality and use of birth, death and cause-of-death information: guidance for a standards-based review of country practices. Queensland, Australia.

17. **National Statistics Office of Georgia – GEOSTAT.** (2012). Vital Statistics Report (2015), Tbilisi 2017.

18. **Maryland Department of Health Vital Statistics Administration.** (2018). Maryland Vital Statistics Annual Report 2018. 4201 Patterson Avenue, 5th Floor. Baltimore, Maryland 21215.

19. **Missouri department of health & senior services.** (2018). Missouri Vital Statistics 2018. Jefferson City, 65102-0570. BEVS PUBLICATION NO. 4.66.

20. **Republic of Rwanda** (2016). Nº32/2016 of 28/08/2016, Law governing persons and family. Official Gazette nº37 of 12/09/201. Kigali.

21. **National Institute of Statistics of Rwanda (NISR)** (2018). Mortality Assessment Survey report 2015, July 2018. Kigali.

22. **State of Alaska, Department of Health and Social Services.** (2018). Alaska Vital Statistics 2017 Annual Report. Juneau, Alaska 99811-0675.

23. **Philippine statistics authority.** (2016). Vital statistics report, 2013-2014. Quezon City.

24. **Namibia statistics Agency.** (2017). Namibia Vital Statistics Report - Registered Births, Deaths and Marriages for the period 2011 – 2015. Windhoek, Namibia.

25. **National Institute of Statistics of Rwanda (NISR)** (2018). The Fifth Integrated Household Living Conditions Survey, EICV5, 2016/17. EICV5, Thematic Report Education. Kigali.

26. **Maina et al.** (2017). Using health-facility data to assess subnational coverage of maternal and child health indicators, Kenya.

27. **Cobos Muñoz, D., C. Abouzahr and D. de Savigny** (2018). "The 'Ten CRVS Milestones' framework for understanding Civil Registration and Vital Statistics systems." BMJ Global Health 3 (2).

28. **National Institute of Statistics of Rwanda (NISR)** (2020). Rwanda vital statistics report 2019. Kigali.

29. **Vital Strategies, United Nations Economic Commission for Africa, United Nations Economic and Social Commission for Asia and the Pacific, and Statistics Norway** (2020). Production of a Vital Statistics Report: Template. NY, Vital Strategies.

30. **World Bank Group** (2020). Doing Business Report 2020,

31. **National Institute of Statistics of Rwanda (NISR)** (2021). Gross domestic product-2020. Kigali

52

ANNEXES

Annex 1: Top 20 most preferred baby's kinyarwanda names in 2020 by sex[5]

S/N	Males		Females	
	Child's names	Count of child's names	Child's names	Count of child's names
	Grand Total	**43,519**	**-**	**46,828**
1	ISHIMWE	7,190	INEZA	6,403
2	MUGISHA	4,292	UWASE	5,863
3	IRAKOZE	3,542	ISHIMWE	5,435
4	HIRWA	2,723	IRAKOZE	3,995
5	IGIRANEZA	2,402	UWINEZA	3,090
6	IRADUKUNDA	2,270	IGIRANEZA	2,827
7	INEZA	2,206	IRADUKUNDA	2,505
8	KWIZERA	2,116	UMUTONIWASE	1,753
9	GANZA	2,098	IRASUBIZA	1,644
10	IRANZI	1,960	NISHIMWE	1,441
11	IRASUBIZA	1,859	UWAMAHORO	1,433
12	MANZI	1,675	ISIMBI	1,411
13	BYIRINGIRO	1,390	UMUHOZA	1,408
14	NIYONKURU	1,290	IGIHOZO	1,303
15	NIYOGISUBIZO	1,206	NIYOGISUBIZO	1,094
16	IZIBYOSE	1,148	INEZAYIMANA	1,083
17	NSHIMIYIMANA	1,124	UWIDUHAYE	1,079
18	NDAYISHIMIYE	1,053	UMURERWA	1,066
19	MUNEZERO	993	KEZA	1,013
20	MUCYO	982	UMUKUNDWA	982

---

[5] *The names mentioned in this annex table relate to births that occurred from 1st January 2020 to 31st December 2020, from the dataset of births who were officially registered in 2020.*

Annex 2: Top 20 leading causes of death all ages

table		

Top 20 Leading COD all ages, Male			Top 20 Leading COD all ages, Female		
Rank	**Cause**	**%**	**Rank**	**Cause**	**%**
1	Septicaemia, unspecified	11.4	1	Septicaemia, unspecified	12.2
2	Birth asphyxia, unspecified	7.8	2	Birth asphyxia, unspecified	6.3
3	Other preterm infants	4.5	3	Other preterm infants	6.1
4	Cardiac arrest, unspecified	4.4	4	Pneumonia, unspecified	3.8
5	Pneumonia, unspecified	3.8	5	Cardiac arrest, unspecified	3.8
6	Other ill-defined and unspecified causes	3.6	6	Other ill-defined and unspecified causes	3.7
7	Respiratory distress of newborn, unspecified	3.1	7	Respiratory distress of newborn, unspecified	3.7
8	Extreme immaturity	2.1	8	Extreme immaturity	2.7
9	Encephalopathy, unspecified	1.9	9	Heart failure, unspecified	2.7
10	Unspecified human immunodeficiency virus [HIV]	1.7	10	Unspecified human immunodeficiency virus [HIV]	2.0
11	Essential (primary) hypertension	1.5	11	Stroke, not specified as haemorrhage or infarction	1.9
12	Stroke, not specified as haemorrhage or infarction	1.5	12	Essential (primary) hypertension	1.9
13	Respiratory failure, unspecified	1.4	13	Respiratory failure, unspecified	1.7
14	Heart failure, unspecified	1.2	14	Encephalopathy, unspecified	1.6
15	Other and unspecified cirrhosis of liver	1.2	15	Congenital malformation, unspecified	1.4
16	Person injured in unspecified motor-vehicle	1.2	16	Unspecified renal failure	1.3
17	Hepatic failure, unspecified	1.2	17	Cardiomyopathy, unspecified	1.2
18	Congestive heart failure, unspecified	1.2	18	Congestive heart failure	1.2
19	Anoxic brain damage not elsewhere classified	1.1	19	Other and unspecified cirrhosis of liver	1.2
20	Chronic nephritic syndrome, unspecified	1.1	20	Hepatic failure, unspecified	1.1

Annex 3: Top 20 leading causes of death for under five years

Rank	Cause	%	Rank	Cause	%
Top 20 Leading COD, Male,0 -4 Years			**Top 20 Leading COD, Female,0 -4 Years**		
1	Birth asphyxia, unspecified	18.3	1	Other preterm infants	17.1
2	Other preterm infants	18.3	2	Birth asphyxia, unspecified	14.9
3	Septicaemia, unspecified	10.1	3	Septicaemia, unspecified	10.9
4	Respiratory distress of newborn, unspecified	6.0	4	Extreme immaturity	7.5
5	Extreme immaturity	5.2	5	Respiratory distress of newborn, unspecified	5.1
6	Pneumonia, unspecified	4.1	6	Pneumonia, unspecified	4.7
7	Bacterial sepsis of newborn, unspecified	3.4	7	Congenital malformation, unspecified	3.8
8	Cardiac arrest, unspecified	2.9	8	Bacterial sepsis of newborn, unspecified	3.5
9	Congenital malformation, unspecified	2.8	9	Cardiac arrest, unspecified	2.2
10	Respiratory failure, unspecified	1.6	10	Other ill-defined and unspecified causes	1.9
11	Congenital malformation of heart, unspecified	1.5	11	Unspecified severe protein-energy malnutrition	1.5
12	Other ill-defined and unspecified causes	1.4	12	Respiratory failure, unspecified	1.2
13	Encephalopathy, unspecified	1.4	13	Congenital malformation of heart, unspecified	1.2
14	Congestive heart failure	1.1	14	Encephalopathy, unspecified	1.0
15	Severe birth asphyxia	0.9	15	Adult respiratory distress syndrome	1.0
16	Plasmodium falciparum malaria	0.9	16	Unspecified viral hemorrhagic fever	1.0
17	Unspecified severe protein-energy malnutrition	0.8	17	Severe birth asphyxia	0.9
18	Hepatic failure, unspecified	0.7	18	Congestive heart failure	0.7
19	Gastroenteritis and colitis of unspecified origin	0.6	19	Heart failure, unspecified	0.7
20	Meningitis, unspecified	0.6	20	Other low birth weight	0.7

Annex 4: Top 20 leading causes of death for young children aged 5-9

	Top 20 Leading COD, Male,5 -9 Years			Top 20 Leading COD, Female,5 -9 Years	
Rank	**Cause**	**%**	**Rank**	**Cause**	**%**
1	Certain infectious and parasitic diseases	10.3	1	Diseases of the circulatory system	11.2
2	Diseases of the circulatory system	7.5	2	Certain infectious and parasitic diseases	10.2
3	Septicaemia	6.5	3	Other heart diseases	9.2
4	External causes of morbidity and mortality	6.5	4	Septicaemia	7.1
5	Other heart diseases	5.6	5	Endocrine, nutritional and metabolic diseases	6.1
6	Congenital malformations, deformations and chromosomal abnormalities	5.6	6	Other endocrine, nutritional and metabolic diseases	5.1
7	Malaria	3.7	7	Diseases of the nervous system	4.1
8	Neoplasms	3.7	8	Diseases of the genitourinary system	4.1
9	Endocrine, nutritional and metabolic diseases	3.7	9	Symptoms, signs and abnormal clinical and laboratory findings…	4.1
10	Malnutrition	3.7	10	External causes of morbidity and mortality	4.1
11	Diseases of the blood and blood-forming organs …	2.8	11	Neoplasms	3.1
12	Anaemias	2.8	12	Other diseases of the nervous system	3.1
13	Diseases of the nervous system	2.8	13	Diseases of the respiratory system	3.1
14	Diseases of the respiratory system	2.8	14	Pneumonia	3.1
15	Other diseases of the respiratory system	2.8	15	Malaria	2.0
16	Diseases of the genitourinary system	2.8	16	Leukaemia	2.0
17	Other diseases of the genitourinary system	2.8	17	Cerebrovascular diseases	2.0
18	Symptoms, signs and abnormal clinical and laboratory findings…	2.8	18	Glomerular and renal tubule interstitial diseases	2.0
19	Transport accidents	2.8	19	Other diseases of the genitourinary system	2.0
20	Accidental poisoning by and exposure to noxious substances	2.8	20	Certain conditions originating in the perinatal period	2.0

Annex 5: Top 20 leading causes of death for young and adults

Top 20 Leading COD, Male,15 -59 Years			Top 20 Leading COD, Female,15 -59 Years		
Rank	**Cause**	**%**	**Rank**	**Cause**	**%**
1	Septicaemia, unspecified	10.6	1	Septicaemia, unspecified	11.7
2	Unspecified human immunodeficiency virus [HIV]	3.7	2	Unspecified human immunodeficiency virus [HIV]	5.9
3	Other ill-defined and unspecified causes	3.6	3	Other ill-defined and unspecified causes	4.1
4	Cardiac arrest, unspecified	3.0	4	Pneumonia, unspecified	3.4
5	Pneumonia, unspecified	3.0	5	Cardiac arrest, unspecified	3.3
6	Respiratory distress of newborn, unspecified	2.4	6	Heart failure, unspecified	2.6
7	Unspecified renal failure	2.2	7	Essential (primary) hypertension	2.1
8	Tuberculosis of lung	2.0	8	Hepatic failure, unspecified	1.8
9	Encephalopathy, unspecified	1.9	9	Encephalopathy, unspecified	1.8
10	Stroke, not specified as haemorrhage or infarction	1.8	10	Birth asphyxia, unspecified	1.7
11	Respiratory failure, unspecified	1.8	11	Respiratory distress of newborn, unspecified	1.7
12	Birth asphyxia, unspecified	1.8	12	Unspecified diabetes mellitus	1.7
13	Essential (primary) hypertension	1.7	13	Respiratory failure, unspecified	1.7
14	Unspecified injury of head	1.7	14	Chronic viral hepatitis B	1.6
15	Injured in motor-vehicle, road traffic accident	1.7	15	Breast cancer, unspecified	1.5
16	Heart failure, unspecified	1.6	16	Malignant neoplasm, unspecified	1.5
17	Hepatic failure, unspecified	1.6	17	Meningitis, unspecified	1.5
18	Malignant neoplasm, unspecified	1.4	18	Cardiomyopathy, unspecified	1.4
19	Chronic viral hepatitis B	1.4	19	Unspecified renal failure	1.4
20	Intracerebral haemorrhage, unspecified	1.4	20	Congestive heart failure	1.3

Annex 6: Top 20 leading causes of death for old aged people

	Top 20 Leading COD, Male,70 Years and above			Top 20 Leading COD, Female,70 Years and above	
Rank	**Cause**	**%**	**Rank**	**Cause**	**%**
1	Diseases of the digestive system	18.0	1	Diseases of the circulatory system	15.1
2	Certain infectious and parasitic diseases	10.1	2	Certain infectious and parasitic diseases	8.8
3	Diseases of the circulatory system	9.5	3	Other heart diseases	8.3
4	Septicaemia	7.6	4	Diseases of the respiratory system	6.7
5	Other heart diseases	4.8	5	Septicaemia	6.2
6	Neoplasms	4.3	6	Diseases of the digestive system	4.1
7	Diseases of the respiratory system	4.1	7	Neoplasms	3.8
8	Diseases of the liver	2.9	8	Cerebrovascular diseases	3.8
9	Symptoms, signs and abnormal clinical and laboratory findings…	2.8	9	Pneumonia	3.8
10	Endocrine, nutritional and metabolic diseases	2.5	10	Endocrine, nutritional and metabolic diseases	3.3
11	Diseases of the genitourinary system	2.4	11	Symptoms, signs and abnormal clinical and laboratory findings.	2.8
12	Pneumonia	2.4	12	Diseases of the liver	2.8
13	Cerebrovascular diseases	2.2	13	Hypertensive diseases	2.3
14	Diseases of the nervous system	2.2	14	Diseases of the genitourinary system	2.2
15	Certain conditions originating in the perinatal period	2.1	15	Certain conditions originating in the perinatal period	2.2
16	Other diseases of the nervous system	2.0	16	Diseases of the nervous system	2.1
17	Hypertensive diseases rheumatic heart diseases	1.8	17	Other diseases of the nervous system	1.9
18	Other diseases of the genitourinary system	1.5	18	Other diseases of the genitourinary system	1.7
19	Other diseases of the respiratory system	1.4	19	Other endocrine, nutritional and metabolic diseases	1.6
20	Malignant neoplasm of prostate	1.2	20	Other diseases of the respiratory system	1.6

Annex 7: Number of births reported at health facilities by weight at birth and by age of mothers

Row Labels	<1500	1500-1999	2000-2499	2500-2999	3000-3499	3500-3999	4000-4499	4500-5000	>5000	Grand Total
10-14	0	3	5	46	42	14	0	1	0	111
15-19	149	307	1228	6262	8018	2685	273	45	3	18970
20-24	475	969	4189	22574	33471	12812	1700	239	24	76453
25-29	526	988	3948	20420	35500	16313	2693	350	35	80773
30-34	498	959	3350	17649	31996	16347	3179	470	53	74501
35-39	443	777	2728	12495	22550	11654	2459	436	41	53583
40-44	168	285	1105	4857	8570	4339	989	163	25	20501
45-49	17	47	130	652	999	546	109	11	0	2511
50+	4	14	40	126	207	92	7	8	0	498
Grand Total	2280	4349	16723	85081	141353	64802	11409	1723	181	327901

Annex 8: Projections of the total population by 2020 according to the medium projections scenario

5-year age group	Both sexes	Male	Female
0-4	1,696,055	856,174	839,881
5-9	1,546,772	775,737	771,034
10-14	1,516,105	754,289	761,816
15-19	1,409,434	697,673	711,760
20-24	1,166,187	572,020	594,168
25-29	1,050,156	510,934	539,222
30-34	968,053	470,142	497,911
35-39	849,057	415,075	433,982
40-44	636,578	300,513	336,065
45-49	439,274	198,421	240,853
50-54	361,943	165,247	196,697
55-59	316,443	141,843	174,599
60-64	277,419	121,977	155,442
65-69	182,216	78,545	103,671
70-74	113,038	46,403	66,635
75-79	63,379	23,257	40,122
80 +	71,006	26,194	44,812
Total	**12,663,116**	**6,154,445**	**6,508,671**

Annex 9: Projection of urban and Rural populations in 2020 according to medium projections scenario

5-year age group	Urban, 2020			Rural, 2020		
	Both sexes	Male	Female	Both sexes	Male	Female
0-4	333,728	158,216	175,512	1,362,327	697,958	664,369
5-9	274,921	129,502	145,419	1,271,850	646,235	625,616
10-14	284,620	131,236	153,384	1,231,485	623,053	608,432
15-19	320,565	140,931	179,634	1,088,869	556,743	532,126
20-24	332,622	161,574	171,048	833,565	410,446	423,120
25-29	307,348	156,401	150,948	742,807	354,533	388,275
30-34	263,701	137,728	125,973	704,353	332,414	371,938
35-39	217,244	116,053	101,191	631,813	299,021	332,791
40-44	144,715	76,358	68,357	491,863	224,155	267,708
45-49	86,088	43,789	42,299	353,187	154,632	198,555
50-54	59,538	30,284	29,255	302,405	134,963	167,442
55-59	47,577	23,315	24,262	268,866	118,528	150,337
60-64	39,889	18,747	21,141	237,530	103,230	134,301
65-69	26,368	11,496	14,872	155,849	67,050	88,799
70-74	15,394	6,157	9,238	97,644	40,246	57,397
75-79	8,940	3,032	5,908	54,439	20,225	34,214
80 +	9,964	3,003	6,961	61,043	23,191	37,851
Total	**2,773,222**	**1,347,823**	**1,425,399**	**9,889,893**	**4,806,621**	**5,083,272**

Annex 10: ASFR per 1000 in urban and rural areas

Mothers' age groups	Live births			ASFR PER 1000		
	Rwanda	Urban	Rural	Rwanda	Urban	Rural
10-14	89	14	75	0.1	0.1	0.1
15-19	13185	1719	11466	18.5	9.6	21.5
20-24	67162	10733	56429	113.0	62.7	133.4
25-29	77987	17249	60738	144.6	114.3	156.4
30-34	72791	16718	56073	146.2	132.7	150.8
35-39	54642	9879	44763	125.9	97.6	134.5
40-44	22962	3441	19521	68.3	50.3	72.9
45-49	3258	347	2911	13.5	8.2	14.7
50+	602	75	526	3.1	2.6	3.1

Annex 10: Persons who contributed to the production of the Rwanda Vital statistics (V.S) Annual report, 2020

National overall coordinators
- MURANGWA Yusuf, Director General of NISR
- MURENZI Ivan, Deputy Director General of NISR

National technical coordinators
- NDAKIZE Michel, Director of demographic and social statistics - NISR
- NILINGIYIMANA Faustin, CRVS Team Leader - NISR

V.S Report, 2020 data analysis and report writing
- NILINGIYIMANA Faustin, CRVS Team Leader – NISR
- NSHIMIYIMANA Patrick, CRVS statistician – NISR
- RUKUNDO Ephrem, Statistician – NISR
- UWAYEZU Beatrice, Population census Team Leader – NISR
- NGOBOKA Godfrey, CRVS coordinator – RBC
- NGOMITUJE Xavier, Statistician – NISR

V.S Report, 2020 expert reviewers
- Prof. Don de Savigny Professor Emeritus, Health Systems and Policy Research
- Ms. Carla AbouZahr, Affiliate to Bloomberg Data for Health- Vital Strategies

V.S Report, 2020 proofreading, design and layout
- NILINGIYIMANA Faustin, CRVS Team Leader – NISR
- UWAYEZU Beatrice, Population census Team Leader – NISR
- NSHIMIYIMANA Patrick, CRVS statistician – NISR
- NGOMITUJE Xavier, Statistician - NISR
- NGOBOKA Godfrey, CRVS coordinator – RBC
- MAZIMPAKA Jean Claude, Statistician – NISR
- NYIRIMANZI Jean Claude – NISR
- KABERA Jean Luc - NISR

APPENDIX

1. MCCOD FORM USED IN HEALTH FACILITIES

REPUBLIC OF RWANDA

MINISTRY OF HEALTH

MEDICAL CERTIFICATE OF CAUSE OF DEATH

Name of the deceased:.. File Nº·.......................... Health Facility:·...............................

National Identification Number/Passport Number :...Nationality:...........................Residence:...............

District..........................Sector..........................Cell..........................Village..........................

Marital status: .... Sex .... Place of Death:...................... Date of Birth:..........................

Date of Birth unknown (Estimated age)......................Date of Death: .... Time of Death ....p.m/a.m

Frame A: Medical data: Part 1 and 2				
I			Cause of death	Time interval from onset to death
Report disease or condition directly leading to death on line a		a		
Report chain of events 'due to' (b to d) in order (if applicable)		b	Due to:	
		c	Due to:	
State the underlying cause on the lowest used line		d	Due to:	
II				
Other significant conditions contributing to death (time intervals can be included in brackets after the condition)				

Frame B: Other medical data			
Was surgery performed within the last 4 weeks?	☐ Yes	☐ No	☐ Unknown
If yes please specify date of surgery			D D M M Y Y Y Y
If yes please specify reason for surgery (disease or condition)			
Was an autopsy requested?	☐ Yes	☐ No	☐ Unknown
If yes were the findings used in the certification?	☐ Yes	☐ No	☐ Unknown

Manner of death:

☐ Disease	☐ Assault	☐ Could not be determined
☐ Accident	☐ Legal intervention	☐ Pending investigation
☐ Intentional self-harm	☐ War	☐ Unknown

If external cause or poisoning: Date of injury D D M M Y Y Y Y

Please describe how external cause occurred (If poisoning please specify poisoning agent)

Place of occurrence of the external cause:

☐ At home	☐ Residential institution	☐ School, other institution, public administrative area ☐ Sports and athletics area
☐ Street and highway	☐ Trade and service area	☐ Industrial and construction area ☐ Farm
☐ Other place (please specify):		☐ Unknown

Fetal or Infant Death

Multiple pregnancy	☐ Yes	☐ No	☐ Unknown
Stillborn?	☐ Yes	☐ No	☐ Unknown
If death within 24h specify number of hours survived		Birth weight (in grams)	
Number of completed weeks of pregnancy		Age of mother (years)	
If death was perinatal, please state conditions of mother that affected the fetus and newborn			

For women, was the deceased pregnant?	☐ Yes	☐ No	☐ Unknown
☐ At time of death		☐ Within 42 days before the death	
☐ Between 43 days up to 1 year before death		☐ Unknown	
Did the pregnancy contribute to the death?	☐ Yes	☐ No	☐ Unknown

Referred from (level of care)		Parity		Mode of delivery	☐ SVD	☐ Assisted	☐ Caesarean
Place of Delivery	☐ Health Facility ☐ Home	☐ In transit	☐ Don't Know	Delivered by skilled attendant	☐ Yes	☐ No	☐ Don't Know

Declaration

I hereby certify that (*tick as appropriate*)   a) I attended the deceased before death
b) I examined the body after death
c) I conducted the post mortem of the body
d) Other (specify) ....

Medical Doctor's Name: ....

Signature .... Date..........................

2. DEATH CERTIFICATE FORM USED BY HEALTH FACILITIES FOR NEXT OF KIN/DECLARANT OF DECEASED

REPUBLIC OF RWANDA

MINISTRY OF HEALTH

N°......

INYANDIKO MPINE Y'UWAPFUYE/ DEATH CERTIFICATE/ ATTESTATION DE DECES
N°............

Itariki y'urupfu/ Date of death / Date de décès : ..../............................/.............................

Jyewe/ I / Moi : .... Umuganga wemewe na leta ufite nimero/Certified Medical Doctor with Registration number of / Médecin enregistré sous le numéro N° ....(Mu Rugaga rw'Abaganga n'Abaganga b'Amenyo mu Rwanda/Ordre de Médecins et Dentistes du Rwanda/ Rwanda Medical and Dental Council), ukorera mu bitaro bya /Working at hospital/Travaillant à l'hôpital de ....

Ndemeza urupfu rwa / Certify the death of/ Atteste le décès de:...

Igitsina/ Sex /Sexe : ....

Itariki yavukiyeho/ Date of birth/ Date de naissance :................................./............................../...............................

Irangamimerere ye/ Marital status/ Status matrimonial: ....

Nomero y'ibyamurangaga/ Identity Card, Passport number/ Numéro de la Carte d'identité, du Passeport: ....

Ubwenegihugu / Nationality/ Nationalité:...

Icyateye urupfu/ Cause of death /Cause de décès:..

....

....

Aho yari atuye/ Place of domicile / Domicile : Akarere, Umurenge, Akagari, Umudugudu/ District, Sector, Cell, Village /District, Secteur, Cellule, Village: ..../...

..../..............

Umenyekanishije/ Declarant/ Déclarant: ....

Nomero y'ibimuranga/ Identity Card, Passport number/ Numéro de la Carte d'identité, du Passeport: ....

Isano bafitanye/ Relationship/ Lien de parenté:

....

Umukono na kashe by'Umuganga/
Signature and Stamp of the Medical doctor/ Signature et cachet du Médecin

3. DEATH CERTIFICATE QUALITY ASSESSMENT TOOL

REPUBLIC OF RWANDA

MINISTRY OF HEALTH
P.O. BOX 84 KIGALI
www.moh.gov.rw

DEATH CERTIFICATE QUALITY ASSESSMENT TOOL V1.2

A correctly filled-in death certificate has none of the following errors. Please indicate whether the death certificate has:

No.	Error Type	Yes*	No
1	Date of birth missing		
2	Date of death missing		
3	Time of death (a.m./p.m.) missing		
4	Sex of the deceased not specified		
5	Multiple causes of death per line		
6	Missing time interval from onset to death		
7	Abbreviations used in certifying cause of death		
8	Blank lines within chain of events leading to death		
9	Incorrect or clinically improbably chain of events leading to death		
10	Incorrect injuries or illnesses listed as contributory causes of death		
11	**Ill-defined condition(s) entered as the underlying cause of death**		
If yes, was the ill-defined condition:			
11.1	*Assigned impossible underlying cause of death i.e. signs and symptoms*		
11.2	*Mode of dying entered as underlying cause of death e.g. respiratory/ heart arrest*		
11.3	*Intermediate cause entered as underlying cause of death eg Septicaemia*		
11.4	*Unspecified causes within a larger death category entered as underlying cause of death*		
12	If surgery was performed, it is not indicated in Frame B		
13	For deaths as a result of neoplasms, additional details were missing		
14	For deaths due to external causes, additional details were missing		
15	For fetal or infant deaths, additional details were missing		
16	For deaths of women, additional details were missing		
17	Illegible hand writing		
18	The form is not signed by the medical doctor		

* Whenever there is "*Yes*" response, clarify with certifying Medical doctor.

4. BIRTH ACT FORM USED FOR REGISTRED BIRTH

INYANDIKO Y'IVUKA/BIRTH ACT/ACTE DE NAISSANCE N°……………………

REPUBULIKA Y'U RWANDA	Itariki y'imenyekanisha/Date of declaration/Date de déclaration : …………………………………………………… …… …… …… Jyewe/ I/Moi: ……… Umwanditsi w'Irangamimerere wa/Civil Registrar of /Officier de l'état civil de: …………………………………………………………………… Nakiriye imenyekanisha ry'ivuka/Receive the declaration of birth/Reçois la déclaration de naissance:
	UMWANA/CHILD/ENFANT:
IBIRO BY'IRANGAMIMERERE BYA/	Izina ry'umwana/Name of the child/ Nom de l'enfant: ……………………………………………………………… Itariki yavukiyeho/Date of birth/Date de naissance: ………………………………………………………………… …… ……
CIVIL REGISTRAR'S OFFICE OF / BUREAU DE L'ETAT CIVIL DE ………………………………	Aho yavukiye/Place of birth/Lieu de naissance: …………………………………………………………………………… …… Igitsina/Sex /Sexe: ………
………………………………	**ABABYEYI /PARENTS/PARENTS:**
	Izina rya se/Father's name/Nom du père: ………………………………………………………………………………… Imyaka ye/Age/Age: ……… ……
IGITABO CYA/	Aho atuye, aba/ Domicile,Residence/ Domicile, Résidence: ……………………………………………………………
VOLUME ………………………………	Ubwenegihugu/Nationality/Nationalité: …………………………………………………………………………………… Nomero y'ibimuranga/ Identity card, Passport number/ Numéro de la Carte d'Identité, Passeport: ……………………………………
	Izina rya nyina/Mother's name/Nom de la mère: ………………………………………………………………………… …… Imyaka ye/Age/Age: ……… Aho atuye, aba/ Domicile,Residence/ Domicile, Résidence: …………………………………………………………… Ubwenegihugu/Nationality/Nationalité: …………………………………………………………………………………… Nomero y'ibimuranga/ Identity card, Passport number/ Numéro de la Carte d'Identité, Passeport : ………………………………… ……
	Umenyekanishije/ Declaring person/ Déclarant: ……………………………………………………………………… **Isano bafitanye/ Relationship/ Lien de parenté:** ………………………………………………………………………
	Icyemezo cya muganga cyo ku wa/ Medical birth certificate of/ Attestation médicale du: ……………………………………………… …… …… …… ……(1)
	Ikigo cy'Ubuzima/ Health establishment/Etablissement de santé : ……………………………………………… …… …… ……… (2)
	Icyemezo cy'ubuyobozi cyo ku wa/ Authority certificate of/Attestation de l'autorité du: ……………………………………………… …… …… …… Ubuyobozi bwagitanze/Issuing authority/Autorité ayant délivré l'attestation ……………………………………… ……
	Iyi nyandiko isomewe uwamenyekanishije ivuka n'abatangabuhamya/This Act is read to the person declaring the birth and witnesses/ Lecture du présent Acte est faite au déclarant de la naissance et aux témoins: …………………………………………………….. ……………………………………………………… **Umukono w'umenyekanishije** **Umukono na kashe by'Umwanditsi w'Irangamimerere** **Signature of the declaring person** **Signature and stamp of the Civil Registrar** **Signature du déclarant** **Signature de l'Officier de l'état civil**

5. DEATH ACT FORM FOR REGISTERED DEATH

INYANDIKO Y'UWAPFUYE /DEATH ACT /ACTE DE DECES N°………………………………

REPUBULIKA Y'U RWANDA	Itariki y'imenyekanisha/Date of declaration/Date de déclaration : ……………………………………………………………………………
	……
	……
	……
	Jyewe/ I / Moi: ……
	Umwanditsi w'irangamimerere wa/ Civil Registrar of /Officier de l'état civil de ………………………………………………………
	Nakiriye imenyekanisha ry'urupfu/Receive the death declaration/ Reçois la déclaration de décès:
IBIRO BY'IRANGAMIMERERE BYA/	**UWAPFUYE/ DECEASED/ DECEDE :**
	Izina ry'uwapfuye/ Names of the deceased/Nom du défunt: …………………………………………………………………………………
	Itariki yapfiriyeho / Date of death /Date de décès: …………………………………………………………………………………………
	……
	……
CIVIL REGISTRAR'S OFFICE OF / BUREAU DE L'ETAT CIVIL DE …………………………………	Aho yapfiriye/ Place of death/ Lieu de décès:……………………………………………………………………………………………………
	Aho yari atuye; yabaga/ Domicile, residence/ Domicile, résidence: ………………………………………………………………………
………………………………………	Igitsina/ Sex /Sexe :………
	Icyateye urupfu/ Cause of death /Cause de décès:……………………………………………………………………………………………
	……
	ABABYEYI/ PARENTS/ PARENTS:
	Izina rya se/ Father's name/ Nom de père : ………………………………………………………………………………………………………
IGITABO CYA/	Imyaka ye/Age/Age: ………
	……
VOLUME	Aho atuye; aba/domicile; residence /domicile; résidence : ………………………………………………………………………………
…………………………	……
	Ubwenegihugu/ Nationality/ Nationalité:………
	Nomero y'ibimuranga/ Identity Card; passport number/ Numéro de la carte d'identité; passeport: ……………………
	Izina rya nyina/ Mother's name / Nom de la mère: …………………………………………………………………………………………
	Imyaka ye/Age/Age: ………
	……
	Aho atuye; aba/domicile; residence /domicile; résidence : …………………………………………………………………………
	……
	Ubwenegihugu/ Nationality/ Nationalité:………
	Nomero y'ibimuranga/ Identity Card, passport number/ Numéro de la carte d'identité, Passeport ………………………
	Umenyekanishije/ Declaring person/ Déclarant: …………………………………………………………………………………………
	Isano bafitanye/ Relationship/ Lien de parenté: ………………………………………………………………………………………
	Icyemezo cya muganga cyo ku wa/ Medical certificate issued at/ Attestation médicale du: …………………………………(1)
	……
	……
	……
	Ikigo cy'Ubuzima/ Health establishment/ Etablissement de santé: ……………………………………………………………………
	Icyemezo cy'ubuyobozi cyo ku wa/Authority certificate of/Attestation de l'autorité du: …………………………………(2)
	……
	……
	……
	Ubuyobozi bwagitanze/Authority name / Autorité ayant délivré l'attestation :
	……
	Iyi nyandiko isomewe umenyekanishije urupfu n'abatangabuhamya/This Act is read to the person declaring the death and witnesses / Lecture du présent Acte est faite au déclarant du décès et aux témoins:
	…………………………………………….. ………………………………….……………
	Umukono w'uwamenyekanishije **Umukono na kashe by'Umwanditsi w'Irangamimerere**
	Signature of declaring person/ **Signature and stamp of the Civil Registrar**
	Signature du déclarant **Signature et cachet de l'Officier de l'état civil**
	Imikono y'abatangabuhamya/Signatures of witnesses/ Signatures des témoins:
	1. ………
	2……

6. MARRIAGE ACT FORM FOR LEGALIZED MARRIAGE

INYANDIKO Y'ISHYINGIRANYWA/MARRIAGE ACT/ACTE DE MARIAGE N°…………..……………….

REPUBULIKA Y'U RWANDA **IBIRO BY'IRANGAMIMERERE BYA/** **CIVIL REGISTRAR'S OFFICE OF/ BUREAU DE L'ETAT CIVIL DE :** ………………………………… … ………………………………… **IGITABO CYA/** **VOLUME** ……………………………..	Itariki y'imenyekanisha/Date of declaration/Date de déclaration : …………………………………………………………………………………………… ……… ……… ……… Jyewe/ I / Moi: ……… Umwanditsi w'irangamimerere wa/Civil Registrar of /Officier de l'état civil de ………………………………………………………… Nakiriye imenyekanisha ry'ishyingiranywa/ Receive the declaration of the marriage/ Reçois la déclaration de mariage

ABASHYINGIRANYWE/SPOUSES/EPOUX
Izina ry'uwashyingiwe/ Name of the spouse/ Nom de l'époux: …………………………………………………………………………… Itariki yavukiyeho/ Date of birth/ Date de naissance: ……………………………………………………………………………………… ……… ……… ……… Aho atuye; aba/domicile; residence /domicile; résidence : ………………………………………………………………………………… Igitsina/ Sex/ Sexe: ……… Ubwenegihugu/ Nationality/ Nationalité: …… Nomero y'ibimuranga/ Identity Card; passport number/ Numéro de la carte d'identité/Passeport …………………………… Izina rya se/ Father's name / Nom du père: …………………………………………………………………………………………………… Izina rya nyina/ Mother's name/ Nom de la mère: ……………………………………………………………………………………………

Na/and/et

Izina ry'uwashyingiwe wundi/ Name of the other spouse/ Nom de l'autre époux: ………………………………………………
Itariki yavukiyeho/ Date of birth/ Date de naissance: ………………………………………………………………………………………
………
………
………
Aho atuye, aba/domicile, residence /domicile, résidence : …………………………………………………………………………………
………
Igitsina/ Sex/ Sexe: ………
Ubwenegihugu/ Nationality/ Nationalité: ………………………………………………………………………………………………………
Nomero y'ibimuranga/ Identity Card, passport number/ Numéro de la carte d'identité, Passeport ………………………
………
Izina rya se/ Father's name / Nom du père: ……………………………………………………………………………………………………
Izina rya nyina/ Mother's name/ Nom de la mère: ……………………………………………………………………………………………
Uburyo bw'icungamutungo bahisemo / Matrimonial regime/ Régime matrimonial: ……………………………………………………
………
 	
Ibyemezo byatanzwe nk'uko amategeko abiteganya/Certificates submitted as provided for by the law/Attestations déposées tel que prévu par la loi :
    1. ………
    2. ………
    3. ………

Iyi nyandiko isomewe abamenyekanishije ishyingirwa, abahagarariye imiryango n'abatangabuhamya/This Act is read to the spouses declaring the marriage, family representatives and witnesses/Lecture du présent Acte est faite aux époux déclarant le mariage, aux représentants des familles et aux témoins.
Imikono y'abashyingiranywe/ Signatures of spouses/Signatures des époux :
 	
    1. …………………………………………
    2. …………………………………………..   …………………………………………
 	
Imikono y'abahagarariye imiryango
Signatures of family representatives   **Umukono na kashe by'Umwanditsi w'Irangamimerere**
Signature des représentants des familles   **Signature and stamp of the Civil Registrar**
 	
    1. …………………………………………   **Signature et cachet de l'Officier de l'état civil**
    2. …………………………………………..
 	
Imikono y'abatangabuhamya
 	
Signatures of witnesses
Signatures des témoins

National Institute of Statistics of Rwanda