Republic of Rwanda

NATIONAL INSTITUTE OF STATISTICS OF RWANDA

Rwanda Metadata Handbook

NATIONAL INSTITUTE OF STATISTICS OF RWANDA

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Abbreviations and Acronyms

AFR	ACCESS TO FINANCE RWANDA
ART	ANTIRETROVIRAL THERAPY
BNR	BANQUE NATIONALE DU RWANDA/ NATIONAL BANK OF RWANDA
DHS	DEMOGRAPHIC AND HEALTH SURVEY
EDPRS 2	THE SECOND ECONOMIC DEVELOPMENT AND POVERTY REDUCTION STRATEGY
EICV	Enquête Intégrale sur les Conditions de Vie des ménages (INTEGRATED HOUSEHOLD LIVING CONDITIONS SURVEY)
EWSA	ENERGY, WATER AND SANITATION AUTHORITY
FDI	FOREIGN DIRECT INVESTMENT
GDP	GROSS DOMESTIC PRODUCT
HEC	HIGHER EDUCATION COMMISSION
HMIS	HEALTH MANAGEMENT INFORMATION SYSTEM
IPAR	INSTITUTE OF POLICY ANALYSIS RWANDA
JRLOS	JUSTICE, RECONCILIATION, LAW AND ORDER SECTOR
MFIs/SACCOs	MICROFINANCE INSTITUTIONS/ SAVINGS AND CREDIT CO-OPERATIVES
MDG	MILLENNIUM DEVELOPMENT GOALS
MIFOTRA	MINISTRY OF PUBLIC SERVICE AND LABOUR
MINAGRI	MINISTRY OF AGRICULTURE AND ANIMAL
MINALOC	RESOURCES MINISTRY OF LOCAL GOVERNMENT
MINECOFIN	MINISTRY OF FINANCE AND ECONOMIC PLANNING
MINEDUC	MINISTRY OF EDUCATION
MINICOM	MINISTRY OF TRADE AND INDUSTRY
MININFRA	MINISTRY OF INFRASTRUCTURE
MINIRENA	MINISTRY OF NATURAL RESOURCES
MIS	MALARIA INDICATOR SURVEYS
MoH	MINISTRY OF HEALTH
NAEB	NATIONAL AGRICULTURE EXPORT BOARD
NISR	NATIONAL INSTITUTE OF STATISTICS OF RWANDA
PHC	POPULATION AND HOUSING CENSUS
RAB	RWANDA AGRICULTURE BOARD
RNRA	RWANDA NATURAL RESOURCES AUTHORITY
RBC	RWANDA BIOMEDICAL CENTER

REMA	RWANDA ENVIRONMENT MANAGEMENT AUTHORITY
RRA	RWANDA REVENUE AUTHORITY
RDB	RWANDA DEVELOPMENT BOARD
RGB	RWANDA GOVERNANCE BOARD
RTDA	RWANDA TRANSPORT DEVELOPMENT AGENCY
RwF	RWANDAN FRANC
SMEs	SMALL AND MEDIUM ENTERPRISES
USD	UNITED STATES DOLLAR

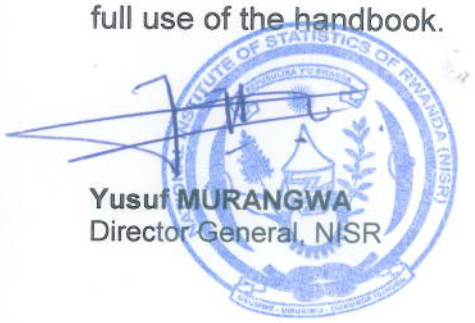
Foreword

Rwanda is committed to achieve its overarching objective set in vision 2020; transforming Rwanda into a middle income country. Guided by this vision, the Second Economic Development and Poverty Reduction Strategy (EDPRS 2) set out targets that need to be achieved covering the period from 2013-2018. To monitor progress towards these goals and targets a list of indicators has been agreed on. At the same time, the country continues to make great progress towards achieving the Millennium Development Goals (MDGs).

The National Institute of Statistics of Rwanda (NISR) mandated to ensure the production of quality and timely official statistics has compiled the first metadata handbook. This metadata Handbook provides comprehensive information on the definition, method of computation, comments and limitations and sources of the data for each of EDPRS 2 and MDGs indicators. The initial handbook comprises of metadata sheets for EDPRS2 and MDG indicators which will be updated regularly.

We at NISR expect that this metadata handbook will ensure the use of consistent definition, method of computation and data sources for each indicator across the National Statistical System (NSS) which in return improves the quality and comparability of produced statistics. As a result, the handbook will support the provision of better data for relevant indicators used to monitor the goals and the targets in EDPRS 2 and MDGs.

I would like to thank the United Nations Statistics Division (UNSD) which funded the services of a consultant for the preparation of the metadata handbook. I would also like to thank the NISR team under the technical supervision and guidance of Department of Statistical Methods, Research and Publication who have worked relentlessly and all the Ministries, Department and Agencies (MDAs) and individuals who contributed towards the realization of this document. Finally, I highly encourage all key stakeholders to make full use of the handbook.



Yusuf MURANGWA
Director General, NISR

Introduction

1. Overview

The EDPRS 2 and MDGs indicators metadata handbook is designed to provide comprehensive information on the definition, method of computation, comments and limitations and sources of the data for each indicator. The purpose of this handbook is to promote the use of consistent definition, method of computation and data sources for each indicator across the NSS. The need to use common dimensions to define an indicator is to ultimately improve the quality of produced official statistics therefore promoting comparability and transparency of statistical data.

This handbook contains metadata sheets for 38 EDPRS2 and 43 MDGs indicators and has been divided into two parts: Part I consist of EDPRS2 indicators and Part II is related to MDGs indicators. The metadata for MDGs indicators have been reviewed putting into account the country settings. The classification of the indicators under each targets and goals in the handbook follows similar structure as of the EDPRS 2 and MDGs documents. This initial handbook does not contain all indicators and as more information becomes available and the list of indicators evolves so will the handbook be reviewed and updated.

2. Process

An international consultant with the support of a team composed of 2 -3 members from the NISR Statistical Methods, Research and Publication (SMRP) Unit reviewed the metadata of each indicator. For every indicator the team consulted credible range of national data sources with the exception of 6 EDPRS 2 indicators found under Accountable Governance and Foundational and Cross Cutting Issues where all the metadata including table format have been entirely provided by the RGB. Furthermore, the process involved numerous consultations with the national statistical office experts and MDAs. A review meeting was organized to present the first draft of the handbook with the active participation of NISR concerned heads of unit and experts as well as MINECOFIN. The reviewed document was later on shared to MDAs for final validation.

3. Structure of Handbook

For each indicator a metadata sheet following international standards has been developed providing all or some of the following information;

Metadata Sheet

Definition	Describes the basic definition and includes references to standards and classifications and clarification of technical terms included in the definition.
Method of Computation	Describes the algorithm used in the calculation of the indicator, providing the mathematical formula (if applicable). Identifies all statistics used to derive the indicator such as normalizing and weighting variables (for instance, the population).

Comments and limitations	Describes comments and limitations of the indicators including issues such as: comparability, sex disaggregating if applicable, presence of wide confidence intervals (such as for maternal mortality ratios).
Sources and Data collection	Describes the mechanism for obtaining data and the official responsible institution to report the data.
Sources of Discrepancies between Global and National Figures	Describes the main reasons for discrepancy between data and metadata used for national and global monitoring to improve understanding by users of the differences between country-level data disseminated through the MDGs global database and those available in country MDGs databases.
Periodicity	Provide the expected calendar of release for new data for each indicator, by the specialized agencies.
Responsible Institutions	Describes the main and key stakeholders that are accountable to report data for monitoring purpose.

PART I: Metadata for EDPRS 2 Indicators

EDPRS2 OUTCOME	INDICATORS FOR MONITORING PROGRESS
Increased national income	1. GDP per capita
Reduced poverty	2. Percentage of population living below the national poverty line
Reduced extreme poverty	3. Percentage of population living in extreme poverty
ECONOMIC TRANSFORMATION	
Accelerated growth exports	4. Exports to GDP ratio (Value of exports goods and services)
	5. Non-traditional exports as percentage of total merchandise exports
Increased private sector Investment and financing	6. FDI to GDP ratio
	7. Private investment as share of GDP
	8. Credit to the private sector to GDP ratio
Increased access to basic Infrastructure at the urban level	9. Proportion of urban households with access to electricity
	10. Proportion of urban households with access within 200m to improved drinking water source
	11. Proportion of urban households with access to an improved sanitation facility
RURAL DEVELOPMENT	
Increased productivity and sustainability of agriculture	12. Area under irrigation(Marshland& Hillside)
Enhanced rural settlements that facilitate access to basic services	13. Proportion of rural households living in planned Settlements (integrated &Economically viable)
Increased access to basic infrastructure for rural households	14. Proportion of rural households with access to electricity
	15. Proportion of rural households with access within 500m

	to an improved drinking water source
	16. Proportion of urban households with access to an improved sanitation facility
	17. Percentage of district class 2 earth roads(Feeder road) upgraded to gravel road
PRODUCTIVITY AND YOUTH EMPLOYMENT	
Availability of critical skills for service and industrial sectors	18. Percentage of employers satisfied with university graduates
Increased entrepreneurship and business development	19. Number of new SMEs registered annually
ACCOUNTAB LE GOVERNANCE	
Increased citizen satisfaction in participation in planning processes and solving their own problems	20. Participation and Inclusiveness
Improved public service delivery	21. Quality of Service delivery
FOUNDATIONAL AND CROSS CUTTING ISSUES	
Reduced population growth	22. Total Fertility Rate (TFR)
Equitable access to 12 years basic education	23. Transition rate from primary to lower secondary
	24. Transition rate from lower secondary to upper secondary
Improved education quality and learning outcomes across all levels of education	25. Pupil - qualified teacher ratio in Primary
	26. Pupil - qualified teacher ratio in Secondary
Reduced Infant Mortality	27. Infant Mortality Rate
Reduced Maternal Mortality	28. Proportion of births taking place in health facilities
	29. Maternal Mortality Ratio
Reduced child mortality	30. Under-five Mortality Rate
Increased use of modern contraceptives	31. Contraceptive Prevalence Rate of modern methods

	among women in union aged between 15-49 yrs.
Reduced Mother to-Child Transmission of HIV	32. HIV Positivity Rate among pregnant women attending Ante-natal Clinics
Enhanced rule of law, accountability and business competitiveness environment	33. Rule of Law
	34. Political Rights and Civil Liberties
	35. Control of Corruption, Transparency and Accountability
	36. Safety and Security
Increased awareness of the benefits of financial services and products	37. Percentage of adult population accessing financial services
Improved resource base	38. Tax revenue as percentage of GDP

1. GDP per capita

Definition	GDP per capita is the gross domestic product divided by midyear population. Gross Domestic Product is the sum of gross value added by all resident producers in the economy measured as the difference between production and intermediate consumption plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. GDP data are reported in RWF and in constant U.S. dollars. Constant dollar GDP is calculated using appropriate deflators thus factoring out the effects of inflation and allows easy comparisons between periods. Constant dollar GDP is also known as the real GDP. These statistics provide key information on the structure and development of the economy.
Method of Computation	GDP is calculated mainly on data coming from administrative sources. A Benchmark estimates are established every 3 - 5 years based on recent EICV survey. The calculation of GDP per capita for year t $GDP\ per\ Capita\ (t) = \frac{Yt}{Nt} \times 100$ Yt is the current GDP for year t, and Nt is the midyear population for year t.
Comments and Limitations	Measuring informal activities poses some challenges during the estimation of GDP.
Sources and Data collection	The National Institute of Statistics estimates annual and quarterly GDP and its components. Mid-year population is

	based on the Population and Housing Census and yearly projections. GDP per capita data are compiled and published in the National Accounts.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	NISR BNR, MINECOFIN
Periodicity	GDP per capita is estimated both on quarterly and annual basis. Annual estimates for calendar years and for the government's fiscal years are obtained by summing the relevant quarterly estimates.

2. Percentage of population living below the national poverty line

Definition	Defined as the percentage of the population living below the national poverty line which is on less than 64,000 RWF per adult equivalent per year measured in 2001 prices corresponding to 118, 000 RWF in 2010. The poverty line is a threshold of the value of total annual per capita consumption in a household below which an individual is considered poor. Aggregate household consumption is computed as the sum of expenditure on food as well as value of auto consumption, expenditure on non-food, health items, education, housing utilities, value of in-kind wages, other benefits received by the household and a measure of the use value of durable goods owned by the household. Consumption per capita is then computed as the total consumption per adult equivalent. Where adult equivalence is an aggregate indicator for household size which takes into account its age and sex composition. The poverty line is then set with reference to a minimum food consumption basket, judged to offer the required number of calories (2200 kcalories per day) for a Rwandan likely to be involved in physically demanding agricultural activity, along with an allowance for non-food consumption. The non-food consumption expenditure is determined as a function of food consumption.
Method of Computation	Household annual consumption per adult equivalent is computed and compared with the poverty line. Individuals living in households whose per capita consumption falls below the poverty line are considered as poor. $\%\ \text{of population living below the national poverty line} = \frac{N_p}{N} \times 100$ Where N_p denotes the number of population (adult equivalent) living below the poverty line and N denotes total

	number of population.
Comments and limitations	EICV surveys do not collect information on the intra-household distribution of consumption. Thus, the consumption based standard of living measure is based on the assumption that individuals are represented in the distribution by the consumption measure of the household they belong to. This fails to take account of inequality in distribution within the household.
Sources and Data collection	Data on household income, consumption and expenditure are collected through the EICV surveys carried out by NISR. The survey also collects information on non-consumption related dimensions of living standards.
Disaggregation - **Geographical**	National, Province, District
Responsible Institutions - **Main** - **Key Stakeholders**	NISR MINECOFIN
Periodicity	3 - 5 years

3. Percentage of population living in extreme poverty condition

Definition	Defined as the percentage of the population living below the food poverty line which is on 45,000RWF per adult equivalent per year measured in 2001 prices corresponding to 83,000 RWF in 2010. The threshold is set with reference to a minimum food consumption basket, judged to offer the required number of calories (2200 Kcalories per day) for a Rwandan likely to be involved in physically demanding agricultural activity. The food poverty line is then set as the cost of buying the food consumption basket if nothing was spent on non-food at all.
Method of Computation	Household annual consumption per adult equivalent is computed and compared with the food poverty line. Individuals living in households whose annual consumption falls below the threshold are considered as extreme poor. $\%\ \text{of population below the food poverty line} = \frac{N_{ep}}{N} \times 100$ N_{ep} denotes the number of population (adult equivalent) in extreme poverty condition, and N denotes the total population.
Comments and limitations	
Sources and Data collection	Data on household income, consumption and expenditure are collected through EICV survey carried out by NISR. This survey also collects information on non-consumption related dimensions of living standards.

Disaggregation - **Geographical**	National, Province ,District
Responsible Institutions - **Main** - **Key Stakeholders**	NISR MINECOFIN
Periodicity	3 - 5 years

ECONOMIC TRANSFORMATION

4. Exports to GDP ratio

Definition	Export to GDP ratio is the total value from exports divided by GDP. Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. General exports consist of: (a) Exports of nationally produced goods (including products after inward processing which changed their origin from foreign) from any part of the statistical territory, including free zones and customs warehouses; (b) Re-exports of foreign goods from any part of free zones and customs warehouses. Re-exports are exports of foreign goods which were previously recorded as imports. Merchandise exports consist of goods and services but the balance of trade is goods only. Services cover transport, travel, communications, construction, IT, financial, other business, personal and government services, as well as royalties and license fees. Gross Domestic Product is the sum of gross value added by all resident producers in the economy measured as the difference between production and intermediate consumption plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.
Method of Computation	Export to GDP ratio is computed as $\text{Export to GDP ratio} = \frac{\text{Total Export}}{\text{GDP}} \times 100$
Comments and limitations	While it is possible to capture information on the main products exported it has been difficult to know the final destination of exports. Also informal exports are not adequately captured.
Sources and Data	Customs data constitute the primary source for the

collection	compilation of merchandise trade statistics by the BNR. In the case of coffee and tea exports, these data are replaced by the information provided directly by NAEB. All formal imports and exports are recorded by RRA (Rwanda Revenue Authority). BNR calculates indices of average export values and publish the foreign trade statistics in its bulletin entitled BNR statistical Bulletin and Annual Report. GDP data are compiled and published in the National Accounts by NISR. Thus, export to GDP ratio is computed by the Macro-Economic Department of MINECOFIN.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	MINECOFIN, BNR, NISR, MINICOM, NAEB, RRA
Periodicity	Annually, Quarterly

5. Non-traditional exports as percentage of total merchandise exports

Definition	Defined as the total value of all non- traditional exports of goods to the total exported merchandise expressed as a percentage. Non-traditional exports are all other exports outside Coffee, Tea, Cassiterite, Coltan, Wolfram, and other mineral exports referred as traditional exports that are produced in the country and provided to the rest of the world. It shows the share of all non- traditional exports to the total exports.
Method of Computation	Non-traditional export as percentage to total merchandise export is computed as $\frac{\text{Non-traditional Export}}{\text{Total Exports}} \times 100$
Comments and Limitations	
Sources and Data collection	Customs data constitute the primary source for the compilation of merchandise trade statistics by the BNR. All formal imports and exports are recorded by RRA (Rwanda Revenue Authorities), importers and exporters are requested to fill an import and export declarations. Exports from tourism sector are collected by RDB(Rwandan Development Board). BNR calculates indices of average export values and publish the foreign trade statistics in its

	bulletin entitled BNR statistical Bulletin and annual report.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	BNR MINECOFIN, MINICOM, RDB, RRA
Periodicity	Annual and Quarterly

6. Foreign Direct Investment to GDP ratio

Definition	Foreign Direct Investment (FDI) is the amount of inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors and is divided by GDP. FDI is the inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. The lasting interest is deemed to exist if the direct investor acquires at least 10% of the voting power of the direct investment enterprise. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. Gross Domestic Product is the sum of gross value added by all resident producers in the economy measured as the difference between production and intermediate consumption plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.
Method of Computation	FDI to GDP is computed as; $\text{FDI to GDP ratio}=\frac{\text{FDI}}{\text{GDP}}\times 100$
Comments and limitations	
Sources and Data collection	The National Bank of Rwanda in collaboration with Rwanda Development Board (RDB), National Institute of Statistics of Rwanda (NISR) and Private Sector Federation (PSF) conducted the Foreign Private Capital (FPC) Census annually. This census concerns all new companies registered as foreign direct investments by Rwanda Development Board as well as those which declared Foreign

	Assets and Liability. GDP data come from national accounts records. The indicator is computed by MINECOFIN Macro-Department based on FDI and GDP data.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	MINECOFIN NISR, BNR, RDB, MINICOM
Periodicity	Annual

7. Private investment share in GDP

Definition	Private investment share in GDP ratio measures the share of private investments in total production. Private investment is an industry, project or any other activity provided that the enterprise is profit-motivated and operated on commercial principles. According to the Rwandan investment code, these projects are supposed to have an investment worth of at least $100,000 when owned by local investors and $250,000 when owned by foreign investors. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.
Method of Computation	The indicator is computed as; $\text{Private Investment to GDP Ratio} = \frac{\text{Total Private Investment}}{\text{GDP}} \times 100$
Comments and limitations	Registered investments by RDB do not represent the actual/real value of investments within the country.
Sources and Data collection	Data on GDP are collected by NISR. Private investment to GDP ratio is computed by the MINECOFIN Macro department.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	MINECOFIN NISR

Periodicity	Annual

8. Credit to Private Sector to GDP ratio

Definition	Credit to private sector as percentage of GDP is the total value of credit provided to private sector as percentage of GDP. Credit to private sector refers to financial resources provided to the private sector such as through loans, purchases of non-equity securities, trade credits and other accounts receivable that establish a claim for repayment. The establishment census defines private sector as an establishment owned and run by one or a group of people. It may be a household establishment that employs unpaid family workers or an establishment that exclusively employs regular wage workers. This includes cooperatives and private health/education institutions. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.
Method of Computation	Credit to private sector as percentage of GDP is calculated as $\text{Credit to private sector to GDP ratio} = \frac{\text{Total credit to private sector}}{\text{GDP}} \times 100$
Comments and limitations	
Sources and Data collection	The data on credit to the private sector are taken from the RDB. GDP estimates come from national accounts. The indicator is produced by MINECOFIN Macro Department based on data from RDB and NISR.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	MINECOFIN RDB, MINICOM
Periodicity	Annual

9. Percentage of urban households with access to electricity

Definition	It is the number of urban households who use electricity as

	their main source for lighting to the total number of urban households expressed as a percentage.
Method of Computation	The indicator is computed as; $\frac{P_e}{P_t} \times 100$ Where P_e denotes the number of urban households who declared using electricity as their main source for lighting and P_t denotes the total number of urban households.
Comments and limitations	
Sources and Data collection	Data on household access to electricity are collected through the PHC and EICV surveys carried out by NISR.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, District Type of habitat (planned and unplanned urban areas)
Responsible Institutions - **Main**	NISR
Periodicity	3 - 5 years for EICV , 10 years for PHC

10. Proportion of urban households with access within 200m to improved drinking water source

Definition	Defined as the share of urban households with access within 200m to an improved drinking water source. The source should be reliable, affordable, provide an adequate quantity of drinking water (minimum 20litre/person/day). The type of improved drinking water source includes piped water, protected wells and springs, tubewell/borehole, bottle water as well as rainwater collection.
Method of Computation	Indicator is computed as; $\frac{N_a}{N} \times 100$ Where N_a denotes number of urban households with access within 200m to improved drinking water source and N denotes total number of urban households.
Comments and Limitations	Given the lack of nationally representative data on drinking water quality and safety and the high costs and technical difficulties of collecting such information at a large scale, improved drinking water source is used as a proxy for access to safe drinking water. In the context of Rwanda, rain water is considered as improved source of water. However, the inclusion of rain

	water in the improved sources of water does not affect the level of the indicator to any significant degree since less than 1% of households use it. Thus, this calls for a need to establish a clear national definition on what are the types of improved drinking water sources.
Sources and Data collection	Data are collected through the EICV by NISR.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, District Type of improved water sources
Responsible Institutions - **Main**	NISR
Periodicity	3 - 5 years EICV

11. Proportion of urban households with access to improved sanitation facilities

Definition	The proportion of the urban households using an improved sanitation facility is the share of the population with access to facilities that hygienically separate human excreta from human contact. Sanitation types considered 'improved' are flush toilets ,pit latrines with a floor slab and ventilated improved pit latrine
Method of Computation	Percentage of urban households having improved sanitation facilities is computed as; $\frac{N_a}{N} \times 100$ Where N_a denotes number of urban households with access to improved sanitation facilities and N denotes total number of urban households.
Comments and limitations	
Sources and Data collection	Data are collected through the EICV, DHS and PHC surveys.
Disaggregation - **Geographical** - **Other Characteristics**	National ,Province, District Types of improved sanitation facility and habitat.
Responsible Institutions - **Main**	NISR
Periodicity	3 -5 years for EICV and DHS; 10 years for PHC.

RURAL DEVELOPMENT

12. Area under irrigation (Marshland and Hillside)

Definition	Area under irrigation refers to the total area (Marshland and hillside) equipped with water management infrastructure to provide water to crops including areas equipped for full or partial control irrigation crops. The major types of irrigation system that are utilized in Rwanda are : - Surface system: where irrigation water is applied to the plant by means of furrows/border/basin and uses the soil as the mean of application. - Pressurized sprinkler system: includes sprinkler/pivots/rain guns. - Localised system: includes dip/hose/bucket irrigation.
Method of Computation	Area under irrigation is the total area of land under irrigation schemes expressed in hectare. The total area of irrigated land is obtained through measurement using GPS or from completed irrigation projects.
Comments and limitations	It has been difficult to obtaining data on some of the irrigated land pre -2008.
Sources and Data collection	Data on area under irrigation are collected by the irrigation and mechanism task force which is under MINAGRI and published on their annual reports.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	MINAGRI RAB
Periodicity	Annual

13. Proportion of rural households living in planned settlements (integrated & economically viable)

Definition	It is defined as the percentage of rural households living in "IMIDUGUDU settlements". Two definition of UMUDUGUDU exists in Rwanda; one is used to refer to the lowest administrative entity "village" and in our context UMUDUGUDU is defined as a clustered rural settlement made of between 100 and 200 houses by site in rural areas. Measurements of plot reserved for UMUDUGUDU » range from 10 to 20 hectares with a possibility or capacity of extension and as far as possible a space provided for various non-agricultural activities so as to allow the population to earn their lives.
Method of Computation	The indicator is calculated as ;

	$=\frac{P_s}{P_t}\times 100$ Where P_s denotes the number of rural households living in clustered settlements and P_t denotes the total number of rural households
Sources and Data collection	
Comments and limitations	EICV surveys collect data on settlement and household housing characteristics.
Disaggregation - **Geographical** - **Other Characteristics**	National size of dwelling, number of households
Responsible Institutions - **Main**	NISR
Periodicity	3 - 5 years

14. Percentage of rural households with access to electricity

Definition	It is the number of rural households who use electricity as their main source for lighting to the total number of rural households expressed as percentage.
Method of Computation	The indicator is computed as; $\frac{P_e}{P_t}\times 100$ Where P_e denotes the number of rural households who declared using electricity as their main source for lighting and P_t denotes the total number of urban households.
Comments and limitations	
Sources and Data collection	Data on household access to electricity are collected through the PHC and EICV surveys carried out by NISR.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, District, Wealth quintiles, Disability status, Type of habitat (Unplanned clustered rural housing, isolated rural housing)
Responsible Institutions - **Main**	NISR
Periodicity	3 - 5 years for EICV , 10 years for PHC

15. Proportion of rural households with access within 500m to improved drinking water source

Definition	Defined as the share of rural households with access within 500m to an improved drinking water source. The source should be reliable, affordable, provide an adequate quantity of drinking water (minimum 20litre/person/day). The type of improved drinking water source includes piped water, protected wells and springs, tube well /borehole, bottle water as well as rainwater collection.
Method of Computation	The indicator is computed as; $\frac{N_a}{N} \times 100$ Where N_a denotes number of rural households with access within 500m to improved drinking water source and N denotes total number of rural households.
Comments and Limitations	Given the lack of nationally representative data on drinking water quality and safety and the high costs and technical difficulties of collecting such information at a large scale, improved drinking water source is used as a proxy for access to safe drinking water. In the context of Rwanda, rain water is considered as improved source of water. However, the inclusion of rain water in the improved sources of water does not affect the level of the indicator to any significant degree since less than 1% of households use it. Thus, this calls for a need to establish a clear national definition on what are the types of improved drinking water sources.
Sources and Data collection	Data are collected through the EICV by NISR.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, District Type of improved water sources
Responsible Institutions - **Main**	NISR
Periodicity	3 - 5 years EICV

16. Percentage of rural households with access to improved sanitation facilities

Definition	The proportion of the rural households using an improved sanitation facility is the share of the population with access to facilities that hygienically separate human excreta from human contact. Sanitation types considered 'improved' are

	flush toilets, pit latrines with a floor slab and ventilated improved pit latrine
Method of Computation	Percentage of rural households having improved sanitation facilities is computed as; $\frac{N_a}{N} \times 100$ Where N_a denotes number of rural households with access to improved sanitation facilities and N denotes total number of rural households.
Comments and limitations	
Sources and Data collection	Data are collected through the EICV, DHS surveys and PHC.
Disaggregation - **Geographical** - **Other Characteristics**	National ,Province, District Types of improved sanitation facility and habitat.
Responsible Institutions - **Main**	NISR
Periodicity	3 -5 years for EICV and DHS and 10 years for PHC.

17. Percentage of district class 2 earth roads (Feeder roads) upgraded to gravel road

Definition	Is defined as the total length of district earth roads upgraded to gravel road to the total length of earth roads found in districts expressed as a percentage Class 2 earth roads are arterial roads which connect district roads to rural community centres which are inhabited as an agglomeration. A gravel road is a type of unpaved road surfaced with gravel /stones.
Method of Computation	Percentage of District earth upgraded to gravel road is computed as $\frac{L_1}{L_2} \times 100$ Where L_1 denotes length in km of district roads upgraded to gravel road and L_2 total length of district earth roads
Comments and limitations	
Sources and Data collection	Data comes from Administrative records from MINAGRI
Disaggregation	District

- **Geographical**	
Responsible Institutions - **Main** - **Key Stakeholders**	MINAGRI MININFRA, RTDA, DISTRICTS
Periodicity	Annual

PRODUCTIVITY AND YOUTH EMPLOYMENT

18. Percentage of employers satisfied with university graduates

Definition	Employers satisfied with university graduates are the proportion of the formal sector employers who expressed their satisfaction towards the performance of university graduates. The formal sectors are all establishments registered by RDB and or RRA and local government and employ at least 5 employees or employ less than 5 employees but keep regular accounts. The university graduates are holders of university degrees regardless of the level or the field of studies i.e. it includes post-graduate level diploma, master or doctorate.
Method of Computation	The percentage of employers satisfied with university graduates is computed as $\frac{N_u}{N_e} \times 100$ Where N_u denotes the summation of formal sector employers who answered "fully satisfied" or "satisfied" by the performance of university graduates and N_e denotes all formal sector employers who were surveyed.
Comments and limitations	Satisfaction levels are difficult to measure and subjective to each employer as graduates may have similar capacity and performance but the employer may appreciate what they do differently.
Sources and Data collection	Baseline data are derived from the Manpower Survey conducted by NISR and subsequent surveys will be carried by HEC.
Disaggregation - **Other Characteristics**	Type of activity of the employers (Public, Private, Health, Education and NGO) and specialization of the graduates
Responsible Institutions - **Main** - **Key Stakeholders**	NSIR MIFOTRA
Periodicity	Annual

19. Number of new SMEs registered annually

Definition	New SMEs registered annually is the total number of newly registered of Micro, Small and Medium (SMEs) size enterprises every year. Based on the SME Development Policy 2010, SMEs have to fulfil two of the three indicators- net capital investments, annual turnover and number of employees. A Micro Enterprise is defined as an enterprise employing 1 to 3 people; annual sales/revenue turnover of less than 0.3million RWF and net capital investment of less than 0.5million RWF. A Small Enterprise is defined as an enterprise employing 4 to 30 people; annual sales/revenue turnover of between 0.3 to 12million RWF and net capital investment of between 0.5 to 15million RWF. A Medium Enterprise is defined as an enterprise employing 31 to 100 people; annual sales/revenue turnover of 12 to 50 million RWF and net capital investment of 15 to 75million RWF.
Method of Computation	It is the total number of newly registered business in the office of the registrar general of a small or medium Enterprise.
Comments and limitations	Figures used so far are from the business plan submitted while registration and do not represent the actual level of turnover or employment and can be only assessed through surveys.
Sources and Data collection	Data on number of SMEs that register every year are collected by RDB and reported by MINICOM.
Disaggregation - **Geographical**	National , Province and district
Responsible Institutions - **Main** - **Key Stakeholders**	RDB, MINICOM, PSF
Periodicity	Annual

ACCOUNTABLE GOVERNANCE & FOUNDATIONAL AND CROSS CUTTING ISSUES

20. 20a. Rule of Law; 20b. Political Rights and Civil Liberties, 20c. Participation and Inclusiveness; 20d. Control of Corruption, Transparency and Accountability, 20e. Safety and Security; 21. Quality of Service delivery

Definition	**20a. RULE OF LAW** Rule of law in the Rwandan context is defined as a principle of governance in which the governors and the governed, all people, institutions and entities both public and private are subjected and accountable to the laws which are equally enforced and independently adjudicated. Rule of law sub-indicators include the following: Separation of powers, Fairness of the Judiciary, Performance of the Prosecution and the Access to legal aid. **20b. POLITICAL RIGHTS AND CIVIL LIBERTIES**[1] Political Rights are understood and inspired by natural justice (procedural fairness) in law, such as the rights of accused, including the right to a fair trial; due process; the right to seek redress or a legal remedy; and rights of participation in civil society and politics such as freedom of association, the right to assemble, the right to petition, the right of self-defense, and the right to vote. Civil liberties are civil rights and freedoms that provide an individual with specific rights, freedom from torture and death, the right to liberty and security, freedom of conscience, religion, expression, press, assembly and association, speech, the right to privacy, the right to equal treatment and due process and the right to a fair trial, as well as the right to life. Other civil liberties may also include the right to own property, the right to defend oneself, and the right to the bodily integrity. This composite indicator is motivated by the effort to track trends in development of democratic tendencies and checks and balances ensuring the political and civil freedoms of the citizens of Rwanda. 7 sub-indicators map state and non-state actors in the political process, role of media and access to information, plurality of political parties and respect to human rights. The measured sub-dimensions under this indicator include: Quality of Democracy, Vibrancy of non-state actors in policy formulation, Political parties

[1] Inspired by the Constitution of the Republic of Rwanda, Chapter One: Fundamental Human Rights, article 10-44

	registration and operation, Access to Public Information, Rights to Media Freedom, Respect to Human Rights and Ratification of core Human Rights convention. **20c. PARTICIPATION AND INCLUSIVENESS**[2] Participation and inclusiveness refer to different mechanisms for the public to express opinions freely in regards to political, economic, management or other social decisions. It is tested within this domain weather participatory decision making can take place along any realm of human social activity in Rwanda. The distribution of power amongst different powers and the strength of citizen participation in the context of decentralization are at the core of this indicator. An emphasis is also put on the gender equality in decision making as a prerequisite for an all-inclusive society giving voice in disregard to gender, alliance to the state actors or attribution to executive, legislative or judiciary powers. Against this background, we measure sub-indicators as Citizen Participation, Decentralization, Civil Society Participation, Gender equality in leadership and Power sharing. **20d. CONTROL OF CORRUPTION, TRANSPARENCY AND ACCOUNTABILITY**[3] The principle of Control of Corruption, Transparency and Accountability, requires mechanisms to measure the extent to which public power is exercised for private gain, including both petty and grand forms of corruption and the strength and effectiveness of a country's policy and institutional framework to prevent and combat corruption. The ability to publicly scrutinize the public administration and executive and the right to access information on the activity and transparency of public servants are of a special attention. In the context of Rwanda and similar to analogous international indexes, RGS 2013 analyses the Incidence of corruption, Control of corruption and Transparency and accountability. **20e. SAFETY AND SECURITY**[4] Personal safety and right to exercise a peaceful and secure life is granted in the Constitution of the Republic of Rwanda. Safety is under this indicator understood as a condition of

[2] Inspired by the Constitution of the Republic of Rwanda, article 167

[3] Inspired by the Constitution of the Republic of Rwanda, article 182-183

[4] Inspired by the Constitution of the Republic of Rwanda, article 169-176

	being protected against physical, social, spiritual, financial, political, emotional, occupational, psychological, educational or other types or consequences of failure, damage, error, accidents, harm or any other event which could be considered non-desirable. While security is the degree of resistance to, or protection from, harm. Also called social safety or public safety, security is the degree of resistance to, or protection from harm. In line with the conventional international measurement, RGS 2013 tackles safety and security in terms of maintaining regional security, national security, personal and property security and disaster management. In the Rwandan context, reconciliation and justice and social cohesion and unity are given an emphasis and provide dedicated sub-indicators for these domains. The following sub-indicators are observed: Maintaining Security, National Security, Regional and International Security, Personal and property security, Disaster Management and Reconciliation, social cohesion and unity. **21. QUALITY OF SERVICE DELIVERY** The provision of Service delivery is a fundamental role of government and private sector and relates closely with accountability and transparency, responsiveness and fairness, participation and inclusion. Service delivery engages service providers and service users; governmental or private sector institution and citizens; government and service providers. Quality of Service Delivery indicator measures the ability of the central and local government to provide vital services to the population in a citizen-centered manner. Sufficient quality, standards of services received, value for tax-payers' money, accountability and transparency in the domains of Local Government, Justice, Health, Education, Land, Agriculture, Water and Infrastructure; inspects the satisfaction of the citizens with the ability of the public and private sectors in Rwanda to serve the needs to the public. In RGS 2013, infrastructure is defined as the basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons. Local Government, Justice Sector, Health Sector, Education Sector, Land Sector, Agriculture and Infrastructure have their dedicated sub-domains under this composite indicator.

Method of Computation	The development of indicators, data collection and identification followed the transparent and participatory process outlined below. ***Developing indicators*** The composite indicators as well as sub- and sub-sub indicators are developed based on internationally recognized research standards for governance measurement and national policies and frameworks. The process involved consolidating a set of indicators and sub-indicators on which the scorecard would be built. Relevant national institutions, private sector and civil society with expertise were consulted for input on the indicators. This process was instrumental in developing the first draft of the set of indicators, sub-indicators and sub sub-indicators based on their relevance to measure trends in the governance landscape. Also, existing indicators were reshaped and reformulated. Hence, "Investing in people" was reformulated as "Investing in Human and Social Development". In the same respect, "Quality of democracy" was changed to "Democratic Dispensation". On participation and inclusiveness, "Decentralization" was considered as standing alone sub-sub indicators as well as Citizen Participation. ***Identifying data source*** It was important to identify a range of relevant data sources. These sources include 0fficial record or secondary data from credible Rwandan institutions, credible citizen/perception surveys, and expert surveys, especially those conducted by civil society organizations and research institutions. The selected survey data sources were first analyzed in detail to assess their methods and sampling in accordance with international standards of quantitative methods of social sciences. The process also involved identifying and consulting key institutions that were to provide input and data to be incorporated in the scorecard. In collaboration with selected data provider institutions, focal persons were designated and assigned to facilitate data collection and participate in the process of designing and developing the RGS 2013. This step helped to re-adjust the set of indicators based on what would accurately represent the reality on the ground. It is also in this regard that the RGB, in collaboration with TI-Rwanda established a team of CSO/independent experts from CSO, media and academia to generate expert survey based data.

Gathering and verifying data

In this phase, RGB researchers worked closely with identified focal persons in institutions and other data providers to collect the required hard data. They also conducted desk research using citizen and expert perception surveys, reports produced at national level. Hard data from different institutions were subjected to double-checks and critical analysis to ensure adequacy and high quality of data. In this process, RGB researchers involved key institutions and data providers. Data were also double checked, providers were repeatedly consulted to verify data validity and address the omission of certain data. This step aimed at ensuring the received data are the most true and verified data from respective of institutions. Finally, to ensure sufficient complexity and comprehensiveness in analysis, the RGB conducted its own expert survey.

Scoring and data analysis

After the final confirmation of data, the RGB updated its database before elaboration of scores using standard statistical methods. The draft scorecard was submitted to relevant institutions (data providers) and the institutions were given the opportunity to provide comments. After integrating relevant feedback, the RGB proceeded to data analysis and publication.

Scoring methods: from database to scorecards

All sub-sub-indicators are weighted equally and averaged to form a sub-indicator score. In turn, sub-indicators are also weighted equally and averaged together to generate an overall score for each indicator.

a) Scoring using existing percentages: In most cases, data compiled from surveys (citizen and expert) are scored automatically as percentages.

b) Performance scoring: Hard data related to performance are also expressed as percentages.

c) Scoring against national and international targets: In some cases, percentages have been calculated against national and international targets (EDPRS/SSP, Vision 2020, MDGs). In this case, the set targets would be considered as 100%, therefore setting the ending point vis-à-vis the current status or achievement. The achievement or exceeding of a target would result in full score. Partial achievement of the target yields corresponding relative score in percentage points.

d) Scoring sub sub-indicators on gender equality: These were scored as follows: A sub sub-indicator which would reach the parity of men and women of 50% would score 100% as an ideal gender balance in the given sub-domain.

e) Scoring based on forecasting methods. In case the analysed indicator doesn't have an annual target, the scoring is based on forecasting methods comparing the performance of previous years. In this case, the forecasts of the analysed year are considered as targets and the indicator is assessed comparing the forecasts against the performance of the same year.

Ranking system

The ranking of the indicators, sub-indicators and sub-sub-indicators results from respective scores. The color-coded ranking system breaks down as follows:

Table 1: Ranking System

Scores	Rank (In Colors)
0-25	R
25.01-50	A
50.01-75	Y
75.01-100	G

The colour rating of any given indicator is intended to give only the most general sense of performance on that indicator, and should not be relied upon in and of itself as a measure of whether or not satisfactory performance has been achieved. Instead, the precise numerical score, the composition of that score from sub-indicators, and the nature of the governance category being evaluated and of the source data should be taken into consideration in evaluating indicator rankings.

Comments and limitations

Basically data are collected annually. However due to the nature of certain indicators, some data can last more than one year. It is the case of assessing power sharing, women equality in decision making, elections, etc. where the mandate after election runs for five years or more. Other data from perception survey are also collected after more than one year. It the case of Rwanda Media Barometer (3 years), Civil Society Barometer (3 years), Rwanda Reconciliation Barometer (3 years) etc. For secondary data, some institutions are delaying in providing regular data for consideration. It can happen that an indicator may have different figures from different institutions; in this case we consider the data from the institution responsible for this

	indicator.
Sources and Data collection	As in the previous editions, the greatest strength of the Rwanda Governance Scorecard is its plurality of multiple sources to construct the indicators, sub-indicators and sub sub-indicators. They were developed on three main bases: ▪ International frameworks ▪ International indexes ▪ Home-grown indicators International indexes and frameworks consulted include the Worldwide Governance Indicators, Freedom House assessments, the Mo Ibrahim Index of African Governance, Transparency International assessments, Millennium Challenge Corporation (MCC) criteria, Millennium Development Goals (MDG) and the Global Integrity Index. National policies and frameworks are the main sources of data. The most prominent include but are not limited to Vision 2020; the Justice, Reconciliation, Law and Order Sector (JRLOS); Economic Development Poverty Reduction Strategy (EDPRS I & EDPRS II); and the Joint Governance Assessment (JGA). Also, data from Rwanda-based research institutions were used. The RGS 2013uses three types of data: secondary/hard data, perception surveys and expert surveys. ***Secondary/ Hard data*** Measuring good governance requires assessing progress against targets. With that in mind, RGB researchers collected and consolidated data from different public institutions (Ministries, Government Commission and Agencies), Civil Society Organizations (CSOs) and Private Sector Organizations. Data collected in this category consists mainly of reports and other administrative data collected from the aforementioned institutions. Data were verified and cross-checked to the fullest extent possible, including organizing inter-institution sessions to discuss the accuracy of data and scores. ***Perception surveys*** Good governance is also about satisfying citizen needs and aspirations. To root the RGS firmly in the realities of the Rwandan people, data from various perception surveys conducted by local government and non-governmental institutions, including the RGB, were used. These include (but are not limited to) the Rwanda Reconciliation Barometer 20125, the Citizen Report Card 20136, the Civil Society

[5] Conducted by the National Unity and Reconciliation Commission (NURC)

	Development Barometer7, the Africa Governance Report8, IRDP Local Governance Barometer 2012, etc. Perception surveys are of huge importance due to the large sample on which some of the surveys are based. Citizen Report Cards by example gather an enormous sample of over 10 thousand households and are thus highly statistically representative. ***Expert surveys*** Assessing governance holistically requires going beyond quantitative data and citizen perception surveys. National experts with wide experience on issues of governance were also consulted to provide qualitative analysis. The RGB, therefore, also utilizes expert surveys conducted by Rwandan institutions to capture dynamics and complexities in the governance landscape. These include an expert survey conducted by the RGB in collaboration with Transparency International-Rwanda (TI-Rwanda), the Civil Society Development Barometer by TI-Rwanda. The experts that contributed to the RGB-TI Rwanda expert surveys were from Rwandan non-state institutions including local NGOs, media and academia. Expert individuals were selected on the basis of their expertise, objectivity and independence and were surveyed on a confidential basis.
Disaggregation - **Geographical**	National, District
Responsible Institutions - **Main** - **Key Stakeholders**	 RGB JRLOS
Periodicity	Annual, June

22. Total Fertility Rate (TFR)

Definition	It measures the average number of births a group of women would have by the time they reach age 50 if they were to give birth at the current age-specific fertility rates. The TFR is expressed as the average number of births per woman. For current fertility rates, the DHS survey uses the period 1-36 months before the survey. As such, it's important to point out that the time reference of TFR is not the year in which the survey is undertaken; rather it is the three years period preceding the survey date. Hence, if an exact time point is needed as a time reference, it must be taken as the mid of the

7 Conducted by Rwanda Governance Board (RGB)
[7] Conducted by Transparency International-Rwanda
[8] Conducted by National University's Center of Conflict Management (CCM)

	three-year interval preceding the survey date.
Method of Computation	Total fertility can be computed as the sum of age-specific fertility rates weighted by the number of years in each age group, divided by 1,000. $TFR = \frac{\sum_{a=15-19}^{45-49} f_a}{1000}$ Where f_a is the age-specific fertility rate for women whose age corresponds to the five-year age group a. The age specific fertility rates are those for the seven five-year age groups from 15-19 to 45-49.
Comments and limitations	- Underreporting of births, in particular, the omission of children living elsewhere and children who died very young (a few days or hours after birth), which can result in underestimation of fertility levels. - Misreporting of date of birth and/or age and, in particular, the tendency to round off age or year of birth, which can result in under or overestimation of fertility at certain ages and/or for certain periods. - Selective survival bias or selectivity effect because the women surveyed are those who have survived. - Civil registration systems are considered the best source of information on total fertility and Rwanda should endeavour to strengthen civil registration and vital statistics systems.
Sources and Data collection	The fertility rates are collected through PHC and DHS. Each woman was asked if she had ever given birth and her complete birth history was collected, including the child's sex, date of birth, and survival status. The birth history includes; - All the births the respondent has had in the order in which they occurred starting with her first birth. - The names of all of her children, from all marriages and unions, whether or not they are still alive, from the first to the last. - If the woman reports that she had a multiple birth (twins, triplets, etc.), record each of the children on a separate line. The only births that are not included are stillbirths.
Disaggregation - **Geographical** - **Other Characteristics**	National ,Province, District, & Residence(Urban/rural) Wealth quintiles , Education level

Responsible Institutions - **Main** - **Key stakeholders**	 NISR MOH
Periodicity	3 to 5 years for DHS and 10 years for PHC

23. Transition Rate from primary to lower secondary

Definition	Transition Rate from primary to lower secondary is defined as the number of new entrants to the lower first class of secondary education in a given year expressed as a percentage of the number of pupils enrolled in the last class of primary education in the previous year. Only new pupils entering the next level of education are given consideration; repeaters at this level are eliminated.
Method of Computation	Transition rate for primary to lower secondary is calculated as follows; $TR=\frac{\text{Number of New pupils in S1 in year t}}{\text{Number of pupils in P6 in year t-1}}\times 100$ Where S1 denotes senior one which is the 1st class of lower secondary education and P6 denotes primary six which is the last class of primary education.
Comments and limitations	
Sources and Data collection	Data are collected from schools by the Sector Education officers using questionnaires. District Education Officers review and report to MINEDUC. Education data are compiled at national level and published in the Education Statistics year book.
Disaggregation - **Geographical** - **Sex**	National, Province , District, Residence (Rural/ Urban) Male/Female
Responsible Institutions - **Main** - **Key Stakeholders**	MINEDUC District, Sector level
Periodicity	Annual

24. Transition Rate from lower secondary to upper secondary

Definition	Transition Rate from lower secondary to upper secondary is defined as the number of new entrants in upper secondary education expressed as a percentage of the number of pupils enrolled in lower education in the previous year. Only new

	pupils entering the next level of education are given consideration; repeaters at this level are eliminated.
Method of Computation	Transition Rate for secondary is computed as $TR=\frac{\text{Number of New pupils in S4 in year t}}{\text{Number of pupils in S3 in year t-1}}\times 100$ Where S4 denotes the 1st class of upper secondary education and S3 denotes senior 3 which is the last class of lower secondary education.
Comments and limitations	
Sources and Data collection	Data are collected from schools by the Sector Education officers using questionnaires. District Education Officers review and report to MINEDUC. Education data are compiled at national level and published in the Education Statistics year book.
Disaggregation - **Geographical** - **Sex**	National, Province, District, Residence (Rural/ Urban) Male/Female
Responsible Institutions - **Main** - **Key Stakeholders**	MINEDUC District, Sector level
Periodicity	Annual

25. Pupil-Qualified teacher ratio in primary

Definition	Pupil to qualified teacher ratio in primary is the average number of pupils per qualified teacher in primary education in a given school year. Qualified teachers at primary level are those who completed 3 years of upper secondary level education in teaching a subject matter.
Method of Computation	Pupil qualified Teacher is computed as $PTR=\frac{\text{Total number of pupils in Primary level of education in year t}}{\text{Total number of qualified teachers in Primary level of education in year t}}$
Comments and limitations	
Sources and Data collection	Data are collected from schools by the Sector Education officers using questionnaires. District Education Officers

	review and report to MINEDUC. Education data are compiled at national level and published in the Education Statistics year book.
Disaggregation - **Geographical**	National, Province, District
Responsible Institutions - **Main** - **Key Stakeholders**	MINEDUC District, Sector level
Periodicity	Annual

26. Pupil-Qualified teacher ratio in secondary

Definition	Pupil to qualified teacher ratio in secondary is the average number of pupils per qualified teacher in secondary education in a given school year. Qualified teachers at Secondary level are holders of a bachelor degree and above in teaching a subject matter.
Method of Computation	Pupil Qualified Teacher is computed as; $PTR = \frac{\text{Total number of pupils in secondary level of education in year t}}{\text{Total number of qualified teachers in Secondary level of education in year t}}$
Comments and limitations	
Sources and Data collection	Data are collected from schools by the Sector Education officers using questionnaires. District Education Officers review and report to MINEDUC. Education data are compiled at national level and published in the Education Statistics year book.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key Stakeholders**	MINEDUC District, Sector level
Periodicity	Annual

27. Infant Mortality Rate (IMR)

Definition	Infant mortality rate is the probability (expressed as a rate per 1000 live births) of a child born alive in a specified period dying before reaching the age of one. The time reference of IMR is not the year in which the survey is undertaken; rather it is the five years period preceding the survey date. Hence, if an exact time point is needed as a time

	reference, it must be taken as the mid of the five-year interval preceding the survey date. A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the 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 a live birth.
Method of Computation	IMR is derived from DHS data using the direct method. The direct method uses data collected on birth histories of women of childbearing age and produces the probability of dying before age one for children born alive, among women of childbearing age, during five year periods before the survey. Direct method require each child's date of birth, survival status, and age of the child on the date of the interview if alive and if not alive the age at death of each live births. The Infant Mortality Rate is computed as follows: $IMR=\frac{D_{<1yr}}{L_b}\times 1000$ Where D <1yr denotes the number of deaths of infants (<1yr of age) in the last 5 years before the survey and Lb is the total number of live births in the last 5 years before the survey.
Comments and limitations	Direct estimates of infant mortality based on survey data may suffer from mothers misreporting their children's birth dates, current age or age at death—perhaps more so if the child has died. The heaping of deaths at age 12 months is especially common. Age heaping may transfer deaths across the one-year boundary and lead to underestimates of infant mortality rates.
Sources and Data collection	The data used to compute the IMR mortality rates were derived from the birth history section of the Woman's Questionnaire in DHS.
Disaggregation - **Sex** - **Geographical** - **Other Characteristics**	 Male/Female National , Province ,District, Residence(Urban/ Rural) Socio-economic characteristics of mothers (education, wealth quintiles) Note that the reference year for IMR by socio-economic characteristic is 10 years period preceding the survey.

Responsible Institutions - **Main** - **Key Stakeholders**	NISR MOH
Periodicity	3 to 5 years

28. Proportion of births taking place in health facilities

Definition	Defined as the number of deliveries that occurred in health facilities to the total number of deliveries expressed as a percentage.
Method of Computation	Proportion of births taking place in health facilities is computed as; $\frac{\text{Number of deliveries that took place in health facilities}}{\text{Total number of deliveries}} \times 100$
Comments and limitations	It should be noted that institutional births may underestimate the percentage of births with skilled attendant.
Sources and Data collection	Data are collected through the Demographic Health Surveys (DHS) and women where asked where they had given birth and who had assisted in the delivery.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, District, Residence(Urban/Rural) Mother's age at birth, Wealth quintile and Mother's education level
Responsible Institutions - **Main** - **Key stakeholders**	NISR MOH
Periodicity	3-5 years

29. Maternal mortality ratio (MMR)

Definition	The maternal mortality ratio (MMR) is the ratio of the number of maternal deaths during a given time period per 100,000 live births during the same time-period. A maternal death refers to a female death from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy. The time reference for MMR is five years period preceding the survey date.
Method of	The Direct Sisterhood Method is used in DHS to estimate

Computation	maternal deaths. Information is collected from female respondents on the survivorship of each of their sisters, the ages of surviving sisters, the year of death or years since death of deceased sisters, and the age at death of deceased sisters. For each sister who died at age 12 or older, the respondent was asked additional questions to determine whether the death was maternity related. Maternal Mortality Ratio(MMR) is calculated as ; $MMR=\frac{\text{Age standardized Maternal Mortality Rate}}{GFR}\times 100{,}000$ Maternal Mortality Rate: is obtained by dividing the number of maternal deaths in a population by the number of women of reproductive age (15-49) multiply by 1000. GFR: denotes General Fertility Rate and it is calculated by dividing the number of births in a year divided by the number of women aged 15–49, times 1000.
Comments and limitations	Maternal mortality data have limitations, particularly related to the underreporting and misclassification of maternal deaths. The maternal mortality ratio should not be confused with the maternal mortality rate (whose denominator is the number of women of reproductive age), which reflects not only the risk of maternal death per pregnancy or birth but also the level of fertility in the population. The maternal mortality ratio (whose denominator is the number of live births) indicates the risk of death once a woman becomes pregnant, and does not take fertility levels into consideration. Because maternal mortality is a relatively rare event, large sample sizes are needed if household surveys are used. This is very costly and may still result in estimates with large confidence intervals. To reduce sample size requirements, the sisterhood method measures maternal mortality by asking respondents about the survivorship of sisters. While this method reduces sample size requirements, it produces estimates covering some 7-12 years before the survey, which renders data problematic for monitoring progress or observing the impact of interventions. The direct sisterhood method asks respondents to provide date of death, which permits the calculation of more recent estimates, but even then the reference period tends to refer to 0-6 years before the survey
Sources and Data	Data on maternal mortality and other relevant variables are

collection	obtained through DHS.
Disaggregation - **Geographical**	National
Responsible Institutions - **Main** - **Key stakeholders**	 NISR MOH
Periodicity	3 to 5 years

30. Under-five Mortality Rate (U5MR)

Definition	It is the probability (expressed as a rate per 1000 live births) of a child born alive in a specified period dying before reaching the age of five, if subject to current age-specific mortality rates. It is important to point out that the reference period is the five-year period preceding the survey date. So, the time point that the rate is referred to is the midpoint of the five year interval. A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the 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 a live birth.
Method of Computation	Like other childhood mortality rates, the data used to compute the U5MR is derived from the birth history section of Woman's questionnaire of DHS. It uses the direct method and data are collected on birth histories of women of childbearing age and produces the probability of dying before age one for children born alive, among women of childbearing age, during five year periods before the survey. The Direct method requires each child's date of birth, survival status, and age of the child on the date of the interview if alive and if not alive the age at death of each live births. Under 5 Mortality is calculated as follows: $\text{U5MR} = \frac{D_{<5yrs}}{L_b} \times 1000$ Where $D_{<5yrs}$ denotes the number of deaths of infants (<5yr of age) in the last 5 years before the survey and L_b denotes

	the total number of Live births in 5 years before the survey .
Comments and limitations	Data on under-five mortality are more complete and timely than data on adult mortality. Under-five mortality rates are also considered to be more robust than infant mortality rates when estimates are based on information drawn from household surveys. Vital registration systems are the preferred source of data on under-five mortality because they collect information prospectively and cover the entire population. However, due to lack of fully functioning vital registration systems that accurately record all births and deaths the DHS is used to provide the data. DHS are subject to recall error. Interviewed women may omit births and deaths, or include stillbirths along with live births. Survey data may also suffer from survivor selection bias and age truncation. Mothers may misreport their children's birth dates, current ages or ages at death—perhaps more so if the child has died. The heaping of deaths at age 12 months is especially common. Age heaping may transfer deaths across the one-year boundary and lead to underestimates of infant mortality rates. Fortunately, it has little effect on under-five mortality rates, which makes the U5MR a more robust estimate than the infant mortality rate when data are drawn from household surveys.
Sources and Data collection	The data used to compute the U5MR mortality rates were derived from the birth history section of the Woman's Questionnaire in DHS.
Disaggregation - **Sex** - **Geographical** - **Other Characteristics**	Male, Female National , Province ,Residence(Urban/Rural) Socio-economic characteristics of mothers(education, wealth quintiles) Note that the reference year for U5MR by socio-economic characteristic is 10 years period preceding the survey.
Responsible Institutions - **Main** - **Key Stakeholders**	 NISR MOH
Periodicity	3 to 5 years

31. Contraceptive Prevalence Rate of modern methods among women in union aged between 15-49 yrs.

Definition	The contraceptive utilization rate for modern methods among women in union is the percentage of women of reproductive age who or whose sexual partner is currently using, any form of modern contraception method. It is usually reported for women ages 15–49 in marital or living in consensual union. Modern contraception methods includes female and male sterilization, pills, intrauterine devices (IUDs), injectable, implants, male and female condoms, lactational amenorrhoea method (LAM), emergency contraception, and Standard Days Method (SDM).Note that if more than one method is used, only the most effective method is considered.
Method of Computation	This indicator is computed as $CPR(\text{modern method}) = \frac{N_c}{N} \times 100$ Where N_c denotes number of currently married women aged 15-49 who are using modern contraception method at a particular point in time and N denotes total number of currently married women aged 15-49.
Comments and limitations	
Sources and Data collection	Population- based survey data coming from DHS are collected on the respondents' knowledge, attitude and practice of contraception.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, Residence(Urban/rural) Number of living Children, wealth quintile , Educational level
Responsible Institutions - **Main**	NISR
Periodicity	3 - 5 years

32. HIV positivity rate among pregnant women attending Ante-natal clinics

Definition	HIV positivity rate among pregnant women attending Ante-natal clinics is the percentage of pregnant women attending antenatal care visit (ANC) with unknown HIV status tested

	HIV positive. This indicator does not take into account those pregnant women who were known to be HIV positive rather provides data on the new case of HIV infected pregnant women in a given time period.
Method of Computation	The indicator is computed as $\frac{N_o}{N_p} \times 100$ Where N_o denotes the number of pregnant women with unknown HIV status who tested HIV positive during ANC visit and N_p number of pregnant women attending ANC with unknown HIV status tested for HIV during ANC visit.
Comments and limitations	It is important to note that this estimate does not represent the actual epidemic level of HIV infection among pregnant women.
Sources and Data collection	Programmatic monthly reports are collected from antenatal care registers at the health facility and submitted to central level. Data are compiled and published on the National Annual Report on HIV & AIDS.
Disaggregation - **Geographical**	National ,Province, District, Residence(Urban/rural)
Responsible Institutions - **Main** - **Key Stakeholders**	 MOH RBC
Periodicity	Annually

37. Percentage of adult population accessing financial services

Definition	Adult population accessing financial services is the proportion of adults who are 18 years or older (because 18 is the minimum age at which individuals can enter into a legal financial transaction in their own right in Rwanda) and have or use any product or service from a commercial bank or any other regulated or registered financial institution which is not a commercial bank e.g. SACCOs, microfinance institutions, insurance companies, Government loans and grants (such as in some programmes of VUP), mobile money systems, Western Union, money gram; or who use informal mechanisms to transact, save, borrow or manage their financial risks. This can include credit or loans provided by agricultural associations, saving with groups such as village savings and lending associations (VSLAs) or savings groups/tontines, borrowing from community based money lenders or savings groups or sending money to family/friends by means of a so-called runner (taxi/bus driver).

Method of Computation	The indicator can be computed as $$F = \left(\frac{B_f}{B_e}\right) \times 100$$ Where: B_f denotes the number individuals who are 18 years or older and financially served/ uses any one of the financial products/services available and B_e denotes adults (18 years or older) in the country. Note that if more than one method is used, only the most effective method is considered.
Comments and limitations	This indicator does not cover the actual use of the products that individuals take up. An adult can open or have a formal/informal product but may not use it in the past six month or even one year.
Sources and Data collection	Data on access to finance are collected from households, analysed and reported by AFR through the FinScope Survey.
Disaggregation - **Sex** - **Geographical** - **Age** - **Others**	Male/Female Province, District, Residence(Urban, Rural) Age group Education level, main income generating activities, ubudehe categories
Responsible Institutions - **Main** - **Key Stakeholders**	 AFR BNR, IPAR
Periodicity	3 years

38. Tax revenue as percentage of GDP

Definition	Total tax revenue as percentage of GDP measures the share of a country's output (GDP) that is collected by the government through taxes. Tax revenue refers to compulsory transfers to the central government for public purposes. It includes taxes on goods and services, direct taxes and taxes on international trades. Gross Domestic Product is the sum of gross value added by all resident producers in the economy measured as the difference between production and intermediate consumption plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Method of Computation	Tax revenue as percentage to GDP is computed as $\frac{T_t}{GDP_t} \times 100$ Where T_t denotes total government taxes collected in the current year (t) and GDP_t denotes gross domestic product of the current year.
Comments and limitations	In Rwanda, property tax and rental income tax are collected at Local Government level (Districts). As such they are not considered while putting together tax revenues at Central Government level.
Sources and Data collection	Revenue Collections are originally recorded in Operational systems used by operational department (SIGTAS for domestic taxes and ASYCUDA WORLD for Customs Taxes) .The reports from Operational Departments Systems are reconciled with bank statements. The reconciliation is done by RRA Finance Department and the validated collections are recorded in RRA Finance Accounting System. At the end of each semester (6 months), RRA Finance Department prepares the Financial Statements and submits reports to the Ministry of Finance. The Planning and Research Department (P&RD) is in charge of communicating to the Ministry of Finance and other Stakeholders about the status and progress of revenue collection on a monthly basis throughout the year. The P&RD extracts the reconciled revenue collections reports summarized by tax codes from RRA Finance System and produces a summarized revenue collection report to RRA management, the Ministry of Finance and other RRA stakeholders such as NISR and BNR. GDP data comes from national accounts records. Export to GDP ratio is computed by the Macro-Economic Department of MINECOFIN.
Disaggregation - **Geographical**	 National
Responsible Institutions - **Main** - **Key Stakeholders**	 MINECOFIN NISR,RRA, BNR
Periodicity	Annually, Quarterly

PART II: Metadata for MDGs Indicators

GOALS AND TARGETS	INDICATORS FOR MONITORING PROGRESS
Goal 1. Eradicate extreme poverty and hunger	
Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1. Percentage of population living below national poverty line
	2. Share of poorest quintile in national consumption
	3. Poverty gap ratio
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people	4. Employment-to-population ratio
Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	5. Prevalence of underweight (moderate and severe)
Goal 2. Achieve universal primary education	
Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	6. Net enrolment ratio in primary education (NER)
	7. Literacy rate of 15-24 year-olds
Goal 3. Promote gender equality and empower women	
Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015	8. Gender Parity Index in primary level enrolment
	9. Gender Parity Index in secondary level enrolment
	10. Seats held by women in national parliament
Goal 4. Reduce child mortality	
Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	11. Percentage of Children 1 year-old immunized against measles
	12. Infant mortality rate (IMR)
	13. Under-five mortality rate (U5MR)
Goal 5. Improve maternal health	
Target 5.A: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	14. Proportion of births attended by skilled health personnel
	15. Maternal mortality ratio (MMR)
Target 5.B: Achieve, by 2015, universal access to reproductive health	16. Adolescent birth rate
	17. Antenatal care coverage for at least four visits
	18. Antenatal care coverage for at least one visit (ANC)
	19. Contraceptive Prevalence Rate (CPR)
	20. Unmet need for family planning
Goal 6. Combat HIV/AIDS, malaria and other diseases	
Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS	21. Condom use at last high-risk sex
	22. HIV prevalence rate
	23. Population 15-24 year-olds who have comprehensive correct knowledge of HIV/AIDS

	24. Ratio of school attendance of orphans to school attendance of non-orphans
Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it	25. Proportion of population with advanced HIV infection with access to antiretroviral drugs
Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	26. Death rate associated with malaria
	27. Death rate associated with tuberculosis
	28. Incidence of malaria
	29. Incidence of tuberculosis
	30. Prevalence of tuberculosis
	31. Proportion of children under 5 sleeping under insecticide-treated bed nets
	32. Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs
	33. Tuberculosis detection rate under DOTS
	34. Tuberculosis treatment success rate under DOTS
Goal 7. Ensure environmental sustainability	
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	35. Carbon dioxide emissions
	36. Consumption of all ozone-depleting substances
	37. Proportion of land area covered by forest
Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	38. Proportion of terrestrial areas protected to total territorial area
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	39. Proportion of population using an improved drinking water source
	40. Proportion of population using an improved sanitation facility
Goal 8. Develop a global partnership for development	
Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	41. External debt service as percentage of exports of goods and services and net income from abroad
Target 8.F: In co-operation with the private sector, make available the benefits of new technologies, especially information and communications	42. Cellular Ownerships
	43. Internet users

GOAL 1. ERADICATE EXTREME POVERTY AND HUNGER

1. Percentage of population living below the national poverty line

Definition	Defined as the percentage of the population living below the national poverty line which is on less than 64,000 RWF per adult equivalent per year measured in 2001 prices corresponding to 118, 000 RWF in 2010. The poverty line is a threshold of the value of total annual per capita consumption in a household below which an individual is considered poor. Aggregate household consumption is computed as the sum of expenditure on food as well as value of auto consumption, expenditure on non-food, health items, education, housing utilities, value of in-kind wages, other benefits received by the household and a measure of the use value of durable goods owned by the household. Consumption per capita is then computed as the total consumption per adult equivalent. Where adult equivalence is an aggregate indicator for household size which takes into account its age and sex composition. The poverty line is then set with reference to a minimum food consumption basket, judged to offer the required number of calories (2200 Kcalories per day) for a Rwandan likely to be involved in physically demanding agricultural activity, along with an allowance for non-food consumption. The non-food consumption expenditure is determined as a function of food consumption.
Method of Computation	Household annual consumption per adult equivalent is computed and compared with the poverty line. Individuals living in households whose per capita consumption falls below the poverty line are considered as poor. $\%\ \text{of population living below the national poverty line} = \frac{N_p}{N} \times 100$ Where N_p denotes the number of population (adult equivalent) living below the poverty line and N denotes total number of population.
Comments and limitations	EICV surveys do not collect information on the intra-household distribution of consumption. Thus, the consumption based standard of living measure is based on the assumption that individuals are represented in the distribution by the consumption measure of the household they belong to. This fails to take account of inequality in distribution within the household.
Sources and Data collection	Data on household income, consumption and expenditure are collected through the EICV surveys carried out by NISR. The survey also collects information on non-consumption related dimensions of living standards.

Disaggregation - **Geographical**	National ,Province, District
Sources of Discrepancies between Global and National Figures	Global poverty gap measures are based on the international poverty line of $1.25 a day measured at 2005 prices and cannot be directly compared with national level poverty gap measures; which are derived using country specific poverty lines estimated in local currencies.
Responsible Institutions - **Main** - **Key Stakeholders**	NISR MINECOFIN
Periodicity	3 - 5 years

2. Share of poorest quintile in national consumption

Definition	The poorest quintiles' percentage share of national income or consumption is the share that accrues to the first quintile of the population. Quintiles are developed by sorting the sample of households by annual consumption values and dividing the population into five equal shares. The 20% of individuals with the lowest levels of annual consumption are allocated to quintile 1 (first quintile).
Method of Computation	Inequality in the distribution of income is reflected in the percentage shares of income or consumption accruing to portions of the population ranked by income or consumption levels. Data on the distribution of income or consumption come from nationally representative household surveys. Where the original data from the household survey are available, they can be used to directly calculate the income or consumption shares by quintile. Consumption, including consumption from own production is calculated for the entire household, adjusted for household size, and then divided by the number of persons living in the household to derive a per capita measure. The population is then ranked by consumption or income; and then the bottom fifth of the population's consumption or income is expressed as a percentage of aggregate household income. The calculations are made in local currency, without adjustment for price changes or exchange rates or for spatial differences in the cost of living within countries are not made, because the data needed for such calculations are generally unavailable.

Comments and limitations	Consumption is usually a much better welfare indicator, particularly in developing countries. Consumption is measured on Household level but individuals in the same household differ in age and consumption needs.
Sources and Data collection	The National Institute of Statistics of Rwanda collects data through the Integrated household living Conditions Survey (EICV).
Disaggregation - **Geographical**	National, Province, District
Sources of Discrepancies between Global and National Figures	In Rwanda, we use consumption instead of income distribution this might be the source of discrepancies between national and global estimates due to differences in computation method.
Periodicity of measurement/ Expected Time of Release	3 - 5 years

3. Poverty gap ratio

Definition	The poverty gap ratio is the mean shortfall of the total population from the poverty line (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line. The poverty line is a common method used to measure poverty based on income or consumption levels. In Rwanda, we use consumption level to measure poverty. A person is considered poor if his or her consumption falls below some minimum level necessary to meet basic needs. This minimum level is referred to as the poverty line. National poverty lines used for the calculation of this indicator is 64,000 RWF per adult equivalent per year measured in 2001 prices. The poverty gap ratio was computed based on the three comparable EICV surveys all expressed in January 2001 prices. The poverty line is then set with reference to a minimum food consumption basket, judged to offer the required number of calories (2200 Kcalories per day) for a Rwandan likely to be involved in physically demanding agricultural activity, along with an allowance for non-food consumption.
Method of Computation	The poverty gap index (P1)which is related to the headcount index, is measured as follows: $P1=\frac{1}{N}\sum_{i=1}^{N}\frac{G_n}{Z}$, $G_n=(z-yi).I(yi\leq z)$

	where the poverty gap (G_n) is the difference between the poverty line (z) and income or consumption for those who are poor (the non-poor have a poverty gap of zero). I(.) is an indicator function that equals 1 if the bracketed expression is true and 0 otherwise. N is the total population.
Comments and limitations	This indicator measures poverty based on household per capita income/consumption, ignoring intra household inequality in the distribution of resources, and does not take into account other dimensions of poverty such as inequality, vulnerability, and lack of voice and power of the poor.
Sources and Data collection	Data on household income, consumption and expenditure are collected through the EICV surveys carried out by NISR. The survey also collects information on non-consumption related dimensions of living standards.
Disaggregation - **Geographical**	National
Sources of Discrepancies between Global and National Figures	Global poverty gap measures are based on the international poverty line of $1.25 a day measured at 2005 prices and cannot be directly compared with national level poverty gap measures; which are derived using country specific poverty lines estimated in local currencies.
Periodicity	3- 5 years

4. Employment-to-Population ratio

Definition	Employment-to-population ratio is the proportion of a country's working-age population that is employed. Employment is defined as persons aged 16 and above who engaged in any activity for at least an hour in the last 7 days before the survey for pay or profit (or pay in kind), or were temporarily absent from a job for such reasons as illness, maternity or parental leave, holiday, training or industrial dispute. Unpaid family workers who work for at least one hour are included in the count of employment.
Method of Computation	Employment-to-population ratios are calculated as follows: $EPR=\frac{E}{P} \times 100$ Where E denotes the number of employed persons(Including soldiers) and P denotes the total population for the corresponding working age group(16 and above) including members of the armed forces and individuals residing in mental, penal or other types of

	institution.
Comments and limitations	The employment-to-population ratio only provides a measure of persons in employment. It says nothing about the quality of employment in which people work posing the question of whether or not an increase of the indicator over time should be interpreted positively. An increase in the ratio has positive implications on poverty reduction only if the jobs obtained are well-paid, productive and secure—in other words, if they are decent jobs. It is worth noting that the information presented in the census reports is limited to the main activity performed during the reference period (seven days before the Census night)while the working population of Rwanda routinely works in multiple jobs.
Sources and Data collection	Data are collected through EICV and PHC. Note that the figures published in EICV 3 under employment rate are actually measuring employment-to-population ratio.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other Characteristics**	 National, Province , District, Residence(Urban/Rural) Male/Female Age group Marital Status, education level, highest level of degree obtained
Sources of Discrepancies between Global and National Figures	For most cases, household labour force surveys are used, and they provide estimates that are consistent with ILO definitional and collection standards. However, Rwanda uses census and EICV to get data in the absence of labour force surveys; this can cause problems of comparability at the international level. Ratios may diverge slightly from nationally reported figures because of the harmonization process.
Periodicity	3- 5 years in EICV, 10 years for PHC.

5. Prevalence of underweight (moderate and severe)

Definition	Prevalence of (moderately or severely) underweight children is the percentage of children under five years old whose weight for age are less than minus two standard deviations from the median weight for age of the reference population ages 0–59 months. In the 2010 RDHS, as recommended by the World Health Organization (WHO), the nutritional status of children in the

	survey population was compared with the 2006 WHO Child Growth Standards (WHO, 2006). The use of the 2006 WHO Child Growth Standards is based on the finding that well-nourished children in all population groups for which data exist follow very similar growth patterns before puberty.
Method of Computation	The weights of the under-five child population in a country are compared with the weights given in the 2006 WHO Child Growth Standards table of child weights for each age group. The percentages of children in each age group whose weights are less than 2 standard deviations below the median are then aggregated to form the total percentage of children under five who are underweight. $W=\frac{C}{B}\times 100$ Where C denotes the Number of children under age five that fall below minus two standard deviations from the median weight for age of the 2006 WHO Child Growth Standards (moderate and severe) and B denotes the total number of children under age five that were weighted.
Comments and limitations	The weight-for-age, indicator reflects body Mass relative to chronological age and is influenced by both the height of the child (height for age) and weight-for-height. Its composite nature makes interpretation complex. For example, weight for age fails to distinguish between short children of adequate body weight and tall, thin children.
Sources and Data collection	NISR collects data through the RDHS (Rwanda Demographic Health Survey), the survey asks questions about infant feeding practices and measures the height using a Shorr measuring board and the weight measurements are taken using a lightweight electronic SECA scale designed and manufactured under the of the United Nations Children's Fund (UNICEF).
Disaggregation - **Geographical** - **Sex** - **Age group** - **Other characteristics**	 National, Province ,District Residence (Urban & Rural) Male / Female Age in months Birth interval , mother's education level, mother's nutritional status, wealth quintile
Sources of Discrepancies between Global and National Figures	Because all nationally-representative data on underweight prevalence are collected only through large-scale household surveys, there would normally be no discrepancies between global and national figures.
Periodicity	3 - 5 years

GOAL 2. ACHIEVE UNIVERSAL PRIMARY EDUCATION

6. Net enrolment ratio in primary education (NER)

Definition	Net enrolment ratio in primary is the ratio of the number of children of official school age who are enrolled in primary school to the total population of children of corresponding official school age. The official age for starting primary school is 7 years old and completing primary school is 12 years old in Rwanda.
Method of Computation	NER in primary education is computed as ; $NER_p^t = \frac{E_p^t}{P_p^t} \times 100$ Where : NER_p^t= Net Enrolment rate in primary education **p** in school year **t** E_p^t= Enrolment of the population of age-group a in primary school **p** in year **t** P_p^t= Population in age-group a which officially corresponds to primary education **p** in school-year **t**
Comments and limitations	In some case, misreporting of enrolment by age is more difficult to overcome as children's birth certificates may not exist or are not checked by school heads. In Rwandan, NER can be compared with the Gross Enrolment Ratio (GER) to assess the incidence of under-aged and over-aged enrolment in primary education.
Sources and Data collection	Data are collected from schools by the Sector Education officers using questionnaires. District Education Officers review and report to MINEDUC. Education data are compiled at national level and published in the Education Statistics year book.
Disaggregation - **Geographical** - **Sex**	 National, Province, District, Residence(Rural/Urban) Male/Female
Sources of Discrepancies between Global and National Figures	Discrepancies between National and Global figures may arise from the above mentioned limitations. Enrolment data compiled by UNESCO are adjusted to be consistent with ISCED97 and are therefore comparable across countries. National data derived from administrative records are not necessarily based on the same classification over time and may not be comparable with data for other countries, unless exactly the same classification is used.
Periodicity	Annual

7. Literacy rate of 15-24 year-olds

Definition	The literacy rate of 15–24 year-olds is defined as the proportion of the population aged 15–24 years who can both read and write with understanding a short simple statement on everyday life. For the 2012 Census, literacy is recorded in the following languages: Kinyarwanda, English, French and Other and measures the individual's ability to read and write a simple text with understanding in a language. Whereas for DHS, literacy rate refers to men and women who attended secondary school or higher and women who can read a whole sentence or part of a sentence. Those with secondary or post-secondary educations were considered literate and not in need of testing. The youth literacy rate is another term for the literacy rate of 15–24 year-olds.
Method of Computation	Literacy rate of 15-24 year olds is calculated as; $LR^{t}_{15\text{-}24}=\frac{L^{t}_{15\text{-}24}}{P^{t}_{15\text{-}24}} \times 100$ Where: $LR^{t}_{15\text{-}24}$= Literacy rate of age group 15-24 in year t $L^{t}_{15\text{-}24}$=Literate population of age group 15- 24 in year t $P^{t}_{15\text{-}24}$= Population of age group a in year t
Comments and limitations	Misreporting of age; where the declared age may not coincide with the birth age which can result in under or overestimation of literacy. Literacy is measured crudely in population censuses, either through self or household report or by assuming that people with no schooling are illiterate, making international comparisons difficult. Comparability over time, even for the same survey, may also be a problem because definitions of literacy used in surveys are not standardized. Shortcomings in the definitions of literacy, measurement problems, and infrequency of censuses and household surveys weaken this indicator's utility for monitoring education outcomes related to the goal of achieving universal primary education. Caution should be exercised when comparing literacy indicator by wealth quintile between the surveys because of the difference in the methods of measurement. The wealth index in DHS and PHC is calculated using household's

	ownership of selected assets, such as televisions and bicycles; materials used for housing construction; and types of water access and sanitation facilities whereas the EICV uses consumption expenditure to measure socio-economic status.
Sources and Data collection	PHCs are the primary sources of basic literacy data. These data are usually collected together with other household characteristics including the educational, demographic and socio-economic statuses of household members. These literacy data are generally based on self-declaration (i.e. one person, usually the head of the household, indicates whether each member of the household is literate or not). The collection of literacy data from this primary source follows the regularity of national population censuses which, in general, is every ten years. DHS and EICV are also other sources of data and involve the use of a literacy variable in a household or individual sample survey. Educational attainment should not be used as a proxy for literacy, as not all children who have received primary education acquired sustainable literacy skills.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other characteristics**	 National, Province, District, Residence (Urban/ Rural) Male/ Female Five-year age cohorts for the population aged 15 - 24 years Wealth Quintile
Sources of Discrepancies between Global and National Figures	Literacy rates published by the UNESCO Institute of Statistics (UIS) are based on national level population censuses and household surveys. Discrepancies may arise when countries derive projected figures using methods that differ from those used by the UIS. Discrepancies may also occur from the above mentioned limitations.
Periodicity	3 to 5 years for DHS and EICV, 10 years for PHC

GOAL 3. PROMOTE GENDER EQUALITY AND EMPOWER WOMEN

8. Gender Parity Index in primary level enrolment

Definition	Gender Parity Index in primary level enrolment is the ratio between the Gross Enrolment Ratio (GER) of girls and that of boys in primary education.

	The Gross Enrolment Ratio (GER) in primary education is the total enrolment in primary education, regardless of age, expressed as a percentage of the eligible official school-age population to primary education in a given school year.
Method of Computation	The GPI is calculated by dividing the female GER by the male GER for primary education. To calculate the GER it is first necessary to determine the official school age population for each level of education. Then, the number of students enrolled in primary education is divided by the official school age population for primary education, and the result is multiplied by 100. GERs for boys and girls are calculated separately.
Comments and limitations	Caution should be exercised in interpreting trends towards gender parity. For example, the indicator cannot help determine whether improvements in the ratio reflect increases in girls' school participation (desirable) or decreases in boys' participation (undesirable). Also, it also does not reveal whether those enrolled in school complete the relevant education cycles or, whether the overall level of participation in education is low or high. It is also important to supplement the analysis of trends in GPIs with analysis of trends in the GER of men and women.
Sources and Data collection	Data are collected from schools by the Sector Education officers using questionnaires. District Education Officers review and report to MINEDUC. Education data are compiled at national level and published in the Education Statistics year book.
Disaggregation - **Geographical**	National, Province, District ,Residence(Rural/Urban)
Sources of Discrepancies between Global and National Figures	The use of different population estimates in the denominator is often at the origin of differences between National and Global data for this indicator, as international population estimates generally differ from those available at the national level.
Periodicity	Annual

9. Gender Parity Index in secondary level enrolment

Definition	Gender Parity Index in secondary level enrolment is the ratio between the Gross Enrolment Ratio (GER) of girls and that of boys in secondary education. The Gross Enrolment Ratio (GER) in secondary education is the total enrolment in secondary, regardless of age,

	expressed as a percentage of the eligible official school-age population corresponding to secondary level education in a given school year.
Method of Computation	The GPI is calculated by dividing the female GER by the male GER for secondary education. To calculate the GER it is first necessary to determine the official school age population for each level of education. Then, the number of students enrolled in secondary level of education is divided by the official school age population of secondary level education, and the result is multiplied by 100. GERs for boys and girls are calculated separately.
Comments and limitations	Caution should be exercised in interpreting trends towards gender parity. For example, the indicator cannot help determine whether improvements in the ratio reflect increases in girls' school participation (desirable) or decreases in boys' participation (undesirable). Also, it also does not reveal whether those enrolled in school complete the relevant education cycles or, whether the overall level of participation in education is low or high. It is important to supplement the analysis of trends in GPIs with analysis of trends in the GER of men and women.
Sources and Data collection	Data are collected from schools by the Sector Education officers using questionnaires. District Education Officers review and report to MINEDUC. Education data are compiled at national level and published in the Education Statistics year book.
Disaggregation - **Geographical**	National, Province, District, Residence(Rural/Urban)
Sources of Discrepancies between Global and National Figures	The use of different population estimates in the denominator is often at the origin of differences between National and Global data for this indicator, as international population estimates generally differ from those available at the national level.
Periodicity	Annual

10. Seats held by women in national parliament

Definition	The proportion of seats held by women in national parliaments is the number of seats held by women members in single or lower chambers of national parliaments, expressed as a percentage of all occupied seats. Seats refer to the number of parliamentary mandates, also known as the number of members of parliament. Seats are usually won by members in general parliamentary

	elections. Seats may also be filled by nomination, appointment, indirect election, rotation of members and by-election. 'The State of Rwanda commits itself that women are granted at least 30 % of posts in decision making organs' (Constitution, Article 9 [4]). The 80 members of the Chamber of Deputies are elected as follows: 53 members elected by direct universal suffrage through a secret ballot using closed list proportional representation, of which at least 30% must be seats reserved for women; 24 women (2 elected from each province and from the city of Kigali by an electoral college with a women-only ballot); 2 members elected by the National Youth Council; and 1 member elected by the Federation of the Associations of the Disabled (Constitution, Article 76).
Method of Computation	The indicator is calculated as the total number of seats occupied by women divided by the total number of seats occupied in parliament and multiplied by 100.
Comments and limitations	Unlike the 30% of reserved seats for women , in the event of death and resignation the replacement of women parliamentarian coming from the political parties is not automatically by a woman instead by the next candidate in the party's list. The role of women parliamentarians needs to be considered alongside the role of other government actors such as the executive; and in relation to the national gender machinery and women's groups in civil society.
Sources and Data collection	Data for calculating this indicator are coming from administrative records of national parliaments and National Electoral Commission (NEC).
Disaggregation - **Geographical**	National
Sources of Discrepancies between Global and National Figures	Not applicable.
Periodicity	Annual

GOAL 4. REDUCE CHILD MORTALITY

11. Proportion of Children 1 year-old immunized against measles

Definition	Proportion of 1 year old children immunized against measles is the percentage of children ages 12–23 months who have received at least one dose of a measles vaccine before their first birthday.
Method of Computation	The indicator is computed as; $I=\frac{C}{P}$ Where C denotes number of children aged 12-23 months who received at least one dose of a measles vaccine before the age of 12 months and P denotes all children aged below 12 months in the Survey.
Comments and limitations	Recall error could be a potential bias in the data. In household surveys for those where vaccination cards were not available, the respondent may or may not know or remember if her child had received the specific vaccination.
Sources and Data collection	In Rwanda, NISR collects data through the DHS .The information on measles vaccination was gathered from two sources: (1) where vaccination cards were available, the interviewer copied the information directly onto the questionnaire; (2) Where cards were not available because the mother never had one, or the card was unavailable at the time of the survey, or the mother had lost the card, mothers were asked to recall whether or not the child had received at least one dose of a measles vaccine at any time before the survey. Note that for children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for the children with a written record of vaccination.
Disaggregation - **Geographical** - **Other characteristics**	National By source of information (Vaccination Card, Mother's report or Either source)
Sources of Discrepancies between Global and National Figures	Rwanda uses Household surveys (DHS) to get vaccination estimates whereas the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) compile country data series based on both types of data gathered through the WHO/UNICEF Joint Reporting Form (JRF) on Vaccine-Preventable Diseases. These are from (a) Administrative coverage data, (b) household surveys such as DHS and MICS and (c) Official national estimate (the estimate of coverage that the Ministry of Health believes to

	be correct; which may or may not coincide with the administrative or national survey data). In cases where alternative sources of data are available, there is an attempt to distinguish whether the data accurately reflect immunization system performance, or whether the data are compromised and present a misleading view of coverage achievements. If adjustments are proposed, they are made in consultation with the individual countries, as described in the section below.
Periodicity	3 -5 years

12. Infant mortality rate (IMR)

Definition	Infant mortality rate is the probability (expressed as a rate per 1000 live births) of a child born alive in a specified period dying before reaching the age of one. The time reference of IMR is not the year in which the survey is undertaken; rather it is the five years period preceding the survey date. Hence, if an exact time point is needed as a time reference, it must be taken as the mid of the five-year interval preceding the survey date. A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the 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 a live birth.
Method of Computation	IMR is derived from DHS data using the direct method. The direct method uses data collected on birth histories of women of childbearing age and produces the probability of dying before age one for children born alive, among women of childbearing age, during five year periods before the survey. Direct method require each child's date of birth, survival status, and age of the child on the date of the interview if alive and if not alive the age at death of each live births. The Infant Mortality Rate is computed as follows: $$IMR = \frac{D_{<1yr}}{L_b} \times 1000$$ Where $D_{<1yr}$ denotes the number of deaths of infants (<1yr of age) in the last 5 years before the survey and L_b is the total number of Live births in 5 years before the survey.
Comments and limitations	Direct estimates of infant mortality based on survey data may suffer from mothers misreporting their children's birth

	dates, current age or age at death—perhaps more so if the child has died. The heaping of deaths at age 12 months is especially common. Age heaping may transfer deaths across the one-year boundary and lead to underestimates of infant mortality rates.
Sources and Data collection	The data used to compute the IMR mortality rates were derived from the birth history section of the Woman's Questionnaire in DHS.
Disaggregation - **Geographical** - **Sex** - **Other Characteristics**	National , Province ,District, Residence(Urban/ Rural) Male/Female Socio-economic characteristics of mothers (education, wealth quintiles) Note that the reference year for IMR by socio-economic characteristic is 10 years period preceding the survey.
Sources of Discrepancies between Global and National Figures	Not applicable.
Periodicity	3 to 5 years

13. Under-five mortality rate (U5MR)

Definition	It is the probability (expressed as a rate per 1000 live births) of a child born alive in a specified period dying before reaching the age of five, if subject to current age-specific mortality rates. It is important to point out that the reference period is the five-year period preceding the survey date. So, the time point that the rate is referred to is the midpoint of the five year interval. A live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the 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 a live birth.

Method of Computation	Like other childhood mortality rates, the data used to compute the U5MR is derived from the birth history section of Woman's questionnaire of DHS. It uses the direct method and data are collected on birth histories of women of childbearing age and produces the probability of dying before age one for children born alive, among women of childbearing age, during five year periods before the survey. The Direct method requires each child's date of birth, survival status, and age of the child on the date of the interview if alive and if not alive the age at death of each live births. Under 5 Mortality is calculated as follows: $U5MR = \frac{D_{<5yrs}}{L_b} \times 1000$ Where $D_{<5yrs}$ denotes the number of deaths of infants (<5yr of age) in the last 5 years before the survey and L_b denotes the total number of live births in 5 years before the survey.
Comments and limitations	Data on under-five mortality are more complete and timely than data on adult mortality. Under-five mortality rates are also considered to be more robust than infant mortality rates when estimates are based on information drawn from household surveys. Vital registration systems are the preferred source of data on under-five mortality because they collect information prospectively and cover the entire population. However, due to lack of fully functioning vital registration systems that accurately record all births and deaths the DHS is used to provide the data. DHS are subject to recall error. Interviewed women may omit births and deaths, or include stillbirths along with live births. Survey data may also suffer from survivor selection bias and age truncation. Mothers may misreport their children's birth dates, current ages or ages at death—perhaps more so if the child has died. The heaping of deaths at age 12 months is especially common. Age heaping may transfer deaths across the one-year boundary and lead to underestimates of infant mortality rates. Fortunately, it has little effect on under-five mortality rates, which makes the U5MR a more robust estimate than the infant mortality rate when data are drawn from household surveys.
Sources and Data	The data used to compute the U5MR mortality rates were

collection	derived from the birth history section of the Woman's Questionnaire in DHS.
Disaggregation - **Geographical** - **Sex** - **Other Characteristics**	National , Province ,District, Residence(Urban/ Rural) Male, Female Socio-economic characteristics of mothers(education, wealth quintiles) Note that the reference year for IMR by socio-economic characteristic is 10 years period preceding the survey.
Sources of Discrepancies between Global and National Figures	Not Applicable.
Periodicity	3 to 5 years

GOAL 5. IMPROVE MATERNAL HEALTH

14. Proportion of births attended by skilled health personnel

Definition	The proportion of births attended by skilled health personnel is the proportion of total live births in a period that are attended by a skilled birth attendant trained in providing lifesaving obstetric care. Note that Skilled health personnel refers to workers/attendants which are accredited health professionals - such as a midwife, doctor, medical assistant or nurse - who have been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and new-borns. Both trained and untrained traditional birth attendants (TBA) are excluded. Note that the time of reference is 5 years preceding the survey.
Method of Computation	The indicator is calculated as the number of births attended by skilled health personnel (doctors, nurses or midwives) divided by the total number of births in the same period and multiplied by 100.
Comments and limitations	This indicator is a measure of a health system's ability to provide adequate care during birth, a period of elevated mortality risk for both mothers and new-borns. However, this indicator may not adequately capture women's access to good quality care, particularly when complications arise.

	In order to effectively reduce maternal deaths skilled health personnel should have the necessary equipment and adequate referral options. In addition, standardization of the definition of skilled health personnel is sometimes difficult because of differences in training of health personnel in different countries. Although efforts have been made to standardize the definitions of doctors, nurses, midwives and auxiliary midwives used in most household surveys, it is probable that many skilled attendants' abilities to provide appropriate care in an emergency depends on the environment in which they work. Recall error is another potential source of bias in the data. The respondent may or may not know or remember the qualifications of the attendants at delivery during the reference period.
Sources and Data collection	Data are collected through DHS, each respondent is asked to recall where they had given birth and who had assisted in the delivery.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, Districts, Residence (Urban/ Rural) Mother's age at birth, Birth order , Mother's education level, Place of Delivery(Health facility , Elsewhere) , Wealth quintiles
Sources of Discrepancies between Global and National Figures	There are no discrepancies between National and Global figures.
Periodicity	3 - 5 years

15. Maternal Mortality Ratio (MMR)

Definition	The maternal mortality ratio (MMR) is the ratio of the number of maternal deaths during a given time period per 100,000 live births during the same time-period. A maternal death refers to a female death from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy. The time reference for MMR is five years period preceding the survey date.
Method of Computation	The Direct Sisterhood Method is used in DHS to estimate maternal deaths. Information is collected from female

	respondents on the survivorship of each of their sisters, the ages of surviving sisters, the year of death or years since death of deceased sisters, and the age at death of deceased sisters. For each sister who died at age 12 or older, the respondent was asked additional questions to determine whether the death was maternity related. Maternal Mortality Ratio(MMR) is calculated as ; $MMR=\frac{\text{Age standardized Maternal Mortality Rate}}{GFR}\times 100{,}000$ Maternal Mortality Rate: is obtained by dividing the number of maternal deaths in a population by the number of women of reproductive age (15-49) multiply by 1000. GFR: denotes General Fertility Rate and it is calculated by dividing the number of births in a year divided by the number of women aged 15–49, times 1000.
Comments and limitations	Maternal mortality data have limitations, particularly related to the underreporting and misclassification of maternal deaths. The maternal mortality ratio should not be confused with the maternal mortality rate (whose denominator is the number of women of reproductive age), which reflects not only the risk of maternal death per pregnancy or birth but also the level of fertility in the population. The maternal mortality ratio (whose denominator is the number of live births) indicates the risk of death once a woman becomes pregnant, and does not take fertility levels into consideration. Because maternal mortality is a relatively rare event, large sample sizes are needed if household surveys are used. This is very costly and may still result in estimates with large confidence intervals. To reduce sample size requirements, the sisterhood method measures maternal mortality by asking respondents about the survivorship of sisters. While this method reduces sample size requirements, it produces estimates covering some 7-12 years before the survey, which renders data problematic for monitoring progress or observing the impact of interventions. The direct sisterhood method asks respondents to provide date of death, which permits the calculation of more recent estimates, but even then the reference period tends to refer to 0-6 years before the survey.
Sources and Data collection	Data on maternal mortality and other relevant variables are obtained through DHS.

Disaggregation - **Geographical**	National
Sources of Discrepancies between Global and National Figures	Differences between National and Global figures could arise from the limitations mentioned above and the use of a different method globally.
Periodicity	3 to 5 years

16. Adolescent birth rate

Definition	The adolescent birth rate measures the annual number of births to women 15 to 19 years of age per 1,000 women in that age group. It represents the risk of childbearing among adolescent women 15 to 19 years of age. It is also referred to as the age-specific fertility rate for women aged 15-19.
Method of Computation	In DHS the adolescent birth rate is computed basing on women's birth history method. The numerator refers to births to women that were 15 to 19 years of age at the time of the birth during a reference period before the interview (0-4years) and the denominator to person-years lived between the ages of 15 and 19 by the interviewed women during the same reference period. The reported observation year corresponds to the middle of the reference period. $A = \frac{B}{P} \times 1{,}000$ Where B denotes births to women that were 15 to 19 years of age at the time of the birth during a reference period before the interview (0-4years) and P denotes female population in that age group (15-19years). In the case of Census, the adolescent birth rate is generally computed based on the date of the last birth or the number of births in the 12 months preceding the enumeration. The census data provide both the numerator and the denominator.
Comments and limitations	The main limitations are the following : Underreporting of births: in particular, the omission of children living elsewhere and children who died very young (a few days or hours after birth), which can result in underestimation of fertility levels. Misreporting of date of birth and/or age and, in particular, the tendency to round off age or year of birth, which can result in under- or overestimation of fertility at certain ages and/or for certain periods Selective survival bias or selectivity effect because the

	women surveyed are those who have survived. Assuming that the fertility of women who died prior to the survey differs from the fertility of the survivors, the fertility levels obtained by the survey may be slightly biased.
Sources and Data collection	NISR collects data through the DHS which uses the women's birth histories and through the population census which asks questions about births that occurred in the 12 months preceding the survey.
Disaggregation - **Geographical** - **Other characteristics**	National, Province , Residence(Urban/ Rural) Education level and Religious affiliations
Sources of Discrepancies between Global and National Figures	Differences may arise due to the limitations mentioned above.
Periodicity	3- 5 years for DHS, 10 years in PHC

17. Antenatal care coverage for at least one visit (ANC)

Definition	Antenatal care coverage for at least 1 visit is the percentage of women aged 15-49 who had a live birth in the 5 years preceding the survey and who received antenatal care provided by skilled health personnel (doctors, midwives, medical assistant or nurse) at least once during pregnancy. Note that Skilled health personnel refers to workers/attendants which are accredited health professionals - such as a midwife, doctor, medical assistant or nurse - who have been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and new-borns. Both trained and untrained traditional birth attendants (TBA) are excluded. The antenatal period presents opportunities for reaching pregnant women with interventions that may be vital to their health and wellbeing and that of their infants. WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content of antenatal care visits, which should include: - blood pressure measurement; - urine testing for bacteriuria & proteinuria;

	- blood testing to detect syphilis & severe anaemia; and - weight/height measurement (optional)
Method of Computation	Antenatal care coverage for at least one visit is computed as below: $A = \frac{C_1}{W} \times 100$ Where; C_1 denotes the number of women aged 15-49 who had a live birth in the 5 years preceding the survey and who received antenatal care provided by skilled health personnel (doctors, midwives, medical assistant or nurse) at least once during pregnancy. W denotes the number of all women aged 15-49 who had a live birth in the same period (5years).
Comments and limitations	Information on ANC visits is based on the mother's report which is note verifiable, but generally in Rwanda ANC coverage is very high.
Sources and Data collection	The National Institute of Statistics of Rwanda collects data through the DHS; women who had had a live birth in the five years preceding the survey were asked whether they had received antenatal care (ANC) and how many visits they had.
Disaggregation Geographical	National , Province, District ,Residence(Urban /rural)
Sources of Discrepancies between Global and National Figures	There are no differences between Global and National figures.
Periodicity	3 - 5 years

18. Antenatal care coverage for at least four visits

Definition	Antenatal care coverage for at least 4 visits is the percentage of women aged 15-49 who had a live birth in the 5 years preceding the survey and who received antenatal care provided by skilled health personnel (doctors, midwives, medical assistant or nurse) at least 4 times during pregnancy. Note that Skilled health personnel refers to workers/attendants which are accredited health professionals - such as a midwife, doctor, medical assistant or nurse - who have been educated and trained to proficiency in the skills needed to manage normal

	(uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and new-borns. Both trained and untrained traditional birth attendants (TBA) are excluded. Unlike for international definition, Antenatal care coverage for at least four visits considers women aged 15-49 who received antenatal care from ANY provider. The antenatal period presents opportunities for reaching pregnant women with interventions that may be vital to their health and wellbeing and that of their infants. WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content of antenatal care visits, which should include: - blood pressure measurement; - urine testing for bacteriuria & proteinuria; - blood testing to detect syphilis & severe anaemia; and - weight/height measurement (optional)
Method of Computation	Antenatal care coverage for at least four visits is computed as below: $A = \frac{C}{W} \times 100$ Where ; C denotes the number of women aged 15-49 who had a live birth in the 5 years preceding the survey and who received antenatal care provided by skilled health personnel (doctors, midwives, medical assistant or nurse) at least 4 times during pregnancy. W denotes the number of all women aged 15-49 who had a live birth in the same period (5years).
Sources and Data collection	The National Institute of Statistics of Rwanda collects data through the RDHS (Rwanda Demographic Health Survey); women who had had a live birth in the five years preceding the survey were asked whether they had received antenatal care (ANC) and how many visits they had.
Disaggregation - **Geographical**	National, Province, District ,Residence(Urban/ Rural)
Comments and limitations	Information on ANC visits is based on the mother's report which is note verifiable, but generally in Rwanda ANC coverage is very high.
Sources of Discrepancies	There are no differences between Global and National

between Global and National Figures	figures.
Periodicity	3 - 5 years

19. Contraceptive prevalence rate (CPR)

Definition	The contraceptive prevalence rate is the percentage of women of reproductive age who are currently using, or whose sexual partner is currently using, at least one contraceptive method, regardless of the method used. It is reported for women aged 15 to 49 who are married or in a union. Women of reproductive age include all women aged 15 to 49. Contraceptive methods include modern and traditional methods. Modern methods of contraception include female and male sterilization, oral hormonal pills, intra-uterine devices (IUD), male and female condoms, injectables, implants (including Norplant), lactational amenorrhea method (LAM), vaginal barrier methods and spermicides. Traditional methods of contraception include the rhythm method (periodic abstinence), withdrawal, and others. Note that LAM is classified in some surveys as a modern method. Unlike for MDG reporting on this indicator where LAM is classified as a traditional method in DHS, LAM figures among the modern contraceptive methods. Note that if more than one method is used, only the most effective method is considered.
Method of Computation	The indicators is computed as; $$\text{CPR} = \frac{\text{Women of Reproductive age who are married or in a consentual union and who are currently using any method of contraception}}{\text{Total number of women of reproductive age who are married or in consentual union}}$$
Comments and limitations	Contraceptive prevalence is often measured alternatively for all women of reproductive age, for sexually active women (irrespective of union status), or for women at risk of pregnancy defined as sexually active, not in fecund, not pregnant and not amenorrhoeic.
Sources and Data collection	Contraceptive prevalence rates are calculated from DHS with questions on current use of contraception. Information is gathered through direct questions to women, including the woman's age and whether she is married or in a consensual union. The questions on contraceptive

	methods often include two parts: a general question asking women if they are currently using a method of contraception and a follow-up question regarding the type of contraceptive method currently used including brand name. In DHS, the methods are described in a series of "probe" questions about methods the respondent has heard about, before the respondent is asked about current use of contraception.
Disaggregation - **Geographical** - **Age** - **Other Characteristics**	National, Province, Districts, Residence(Urban, Rural) Five-year age cohorts for the population aged 15 years and over By contraceptive method currently used
Sources of Discrepancies between Global and National Figures	The estimates are based on nationally owned data. However, discrepancies can be due to the difference in definition of modern methods of contraception.
Periodicity	3 – 5 years

20. Unmet need for family planning

Definition	Unmet need for family planning is defined as the percentage of women of reproductive age, either married or in a consensual union, who have an unmet need for family planning. Women with an unmet need for family planning are women who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the birth of their next child for at least two years or more. The women included are: - all pregnant women (married or in a consensual union) whose pregnancies were unwanted or mistimed at the time of conception; - all postpartum amenorrheic women (married or in consensual union) who are not using family planning and whose last birth was unwanted or mistimed; - and all fecund women (married or in consensual union) who are neither pregnant nor postpartum amenorrheic, and who either do not want any more children (want to limit family size), or who wish to postpone the birth of a child for at least two years or do not know when or if they want another child (want to space births), but are not using any contraceptive method. Infecund women are not included in the numerator.
Method of Computation	Unmet need for family planning is calculated using the following formula:

	$\text{Unmet need for family planning} = \frac{\text{Women of reproductive age who are married or in consensual union and who have an unmet need for family planning}}{\text{Women of reproductive age who are married or in consensual union}}$
Comments and limitations	Trends in unmet need for family planning in a particular population should be based on successive data points that were calculated in a comparable way. In designing and monitoring programmes aimed at reducing unmet need for family planning, this indicator should be interpreted in connection with other relevant national data, including qualitative and quantitative information regarding the reasons that women who are at risk of an undesired or mistimed pregnancy are not using family planning, and assessments of the availability and quality of family planning and other reproductive health services. According to the standard definition of unmet need for family planning, women who are using a traditional method of contraception are not considered to have an unmet need for family planning. Because traditional methods can be considerably less effective than modern methods, additional analyses may be conducted to distinguish between women relying on traditional and modern methods in order to determine the unmet need for modern contraception.
Sources and Data collection	Information on unmet need for family planning is collected through DHS.
Disaggregation - **Geographical** - **Age** - **Other Characteristics**	 National, Province ,District, Residence(Urban/ Rural) Five-year age cohorts for the population aged 15 years and over For spacing ,For limiting, Education level , Wealth quintile
Sources of Discrepancies between Global and National Figures	There should not be any discrepancies between global and national figures arising from adjustments to national data.
Periodicity	3 – 5 years

GOAL 6. COMBAT HIV/AIDS MALARIA AND OTHER DISEASES

21. Condom use at last high-risk sex

Definition	Condom use at last higher-risk sex is the percentage of young men and women aged 15–24 reporting the use of a condom the last time they had sexual intercourse with a non-marital, non-cohabiting sexual partner of those who had sex with such a partner in the last 12 months. Higher-risk sex is defined as sex with a non-marital, non-cohabiting sexual partner.
Method of Computation	The indicator is calculated by dividing the number of respondents aged 15–24 reporting using a condom the last time they had sex with a non-marital and non-cohabiting sexual partner, by the total number of respondents aged 15–24 reporting having had sex with a non-marital, non-cohabitating sexual partner in the last 12 months and multiplying by 100.
Sources and Data collection	Data on the use of condoms during high-risk sex are collected through DHS.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other Characteristics**	 National, Province, Districts, Residence (Urban / Rural) Male and Female 2 years cohorts for the population aged 15 -24 years Knowledge of Condom , education level
Comments and limitations	The maximum protective effect of condoms is achieved when their use is consistent rather than occasional. The current indicator does not provide information on levels of consistent condom use. However, the alternative data collection method of asking whether condoms were always/sometimes/never used in sexual encounters with high-risk partners in a specified period is subject to recall bias. Furthermore, trends in condom use during the most recent sex act will generally reflect trends in consistent condom use. The current indicator is therefore considered adequate to address the target since it is assumed that if use at last higher-risk sex rises, consistent use will also increase.
Sources of Discrepancies between Global and National Figures	In principle, there is no discrepancy between global and national figures.
Periodicity	3 – 5 years

22. HIV prevalence among population aged 15-24 years

Definition	The HIV prevalence rate, population 15-24 years old, is the percentage of population aged 15-24 living with HIV. Human Immunodeficiency Virus (HIV) is a virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death.
Method of Computation	HIV prevalence among 15- 24 years is derived by dividing the number of population aged 15-24 years tested whose HIV test results are positive by the number of same age population tested for HIV.
Comments and limitations	HIV prevalence among young people aged 15–24 years is a better proxy for monitoring overall HIV incidence than prevalence among people aged 15–49 years. Trends in HIV prevalence for older age groups are slow to reflect changes in HIV incidence because of the long average duration of HIV infection.
Sources and Data collection	DHS is the primary sources of data. Women and men who were interviewed in the subsample of households selected of the 2010 RDHS were asked to voluntarily provide blood for HIV testing. For women and men willing to be tested, drops of blood were drawn and dried on filter paper. Analysis of the samples for HIV was carried out at the NRL. The HIV test is anonymous; that is, the results of the test were not linked to survey data until the individual respondent's identifying information was destroyed by NISR. Therefore, the respondents' HIV test results can never be linked to identifying data. Ninety-nine percent of all RDHS respondents who were eligible for testing were interviewed and consented to HIV testing. These data are compiled by the NISR and published on the DHS.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other Characteristics**	 National, Province ,District, Residence, (Rural / Urban) Male/Female 5 years cohorts for the population aged among youth 15-24 years Religion, Employment , Education level , Wealth quintile, sexual behaviour , Demographic characteristics
Sources of Discrepancies between Global and National Figures	The global estimates are representative of the national estimates for a given year.
Periodicity	3 to 5 years for DHS

23. Population 15-24 year-olds who have comprehensive correct knowledge of HIV/AIDS

Definition	This indicator is the percentage of the population aged 15–24 that has a comprehensive correct knowledge of Human immunodeficiency virus/Acquired immunodeficiency syndrome (HIV/AIDS). Comprehensive correct knowledge of HIV/AIDS is correctly identifying the two major ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful, uninfected partner), knowing that a healthy-looking person can transmit HIV and rejecting the two most common local misconceptions about HIV transmission. The two local misconceptions about HIV transmission are a person can get HIV from a mosquito bite, by sharing food with someone who is infected, by hugging or shaking hands with an infected person or through supernatural means. Human Immunodeficiency Virus (HIV) is a virus that weakens the immune system, ultimately leading to Acquired Immuno Deficiency Syndrome (AIDS). HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death. Without treatment, median survival from the time of infection is about 10.5 years for males and 11.5 years for females. Access to treatment is uneven, and no vaccine is currently available.
Method of Computation	This indicator is calculated by dividing the number of persons aged 15–24 years who have a comprehensive correct knowledge of HIV/AIDS by the total number of persons aged 15–24 and multiplying by 100. A person is considered as having a comprehensive correct knowledge of HIV/AIDS if he or she answered 'Yes' to first three questions and 'No' to the last two : - Can people reduce their chance of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners? - Can people reduce their chance of getting the AIDS virus by using a condom every time they have sex? - Can a healthy-looking person have HIV? - Can a person get HIV from mosquito bites? - Can a person get HIV by sharing food with someone who is infected? In Rwanda DHS the following additional questions are also asked? - Can people get the AIDS virus because of witchcraft

	or other supernatural means? - Can men reduce their chance of getting the AIDS virus by getting circumcised?
Sources and Data collection	Data on knowledge and misconceptions about HIV and AIDS are collected through DHS.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other Characteristics**	 National, Province , District ,Residence(Urban/ Rural) Male/Female 5 years cohorts for the population aged 15 -24 years Marital status, wealth quintile, education level
Comments and limitations	The belief that a healthy-looking person cannot be infected with HIV is a common misconception that can result in unprotected sexual intercourse with infected partners. Correct knowledge about false beliefs of possible modes of HIV transmission is as important as correct knowledge of true modes of transmission. For example, the belief that HIV is transmitted through mosquito bites can weaken motivation to adopt safer sexual behaviour, while the belief that HIV can be transmitted through sharing food reinforces the stigma faced by people living with AIDS. Surveying the most-at-risk populations is challenging. The overall sample is normally not sufficiently large to provide a representative sample of the most-at-risk sub-group of the population.
Sources of Discrepancies between Global and National Figures	No discrepancy between Global and National figures.
Periodicity	3 - 5 years

24. Ratio of school attendance of orphans to school attendance of non-orphans

Definition	Ratio of school attendance of orphans to school attendance of non-orphans is defined as the ratio of school attendance of orphans aged 10–14 to school attendance of non-orphans aged 10–14 years. School attendance is defined as the proportion of children in a given group attending school. Orphans are defined as children aged 10–14 whose biological parents have both died. Non-orphans are defined as children aged 10–14 whose parents are both still alive and who currently live with at least one biological parent.

	The age of children is measured as of the last birthday.
Method of Computation	The indicator is computed as the school attendance rate of orphans aged 10–14 years divided by the school attendance rate of non-orphans aged 10–14 years. The school attendance of orphans aged 10–14 years is calculated by dividing the number of children who have lost both parents and attend school by the total number of children who have lost both parents. The school attendance of non-orphans aged 10–14 years is calculated by dividing the number of children whose parents are both still alive, who live with at least one parent and who attend school, by the total number of children whose parents are both still alive and who live with at least one parent.
Comments and limitations	This indicator is not a direct measure of schooling for children orphaned by AIDS. Given the difficulties in measuring the number of children orphaned by AIDS, the indicator is calculated on the basis of all orphans aged 10–14 years independently of the cause of death of the parents. However, it is believed that a high proportion of deaths of adults with school-age children in countries heavily impacted by the HIV epidemics is likely to be related to AIDS. The indicator is limited to children aged 10–14 for comparability purposes, as age at school entry varies across countries. Also, the age-range 10–14 years is used because younger orphans are more likely to have lost their parents recently so any detrimental effect on their education will have had little time to materialize. The definitions of orphan/non-orphan used for this indicator (both parents have died versus both parents are still alive) are chosen so that the maximum effect of disadvantage resulting from missing parents can be identified and tracked over time. Due to coverage limitations, this indicator will tend to understate the relative challenges orphaned children face in attending school. Household surveys, that are the typical source of information for calculating this indicator, can miss children in unstable households, and orphaned children are disproportionately likely to be in such households. Also, children that are more likely to be orphans, such as those living on the street or in institutions are sometimes not recorded in household surveys.

Sources and Data collection	Data on school attendance of orphans and non-orphans are collected through (DHS). Note that Collected data in DHS are based on only children who usually live in the household.
Disaggregation - **Geographical** - **Sex** - **Other Characteristics**	 National, Province, District Residence (Urban/ Rural) Male /Female Wealth quintile
Sources of Discrepancies between Global and National Figures	In principle, there is no discrepancy between global and national figures.
Periodicity	3 – 5 years

25. Proportion of population with advanced HIV infection with access to antiretroviral drugs

Definition	The proportion of adults and children with advanced HIV infection currently receiving antiretroviral therapy according to nationally approved treatment protocols (or WHO/Joint UN Programme on HIV and AIDS standards) among the estimated number of people with advanced HIV infection. Human immunodeficiency virus (HIV) is a virus that weakens the immune system, ultimately leading to the Acquired immunodeficiency syndrome (AIDS). HIV destroys the body's ability to fight off infection and disease, which can ultimately lead to death. Infections associated with severe immunodeficiency are known as "opportunistic infections", because they take advantage of a weakened immune system. Without treatment, average survival from the time of infection is about 10.5 years for males and 11.5 years for females. Access to treatment is uneven, and no vaccine is currently available. Antiretroviral therapy (ART) consists of the use of at least three antiretroviral (ARV) drugs to maximally suppress HIV and stop the progression of HIV disease. Acquired immunodeficiency syndrome (AIDS) refers to the most advanced stages of HIV infection. AIDS is defined clinically by the occurrence of any of more than 25 related opportunistic infections or cancers in a person with serological evidence of HIV infection. An immunological diagnosis of AIDS can also be made if the CD4 count is less than 200 cells per mm3 in an HIV-infected adult (for AIDS diagnosis in children see: http://www.who.int/hiv/pub/vct/hivstaging). Eligible for ART are those with advanced HIV infection

	requiring antiretroviral therapy. This is based on recommendations by WHO which were updated in 2010. For example, WHO recommended in 2010, based on new evidence, that the CD4 threshold at which antiretroviral therapy is deemed necessary for adults to be changed from 200 cells per mm3 to 350 cells per mm3. Eligibility criteria for initiating antiretroviral therapy among infants and children are in accordance with WHO treatment guidelines for infants and children.
Method of Computation	This indicator is calculated by dividing the number of adults and children in need for ART who receive it by the total number of adults and children with HIV eligible for ART and multiplying by 100.
Comments and limitations	The reported number of people on antiretroviral therapy carries uncertainties. Programme monitoring systems need to be further developed to increase accuracy. For example, some patients pick up several months of antiretroviral drugs during one visit to a treatment centre, which could include antiretroviral therapy for the last month of the reporting period, but might not be recorded in the patient register as visits for the last month of the reporting period. Efforts should be made to account for these patients, as they need to be included in the calculation of the indicator. Although this indicator allows trends to be monitored over time, it does not attempt to distinguish between the different types of treatment regimens available nor does it measure the cost, quality or effectiveness of treatment. Antiretroviral therapy for post-exposure prophylaxis is not included either.
Sources and Data collection	Data on the number of adults and children in need for ART who receive it are collected from the test facilities and sent to central for processing. The total number of adults and children with HIV who need antiretroviral therapy is generated using a standardized statistical modelling approach. The estimation of the number of adults with advanced HIV infection who should start treatment is based on the assumption that the average time from HIV seroconversion to eligibility for antiretroviral therapy is eight years and, without antiretroviral therapy, the average time from eligibility to death is about three years.
Disaggregation - **Geographical** - **Sex** - **Age**	 National Male/Female Adult/ Children

Sources of Discrepancies between Global and National Figures	There are no discrepancies between Global and national figures.
Periodicity	Annual

26. Death rate associated with malaria

Definition	The death rate associated with malaria is the number of deaths caused by malaria per 100,000 people per year.
Method of Computation	The malaria death rate (I) is computed as $I=\frac{D_t}{POP}\times 100{,}000$ D_t denotes the number of death due to malaria in year t and (Pop) total population.
Comments and limitations	In terms of recording deaths caused by malaria, the symptoms of malaria may be similar to those of other diseases so one cannot always be certain that a death is due to malaria. This is particularly the case with children since many deaths occur in children who may simultaneously suffer from a range of conditions including respiratory infections, diarrhoea, and malnutrition. Thus, the number of death caused by malaria can be overestimated.
Sources and Data collection	Information on the number of death caused by malaria are compiled annually through the RHMIS/MoH and are published in the MoH annual report. Mid-year population is based on the Population and Housing Census and yearly projections.
Disaggregation - **Geographical** - **Sex** - **Age**	 National, Province, District Male/Female Age group
Sources of Discrepancies between Global and National Figures	There are no discrepancies between Global and national figures.
Periodicity	Annual

27. Death rate associated with tuberculosis

Definition	The tuberculosis death rate indicator refers to the estimated number of deaths due to tuberculosis (TB) in one year per 100,000 populations per year. Deaths from all

	forms of TB are included. However, deaths in HIV positive people with TB as a contributory cause not included in this indicator. TB is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to "wall off" the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Tuberculosis is treatable with a six-month course of antibiotics.
Method of Computation	The TB death rate (I) is computed as $I=\frac{D_t}{Pop}\times 100{,}000$ Dt denotes the number of death due to TB in year t and (Pop) total population.
Comments and limitations	Reliable figures require that death registration be nearly universal and that the cause of death be reported routinely on the death records and determined by a qualified observer according to the International Classification of Diseases. Such information is generally not available in developing counties. Currently, Rwanda has put in place the "TB deaths audit mechanism" to be able to exclude deaths from causes other than TB.
Sources and Data collection	Administrative data are derived from the administration of health services.
Disaggregation - **Geographical** - **Sex** - **Age**	 National, Residence (Urban/Rural) Male/Female Age group
Sources of Discrepancies between Global and National Figures	There are no discrepancies between Global and National figures.
Periodicity	Annual

28. Incidence of malaria

Definition	The Incidence of malaria refers to the number of new cases of malaria per 100,000 people per year. Malaria cases are confirmed by microscopic examination or RDT in Rwanda.
Method of Computation	The malaria incidence rate (I) is computed as $I=\frac{M_t}{Pop}\times 100{,}000$ Where M_t denotes the number of new cases of malaria in year t and (Pop) total population.
Comments and limitations	
Sources and Data collection	Information on the number of malaria cases, reporting completeness and case confirmation rates are compiled annually by the ministry of health through HMIS and are published in the MoH annual report. Note that the private health care providers reports to MoH.
Disaggregation - **Geographical** - **Sex** - **Age**	 National, Province , District Male/Female Age group
Sources of Discrepancies between Global and National Figures	There are no discrepancies between National and Global figures.
Periodicity	Annual

29. Incidence of tuberculosis

Definition	Tuberculosis incidence is defined as the number of new TB cases and recurrent (relapse) episodes of TB (all forms) occurring in a given year per 100,000 population. Recurrent episodes are defined as a new episode of TB in people who have had TB in the past and for whom there was bacteriological confirmation of cure and/or documentation that treatment was completed. All forms of TB are included, as are cases in people with HIV.
Method of Computation	This indicator is computed as $I=\frac{M_t}{Pop}\times 100{,}000$ Where Mt denotes the number of new cases of TB in year t and (Pop) total population.

Comments and limitations	Prevalence and death rates are more sensitive markers to the changing burden of tuberculosis than incidence (new cases), although data on trends in incidence are far more comprehensive and give the best overview of the incidence of tuberculosis control.
Sources and Data collection	The number of new cases detected by national TB programmes is collected as part of the routine surveillance (recording and reporting) that is an essential component of the Stop TB Strategy. Quarterly reports of the number of TB cases registered are then compiled and sent (either directly or via intermediate levels) to the central office of the national TB control programme. Data on TB incidence rate are published on the Ministry of Health Report.
Disaggregation - **Geographical** - **Sex** - **Age**	 National, Residence(Urban/Rural) Male/Female Age
Sources of Discrepancies between Global and National Figures	There are no discrepancies between global and national figures.
Periodicity	Annual

30. Prevalence of tuberculosis

Definition	The prevalence of tuberculosis is defined as the number of TB cases in a population at a given point in time (sometimes referred to as "point prevalence") per 100,000 populations. It includes cases of TB in people with HIV. TB is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to “wall off” the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Tuberculosis is treatable with a six-month course of antibiotics. Human Immunodeficiency Virus (HIV) is a virus that weakens the immune system, ultimately leading to AIDS, the acquired immunodeficiency syndrome. HIV destroys the body’s ability to fight off infection and disease, which can ultimately lead to death.

Method of Computation	The TB prevalence rate is computed as $I=\frac{M_t}{Pop}\times 100{,}000$ Where M_t denotes the number cases of TB in year t and (Pop) total population.
Comments and limitations	
Sources and Data collection	Prevalence of TB surveys and administrative data are source for this indicator.
Disaggregation - **Geographical** - **Sex** - **Age**	 National, Residence (Urban/ Rural) Male/Female Age
Sources of Discrepancies between Global and National Figures	There are no discrepancies between global and national figures.
Periodicity	Annual

31. Proportion of children under 5 sleeping under insecticide-treated bed nets

Definition	Defined as the number of children aged 0-59 months that slept under an insecticide-treated mosquito net the night prior to the survey expressed as percentage of the total number of children aged 0-59 months included in the survey.
Method of Computation	The indicator is computed as; $M=\frac{U}{C}\times 100$ Where U denotes number of children aged 0-59 months (5 years) who slept under an Insecticide-Treated Nets (ITN) the night prior to the survey and C denotes the total number of children aged 0-59 months (or 5 years) included in the survey.
Comments and limitations	The limitation is that recall bias during interviews can lead to inaccurate date reports of the last insecticide impregnation of nets. Also, information is not typically collected on whether nets were washed after treatment, which can reduce the net's effectiveness.
Sources and Data collection	The National Institute of Statistics of Rwanda collects data through the RDHS (Rwanda Demographic Health Survey), All household respondents were asked whether their household owned any mosquito nets and, if so, how many

	children slept under an insecticide-treated net (ITN) mosquito net the night prior to the survey. Interviewers were instructed to look at the nets whenever possible. This indicator is collected also through the Malaria indicator Survey (MIS) every 2 years. The survey has the same methodology as the DHS.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other Characteristics**	National, Province, Districts ,Residence(Urban, rural) Male/Female Age in months Wealth quintiles
Sources of Discrepancies between Global and National Figures	There is no source of discrepancies
Periodicity	3 - 5 years for DHS, 2 years for MIS

32. Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs

Definition	Defined as the number of children aged 0-59 months with fever in the 2 weeks prior to the survey who received any anti-malarial medicine expressed as percentage of the total number of children aged 0-59 months reported to have fever in the two weeks prior to the survey.
Method of Computation	The indicator is computed as; $M=\frac{U}{C}\times 100$ Where U denotes number of children aged 0-59 months with fever in the 2 weeks prior to the survey who received any anti-malarial medicine and C denotes the total number of children aged 0-59 months reported to have fever in the two weeks prior to the survey.
Comments and limitations	The indicator reports on receiving any anti-malarial medicine and includes anti-malarial medicines, such as chloroquine, that may be less effective due to widespread resistance and treatment failures. In Rwanda they consider mainly, Coartem, primo and others (Artesunate injectable, Artemether + Lumefantrine20mg + 120mg) and the medicine are still effective up to now.

	Because of difficulty recalling past events, respondents may not provide reliable information on episodes of fever within the previous two weeks or on the identity of prescribed drugs.
Sources and Data collection	Information on the proportion of fever cases seeking care are obtained from DHS and MIS conducted every 2 years. The survey has the same methodology as the DHS.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other Characteristics**	 National, Province, Districts ,Residence(Urban, rural) Male/Female Age in months Wealth quintiles, mother's education level
Sources of Discrepancies between Global and National Figures	There are no source of discrepancies between national and international figures
Periodicity	3- 5 years for DHS, 2 years for MIS

33. Tuberculosis detection rate under DOTS

Definition	The proportion of tuberculosis (TB) cases detected, also known as the TB detection rate, is the number of estimated new TB cases detected in a given year using the internationally recommended tuberculosis control strategy directly observed treatment shortcourse (DOTS) approach expressed as a percentage of all new TB cases. Tuberculosis is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to "wall off" the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Tuberculosis is treatable with a six-month course of antibiotics. A tuberculosis case is defined as a patient in whom tuberculosis has been bacteriologically confirmed or diagnosed by a clinician. Case detection means that TB is diagnosed in a patient and is reported within the national surveillance system.

	A new case of TB is defined as a patient who has never received treatment for TB, or who has taken anti-TB drugs for less than 1 month. DOTS is a proven TB treatment system based on accurate diagnosis and consistent treatment with a full course of anti-tuberculosis drugs (isoniazid, rifampicin, pyrazinamide, streptomycin and ethambutol). It is the first component and foundation of the internationally-recommended Stop TB Strategy, which was launched by WHO as a successor to the DOTS strategy in 2006.
Method of Computation	The TB case detection rate under DOTS is calculated by dividing the number of new cases notified by the estimated number of incident cases for the same year and multiplying by 100.
Comments and limitations	Sputum smear-positive cases are the focus of this indicator because they are the principal sources of infection to others, because sputum smear microscopy is a highly specific (if somewhat insensitive) method of diagnosis, and because patients with smear-positive disease typically suffer higher rates of morbidity and mortality than smear-negative patients. However, national TB control programmes should aim to provide treatment to all patients, as set out in the Stop TB Strategy.
Sources and Data collection	Data for this indicator are derived from National TB programmes, which monitor and report cases detected treatment progress and programme performance. Through this system, cohorts of patients can be monitored directly and accurately by making systematic evaluations of patient progress and treatment outcomes. The number of new cases detected by national TB programmes is collected as part of the routine surveillance (recording and reporting) that is an essential component of the Stop TB Strategy. Quarterly reports of the number of TB cases registered are then compiled and sent (either directly or via intermediate levels) to the central office of the national TB control programme. Data on TB detection rate are published on the Ministry of Health Report.
Disaggregation - **Geographical** - **Age group** - **Sex**	 National, Province, District, Health Centres Age Female/ Male
Sources of Discrepancies between Global and National Figures	In principle, there is no discrepancy between global and national figures.

Periodicity	Annual

34. Tuberculosis treatment success rate under DOTS

Definition	The proportion of TB cases detected and cured, also known as the TB treatment success rate, is the number of new, TB cases in a given year that were cured or completed a full treatment of DOTS expressed as a percentage of all new TB cases. Tuberculosis is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection with Mycobacterium tuberculosis often causes no symptoms, since the person's immune system acts to "wall off" the bacteria. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Tuberculosis is treatable with a six-month course of antibiotics. A tuberculosis case is defined as a patient in whom tuberculosis has been bacteriologically confirmed or diagnosed by a clinician. A new case of TB is defined as a patient who has never received treatment for TB, or who has taken anti-TB drugs for less than 1 month. DOTS is a proven TB treatment system based on accurate diagnosis and consistent treatment with a full course of anti-tuberculosis drugs (isoniazid, rifampicin, pyrazinamide, streptomycin and ethambutol). It is the first component and foundation of the internationally-recommended Stop TB Strategy, which was launched by WHO as a successor to the DOTS strategy in 2006.
Method of Computation	The TB treatment success rate is calculated by dividing the number of new, registered TB cases that were cured or completed a full course of treatment by the total number of new registered cases and multiplying by 100. The treatment success rate is calculated based on the results of the treatment for each patient. At the end of treatment, each patient is assigned one of the following six mutually exclusive treatment outcomes: cured; completed; died; failed; defaulted; and transferred out with outcome unknown. The proportions of cases assigned to these outcomes, plus any additional cases registered for treatment but not assigned to an outcome, add up to 100 per cent of cases registered.
Comments and limitations	Sputum smear-positive cases are the focus of this indicator because they are the principal sources of infection to

	others, because sputum smear microscopy is a highly specific (if somewhat insensitive) method of diagnosis, and because patients with smear-positive disease typically suffer higher rates of morbidity and mortality than smear-negative patients. However, national TB control programmes should aim to provide treatment to all patients, as set out in the Stop TB Strategy. Even where treatment is of high quality, reported treatment success rates will only be high when the routine information system is also functioning well. The treatment success rate will be affected if the outcome of treatment is not recorded for all patients (including those who transfer from one treatment facility to another).
Sources and Data collection	Data for this indicator are derived from National TB programmes, which monitor and report cases detected treatment progress and programme performance. Through this system, cohorts of patients can be monitored directly and accurately by making systematic evaluations of patient progress and treatment outcomes. Because treatment for TB lasts 6-8 months, there is a delay in assessing treatment outcomes.
Disaggregation - **Geographical** - **Sex** - **Age** - **Other Characteristics**	National, province, district, Health Centres Female/ Male Age group By drug resistance and HIV status.
Sources of Discrepancies between Global and National Figures	There are no discrepancies between global and national figures.
Periodicity	Each year national TB control programmes report to WHO the number of cases of TB diagnosed in the preceding year, and the outcomes of treatment for the cohort of patients who commenced treatment during the year prior to that. Data are produced annually.

GOAL 7. ENSURE ENVIRONMENTAL SUSTAINABILITY

35. Carbon dioxide emissions

Definition	Carbon dioxide emissions is defined as the total carbon dioxide (CO2) emissions from energy, industrial processes, agriculture and waste (minus CO2 removal by sinks), presented as total emissions. Total carbon dioxide (CO2) emissions are defined as the total amount of carbon dioxide and other gases such as

	methane (CH4) and Nitrous oxide with direct effect to global warming, emitted by a country as a consequence of human activities, minus carbon dioxide removals by sinks. The term "total" implies that emissions from all national activities are considered and consequently, methane (CH_4) and Nitrous oxide are converted in CO2 equivalent to make a national total emissions in CO2 including: CO_2, CH_4 and N_2O. The typical sectors for which CO2 emissions are estimated are energy, industrial processes, agriculture and waste. Emissions resulting from land-use changes and forest cover changes are also calculated. The energy sector includes emissions from the consumption of solid, liquid and gaseous fuels and emissions from oil/gas flaring. Industrial processes include emissions from cement production and some other processes. The waste sector includes emissions from dumpsites, waste water, sludge and waste incineration. Sinks are processes, activities or mechanisms which remove a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere. Forests and other vegetation are considered sinks because they remove carbon dioxide through photosynthesis.
Method of Computation	Rwanda does not have its own methodology for estimating national emissions and absorptions of greenhouse gases. Some guidelines for the establishment of national communications from Parties not targeted in Annex I of the Convention (decision 17/CP.8) and the IPCC methodology (1996, 2000, and 2003) have been used. The key methodological documents are: 1. Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.htm 2. Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories: http://www.ipcc-nggip.iges.or.jp/public/gp/english/ 3. Good Practice Guidance for Land Use, Land-Use Change and Forestry. http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.htm
Comments and Limitations	Carbon dioxide is only one of the greenhouse gases and therefore this indicator provides information on only one part of overall greenhouse gas emissions. Accordingly, the overall impact on climate change may be underestimated if only CO2 emissions are included in the estimate. However, usually the share of CO2 in total greenhouse gas emissions

	is high, ranging from 70 per cent to 90 per cent, and it is therefore reasonable to use CO2 emissions as a simple proxy for a more complex composition of greenhouse gases. CO2 emissions/removals from land-use change and forestry are often known with much less certainty than emissions from other sectors, if they are known at all. In uncertain cases, CO2 emissions/removals from forests and land-use changes can be excluded and "total" CO2 emissions can be estimated as the sum of emissions from energy, industrial processes and waste. Sector data used to compute the CO2 emission are collected for other purposes which compromise the quality of the result.
Sources and Data collection	Data on key hypotheses, the demand and energy transformation, land use allocation were collected from government services. However specific data on the quantity of fuel consumed per day and per vehicle were estimated on basis of a survey carried out in private institutions such as ATRACO, ACETAMORWA, VOLCANO, RWANDA-MOTOR. Lastly, the data on future projections were estimated on basis of the vision 2020 of the government and from the experts' judgment based on the national conditions. The data on the use of energy for lighting and for cooking per household was obtained from EICV 1 & 2 conducted by NISR.
Disaggregation - **Geographical** - **Other Characteristics**	National Individual source or source categories (Energy, Industrial processes, Agriculture, Land Use, Land-Use Change and Forestry, Waster and etc.)
Sources of Discrepancies between Global and National Figures	Data are national. No estimates for the possible differences with the MDGs global database are available.
Periodicity	Rwanda submits GHG and CO2 data periodically as part of their national communications.

36. Consumption of all ozone-depleting substances

Definition	The consumption of ozone-depleting substances is the sum of the consumption of the ozone-depleting potential-weighted metric tons of all ozone-depleting substances controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer. Ozone-depleting potential-weighted metric tons are metric tons of individual ozone-depletings substances multiplied by their ozone-depleting potential.

	Ozone-depleting substances (ODS) are defined in the Montreal Protocol as substances containing chlorine or bromine that destroy the stratospheric ozone layer which absorbs most of the biologically damaging ultraviolet radiation. The phasing out of ozone depleting substances, and their substitution by less harmful substances or new processes, are aimed at the recovery of the ozone layer. Substances controlled by the Montreal Protocol are categorised into annexes, with different groups in each annex. These include chlorofluorocarbons (CFCs) (Annex A, group I), halons (Annex A, group II), and methyl bromide (Annex E, group I) among others. Controlled substances are substances in Annex A, Annex B, Annex C or Annex E of the Montreal Protocol, whether existing alone or in a mixture. They include the isomers of any such substance, but exclude any controlled substance or mixture that is in a manufactured product other than a container used for the transportation or storage of that substance. Therefore trade in finished products would not fall under the control of the Protocol. Ozone depleting potential (ODP) refers to the amount of ozone depletion caused by a substance. It is the ratio of the impact on ozone of a chemical substance compared to the impact of a similar mass of CFC-11. The ODP of CFC-11 is defined to be 1. CFCs have ODPs that range from 0.6 to 1 while hydro chlorofluorocarbons (HCFCs) have ODPs that range from 0.001 to 0.52. Halons have ODPs of up to 10 while methyl bromide has an ODP of 0.6. A full list of the controlled substances as well as the control measures applicable to each group of substance can be found in the protocol text, which is available at http://ozone.unep.org/
Method of Computation	Consumption of ODS is calculated as the national production of ODS plus imports, minus exports, minus destroyed quantities, minus feedstock uses of a controlled substance. In Rwandan case , production , export and feedstock are equated to zero. Destruction and feedstock uses both remove ODS from the system, hence they are subtracted when calculating consumption. The Montreal Protocol also specifies that consumption shall not include the amounts used for quarantine and pre-shipment applications of methyl bromide, and further specifies that exports to non-Parties will count as consumption in the exporting Party.

	The precise formula for calculating consumption is: Consumption = (Total ODS Production) – (Destroyed ODS) – (Production for Internal Feedstock Use) – (Production for internal quarantine use (for methyl bromide only)) + (Total New Imports) – (Import for Feedstock) – (Import for Quarantine Use) – (Total New Exports) + (Exports to Non-parties) Consumption of individual substances need to be multiplied by their ozone depleting potential and summed to calculate the consumption of all ODS in ozone-depleting potential weighted metric tons.
Comments and limitations	For ozone depletion, this indicator does not reveal much about current trends in deterioration of the ozone layer because the ecosystem response to ODS consumption is delayed by up to several decades. Another limitation for this indicator is that there are sometimes problems with the accuracy of the available consumption data. Sources of inaccuracies include errors of omission, under-reporting, over-reporting, and miss-categorisation where one substance is incorrectly reported as a different substance. Availability of data for all substances varies across countries and years. In Rwanda the consumption values for "All Ozone-Depleting Substances" refer only to CFCs and HCFCs substances.
Sources and Data collection	Estimation of the consumption of ODS requires data on national ODS production plus imports, minus exports, minus stocks destroyed. These data are collected from the Rwandan Revenue Authority (RRA) and Rwanda Bureau of Standards. Data are usually collected and reported by the Rwanda Environment Management Authority.
Disaggregation	By sectors in which consumption or production of ODS takes place, and by substance.
Sources of Discrepancies between Global and National Figures	National figures are used directly without adjustment (other than applying the standard computational formula).
Periodicity	Rwanda reports data annually to the Ozone Secretariat using data reporting formats agreed by the Parties. Data for this indicator at the international level are reported by the United Nations Environment Programme (UNEP) Ozone Secretariat.

37. Proportion of land area covered by forest

Definition	The proportion of land area covered by forest is the amount of forest area in the total land area. Forest area includes land spanning more than 0.25 hectares with trees higher than 5 metres and a canopy cover of more than 10 per cent. Areas under reforestation that have not yet reached but are expected to reach a tree height of 5 metres and canopy cover of 10 per cent are included, as are temporarily unstocked areas, resulting from human intervention or natural causes, which are expected to regenerate. Also included are: areas with bamboo and palms, provided that height and canopy cover criteria are met; forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific scientific, historical, cultural or spiritual interest; windbreaks, shelterbelts and corridors of trees with an area of more than 0.25 hectares and width of more than 20 metres; and plantations primarily used for forestry or protective purposes, such as rubber-wood plantations . Forest area excludes land that is predominantly under agricultural or urban land use, such as tree stands in agricultural production systems (e.g. fruit plantations and agroforestry systems), and trees in urban parks and gardens. Land area is the total surface area of a country less the area covered by inland waters, like major rivers and lakes.
Method of Computation	This indicator is calculated by dividing the total area of forest by total land area and multiplying by 100
Comments and limitations	The national forest inventory carried out in 2007 by ISAR and CGIS-NUR considered only forest areas with 0.5 ha or more due to relatively low resolution of satellite images used [Landsat (30 m), Aster (15m) and SPOT (10-20m)] and financial limitations (MINIRENA/CGIS-NUR, 2007). This national forest inventory was therefore incomplete because it left out smaller woodlots (< 0.5 ha), while such woodlots are considered the main source of forest products for rural and even urban households needs. In fact, a recent study by FAO (FAO, 2010) estimated that small woodlots and tree resources outside forest (TROF) cover around 6.6% of Rwanda land area. It is anticipated that the present forest mapping, which will include smaller forest plantations up to a quarter of a hectare (0.25 ha), will provide more reliable data on smaller forest plantations and hence constitute a reliable source for future planning of the forest sector. Also, the indicator does not capture key characteristics or conditions of forest resources such as whether the forests are undisturbed primary forests, severely degraded forests

	or something in between. Nor does the indicator capture forest health and vitality, the actual volume of trees, the amount of carbon sequestered, tree diversity, forest values, or forest management status. In addition, differences in methodologies and definitions over time make it difficult to compare the results of different assessments and to accurately estimate changes over time.
Sources and Data collection	Data on forest areas originate from national forest inventories or assessments and special studies. It is possible to produce estimates with information from ground surveys, cadastral surveys, remote sensing or a combination of these. National forest inventories are expensive and, as a result, they are carried out at infrequent intervals . On the other hand, easier access to remote sensing imagery has enabled recent assessments of forest and tree cover in some countries.
Disaggregation - **Geographical** - **Other characteristics**	National By type of forest species
Sources of Discrepancies between Global and National Figures	The national figures in the database are reported by the countries themselves following standardized format, definitions and reporting years, thus eliminating any discrepancies between global and national figures.
Periodicity/ Expected Time of Release	National forest inventories are expensive and, as a result, they are carried out at infrequent intervals.

38. Proportion of terrestrial area protected to total territorial area

Definition	The proportion of terrestrial area protected is defined as the proportion of a country's total terrestrial area that is designated as a protected area. The terrestrial of a country is the sum of the terrestrial area falling within the country's borders. It is also referred to as territorial area. Terrestrial area includes total land area and inland waters. Protected areas (terrestrial or freshwater), as defined by the International Union for Conservation of Nature (IUCN), are clearly defined geographical spaces, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Only protected areas that are "nationally designated" are included in this indicator. The status "designated" is

	attributed to a protected area when the corresponding authority, according to national legislation or common practice (e.g. by means of an executive decree or the like), officially endorses a document of designation. The designation must be made for the purpose of biodiversity conservation, not single species protection or fortuitous de facto protection arising because of some other activity (e.g. military).
Method of Computation	The indicator is computed by dividing the total protected area–both terrestrial by the total territorial area of the country and multiplying by 100.
Comments and limitations	The indicator provides a measure of governments' willingness to protect biodiversity. However, it does not measure the effectiveness of protected areas in reducing biodiversity loss, which ultimately depends on a range of management and enforcement factors not covered by the indicator. The indicator does not provide information on internationally designated protected areas and other areas that although important for conserving biodiversity, are not designated as protected (e.g. many indigenous and community conserved areas). The data also do not usually include sites protected under local or provincial law. In some case, it has been challenging to delimit water where it is trans boundary (e.g. lake Kivu shared with DRC, Cyohoha or Rweru shared with Burundi, etc).
Sources and Data collection	The first step in data collection is the mapping of the area to be protected using Geographic Information system (GIS) that stores information about protected areas such as their name, size, type, date of establishment, geographic location (point) and/or boundary (polygon); the next step is the drafting of the law for the protection of such area. For Mapping the institution in charge is Rwanda Natural Resources Authority in its department of land and mapping. For law drafting the institution in charge is Rwanda Natural Resources Authority in its department of Forestry and Nature Conservation or in its department of Integrated Water Resources (depending on the area if it is terrestrial or fresh water), but also they do consultations with other partner institutions. The reporting is also done jointly depending on utilization

	of the are - If it a park RDB comes on first floor - If it is for biological diversity conservation, especially overall reporting to the CBD, it is REMA under supervision of MINIRENA In both circumstances REMA as a Rwandan regulator institution in environment is implicated.
Disaggregation - **Geographical**	National
Sources of Discrepancies between Global and National Figures	UNEP-WCMC aggregates the global and regional figures for this indicator from the national figures calculated through GIS analysis. The global, regional and national figures provided by UNEP-WCMC are therefore consistent. Gaps and/or time lags in reporting national protected area data to the WDPA can however result in discrepancies between the national figures provided by UNEP-WCMC and national figures available from national agencies.
Periodicity/Expected Time of Release	Annual

39. Proportion of population using an improved drinking water source

Definition	It is the share of the population with access to an improved drinking water source. The source should be reliable, affordable, provide an adequate quantity of drinking water (minimum 20litre/person/day). The type of improved drinking water source includes piped water, protected wells and springs, tubewell/borehole, bottle water as well as rainwater collection.
Method of Computation	Percentage of urban households with access to an improved drinking water source is computed as = (Na/ N) * 100 Where Na denotes number of urban households with access to improved drinking water source and N denotes total number of households.
Sources and Data collection	Data are collected through the EICV, DHS and PHC.
Disaggregation - **Geographical** - **Other Characteristics**	National, Province, District ,Residence (Urban/Rural) Type of improved water sources, time to obtain drinking water, water treatment prior drinking and habitat.
Comments and Limitations	Given the lack of nationally representative data on drinking water quality and safety and the high costs and technical difficulties of collecting such information at a large scale,

	the Inter-agency Expert Group on MDG Indicators endorses the use of this indicator on the use of an improved drinking water source as a proxy for access to safe drinking water. In the context of Rwanda, rain water is considered as improved source of water. However, the inclusion of rain water in the improved sources of water does not affect the level of the indicator to any significant degree since less than 1% of households use it. Thus, this calls for a need to establish a clear national definition on what are the type of improved drinking water sources.
Sources of Discrepancies between Global and National Figures	The origins of the most common discrepancies between internationally reported and nationally reported figures are: - Use of different definitions for safe drinking water. - Use of population as the denominator for coverage as per the MDG indicator vs. the use of households as the denominator is routinely done by DHS.
Responsible Institutions - **Main**	NISR
Periodicity	2 to 3 years for EICV, 3- 5 years for DHS and 10 years for Census.

40. Proportion of population using an improved sanitation facility

Definition	The proportion of the urban households using an improved sanitation facility is the share of the population with access to facilities that hygienically separate human excreta from human contact. Sanitation types considered 'improved' are flush toilets, pit latrines with a floor slab and ventilated improved pit latrine
Method of Computation	Percentage of urban households having improved sanitation facilities is computed as; $\frac{N_a}{N} \times 100$ Where N_a denotes number of urban households with access to improved sanitation facilities and N denotes total number of urban households.
Comments and limitations	
Sources and Data	Data are collected through the EICV, DHS and PHC surveys.

collection	
Disaggregation - **Geographical** - **Other Characteristics**	National ,Province, District Types of improved sanitation facility and habitat.
Sources of Discrepancies between Global and National Figures	The origins of the most common discrepancies between global and national figures are: - Use of different definitions for sanitation facilities. - Use of population as the denominator for coverage as per the MDG indicator vs. the use of households as the denominator as was routinely done by DHS.
Periodicity	3 -5 years for EICV and DHS and 10 years for PHC.

Goal 8. Develop a global partnership for development

41. Debt service as percentage of exports of goods and services and net income from abroad

Definition	The External Public debt service as a percentage of exports of goods and services is the sum of a country's debt service on short and long-term public and publicly guaranteed debt and International Monetary Fund (IMF) repurchases and charges, expressed as a percentage of that country's exports of goods and services and net income from abroad Public Debt service is the sum of principal repayments and interest payments actually paid on debt to non-residents. Long-term refers to debt that has an original or extended maturity of more than one year. IMF repurchases are total repayments of outstanding drawings from the general resources account during the year specified, excluding repayments due in the reserve tranche. IMF charges cover interest payments with respect to all uses of IMF resources, excluding those resulting from drawings in the reserve tranche. Exports of goods, services and net income are the sum of goods (merchandise) exports, exports of (nonfactor) services and income (factor) receipts from abroad excluding workers' remittances.
Method of Computation	The indicator is calculated as the value of external public debt service divided by the value of exports of goods and services and income and multiplied by 100.
Comments and	This series differs from standard debt-to-export ratios

limitations	because it covers debt service only on long-term public and publicly guaranteed debt and repayments to the IMF. Standard debt-to-export ratios cover total external debt including private non-guaranteed debt and short-term debt. Shares of private non-guaranteed debt and short term debt are small for low-income countries, but they can be substantial for creditworthy middle-income countries. Small, open economies may have relatively high levels of exports and yet they may still have difficulties in meeting debt service obligations, particularly when debt service payments for public debt are high relative to government revenue. On the other hand, a large economy may have proportionately smaller exports and still find its debt payments sustainable. For this reason, it is useful to look at other indicators in forming a picture of debt sustainability such as the ratio of total debt to gross national income, the size of international currency reserves relative to total debt and the amount of debt that is due to mature within one year. Where formal registration of foreign borrowing is not mandatory, compilers must rely on balance of payments data and financial surveys to compile debt service data.
Sources and Data collection	Information on external debt is recorded and maintained by the ministry of finance and central banks on a loan-by-loan basis. Data on exports of goods and services and income from abroad are recorded in the balance of payments.
Disaggregation	Data on external debt are reported on a loan-by-loan basis, disaggregation by the public external debt by debtors and creditors. Data on exports are currently available only at the national level.
Sources of Discrepancies between Global and National Figures	National figures on external debt might be different from the global figures published in World Bank's Global Development Finance due to discrepancies in reported currency and exchange rates used to convert the data to US dollar
Periodicity	Annually

42. Mobile Cellular ownership

Definition	Defined as the number of household owning mobile-cellular telephone to the total number of households expressed in percentage. Mobile-cellular telephone subscriptions refer to the number of subscriptions to a public mobile-telephone service that provide access to the PSTN using cellular technology. The indicator includes the number of post-paid subscriptions and the number of active prepaid accounts (i.e. that have been used during the last three months). The indicator applies to all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services.
Method of Computation	This indicator is calculated as; $\frac{N_m}{N} \times 100$ Where Nm denotes the number of households owning currently a mobile-cellular telephone, N denotes the total number of households.
Comments and limitations	The EICV and PHC being a household-level survey most of the data presented in this chapter are therefore at the household level, and thus a household will qualify as owning a mobile phone when at least one member has such a phone. Therefore on mobile ownership households will therefore be higher than penetration rates of individuals in the population.
Data Collection and source	Data for mobile-cellular telephone ownership are collected through PHC and EICV.
Disaggregation - **Geographical** - **sex** - **Other Characteristics**	National, Province, District, Residence (Urban , Rural) Female/Male Wealth quintile
Sources of Discrepancies between Global and National Figures	Discrepancies between global and national figures may arise when countries use different definitions than the ones used by ITU and especially when countries' data for active and non-active subscriptions are not clearly distinguished.
Periodicity	3-5 years for EICV and 10 years for PHC

43. Internet users

Definition	Defined as the number of households whose at least one members have access to the Internet out of the total number of households expressed in percentage. The Internet is a world-wide public computer network. It provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files, irrespective of the device used (not assumed to be only via a computer – it may also be by mobile-cellular telephone, other wireless devices, games machine, digital TV etc.). Access can be via a fixed or mobile network.
Method of Computation	This indicator is calculated as; $\text{Internet access} = \frac{N_i}{N} \times 100$ N_i denotes the total number of households using currently the Internet (from any location) and N the total number of households.
Comments and limitations	
Data Collection and source	Data on percentage of households whose at least one member has currently access to the Internet are collected through HPC and EICV. Note that EICV measures only households who is accessing from Home.
Disaggregation - **Geographical** - **Sex** - **Other characteristics**	National, Province , Residence(Urban , Rural) Male/Female Wealth quintile, Place of internet access(Home, office/School, cyber and others)
Sources of Discrepancies between Global and National Figures	No discrepancies.
Periodicity of measurement	3-5 years for EICV and 10 years for PHC

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