Republic of Rwanda

NISR
NATIONAL INSTITUTE OF STATISTICS OF RWANDA

Labour Force survey

METHODOLOGY

The Labour Force Survey Methodology is produced by the National Institute of Statistics of Rwanda (NISR). Additional information about the Labour Force Survey Methodology report may be obtained from NISR:

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Foreword

The National Institute of Statistics of Rwanda (NISR) introduced the labour force survey (LFS) program to provide labour market statistics to the Ministry of Public Service and Labour (MIFOTRA), the Ministry of Finance and Economic Planning (MINECOFIN), the Ministry of Education (MINEDUC), the International Labour Organization (ILO), and other key stakeholders.

Labour statistics are fundamental to Rwanda's efforts in achieving decent work for all. These statistics are needed in developing evidence-based policies and assessing progress toward this goal. Additionally, the Government of Rwanda requires updated information to monitor the implementation of programs and policies as stipulated in the second National Strategy for Transformation (NST2), the Sustainable Development Goals (SDGs), and the Vision 2050. To effectively track progress toward these targets, it is essential to produce relevant, reliable, coherent, timely, and accessible labour statistics.

The primary objective of the Labour Force Survey (LFS) is to provide reliable and timely data on the structure and dynamics of the labour force, including employment, unemployment, and other labour market indicators. These data support the formulation, implementation, and evaluation of economic and social policies, particularly those related to employment creation, income generation, skills development, and the promotion of decent work.

The LFS program began with a pilot survey conducted in February 2016. The first official round was implemented in August 2016 and continued on bi-annual basis until August 2018. Starting from the year 2019, the survey was redesigned to produce quarterly estimates of key labour market aggregates, allowing for more frequent monitoring and analysis.

Following the 2022 Rwanda Population and Housing Census, which provided updated population structures and spatial distributions, a new sampling frame was developed. As a result, the LFS methodology was revised to align with this updated frame. This report presents the sampling methodology and other operational procedures applied in the Labour Force Survey from 2024 onward, until further revisions are made.

The National Institute of Statistics of Rwanda (NISR) encourages policymakers, program managers, researchers, and other users to refer to this LFS Methodology Report. It offers essential insights into the data production process and enhances understanding of the quarterly and annual LFS data products.

MURENZI Ivan

Director General of NISR

1 Sampling Methodology

1.1 Introduction

The Rwanda Labour Force Survey (LFS) aims to generate regular and timely data on the most important dimensions of the labour market to labour-related policy. It provides quarterly and yearly estimates on employment, unemployment, underemployment, and multiple demographic characteristics.

The National Statistical Institute of Rwanda (NISR) decided to update the LFS sampling design and increase its sample size, starting in Quarter 1 2024, to obtain more precise quarterly national estimates and reliable yearly estimates by district and urban and rural areas.

This report describes the new sampling design and the corresponding estimation procedures. It starts by outlining the main features of the current LFS sampling design. It then presents the new sample size calculations, the allocation among strata, and the updated sample rotation scheme. Finally, the report describes the sample weighting process and the estimation procedures.

1.2 Technical Definitions

This section lists the definition of the most commonly used terminology to make this report understandable for non-specialist readers.

- *Unit of analysis:* element for which the information is recollected. In the case of the Rwanda LFS, the units of analysis are the private households and the people living in each household.
- ***Population***: total units of analysis whose characteristics are to be estimated. For the LFS, the universe will cover the population living in private households in all districts of Rwanda.
- ***Sample***: subset of analysis units selected to represent the population. A probability sample is one where each element in the population has a positive and known probability of selection.
- ***Sampling unit***: the unit selected at each stage of selection to represent the units of analysis. The LFS has two stages of selection. The primary sampling units (PSUs) are census enumeration areas (or a set of merged small enumeration areas), and the secondary sampling units (SSUs) are the households listed within each PSU selected in the sample.
- ***Sampling frame***: extensive and complete list of all the sampling units in the population. In the case of the LFS, the sampling frame of PSUs is based on cartography from the last Census. The second stage sampling frame will be based on listing households in each sample PSU.
- ***Sample estimate***: numerical quantity estimated from sample observations of a characteristic to provide inferences about an unknown population parameter.
- ***Sampling error***: variability in the value of an estimate based on data from a population sample.
- ***Coefficient of variation:*** defined as the standard error of an estimate divided by the value of the estimate, usually expressed as a percentage. It is a measure of the relative precision of an estimate.
- ***Stratification***: dividing the population into independent groups (strata) defined to provide homogeneity of the sampling units within each stratum. It is used to improve the efficiency of the sample design, i.e., obtain more precise estimates with a given sample size. The sampling units are selected independently within each stratum and each unit is part of exactly one stratum.

- ***Cluster sampling:*** clusters are defined as area units such as census enumeration areas (EAs) with well-defined boundaries. The clusters are selected at the first sampling stage to make the sample more cost-effective.
- ***Design effect***: the ratio between the variance of an estimate based on a complex sample (such as the one used for the LFS with stratification and multiple stages of selection) and the corresponding variance from a simple random sample of the same size.

1.3 LFS Objectives

The objectives of the 2024-2034 LFS are similar to those of 2022 and before, i.e. producing quarterly and yearly labour-market estimates. However, the new LFS sampling design provides estimates with improved precision, especially for districts and urban and rural areas.

1.4 Current LFS Sample Review and Parameters for the New Design

The parameters for redesigning the sample were obtained from the current (2022) LFS data from previous rounds. The following paragraphs describe the main features of the current sample and the outcomes of the review and analysis of the available data.

The current LFS sample:

- Has a two-stage stratified probability design. PSUs are selected in the first stage. All households are then listed in each sample PSU to ensure an updated household sampling frame, and households are selected in the second stage.
- Selects 25 households per PSU.
- Has a quarterly rotation scheme with three rotating panels.
- Delivers quarterly estimates, and fieldwork is carried out entirely in the mid-month of each quarter.
- Yields quarterly estimates for the entire country and countrywide urban and rural areas. Yearly estimates are reported for each of the thirty districts.

The review of the 2022 data shows that frame errors (inclusion of ineligible units during the listing, such as vacant dwellings) are very few and nonresponse is low at less than 5%.

The efficiency of the current sample rotation scheme was assessed in terms of the resulting gains in precision for the change estimates across consecutive quarters and years. As a result, it was decided to shift from the current three rotating panels to four panels and implement a 2-2-2 rotation scheme, in which each sample household is interviewed over two consecutive quarters, rests for the following two quarters, and is interviewed again over the two subsequent quarters.

The analysis of 2022 data also concluded that sampling errors were too large for most of the districts and for the countrywide urban domain to derive reliable sampling parameters that could be used for the new design in these domains, such as design effects and intra-class correlations.

1.5 Sampling Frame and Stratification in the New Sample Design

The new LFS design uses the 2022 Population and Housing Census as the frame for the first sampling stage. The PSUs are the 2022 census enumeration areas (EAs), except for some small EAs that were merged to ensure an adequate number of households per PSU. The list of all PSUs in the country was stratified by district. A sample of PSUs was drawn in each district independently, ensuring enough sample to reach adequate precision for yearly district-level estimates. In addition, PSUs within the six districts with the largest share of urban population outside Kigali were substratified into urban and rural PSUs.

For the second sampling stage, households will be listed in each selected PSU, which will serve as an updated frame for household selection.

1.6 New Sample Size

According to the 2022 Population and Housing Census, Rwanda has about 13 million people distributed across 30 districts. One of the new LFS main estimation objectives is to achieve yearly district-level unemployment estimates with adequate precision. In particular, the new sample size should be able to estimate a district-level unemployment ratio of 6% with a coefficient of variation no larger than 12%. The unemployment ratio is the proportion of unemployed people 16 years of age or above, over the total population 16 years old or above. An unemployment ratio of 6% corresponds to an unemployment rate of about 9%.

Let denote an individual-level variable that takes the value of 1 if the person is unemployed and 0 if the person is either employed or out of the labour force. Let represent the population 16 years or older per district. Then, the unemployment ratio is , and the sample size of individuals per district to achieve the target coefficient of variation (under simple random sampling can be calculated as[1]:

$$n = \frac{\frac{N}{N-1}\frac{q_U}{p_U}}{CV_0^2 + \frac{1}{N-1}\frac{q_U}{p_U}} \cong \frac{\frac{q_U}{p_U}}{CV_0^2}$$

where the approximation in the second term results from considering a large population .

Under $p_U = 0.06$ and $CV_0 = 0.12$,

$$n = \frac{(0.06/0.94)}{0.12^2} = 1{,}087.96$$

Thus, the minimum sample size required to estimate a district-level unemployment ratio of 6% with a coefficient of variation no larger than 12%, under simple random sampling, is 1,088 individuals. Using the average number of persons 16 years or older per household (from the 2022 Census, the required sample of households per district in the new LFS is

$$n_{hh} = n * \frac{1}{avg_{16+}} = \frac{\frac{q_U}{p_U}}{CV_0^2} * \frac{1}{avg_{16+}}$$

1 Valliant, R., Dever, J., & Kreuter, F. (2013). *Practical Tools for Designing and Weighting Survey Samples* (p. 56).

hence,

$$n_{hh} = 1{,}087.96 * \frac{1}{2.364} = 460.22$$

Furthermore, based on the current LFS, the expected response rate in the new LFS should be no smaller than 90%, so the required household sample size per district, under simple random sampling, should be

$$n'_{hh} = \frac{\frac{q_U}{p_U}}{CV_0^2} * \frac{1}{avg_{16+}} * \frac{1}{rr}$$

which leads to,

$$n'_{hh} = 460.22 * \frac{1}{0.9} = 511.36$$

However, since the LFS sample is clustered in PSUs, its design is less efficient than simple random sampling. The efficiency loss due to clustering is measured through the design effect, and the design effect for the new sample can be estimated as

$$deff = 1 + (b - 1)\,\rho$$

where,

$deff$ is the design effect of variable y_i

ρ is the intraclass correlation coefficient of variable ; and

b is the average number of sample households per PSU (subsample size).

In the 2019 LFS, the estimated average intraclass correlation coefficient for variable was ~ 0.01085; that value is employed here for the new LFS. The number of households to be interviewed per PSU in the new LFS was determined using this value of the intraclass correlation and by evaluating the impact that the number of sample households per PSU would have on the design effect of variable . The decision also contemplated the workload distribution among enumerators in the field team working in a PSU. As a result, it was decided that the new LFS would interview 12 households per PSU, instead of the 25 households per PSU in the current LFS.

Therefore, the expected PSU subsample size of individuals 16 years of age or above is

$$b = 12 * 2.364 * 1.8 = 51.06$$

Factor 1.8 has been included in the calculation because each individual is expected to be interviewed 1.8 times on average due to the chosen rotation pattern. This is explained below, in Section 8.

Finally,

$$n''_{hh} = \frac{\frac{q_U}{p_U}}{CV_0^2} * \frac{1}{avg_{16+}} * \frac{1}{rr} * deff$$

hence,

$$n''_{hh} = \frac{(0.06/0.94)}{0.12^2} * \frac{1}{2.364} * \frac{1}{0.9} * (\,1 + (51.06 - 1) * 0.01085\,) = 789.3$$

Thus, 789.3 households need to be interviewed in each of the 30 districts yearly to attain the yearly district-level estimation target, yielding an annual national sample size of 789.3 x 30 = 23,680.5 household interviews.

This annual sample must be randomly distributed across quarters to obtain quarterly estimates, so each quarter will include 23,680.5/4 = 5,920.1household interviews. At the end of each year, the four quarterly samples will be aggregated to attain a large enough sample for the yearly district-level estimates.

Given that the number of PSUs in the sample must allow for a 2-2-2 rotation scheme within each stratum (see Section 8), and since the number of selected households per PSU is fixed, the sample size had to be slightly increased in some strata. Therefore, the resulting sample size was finally set to 6,624 household interviews per quarter and 26,496 per year.

1.7 Sample Allocation

Once the national quarterly and yearly sample sizes were established, deciding how they would be allocated across Rwanda's 30 districts was necessary. To calculate the sample size per district , the final quarterly sample size , the number of households in the country , the number of households by district from the census and the standard deviation of variable were used.

Four different allocation criteria were assessed: equal allocation, proportionate allocation, Neyman allocation and a customized allocation.

Equal allocation

$$n_d = \frac{n}{30}$$

With this allocation, the assumption is that there are no differences between districts that allow for differences in the sample allocation. This is the simplest way of allocating the sample, but it is inefficient since it increases the variance of the national estimates.

Proportionate allocation

$$n_d = \frac{N_d}{N} * n$$

With this allocation, the sample assigned to each district will be proportionate to its population share, so the more populated districts will receive a larger sample. This will result in Kigali receiving the largest portion of the national sample, producing very precise estimates for Kigali but quite imprecise estimates for the other districts, especially those with the smallest populations.

Neyman allocation

$$n_d = \frac{N_d * S_d}{\sum_{i=1}^{30} N_i * S_i} * n$$

The sampling fraction in each district is proportionate to the district population share and the standard deviation of variable . More sample is assigned to districts with the largest variation of to generate the least possible national sampling variance.

Customized allocation

Starting from one of the options described above, this allocation permits to oversample households in specific domains of interest, for example urban-rural. However, this would imply a loss of national estimates' precision compared to the proportionate or the Neyman allocations.

The most suitable allocation scheme for the new LFS sample was decided based on three criteria:

– To increase the countrywide urban sample size and improve the precision of the estimates in this domain, districts with the largest proportions of urban population were assigned larger samples. In particular, larger samples were assigned to the three districts that form Kigali (Nyarugenge, Gasabo and Kicukiro) and the six districts with the largest proportions of urban population outside Kigali (Rubavu, Musanze, Bugesera, Rwamagana, Rusizi, and Kamonyi). In addition, within these six districts, PSUs were stratified into urban and rural and the district sample was allocated equally into these two substrata.

– The previous point was considered as long as the annual sample for the remaining 21 districts would permit estimating the unemployment ratio by district with an expected coefficient of variation of at most 15%.

– The expected coefficients of variation for the annual and quarterly estimates of the unemployment ratio were assessed for five domains: Urban, Rural, Kigali, Urban Non-Kigali, and Rwanda.

Table 1 shows the final quarterly and annual sample allocation among the 30 districts in Rwanda, including the number of PSUs and households.

Table 1. LFS Sample Size by District

Province	District	n_{psu} quarter	n_{hh} quarter	n_{hh} int year
	Rwanda	552	6,624	26,496
Kigali	Nyarugenge	28	336	1,344
Kigali	Gasabo	28	336	1,344
Kigali	Kicukiro	28	336	1,344
Southern	Nyanza	16	192	768
Southern	Gisagara	12	144	576
Southern	Nyaruguru	12	144	576
Southern	Huye	20	240	960
Southern	Nyamagabe	16	192	768
Southern	Ruhango	16	192	768
Southern	Muhanga	20	240	960
Southern	Kamonyi	24	288	1,152
Western	Karongi	16	192	768
Western	Rutsiro	12	144	576
Western	Rubavu	24	288	1,152
Western	Nyabihu	20	240	960
Western	Ngororero	12	144	576
Western	Rusizi	24	288	1,152
Western	Nyamasheke	12	144	576
Northern	Rulindo	16	192	768
Northern	Gakenke	12	144	576
Northern	Musanze	24	288	1,152

Province	District	n_{psu} quarter	n_{hh} quarter	n_{hh} int year
Northern	Burera	16	192	768
Northern	Gicumbi	12	144	576
Eastern	Rwamagana	24	288	1,152
Eastern	Nyagatare	20	240	960
Eastern	Gatsibo	16	192	768
Eastern	Kayonza	20	240	960
Eastern	Kirehe	12	144	576
Eastern	Ngoma	16	192	768
Eastern	Bugesera	24	288	1,152

The expected coefficient of variation of the unemployment ratio can be derived from the sample size formula as

$$CV = \sqrt{\frac{\frac{q_U}{p_U}}{n''_{hh}} * \frac{1}{avg_{16+}} * \frac{1}{rr} * deff}$$

The following tables present the final sample sizes for five domains (Urban, Rural, Kigali, Urban Non-Kigali, and Rwanda) under the sample allocation among districts shown above[2]. They indicate the expected coefficients of variation of the unemployment ratio estimate by domain. A population unemployment ratio of 6% is assumed.

Table 2. Expected Annual Sample Size of Household Interviews by Domain

Domain	n_{hh} int/year	Domain	n_{hh} int/year
Kigali	4,032	Rural	17,550
Rural non-Kigali	17,147	Urban	8,946
Urban non-Kigali	5,317	Rwanda	26,496
Rwanda	26,496		

Table 3. Expected Annual Unemployment Ratio CV by Domain (under p=6%)

Domain	CV	Domain	CV
Kigali	5.9%	Rural	2.7%
Rural non-Kigali	2.7%	Urban	4.9%
Urban non-Kigali	6.4%	Rwanda	2.3%
Rwanda	2.3%		

Table 4. Expected Quarterly Unemployment Ratio CV by Domain (under p=6%)

Domain	CV	Domain	CV
Kigali	11.8%	Rural	5.4%
Rural non-Kigali	5.4%	Urban	9.8%
Urban non-Kigali	12.7%	Rwanda	4.7%
Rwanda	4.7%		

2 File "Rwanda LFS Sample Size and Allocation.xlsx" includes the calculations and simulations performed to obtain the LFS national sample size and the sample allocation across districts and urban/rural areas.

1.8 Panel Rotation Scheme

The LFS sample will have a 2-2-2 panel rotation scheme. This means that the sample in each stratum is randomly distributed into four equal-size groups, called “rotation groups” and each of these groups is randomly split into equal-size subgroups, called “panels”. Thus, each PSU in the sample and the households in it are randomly allocated to a panel that will be part of the LFS sample for two consecutive quarters, leave the sample for the following two quarters, and then return to the sample for another two quarters. After this, the panel PSU and the households in it will abandon the sample and be replaced by a new panel of PSUs and households; this is why these are referred to as “rotating panels”. In sum, each household in the LFS sample will be visited for the first time in one specific quarter and for the fourth and last time eighteen months later.

In practice, to construct the rotation groups, the sampling frame of PSUs in each stratum is first split randomly into four equal-size subsamples (the rotation groups), each of them representative of the stratum population. Next, equal-size subsamples of PSUs (the panels) are selected within each rotation group independently.

The LFS 2-2-2 rotation scheme leads to a 50% sample overlap between two consecutive quarters and a 50% overlap between the same quarter of two successive years. As a result of the panel rotation pattern, every quarter the LFS sample will be composed of one part including households from the previous quarter and another part formed by households not included in the previous quarter.

The diagram below shows the LFS sample corresponding to each quarter in the columns, and the four rotation groups and their panels in the rows. Each panel has a different color. For example, the Quarter 3 sample in year y+1 is formed by four panels of PSUs and households corresponding to the four rotation groups. The panels in rotation groups B and D (panels B2 and D3) were also included in Quarter 2 of the same year y+1, so 50% of the Quarter 3 sample overlaps with the Quarter 2 sample within year y+1. The diagram also shows that in Quarter 3 of year y+1, the panels in rotation groups A and B (panels A2 and B2) were also included in Quarter 3 of the previous year y, so 50% of the Quarter 3 sample of y+1 also overlaps with the Quarter 3 sample of the previous year y.

Figure 1. LFS Sample 2-2-2 Panel Rotation Scheme

Rotation Group	Year y				Year y+1				Year y+2	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
RG A			Panel A2	Panel A2			Panel A2	Panel A2		.....
RG B		Panel B2	Panel B2			Panel B2	Panel B2			.....
RG C										.....
RG D						Panel D3	Panel D3			.....

Also, when the LFS samples corresponding to the four quarters in a year are aggregated into a larger yearly sample, the resulting 26,496 household interviews will consist of panel households interviewed more than once over the year. In other words, each household is unique within a year, but each household is interviewed more than once within a year.

Specifically, under the 2-2-2 rotation scheme, any given year will comprise 9 independent panels of PSUs and households. 7 of them will be included in two quarters within the year and the other two will be included just once during that year. As a result, each PSU and the households within it will be in the annual sample an average of times. This means that the 26,496 interviews throughout a year will consist of unique panel

households. Annex 1 details the complete LFS schematic 2-2-2 rotation scheme. This scheme was created by combining all sample PSUs scheduled for implementation from Quarter 1 of 2024 to Quarter 4 of 2034 and aligning each rotation group with its respective panel.

The objective of seeking overlapping samples over successive survey rounds as part of the sampling design is to achieve a positive correlation for the variables of interest as large as possible between consecutive quarters or quarters one year apart. This correlation reduces the estimator's variance of the difference of a given variable between two quarters.

The expression below shows how the sampling variance of the change estimator for variable is reduced - and thus, the precision of the change estimate increased - due to the existing correlation between and , which is in part determined by the magnitude of the overlap between the two successive samples. Since respondents in a panel are the same over the consecutive samples, the covariance between and is expected to be non-zero. The larger the overlap between samples in two quarters, the higher the covariance and the larger the precision of the change estimate.

$$\hat{\Delta} = \hat{y}_2 - \hat{y}_1 , \quad var(\hat{\Delta}) = var(\hat{y}_1) + var(y_2) - 2\, cov(y_1, \hat{y}_2)$$

where

$\hat{y}_1$ indicates the point estimate of variable y in sample 1, corresponding to time point 1;

$\hat{y}_1$ is the point estimate of variable y in sample 2, corresponding to time point 2;

$\hat{\Delta}$ denotes the point estimate of the change of variable y between time points 1 and 2.

However, even if maintaining a fixed panel sample over time (i.e. keeping a complete overlap between successive samples) would yield the largest precision of the change estimates, this is not used in official surveys with numerous consecutive rounds, as it would result in increasing levels of attrition over time because of respondent fatigue. This is why official regular surveys like Rwanda LFS use rotating panels, where households are re-interviewed for a limited number of rounds.

Annex 4 includes the Stata code for testing the change of a variable between any two LFS waves, accounting for both the panel overlap and the sample design features. The test output shows the point estimate of the change, and the corresponding standard error, *t*-score, *p*-value, and 95% confidence interval.

2.9 Sample Selection

The new Rwanda LFS sample has a two-stage stratified probability design. It includes 36 strata, formed by 24 entire districts and 6 districts partitioned into urban and rural areas (Rubavu, Musanze, Bugesera, Rwamagana, Rusizi and Kamonyi). Each stratum is divided into four equal-sized rotation groups.

In the first sampling stage, the PSUs are census EAs, or groups of EAs. PSUs were selected independently within each rotation group with probabilities proportionate to their size (PPS) using the number of households reported by the 2022 Census as a measure of size.

The selection probability of PSU i in rotation group g in stratum is

$$p_{dgi}^{PSU} = \frac{m_{dg}\, X_{dgi}}{\sum_{i=1}^{N_{dg}} X_{dgi}} \qquad d = 1, \dots, D \ , \ i = 1, \dots, N_d \ , \ g = 1, \dots, 4$$

Where represents the number of households registered by the 2022 Census in PSU in rotation group in stratum , and is the number of PSUs selected in the rotation group and stratum.

In the second sampling stage, a subsample of households was drawn within each of the PSUs selected in the first stage. Specifically, a listing operation was implemented in each PSU to update the census list of households and a sample of households was then selected with systematic sampling. The selection probability of household in PSU , rotation group and stratum is

$$p^{H}_{dgij} = \frac{n}{X^{*}_{dgi}} \qquad d = 1, \dots, D \ , \ \ i = 1, \dots, N_d \ , \ \ g = 1, \dots, 4$$

Where is the number of households selected in the PSU and denotes the number of households listed in PSU in rotation group and stratum . Subsample size is fixed across all sample PSUs.

Then, the final selection probability of a household is[3]

$$p_{dgij} = \frac{m_{dg}\, X_{dgi}}{\sum_{i=1}^{N_{dg}} X_{dgi}} * \frac{n}{X^{*}_{dgi}} \qquad d = 1, \dots, D \ , \ \ i = 1, \dots, N_d \ , \ \ g = 1, \dots, 4$$

In every sample household in the LFS, all individuals are interviewed, either directly or through a proxy respondent. Therefore, the selection probability of an individual within their household is 1, and their final selection probability is the same as the household.

1.10 Weighting

The estimation of population parameters from a probability sample is based on the premise that each sample unit represents a certain number of other units in the population in addition to itself. For example, a specific household with a sampling weight of 210 represents itself and another 209 households in the population. Correspondingly, the total number of units in the population with a given characteristic is estimated by summing the weights of units in the sample with that characteristic.

The LFS, as in most household surveys, will use a weight equal to the inverse of the probability of selection of each unit. Thus, the base weight (or design weight) of a sample household is the inverse of its final selection probability .

$$W_{0,dgij} = \left(\frac{m_{dg}\, X_{dgi}}{\sum_{i=1}^{N_{dg}} X_{dgi}} * \frac{n}{X^{*}_{dgi}} \right)^{-1}$$

As with the final selection probabilities, the base weight of any sample individual is equal to the weight of the household to which it belongs.

In practice, however, household and individual base weights are often modified for numerous reasons and

3 In PSUs where the household count from the listing operation is the same as the census household count (), the household final selection probability is simplified as

$$p_{dgij} = \frac{m_{dg}\, X_{dgi}}{\sum_{i=1}^{N_{dg}} X_{dgi}} * \frac{n}{X^{*}_{dgi}} \qquad d = 1, \dots, D \ , \ \ i = 1, \dots, N_d \ , \ \ g = 1, \dots, 4$$

If this scenario held in all PSUs, then the final selection probability of all households would be the same and the design would be self-weighting. However, as the census data gets outdated over time, it is expected that will diverge from , so the household final selection probabilities will vary more across PSUs. As a result, some precision will be lost for the survey estimates in exchange for a reduction in coverage error due to the listing conducted every quarter.

are not directly used to obtain the survey estimates. In addition to sampling error – i.e., the error due to working with a sample as opposed to the entire population – every survey is subject to different types of nonsampling error, such as nonresponse, underrepresentation of specific population groups, measurement error, etc. Sampling and nonsampling errors combined contribute to the total survey error affecting the estimates. They are hard to quantify and are generally systematic, i.e. non-random, introducing some degree of bias to the survey estimates.

Minimizing the effect of the different sources of nonsampling error on the survey estimates is one of the central subjects of survey methodology. This is achieved by keeping sampling frames complete and up-to-date, testing the questionnaire design, assessing the field protocols in pilot tests, training enumerators sufficiently, visiting households several times and at different times of day until they are reached, supervising interviewers closely, and having a comprehensive quality control system in place to allow for corrective actions as soon as any issue in the field is detected.

Nonetheless, nonsampling errors cannot be entirely eliminated even taking all these measures. In particular, undercoverage and nonresponse potential bias can be addressed and reduced, though not eliminated, through weighting adjustment.

1.11 Weighting Nonresponse Adjustment

Nonresponse occurs when an eligible household4 is selected as part of the sample but cannot be interviewed due to several possible reasons, e.g., all household members refuse to cooperate, household members are temporarily absent during the survey period, the interview started, but it was not possible to finalize it, etc.5

Every household survey should try to reduce nonresponse as much as possible. Some common practices consist of training enumerators with techniques to achieve a change of attitude in the respondents who refuse to participate, and revisiting households after visits where nobody is at home several times before discarding the household. Even so, nonresponse is an ever-present phenomenon in any survey and a source of potential bias. Though the magnitude of the bias due to nonresponse is generally unknown, it is related to the level of nonresponse and the difference in the characteristics under study between respondent and nonrespondent households.

The base weights described in the previous section were adjusted to compensate for any potential nonresponse bias using a class-based adjustment, with the class being each PSU.

The weighting class nonresponse adjustment is based on the inverse of the weighted response rate estimated in each PSU, which is the ratio of the sum of the base weights of all sample households (respondents and nonrespondents) to the sum of the base weights of respondents in that PSU. It is given by

$$a_{dgij} = \frac{\sum_{dgi,R} W_{0,dgij} + \sum_{dgi,NR} W_{0,dgij}}{\sum_{dgi,R} W_{0,dgij}}$$

where a is the adjustment factor applied to each responding household j in PSU i in rotation group g and stratum d to compensate for nonresponse. Subindices R and NR indicate the respondent and nonrespondent households respectively and $W_{0,dgij}$ is the household base weight.

4 Eligible households are those that are part of the survey target population, i.e. excluding vacant dwellings, business stores, etc.

5 The total nonresponse rate in the LFS has usually been below 5%.

Finally, the nonresponse-adjusted weight of each respondent household in PSU is

$$W_{a,dgij} = a_{dgij}\, W_{0,dgij}$$

1.12 Weighting Calibration Adjustment

After obtaining adjusted weights, the latter were calibrated to known population projections for four demographic groups: Males and females population less than 16 years old and males and females 16 years old and over living on private households

The population projections were derived from the NISR census publication.6 The projections were adjusted by deducting estimated values for the institutional population not living in private households. The calibration procedure followed the methodology of Deville and Sarndäl.7 Accordingly, the final calibrated weights were obtained from the formula,

$$CalibratedWeight(hh_k) = w_k = d_k^{'} \times (1 + \lambda x_k^{'})$$

where d_k' is the adjusted weight for non-response, λ is a regression vector obtained from the calibration formula, and xk' is the vector of the count of male less than 16 years old, male 16 years old and over, female less than 16 years old and female 16 years old and over of interviewed households in the enumeration area k. All individuals in the same household are assigned the weight of the household in which they belong.

1.13 Estimation

Estimation from survey data is the inferential process of obtaining estimates or approximations to unknown population parameters. Let W_{dgij} be the final weight of households j in PSU i in rotation group g in stratum – that is, the base weight adjusted for nonresponse and calibrated.

Final weights allow the creation of simple expressions for the estimators. If Y and Z are two survey variables of interest measured at the household level, their most commonly used estimators are totals, means and ratios.

Total:

$$\hat{Y} = \sum_{d=1}^{D} \sum_{g=1}^{4} \sum_{i=1}^{m_{dg}} \sum_{j=1}^{n_{dgi}} W_{dgij}\; y_{dgij}$$

Mean:

$$\hat{\bar{Y}} = \frac{\sum_{d=1}^{D} \sum_{g=1}^{4} \sum_{i=1}^{m_{dg}} \sum_{j=1}^{n_{dgi}} W_{dgij}\; y_{dgij}}{\sum_{d=1}^{D} \sum_{g=1}^{4} \sum_{i=1}^{m_{dg}} \sum_{j=1}^{n_{dgi}} W_{dgij}}$$

Ratio:

where

6 National Institute of Statistics of Rwanda, *Fifth Population and Housing Census, Rwanda, 2022, Thematic Report Population Projections*, July 2023.

7 Deville, J.C., and Sarndäl, C.E., "Calibration Estimators in Survey Sampling," *Journal of the American Statistical Association*, Vol. 87, 1992, pp. 376-382.

is the number of PSUs selected in rotation group in stratum , with and ; and is the number of households selected in PSU in rotation group in stratum .

1.14 Sampling Error Estimation

As mentioned above, the LFS has a complex sample design, i.e., a design featuring stratification, clustering, and unequal selection probabilities due to the disproportionate sample allocation across strata done to improve the precision of the survey estimates in some districts and urban areas. Such sample design features make unequal base weights necessary which, added to the adjustments introduced after fieldwork, result in weights with a certain degree of variability.

When estimating sampling errors (through the sampling variance, standard errors, confidence intervals or coefficients of variation) for statistics such as means, proportions, ratios and regression parameters, all features of the complex LFS sample design must be accounted for. If they are not, standard statistical software will "assume" that the sample is a simple random sample (SRS), resulting in biased estimates and unrealistically low sampling errors. Therefore, standard errors and coefficients of variation would be underestimated, confidence intervals would be erroneously narrower, and test statistics would be biased.

The two most common approaches to estimating sampling errors for complex sample data are 1) Taylor series linearization (TSL) of the estimator and the corresponding approximation of its variance or 2) replication variance estimation techniques, such as jackknife repeated replication (JRR), bootstrapping, and balanced repeated replication (BRR). Stata, SAS and other statistical software packages use the ultimate cluster estimator and the TSL method by default to estimate sampling errors for complex sample data. Annex 3 indicates the Stata syntax that should be used when analyzing the LFS data to account for its sample design features and weighting.

Under the TSL method, the sampling variance of the mean or proportion of variable can be approximated as

$$var(\hat{R}) = \frac{1}{\widehat{W}^2}\left[var(\hat{Y}) + \hat{R}^2\left(var\widehat{W}\right) - 2\,\hat{R}\,cov(\widehat{W},\hat{Y})\right]$$

where is the estimator of the mean or proportion of variable , is the weighted total of variable , and is the total of the sampling weights (the sum of the weights).

The sampling variances and covariances of totals and are estimated using the ultimate cluster estimator, simple formulae that require only knowledge of the totals by PSU.

$$var(\hat{Y}) = \sum_{d=1}^{D}\left[\frac{m_d}{m_d-1}\sum_{g=1}^{4}\sum_{i=1}^{m_{dg}}\left(\widehat{Y_{dgi}^2} - \frac{\widehat{Y_d^2}}{m_d}\right)\right]$$

$$var(\widehat{W}) = \sum_{d=1}^{D}\left[\frac{m_d}{m_d-1}\sum_{g=1}^{4}\sum_{i=1}^{m_{dg}}\left(\widehat{W_{dgi}^2} - \frac{\widehat{W_d^2}}{m_d}\right)\right]$$

$$COV(\hat{Y},\widehat{W}) = \sum_{d=1}^{L}\frac{m_d}{m_d-1}\left[\sum_{g=1}^{4}\sum_{i=1}^{m_{dg}}\widehat{Y_{dgi}}\;\widehat{W_{dgi}} - \frac{\widehat{Y_d}\,\widehat{W_d}}{m_d}\right]$$

where,

$m_d = \sum_{g=1}^{4} m_{dg}$;

$\widehat{Y_{dgi}} = \sum_{j=1}^{n_{dgi}} W_{dgi}\, y_{dgi}$ is the weighted sample total of variable Y in each PSU i in rotation group g in stratum d, with $g = 1, \dots, 4$ and $d = 1, \dots, D$;

$\widehat{W_{dgi}}$ is the sum of the weights in PSU i in rotation group g in stratum d;

$\widehat{Y_d} = \sum_{g=1}^{4} \sum_{i=1}^{m_d} \widehat{Y_{dgi}}$;

m_{dg} is the number of PSUs selected in rotation group g in stratum d with with $g = 1, \dots, 4$ and $d = 1, \dots, D$;

n_{dgi} is the number of households selected in PSU i in rotation group g in stratum d

2 Questionnaire design

The questionnaire of the Rwanda Labour Force Survey in its present form contains questions organized into sections dealing with following topics:

A: Household roster

B: Education

C: Identification of employed, time-related underemployed, unemployed and potential labour force and outside labour force

D: Characteristics of main job/activity

F: Past employment

G: Own-use production of goods and services

H: Subsistence foodstuff production

S: Special section (Questions to be added based on requests)

Not all questions are addressed to every household member. For children under 14 years of age, a minimum number of questions is asked. For individuals aged 14 years and above, the number and type of questions depend on their activities and he labour force status during the reference period. The basic reference period is the seven days preceding the interview date, though certain questions employ alternative reference periods, which are explicitly stated in the questionnaire.

The questionnaire was prepared in both Kinyarwanda and English. An initial version of the Kinyarwanda questionnaire was tested during the February 2016 LFS Pilot survey. The field test conducted in selected urban and rural areas, assessed the integrity of the instrument, including question clarity, interview duration , coding and data processing. Insights from this pilot were instrumental in refining the final questionnaire.

Further modifications were made based on lessons learned during the pilot survey. The revised questionnaire was subsequently tested through mock interviews conducted during the training of supervisors and interviewers ahead of the August 2016 and February 2017 LFS rounds. Additional minor adjustments were made based on fieldwork experiences in previous LFS rounds.

Beginning in 2024, the questionnaire was further updated to incorporate questions aligned with the International Classification of Status in Employment (ICSE-18). This revised standard is being piloted in preparation for its full adoption into the LFS starting in the 2025 survey rounds.

It is important to note that the LFS questionnaire was programmed in CSPRO by the NISR data processing team to ease field operations. The 2024/25 version of the LFS questionnaire is provided in the annex for reference.

3 Fieldwork operations

3.1 Preparations

The main pre-survey activities conducted in preparation for field operations include the recruitment and training of interviewers, as well as the preparation of tablets and other logistical preparations.

The recruitment begins with the preparation of formal request memos to relevant units, contacting previously trained enumerators and confirming their availability to participate in the upcoming round of data collection. Simultaneously, logistical arrangements are initiated to secure data collection devices (tablets or smartphones), vehicles and other materials.

Another essential part of the preparation involves configuring the tablets for data collection. This includes installing of the LFS Computer-Assisted Personal Interviewing (CAPI) application, along with necessary lookup files to be uploaded to the devices, sampled household lists, deployment plans, and Enumeration Area (EAs) maps. These materials help enumerators in navigating and accurately identifying assigned households or units during fieldwork.

Before the start of each quarterly LFS field data collection, enumerators participate in a refresher training session to reinforce their understanding of survey instruments and procedures. The training provides detailed feedback from the previous round, highlighting common errors and inconsistencies identified by Data Quality Monitors (DQMs) and Data Analysts. Enumerators are guided on how to avoid these mistakes and improve data quality, with a focus on proper use of the CAPI tool, question interpretation, and strict adherence to survey protocols.

3.2 Fieldwork Data collection

Following preparatory activities, LFS staff take their respective responsibilities. As of 2024, the LFS team consists of 2 national coordinators, who oversee field operations and coordinate the work of supervisors; 9 monitors; 4 auditors; 32 team leaders; and 96 interviewers, bringing the total number of field personnel involved in interviewing to 140.

Supervisors worked closely with monitors and auditors, conducting field visits across the country to ensure adherence to protocols. Monitors control data quality dashboards, provide feedback to enumerators and team leaders, and collaborate with auditors to review interview recordings when data quality concerns arise. Team leaders, typically the most experienced interviewers, provide real-time guidance to enumerators and hold daily debriefings to review collected data and address issues while still in the field.

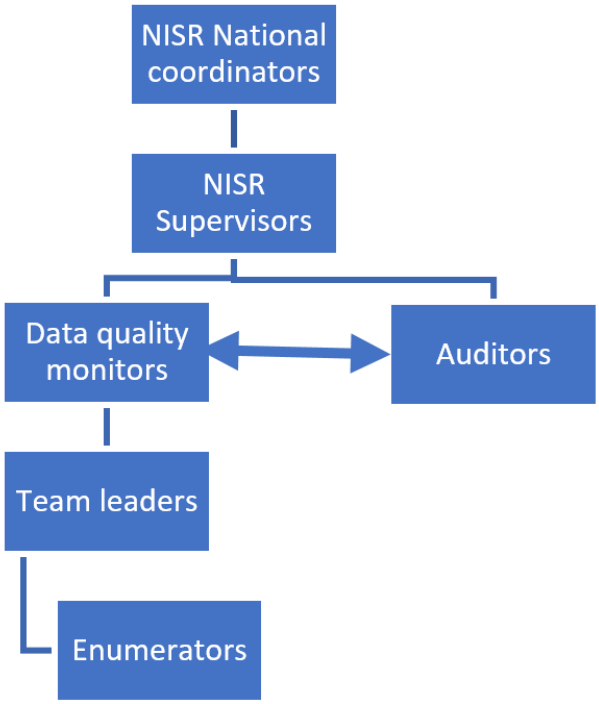


Figure 1: LFS Fieldwork organization

The quarterly field data collection is conducted in the mid-month of each quarter, specifically February, May, August and November, from the beginning to the end of the month. Listing of households in new rotation groups is also carried out alongside data collection. Additionally, procedures were developed to facilitate the selection of sample households from the updated lists as part of field operations.[8]

3.3 Data quality control

As with any survey, the real time monitoring of data quality is essential to minimize response errors and other errors such as coding and editing mistakes, as well as errors in data entry and processing. to allowit is also essential to allow enumerators to address issues while still within the assigned cluster. To support this, online different data quality monitoring platforms (discussed below) were developed to track data quality and provide timely feedback.

Listing application

Before selecting households for interviews, a fresh listing is conducted to update the sampling frame. This operation is carried out using the CSPro CAPI application, integrated with high-quality maps generated by the GIS section at NISR. These maps produced in GeoJSON format, are georeferenced and include clearly defined cluster boundaries and are specifically designed to be compatible with the CSPro application used by enumerators in the field, ensuring streamline listing operations.

During the household listing phase of the quarterly Labour Force Survey (LFS), a systematic approach was employed to enhance efficiency, accuracy, and balanced workload distribution of the enumerators. Each cluster was assigned to a team of three enumerators. To support this setup, the GIS section subdivided each

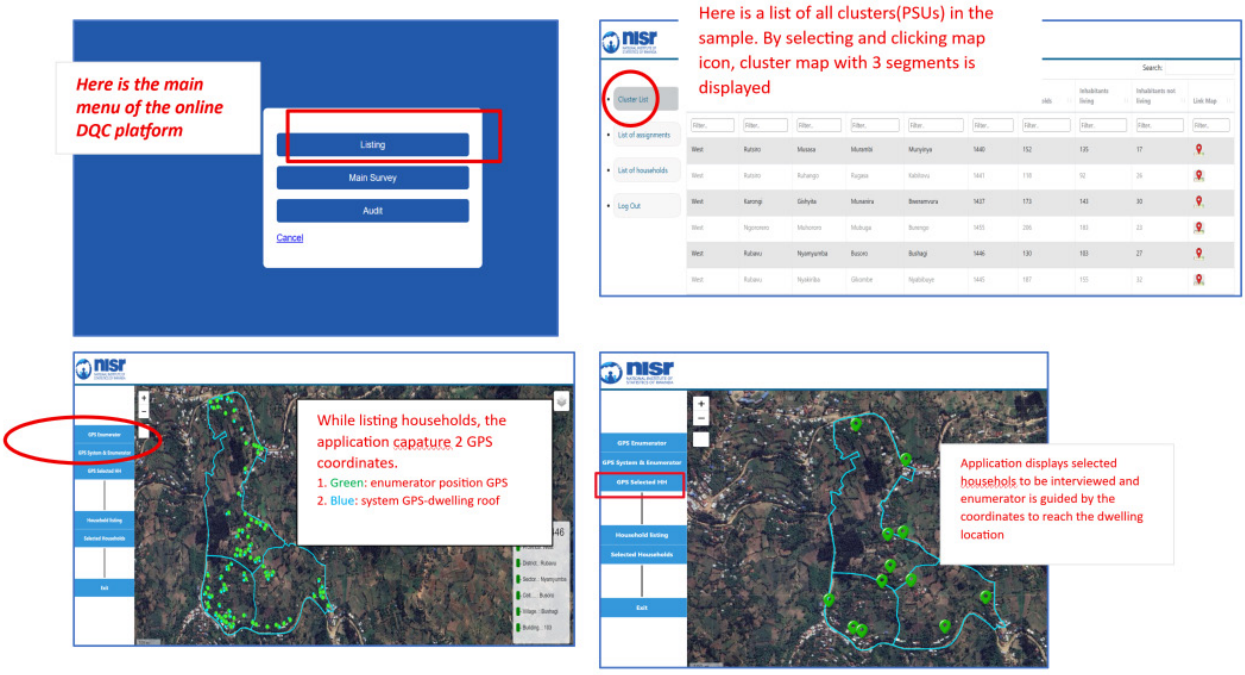
8 Mehran, F., GIZ Consultant, "Rwanda Labour Force Survey February 2016. Selection of households without data entry as part of the field operations." 30 December 2015.

cluster into three manageable segments, guided by spatial data and operational requirements.

An online listing data quality control (DQC) platform was developed to monitor the completeness and accuracy of the listing activities. This platform is accessible to team leaders, monitors, supervisors, and coordinators. It enables the identification of potential errors, such as structures listed outside predefined cluster boundaries, and ensures full coverage so that no eligible households are missed.

This image below illustrates key features of the online listing platform.

Figure 2: Online data quality control platform-Listing



Source: National Institute of Statistics of Rwanda

Main survey application

Following the listing and selection of households for interview—currently 12 households per sampling unit—interviewers visit the selected households to conduct interviews using the Labour Force Survey (LFS) questionnaire, programmed in the CSPro CAPI application.

To ensure data quality during fieldwork, an online data quality control platform was developed and is accessible to all LFS staff involved in monitoring. This platform is automatically updated with data from the field when enumerators synchronize their devices with the NISR server.

The platform provides several key features, including:

– Overall interview progress
– Progress tracking by team, enumerator, province, district, and date
– Number of completed interviews
– Refusals categorized by reason

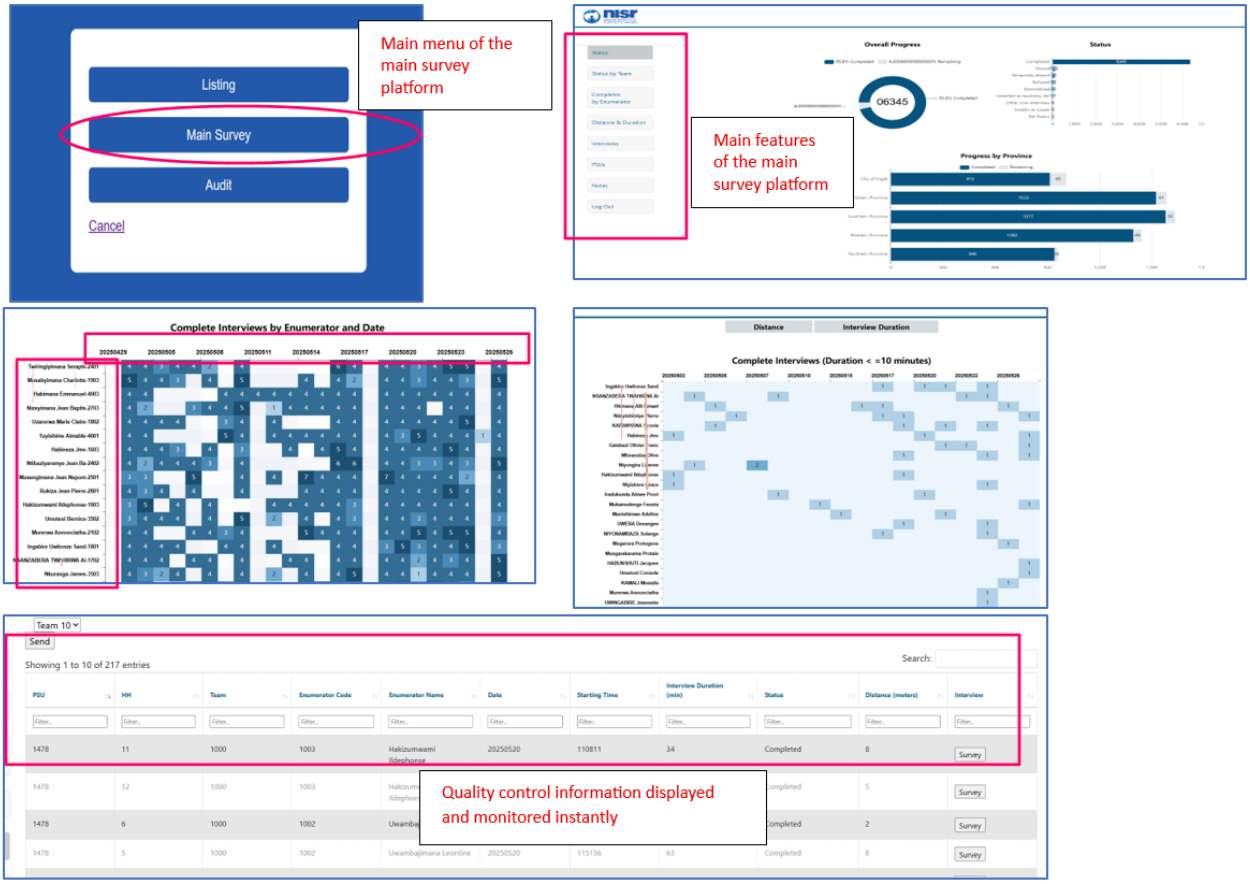
Distance between the interview location and the household listing coordinates

Duration of interviews per household

These features enable survey supervisors and coordinators to closely monitor the progress and performance

of individual enumerators and teams, helping to identify and address issues promptly and minimize potential non-sampling errors.The images below illustrate some of the platform's key functionalities.

Figure 3: Online data quality control platform-Main Survey



Source: Source: National Institute of Statistics of Rwanda

Audit platform

Audit Platform is another crucial online Data Quality Control (DQC) application developed to enhance the monitoring of interviews conducted by enumerators. It is primarily used by DQC monitors and auditors based at NISR to ensure the quality and integrity of the data collected during fieldwork.

All household interviews are recorded using the LFS CAPI application, and both the data and audio recordings are transmitted to NISR servers. These recordings are then indexed by question, allowing auditors to easily navigate to specific questions and listen to how the enumerators conducted the interviews. This enables a direct comparison between the recorded responses and those entered by the enumerators, helping to identify any inconsistencies.

When discrepancies are detected, auditors can either correct the errors directly or communicate with the respective enumerator for clarification or correction. Below is an illustration showing some of the key functionalities of the Audit Platform.

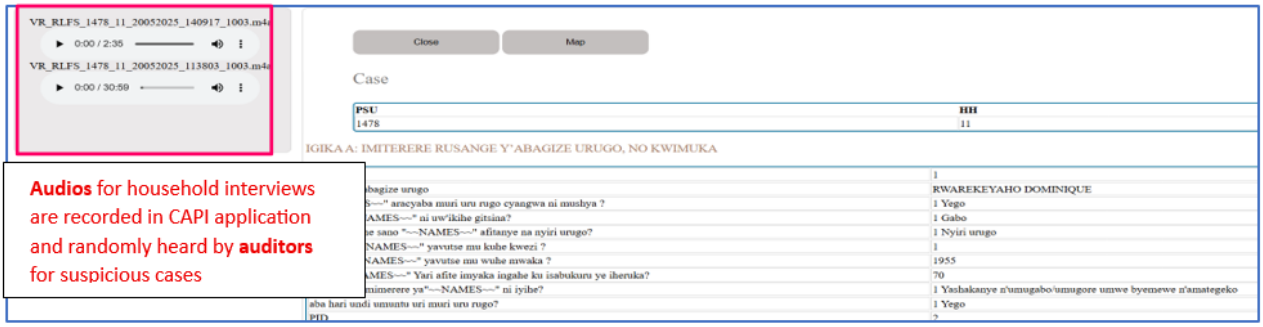
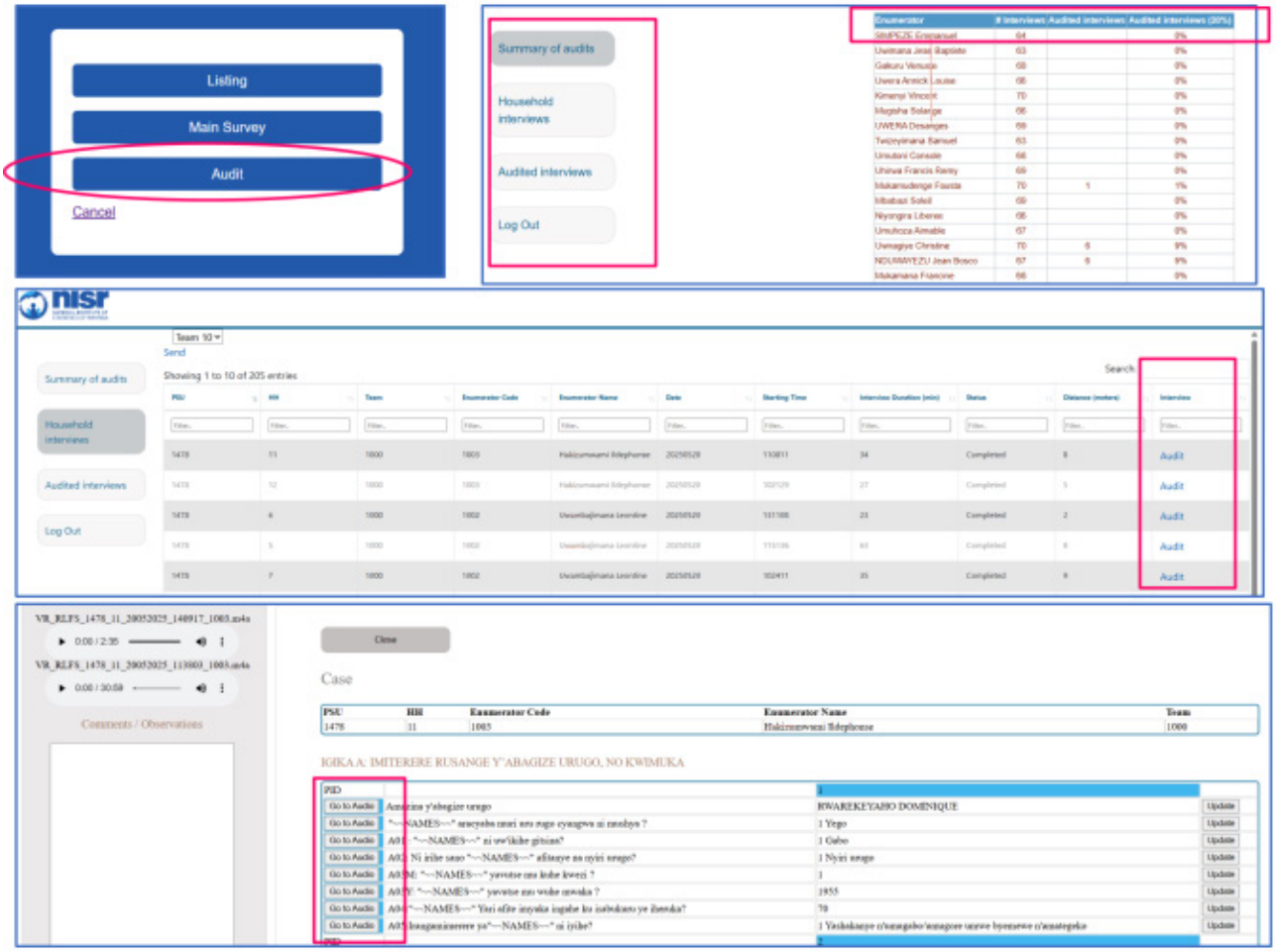


Figure 4: Online data quality control platform-Audit

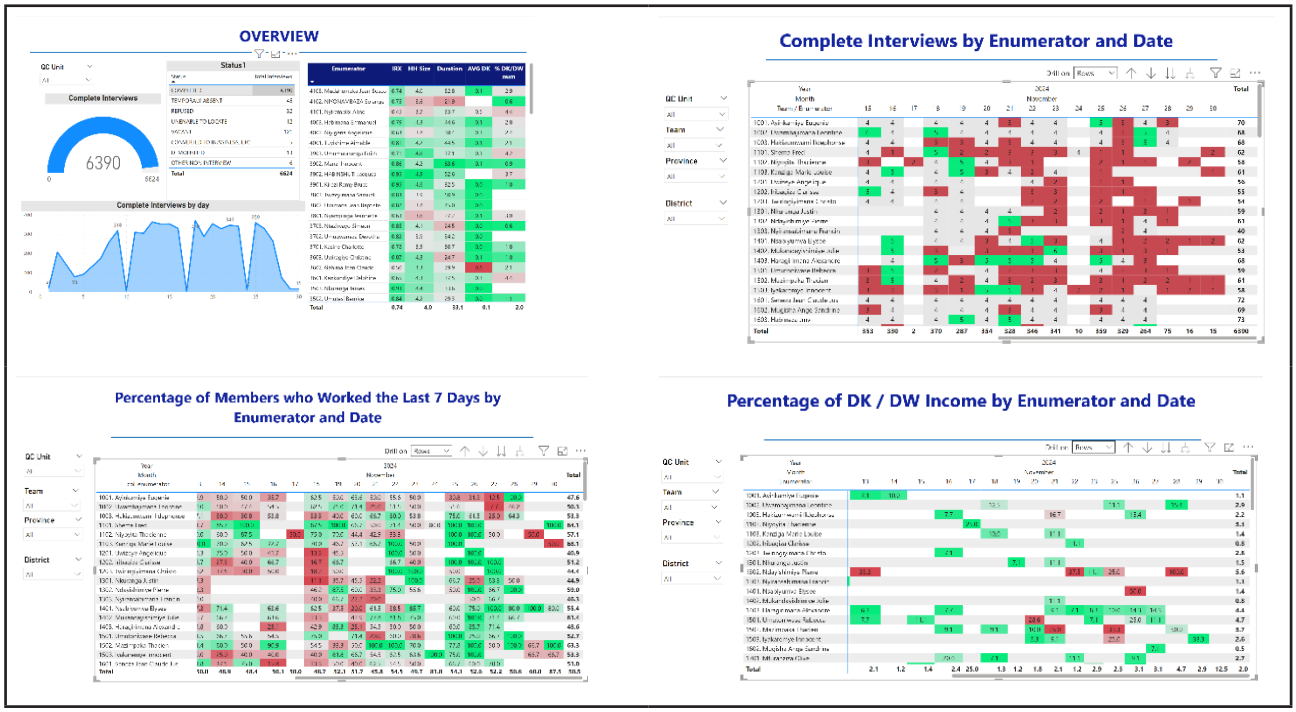


Source: Source: National Institute of Statistics of Rwanda

Power Bi dashboard

This is another essential online platform that receives real-time data directly from the CSWeb environment. It automatically displays both the main Labour Force Survey (LFS) indicators and quality control indicators. This enables daily monitoring of data trends and facilitates timely discussions whenever unusual patterns or issues arise. Here below are some

Figure 5: Online data quality control platform-Power BI dashboard



Source: Source: National Institute of Statistics of Rwanda

Other data quality control mechanisms

In addition to the online DQC platforms discussed above, other data quality checks performed by NISR staff were summarized as follows:

High-Frequency Checks: Inconsistencies and errors in the LFS data are identified daily and feedback is provided. This process follows a step-by-step approach, where STATA syntax developed by LFS analysts is executed and errors are compiled. These are then given to monitors, who forward any issues to the team leaders in the field for investigation and correction. Once the team leaders addressed the issues, they sent the files back with comments on each correction. Supervisors then reviewed these comments and, if necessary, reached out for further clarification.

Spot-Checks: During the quarterly LFS data collection, coordinators and supervisors conduct unannounced visits to various locations countrywide. They visit different teams to assess team organization and follow up on any issues, ensuring the quality of the data collected.

Overall, the quality assessment of labor force survey data is conducted thoroughly to minimize sampling errors, response errors and non-response errors to the greatest extent possible.

4 Data security and processing

Data security is a critical component in protecting confidential information, ensuring the privacy of respondents, and complying with relevant protocols and regulations. In the Labour Force Survey (LFS), various technologies are employed across different stages—data collection, transmission, and reception—to uphold data security and privacy.

Initially, LFS processes relied on File Transfer Protocol (FTP) to transmit data from the field. However, this approach had several limitations, including delays in data retrieval and extended processing time due to manual editing requirements. To address these challenges, FTP was later enhanced with additional security features, and a more robust system—CSWeb—was introduced.

CSWeb offers a significant upgrade by integrating Transport Layer Security (TLS) to encrypt data during transmission. This ensures secure communication between enumerators' tablets and the central data reception system. The adoption of CSWeb brought several benefits, including real-time data transmission from the field, minimized delays in accessing data, and reduced the need for time-consuming editing procedures.

Since tablets are the primary data collection devices in LFS, stable internet connectivity—provided by major service providers in Rwanda—is crucial for uninterrupted data transmission. The data reception and hosting environment is built around a centralized CSWeb server, which enables seamless, real-time ingestion and monitoring of incoming field data.

5 Data analysis and reporting writing

The remote analytics environment for LFS was established on a Windows-based platform, supporting simultaneous access by multiple users. To ensure secure data access and remote connectivity, a Virtual Private Network (VPN) was configured. This setup provides a secure and encrypted communication channel, allowing only authorized users to access the system.

LFS data are accessed via Remote Desktop Protocol (RDP), with analysts, coordinators, and consultants granted individual login credentials to connect securely. This method significantly enhances data security by preventing local storage of sensitive datasets on personal devices, thereby minimizing the risk of data loss, theft, or damage that could compromise respondent confidentiality.

Once the data collection is complete and all data are successfully received, analysts perform additional data cleaning and validation using STATA software. This process results in a finalized, high-quality dataset. Subsequently, sampling weights are applied, and a series of derived variables are generated based on the collected responses.

The enriched dataset, now containing both sampling weights and derived variables, is used to compute key labor force estimates as specified in the survey's tabulation program, along with other analytical tables included in the main report. For transparency and reproducibility, a schematic overview of some STATA syntax used to construct derived variables is presented in the figure below. In addition, the questionnaire, highlighting the questions used to generate derived variables, is provided in Annex 4.

Figure 6: some derived variables from LFS questions

Derived variable: status1 (Employment status)

```
108 ******************************************
109 *EMPLOYMENT STATUS FOR 14+
110 ******************************************
111
112 cap drop status1
113
114 gen status1=0 if A04>=14
115
116 recode status1(0=1)  if C01==1
117 recode status1(0=1)  if C02==1
118 recode status1(0=1)  if (C02A==1 & inlist(C05,1,2))
119 recode status1(0=1)  if C03==1
120
121 recode status1 (0=1) if C06==1 & inlist(C07,1,2,3)
122 recode status1(0=1)  if C06==1 & !inlist(C07,1,2,3,7) & C08==1 & C07!=.
123 recode status1(0=1)  if !inlist(C07,1,2,3,7) & inrange(C08,2,3) & C09==1 & C07!=.
124
125 recode status1(0=2)  if C19==1  &  C21!="L" & C25==1
126 recode status1(0=2)  if C19A==1 &  C21!="L" & C25==1
127 recode status1(0=2)  if (C19==2 & C19A==2) & C20==1 & inlist(C20A,1,2)  & C25==1
128
129 recode status1(0=3)
130
131
132 label def status 1"Employed" 2"Unemployed" 3"out of labour force", modify
133 lab val status1 status
134 lab var status1 "Labour force status with 14+"
135
```

Derived variable: employed16(Employment to pop ratio) and UR1 (unemployment rate)

```
249 *Employment to population ratio
250 cap drop employed16
251 gen employed16 = 0 if inrange(A04,16,100)
252 recode employed16 (0=100) if status1==1
253 lab var employed16 "Employment to population ratio"
254
255 * Unemployment rate
256 cap drop UR1
257 gen UR1=0 if status1<3 & wap16==1
258 recode UR1(0=100)if status1==2
259 lab var UR1 "Unemployment rate"
260
261 *Labour force participation rate
262 cap drop LFPR
263 gen LFPR = 0 if wap16==1
264 recode LFPR(0=100) if status1<3
265 lab var LFPR "Labour force particiaption rate"
266
```

Derived variable: PLF (Potential labour force)

```
322
323 *POTENTIAL LABOUR FORCE
324 **********************
325 *Potential labour force = Availables not jobseekers and unvailable jobseekers
326
327   * Let's start with a variable "jobsearch"
328 cap drop jobsearch
329 gen jobsearch=0 if inrange(status1,2,3) & wap16==1
330 recode jobsearch(0=1) if C21!="L"
331 lab var jobsearch "Not employed with jobseach"
332 ta jobsearch
333
334   *Potential labour force
335 cap drop PLF
336 replace C25 = . if C21 == "L" & C23 ==2 & C25!=.
337 gen PLF=0 if status1!=1
338 replace PLF=1 if ((C19==1 | C19A==1) & jobsearch==1 & C25==2)
339 replace PLF=1 if  ((C19==2 & C19A==2) & C20==1 & inrange(C20A,1,2) & C25==2 & status1!=1)
340 replace PLF=2 if PLF==0 & (C19==1  & jobsearch!=1 & C23==1 & C25==1) | (C19==2 & C20==2 & C23==1 & C25==1 | (C19==2  & C20==1 & inrange(C20A,3,
    4) & C23==1 & C25==1))
341 replace PLF=2 if PLF==0 & (C19A==1  & jobsearch!=1 & C23==1 & C25==1) | (C19A==2 & C20==2 & C23==1 & C25==1 | (C19A==2  & C20==1 & inrange(C20A
    ,3,4) & C23==1 & C25==1))
342
343
344 replace PLF = . if PLF==0
345 replace PLF = . if A04<16
346 lab def PLF 1" Unvailable jobseekers" 2"Available not jobseekers", modify
347 lab val PLF PLF
348 lab var PLF "Potential labour force"
349
```

Derived variable: LUU (Labour underutilization)

```
*LABOUR UNDERUTILISATION
**********************

cap drop LUU
gen LUU = .
replace LUU = 1 if status1==2
replace LUU = 2 if TRU ==1 & LUU==.
replace LUU = 3 if inrange(PLF,1,2) & LUU==.
lab def LUU 1"Unemployed" 2"Time related underemployed" 3"Potential labour force", modify
lab val  LUU LUU
lab var LUU "Labour underutilization"

* creating Labour underutilisation rate
cap drop LUUR
gen LUUR = 0 if inrange(status1,1,2)| inrange(PLF,1,2)
recode LUUR(0= 100) if inrange(LUU,1,3)
ta LUUR
lab var LUUR" Labour underutilization rate (%)"
```

Derived variable: TRU (Time-related underemployment)

```
*Time related underemployment

cap drop TRU
gen TRU = 0 if status1==1 & wap16==1
recode TRU(0=1) if (C14==1 & C18==1)
lab def TRU 1"Time related underemployed" 0"Not time related underemployed", m
lab val TRU TRU
lab var TRU "Time related underemployment"
```

Tabulation: STATA syntax for summary labour force indicators

```
**# Table 1: Summary labour force indicators, Rwanda

    collect clear
    table  (wap16)    (LFS_y Quarter) [iw=weight] if wap16==1  ,
    table  (LFPR)     (LFS_y Quarter) [iw=weight] if wap16==1  ,                    append
    table  (status1)  (LFS_y Quarter) [iw=weight] if wap16==1  ,                    append
    table  (LUU)      (LFS_y Quarter) [iw=weight] if wap16==1  ,                    append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean LFPR)     append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean employed16) append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean pop_outLFS) append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean TRUR)     append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean UR1)      append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean LU2)      append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean LU3)      append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(mean LUUR)     append
    table  (var )     (LFS_y Quarter) [iw=weight] if wap16==1  , stat(median cash)   append
    table  (var )     (LFS_y Quarter) [iw=weight] if YA==1     ,  stat(mean neetyoung) append


    collect layout (wap16[.m] LFPR[100] status1[1 2 3] LUU[2 3] var[LFPR] var[employed16] var[pop_outLFS] var[TRUR] var[UR1] var[LU2] var[LU3] var[LUUR] var[neetyoung]  var[cash]) (LFS_year[2019 2020 2021 2022 2023 2024 2025]#Quarter[1 2 3 4])
    collect style header Quarter,    title(hide)
    collect style header wap16,  title(hide)
    collect style header LFPR,  title(hide)
    collect style header status1,  title(hide)
    collect style header LUU,  title(hide)

    collect label dim LFS_year "Period: Year/Quarter", modify
    collect label levels LFPR 100 "Labour force", modify
    collect label levels wap16 .m "Working age population(16+ years)", modify
    collect label levels var LFPR "Labour force participation rate(%)", modify
    collect label levels var employed16 "Employment-to-population ratio(%)", modify
    collect label levels var pop_outLFS "Out of labour force (Inactivity rate(%))", modify
    collect label levels var TRUR "Time related underemployment rate(%)", modify
    collect label levels var UR1  "LU1-Unemployment rate (%)", modify
    collect label levels var LU2  "LU2-Combined rate of unemployment and time-related underemployment(%)", modify
    collect label levels var LU3  "LU3-Combined rate of unemployment and potential labour force(%)", modify
    collect label levels var LUUR "LU4-Composite measure of labour underutilization(%)", modify
    collect label levels var cash "Median monthly earnings at main job", modify
    collect label levels var neetyoung "NEET rate-Youth  not in employment nor currently in education or training(%)", modify


    collect style cell cell_type[column-header], warn shading( background(lightgray) foreground(lightgray) pattern(solid) )
    collect style cell , font(Aptos Narrow, size(10))   nformat(%9.0fc)
    collect style cell var, font(Aptos Narrow, size(10))  nformat(%9.1fc)
    collect style cell var[cash], font(Aptos Narrow, size(10))  nformat(%9.0fc)

    collect title "Table 1: Summary labour force indicators, Rwanda"
    collect style title, font(Aptos Narrow, size(16) bold)

    collect notes `"Source:  National Institute of Statistics of Rwanda (NISR), Labour Force Survey"'
    collect style notes, font(Aptos Narrow, size(8) italic)
```

Source: National Institute of Statistics of Rwanda

6 Annexes

Annex 1: Rwanda LFS theoretical Sample Rotation Scheme 2-2-2

Group/Qs	2024				2025				2026				2027				2028				2029				2030				2031				2032				2033				2034			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	1D																																									
2	2C	2D																																								
3		3C	3D																																							
4			4C	4D																																						
5	5B			5C	5D																																					
6	6A	6B			6C	6D																																				
7		7A	7B			7C	7D																																			
8			8A	8B			8C	8D																																		
9				9A	9B			9C	9D																																	
10					10A	10B			10C	10D																																
11						11A	11B			11C	11D																															
12							12A	12B			12C	12D																														
13								13A	13B			13C	13D																													
14									14A	14B			14C	14D																												
15										15A	15B			15C	15D																											
16											16A	16B			16C	16D																										
17												17A	17B			17C	17D																									
18													18A	18B			18C	18D																								
19														19A	19B			19C	19D																							
20															20A	20B			20C	20D																						
21																21A	21B			21C	21D																					
22																	22A	22B			22C	22D																				
23																		23A	23B			23C	23D																			
24																			24A	24B			24C	24D																		
25																				25A	25B			25C	25D																	
26																					26A	26B			26C	26D																
27																						27A	27B			27C	27D															
28																							28A	28B			28C	28D														
29																								29A	29B			29C	29D													
30																									30A	30B			30C	30D												
31																										31A	31B			31C	31D											
32																											32A	32B			32C	32D										
33																												33A	33B			33C	33D									
34																													34A	34B			34D	34D								
35																														35A	35B			35C	35D							
36																															36A	36B			36C	36D						
37																																37A	37B			37C	37D					
38																																	38A	38B			38C	38D				
39																																		39A	39B			39C	39D			
40																																			40A	40B			40C	40D		
41																																				41A	41B			41C	41D	
42																																					42A	42B			42C	42D	
43																																						43A	43B			43C	43D
44																																							44A	44B			44C	44D
45																																								45A	45B			45C
46																																									46A	46B		
47																																										47A	47B	
48																																											48A	48B
49																																												49A

Note: letters, A, B, C, D means first, second, third and fourth appearances, respectively of a PSU in the quarterly sample

Annex 2: Main concepts and definitions

The main concepts and definitions used in the survey are in line with the international standards on statistics of work, employment, and labour underutilization adopted by the 19th International Conference of Labour Statisticians (Geneva, 2013). They are briefly described below.

Work

The starting point of the international standards on statistics of work, employment and labour underutilization is the concept of work defined as:

– "Any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use" in line with the General production boundary defined in the System of National Accounts 2008.

– Work is defined "irrespective of its formal or informal character or the legality of the activity."

– It excludes "activities not involving production of goods or services (begging, stealing), self-care (personal grooming, hygiene) and activities that cannot be performed by another person on one's own behalf (sleeping, learning, own recreation)."

The international standards recognize different forms of work: Own-use production work (production of goods and services for own final use); employment (work performed for others in exchange for pay or profit); unpaid trainee work (work performed for others without pay to acquire workplace experience or skills); volunteer work (non-compulsory work performed for others without pay); and other forms of work (not defined at this time by the international standards). The RLFS focuses on the measurement of employment and labour underutilization and separately on own-use production work.

Working age population

The working age population in Rwanda is defined as all persons 16 years old and over. For international reporting, the international standards recommend the lowest age bracket starting with 15 years. To enable comparison with the past and to conform to the international standards, the LFS questionnaire collected data on labour force and labour underutilization characteristics of the population 14 years and over. Accordingly, the main indicators presented in this report are based on the 16 years old limit.

Employment

Employment is a particular form of work. Persons in employment are defined as all those above a specified age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. It excludes persons engaged wholly in activities to produce goods or services for own final use such as producing agricultural, fishing and gathering products for own-consumption or cleaning, decorating, gardening and maintaining one's own dwelling or premises, durables and other goods. Persons in employment comprise: (a) employed persons "at work," i.e., who worked in a job for at least one hour; and (b) employed persons "not at work" due to temporary absence from a job, or to working-time arrangements (such as shift work, flexi-time and compensatory leave for overtime).

This definition of employment differs from the definition used in past surveys and censuses that was based on the previous international standards. The main difference concerns the statistical treatment of subsistence foodstuff producers. According to these earlier standards, "persons engaged in the production of goods and services for own and household consumption should be considered as in self-employment if such production comprises an important contribution to the total consumption of the households." According to the new

standards, however, only those are included in employment if the production was "intended mainly for sale or barter, even if part of the output is consumed by the household or family."

Labour underutilization

Labour underutilization refers to mismatches between labour supply and demand. It reflects the unmet need for employment among the population. Measures of labour underutilization include, but may not be restricted to unemployment; time-related underemployment; and potential labour force.

Unemployment

Persons in unemployment are defined as all those above a specified age who (a) were not in employment; (b) carried out activities to seek employment during a specified recent period; and (c) were currently available to take up employment given a job opportunity. The definition of unemployment provides an exception in the case of future starters. They are considered as unemployed even if they did not carry out activities to seek employment during the specified recent period, if satisfy the availability condition.

Although this definition of unemployment is essentially the same as the definition used in past surveys and censuses, the resulting statistics differ considerably from each other. This is due to the impact of the change in the definition of employment. Persons who are not classified as employed under the new definition are now subject to classification as unemployed if they satisfy the other two criteria of unemployment.

Time-related underemployment

Persons in time-related underemployment are defined as all persons in employment who, during a specified reference period, (a) wanted to work additional hours, (b) whose working time in all jobs was less than a specified hours threshold, and (c) who were available to work additional hours given an opportunity for more work. The hour-threshold was set at 35 hours of work during the reference week at all jobs. It corresponds to the median value of the distribution of hours actually worked at all jobs during the reference week.

Potential labour force

Potential labour force is defined as all persons above a specified age who, during the short reference period, were neither in employment nor in unemployment but who were considered as either (a) unavailable jobseekers (seeking employment but not currently available) or (b) available potential jobseekers (currently available for employment but did not carry out activities to seek employment). The relationship among the various concepts is shown in the figure below.

Note: The employed excludes workers engaged in the production of goods or services for own consumption or in other forms of work not regarded as employment.

Discouraged jobseekers

Among the potential labour force, one particular group requires separate attention. These are the so-called discouraged jobseekers. Discouraged jobseekers are persons outside the labour force who wanted employment and were currently available but did not seek employment during the short reference period of measurement for labour market-related reasons as listed below:

– past failure to find a suitable job
– lack of experience
– lack of qualifications or jobs matching the person's skills

– lack of jobs in the area
– considered too young or too old by prospective employers

The discouraged jobseekers are a subset of the potential labour force, or more particularly, a subset of the "available potential jobseekers". During the survey reference period, they wanted and were available for employment, but were not seeking employment for labour market-related reasons as opposed to personal, family or other non-labour related reasons. They are considered as potential jobseekers because in principle they have been seeking employment in the past but stopped looking for employment after failure or repeated failures to obtain suitable employment due to various reasons related to the unsuitability of their age, qualification, work experience, and similar labour-market reasons. If these obstacles could be overcome, they would presumably be again jobseekers.

Others outside the labour force

The potential labour force is one group of persons outside the labour force. In general, persons outside the labour force include persons of working age population who were neither in employment nor in unemployment during the reference period of measurement. Persons outside the labour force may be classified in terms of their current main activity status as well as the main reason for not being engaged in the labour force and their potential future labour force engagement. The international standards recommend the classification of persons outside the labour force by main activity status, as self-declared, with the following categories:

– own-use production of goods or own-use provision of services;
– unpaid-trainee work;
– volunteer work;
– studies;
– self-care (due to illness or disability);
– leisure activities (social, cultural, recreational).

The main status of the individual is to be determined by the person himself or herself, or in practice by the survey respondent if the survey allows for proxy-response.

Additional classifications of the population outside of the labour force (or more generally, the population not in employment) that may be considered in survey design are past work employment and characteristics of last employment for those who had past employment experience, and main current source of livelihood.

Willing non-jobseekers

One particular group of persons outside the labour force who are not in the potential labour but have some attachment to the labour force are the so-called "willing non-jobseekers". Willing non-jobseekers are defined as persons who wanted employment but were not seeking employment and were not currently available for employment during the corresponding specified reference periods of measurement.

The willing non-jobseekers are a subset of the persons outside the labour force, and more particularly, a subset of those persons outside the labour force who are not in the potential labour force. The willing non-jobseekers were not seeking employment, nor were available for employment during the appropriate reference periods and as a result are not classified as unemployed or as potential labour force. However, they wanted employment during the appropriate reference period, and in this sense they are considered as a separate category among the population outside the labour force.

Own-use production work

Persons in own-use production work are defined as all those of working age who, during a short reference period, performed any activity to produce goods or provide services for own final use for a cumulative total of at least one hour. “For own final use” is interpreted as production where the intended destination of the output is mainly for final use (in the form of capital formation, or final consumption by household members, or by family members living in other households). In the case of agricultural, fishing, hunting or gathering goods intended mainly for own consumption, a part or surplus may nevertheless be sold or bartered.

Subsistence foodstuff producers constitute an important subgroup of persons in own-use production work. They are defined as all those who performed any of the specified activities to produce foodstuff from agriculture, fishing, hunting or gathering that contribute to the livelihood of the household or family. Excluded are persons who engaged in such production as recreational or leisure activities.

Own-use producers and in particular persons engaged in own-use production of goods such as subsistence foodstuff producers (and for that also matter unpaid trainee workers or volunteer workers) may be engaged, in the same reference period, in other activities, including employment or search for employment. On the basis of their other activity, therefore, certain own-use producers may also be in the labour force and classified as employed, unemployed or other labour underutilization category.

The following table lists the terminology and definitions of the main labour force and labour underutilization indicators used in the survey. The definitions of other concepts used in the survey are described as part of the analysis of the data in the body of the report.

Main labour force and labour underutilization indicators

Concept	Definition
Working age population (Pop16+)	E+U+N
Labour force (LF)	LF = E+U
Potential labour force	P
Extended labour force (XLF)	XLF = E+U+P
Employment	E
Unemployment	U
Time-related underemployment	T
Labour force participation rate	LF/Pop16+
Employment-population ratio	E/Pop16+
Unemployment rate (LU1)	U/LF
Combined rate of unemployment and time-related underemployment (LU2)	(U+T)/LF
Combined rate of unemployment and potential labour force (LU3)	(U+P)/XLF
Composite measure of labour underutilization (LU4)	(U+T+P)/XLF

Annex 3: LFS Methodology Contributors

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Tuyisenge Methode, Economic Statistics Specialist, NISR

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Annex 4: LFS Questionnaire

Section 0: HOUSEHOLD LOCALIZATION

INFORMATION PROVIDED TO INTERVIEWERS			
PSU_NO	PSU NUMBER		
HL1	PROVINCE		
HL2	DISTRICT		
HL3	SECTOR		
HL4	CELL		
HL5	VILLAGE		
CODE_UR	URBAN OR RURAL?	URBAN	01
		RURAL	02
HHLSTRUCT	STRUCTURE NUMBER		
HHLNO	HOUSEHOLD NUMBER		
QH_NO	QUESTIONNAIRE NUMBER		
NAME_HEAD	NAME OF THE HEAD OF HOUSEHOLD		
PHONEN	HEAD OF HOUSEHOLD PHONE NUMBER		
SAMEHH	THE SAME HOUSEHOLD VISITED LAST TIME?	YES	01
		NO	02
HHRG	ROTATION		
HHGAP	NUMBER OF GROUP APPEARANCE		
HHGAC	NUMBER OF GROUP ACCEPTANCE		
RDAY	DAY		
RMONTH	MONTH		
RYEAR	YEAR		
CONSENT	HOUSEHOLD ECCEPTED INTERVIEW?	YES	01
		NO	02
REASON	REASON FOR NON-INTERVIEW (***After filling reason for non-interview, Take GPS and End questionnaire)***	Temporally absent	01
		Refused	02
		Unable to locate	03
		Vacant	04
		Converted to business, etc.	05
		Demolished	06
		Other non-Interview	07
START_TIME	Time of interview start	DD-MM-YYYY hh:mm:ss	
END_TIME	Time of interview start	DD-MM-YYYY hh:mm:ss	
COMP_QSE	HOUSEHOLD COMPLETED?	YES	01
		NO	02
GPS_LATITUDE	latitude		
GPS_LONGITUDE	longitude		

Section A: HOUSEHOLD ROSTER

FOR ALL HOUSEHOLD MEMBERS				
	FOR INTERVIEWER : List the usual Household members starting from the Household head, followed by his wife and children from the eldest to the youngest. Include other relatives and domestic workers if they are considered as household members. Do not forget babies.			
PID	*Personal ID*			
SNO	*Serial number*			
NAMES	*Names of household members*			
A01	What is (NAME) 's sex?	MALE	01	
		FEMALE	02	
A02	What is the relationship of (NAME) to head of household?	Household Head	01	
		Spouse (Wife/Husband)	02	
		Child (Son/daughter)	03	
		Adopted/Foster/step child	04	
		Parent(Father/Mother)	05	
		Parent-in-law	06	
		Brother or Sister-In law	07	
		Brother or Sister	08	
		Grandchild	09	
		Son/Daughter-in-law	10	
		Other relative	11	
		Domestic worker	12	
		Non-relative	13	
		Unknown relationship	14	
A03M	(NAME)'s month of birth?	_____ M		
A03Y	(NAME)'s YEAR of birth?	_____ Y		
A04	Is (NAME)'s age at last birthday? *(confirm age)*	_____ Years		***CAPI***
A05	What is (NAME'S) present marital status? *(Asked those people 12 years and above)* *For interviewer: (COMFIRM THE STATUS)*	Married monogamously	01	
		Married polygamous	02	
		Living together	03	
		Divorced	04	
		Separated	05	
		Single	06	
		Widow/Widower	07	

Sub-section A2: Migration				
QUESTIONS ASKED ALL HOUSEHOLD MEMBERS				
A12A	Is there any non-Rwandan living in this household? If No, Autofill A12 with Rwanda(1) and Go to A13A	Yes	01	
		No	02	
A12B	Who is not a Rwandan?	Select all from list of HH members		
A12	What is (NAME'S) nationality?	Rwanda	01	
		Burundi	02	
		Congo-Kinshasa DRC	03	
		Kenya	04	
		Tanzania	05	
		Uganda	06	
		South Sudan	07	
		Rest of Africa	08	
		Other country	09	
A13A	Is there any person who is living in Rwanda on temporarily basis in this Household? If No, Autofill A13 with Permanent resident (1) and Go to A14AA	Yes	01	filter
		No	02	
A13B	Who is not permanent in Rwanda?	Choose from list of HH members		
A13	What is (NAME'S) Residential Status in Rwanda?	Permanent resident	01	
		Temporary resident	02	
A14AA	Is there any household member who was born outside Rwanda? If No, Autofill A14A with Rwanda (1) and Go to A14B	Yes	01	filter
		No	02	
A14AAZ	Who was not born in Rwanda?	Choose from list of HH members		
A14A	What is (NAME'S) Country/Area of birth?	Rwanda	01	
		Burundi	02	→A15
		Congo-Kinshasa DRC	03	→A15
		Kenya	04	→A15
		Tanzania	05	→A15
		Uganda	06	→A15
		South Sudan	07	→A15
		Rest of Africa	08	→A15
		Other country	09	→A15
A14B	What is (NAME) ' S district of birth	Choose district code for Rwandan-born members		
A15	Since birth has (NAME) lived in another district or foreign country for at least 6 consecutive months?	Yes	01	
		No	02	→A06A
A16Y	For how long (NAME)'s usual place of residence has been here since the last move? Register 0 if less than one year	_____ Years		

A17A	In which country did (NAME) live in prior to arrival here?	Rwanda	01	
		Burundi	02	
		Congo-Kinshasa DRC	03	
		Kenya	04	
		Tanzania	05	
		Uganda	06	
		South Sudan	07	
		Rest of Africa	08	
		Other country	09	
A17B	In which district did (NAME) live in prior to arrival here?	Choose district code for Rwandan-born members		
A19	How long did (Name) live in the previous location prior to arriving here? Register 0 if less than one year	_____ Years		
A20	What was (your/NAME)'s main reason for moving to the current location?	Parents moved	01	
		To live with relatives	02	
		To attend school	03	
		Marriage	04	
		Family quarrel	05	
		Divorce	06	
		Found job	07	
		Job transfer	08	
		To look for work	09	
		Looking for land to farm	10	
		Loss of employment	11	
		Employment of spouse	12	
		Coming back in country/ own building/ Renting	13	
		Other	14	

Sub-section A3: Disability				
QUESTIONS FROM A06 TO A11 ARE ASKED TO THOSE AGED 5 YEARS AND ABOVE				
A06A	Is there any household member who have difficulty seeing, even if wearing glasses? *If No, Autofill A06 with No difficulty (1) and Go to A07A.* *If Yes, select from household members and Answer A06*	Yes	01	filter
		No	02	
A06	Level of difficulty of seeing, even if wearing glasses for [Name]?	No - no difficulty	01	
		Yes - some difficulty	02	
		Yes – a lot of difficulty	03	
		Yes- cannot do at all	04	
A07A	Is there any household member who have difficulty hearing, even if using a hearing aid? *If No, Autofill A07 with No difficulty (1) and Go to A08A.* *If Yes, select from household members and Answer A07*	Yes	01	filter
		No	02	

A07	Level of difficulty of hearing, even if using a hearing aid for [Name]?	No - no difficulty	01	
		Yes - some difficulty	02	
		Yes – a lot of difficulty	03	
		Yes- cannot do at all	04	
A08A	Is there any household member who have difficulty walking or climbing steps? *If No, Autofill A08 with No difficulty (1) and Go to A09A. If Yes, select from household members and Answer A08*	Yes	01	filter
		No	02	
A08	Level of difficulty of walking or climbing steps for [Name]?	No - no difficulty	01	
		Yes - some difficulty	02	
		Yes – a lot of difficulty	03	
		Yes- cannot do at all	04	
A09A	Is there any household member who have difficulty remembering or concentrating? *If No, Autofill A09 with No difficulty (1) and Go to A10A. If Yes, select from household members and Answer A09*	Yes	01	filter
		No	02	
A09	Level of difficulty of remembering or concentrating for [Name]?	No - no difficulty	01	
		Yes - some difficulty	02	
		Yes – a lot of difficulty	03	
		Yes- cannot do at all	04	
A10A	Is there any household member who have difficulty with self-care such as washing all over or dressing? *If No, Autofill A10 with No difficulty (1) and Go to A11A. If Yes, select from household members and Answer A10*	Yes	01	filter
		No	02	
A10	Level of difficulty of self-care such as washing all over or dressing for [Name]?	No - no difficulty	01	
		Yes - some difficulty	02	
		Yes – a lot of difficulty	03	
		Yes- cannot do at all	04	
A11A	Is there any household member who have difficulty communicating, for example understanding or being understood? *If No, Autofill A11 with No difficulty (1) and Go to section B. If Yes, select from household members and Answer A11*	Yes	01	filter
		No	02	
A11	Level of difficulty of understanding or being understood for [Name]?	No - no difficulty	01	
		Yes - some difficulty	02	
		Yes – a lot of difficulty	03	
		Yes- cannot do at all	04	

Section B: EDUCATION

FOR HOUSEHOLD MEMBERS 14 YRS OLD AND ABOVE				
B01	IS [NAME] a student? (Is he/she attending school or would be attending one if schools were not closed due to holidays)	Yes	01	
		No	02	
B02A	What is [NAME] Highest level of educational attending / attended?	None	01	→B07
		Pre-primary	02	
		Primary education	03	
		Lower secondary education	04	
		Upper secondary education	05	
		Tertiary education	06	
B02B	How many years have [NAME] completed successfully in that level of education? (After answering this question, those who answered B02A 02-04 skip to B07)	Number of Years		
B05A	In which area did/is [NAME] specialize in the highest level?	Write in words_____		
B05B		ISCED CODE		
B05C		_____ Write in words		Auto-filled
B07	Are (you/name) currently attending any trade or technical vocational courses	Yes No	01 02	→B09
B08	Did (you/NAME) learn any trade or technical vocational course in the past?	Yes No	01 02	→Sec. C
B09	How long will/did this course take?	Less than one month	01	
		1-3 Months	02	
		3-6 Months	03	
		One year	04	
		Two years	05	
		Three years or more	06	
B10	What type of technical skills did [NAME] learn? (Choose from list of Technical skills)	TECHNICAL SKILLS CODE _____		
B11	Where did (NAME) acquire these skills	Vocational School Course / IPRC	01	
		Apprenticeship or on job Training	02	
		Learned from a friend or family	03	
		NGO	04	
		Community organization	05	
		Other (Specify)	06	
B13	Did [you/NAME] complete the course?	Yes with certificate	01	
		Yes without certificate	02	
		Yes with Degree / Diploma	03	
		No	04	→Sec C
B13B	In which year did (you/Name) complete this course?	_____ YEAR		

B14	What happened after you completed the course?	Nothing	01	→Sec. C
		I was able to get a job	02	
		My salary increased	03	→Sec. C
		I was promoted at work	04	→Sec. C
		My job skills have improved	05	→Sec. C
		I got internship/traineeship with a company	06	→Sec. C
		Starting own business	07	
		Other specify	08	→Sec. C
B15	How long did take (Name/you) to get a job or start own business after completing the course	Less than one month	01	
		1-3 Months	02	
		3-6 Months	03	
		One year	04	
		Two years	05	
		Three years or more	06	

Section C: IDENTIFICATION OF EMPLOYED, TIME-RELATED UNDEREMPLOYED, UNEMPLOYED, AND PERSONS OUTSIDE LABOUR FORCE

FOR HOUSEHOLD MEMBERS AGED 14 YEARS AND ABOVE				
	Read for respondent : I am now going to ask you a series of questions on your current situation with regard to work and economic activity. These questions were asked before when your household was interviewed last time. But because the work situation of people may change over time, the same questions are asked again to obtain information on your current situation even if it has not changed since last interview.			
C01	During the last 7 days, did [NAME] do any work for wage, salary, commissions, tips or any other pay, in cash or in kind, even if only for one hour? (including paid interns)	Yes	01	→C10
		No	02	
C02	During the past 7 days, did (NAME) run or do any kind of business activity **other than** farming, Rearing farm animals, Fishing or fish farming to generate income, even if only for one hour?	Yes	01	→C10
		No	02	
C02A	During the past 7 days, did (NAME) run or do any farming, Rearing farm animals, Fishing or fish farming to generate income, if only for one hour?	Yes	01	→C05
		No	02	→C03
C05	In general, are the products obtained from this activity for sale or for family use?	Only for sale/barter	01	→C09A
		Mainly for sale/barter	02	→C09A
		Mainly for family use	03	
		Only for family use	04	
C03	During the past 7 days, did (NAME) help unpaid in a business owned by a household or family member, or help a member of household or family in his/her paid job, even if only for one hour?	Yes	01	→C10
		No	02	→C06
C06	During the last 7 days, did (NAME) have a paid job or a business from which he/she was temporarily absent and for which he/she expect to return?	Yes	01	
		No	02	→C19

C07	What was the main reason (NAME) was absent from work during the last 7 days?			
	[Interviewer: Do not to read answer categories]			
	Sick leave due to own illness or injury → C10		01	→C10
	Public holidays, vacation or annual leave → C10		02	→ C10
	Maternity or paternity leave as specified by legislation → C10		03	→ C10
	Parental leave		04	
	Educational leave		05	
	Care for others and other personal absences		06	
	Seasonal work		07	→C19
	Strikes or lockouts		08	
	Reduction in economic activity (e.g. temporary lay-off, slack work)		09	
	Disorganization or suspension of work (e.g. due to bad weather, mechanical, electrical or communication breakdown		10	
	Other Specify		16	
C08	What is the expected total absence from work for (NAME)?	Less than 3 months	01	→C10
		3 months or more	02	
		Not sure to return to work	03	
C09	Does (NAME) continue receiving an income from his/ her job during absence?	Yes	01	→C10
		No	02	→C19
C09A	Among the following categories, which correspond to the (NAME)'s situation	Enterpreneur in agriculture	01	
		Subsistence agricultural	02	
		Help without pay in agriculture	03	
C10	Did [NAME] have any other paid job or business or any secondary activity to generate an income, done for at least one hour during the last 7 days?	Yes	01	
		No	02	
C10A	How many jobs other than main job do [YOU/NAME] Possess?	_____ NUMBER OF JOBS:		
C11A	How many hours does [NAME] usually work per week in Main job/Activity?	_____ NUMBER OF HOURS:		
C11B	How many hours does [NAME] usually work per week in secondary job/Activity?	_____ NUMBER OF HOURS:		Ask if C10=1
C12A	During the past 7 days, how many days did (NAME) actually work in Main job/Activity?	_____ NUMBER OF HOURS:		
C12B	During the past 7 days, how many days did (NAME) actually work in all secondary jobs/Activities?	_____ NUMBER OF HOURS:		Ask if C10=1
C13A	During the past 7 days, how many hours did (NAME) actually work in Main job/Activity?	_____ NUMBER OF HOURS:		
C13B	During the past 7 days, how many hours did (NAME) actually work in all secondary jobs/Activities?	_____ NUMBER OF HOURS:		Ask if C10=1

C14	How many hours has [NAME] usually worked at all jobs combined during the last 7 days? ***Auto-filled by CAPI***	Less than 35 hrs	01	→C16
		35 hrs - 48hrs	02	→Sec. D
		49 hrs or more		
C15	What was the main reason (NAME) usually worked long hours per week?	Nature of work	01	→Sec. D
		To earn more money	02	→Sec. D
		Lack of employees	03	→Sec. D
		Meet deadlines	04	→Sec. D
		Other specify	05	→Sec. D
C16	During the last 4 weeks, did (NAME) look for additional or other paid work?	Yes	01	→C18
		No	02	
C17	Would (NAME) want to work more hours per week than usually worked provided the extra hours are paid or profitable?	Yes	01	
		No	02	→Sec. D
C18	If an opportunity for additional work became available, could (NAME) start working more hours within the next two weeks?	Yes	01	→Sec. D
		No	02	→Sec. D
C19	During the last four weeks, from [START_DATE] up to [last END_DAY/yesterday] did (you/NAME) do anything to find a paid job?	Yes	01	→C21
		No	02	
C19A	During the last four weeks, from [START_DATE] up to [last END_DAY/yesterday] did (you/NAME) try to start a business?	Yes	01	→C21
		No	02	
C20	Has [NAME] already found a job or arranged to start a business in the next 4 weeks?	Yes	01	
		No	02	→C23
C20A	How soon (do/does) (you/NAME) expect to start working in this new job or business	ONE MONTH OR LESS	1	**→C25**
		MORE THAN ONE MONTH AND UP TO THREE MONTHS	2	**→C25**
		MORE THAN THREE MONTHS	3	→C23

C21	What did [NAME] do in the last 4 weeks to find a paid job or start a business?			
	"Check list and mark up to four codes			
	Apply to prospective employers		A	
	Place or answer job advertisements		B	
	Post/update resume on professional/social networking sites online		C	
	Register with employment center (public/private)		D	
	Take a test or interview		E	
	Seek help from relatives, friends, others		F	
	Check at factories, work sites		G	
	Wait on the street to be recruited		H	
	Seek financial help to start a business		I	
	Look for land, building, equipment, materials to start a business		J	
	Apply for permit or license to start a business		K	
	No method		L	→C23
	Other, specify		M	
C22	For how long has [NAME] been without work and trying to find a paid job or start a business?	_____ MONTHS:		→C25
C23	Would [NAME] want to work if a paid job or business opportunity became available?	Yes	01	
		No	02	→Sec. F
C24	What was the main reason (NAME) did not try to find a paid job or start a business in the last 4 weeks?			
	Own illness		01	
	Disability		02	
	Studies		03	
	Pregnancy		04	
	Presence of small children/ elders / sick people		05	
	Refusal by family		06	
	Past failure to find suitable job		07	
	Lack of experience, qualification or jobs matching skills		08	
	Lack of jobs in the area		09	
	Considered too young or too old by prospective employers		10	
	Lack of infrastructure (assets, roads, transportation, employment services)		11	
	Other sources of income (pension, rent)		12	
	Estrangement		13	
C25	If a paid job or business opportunity become available, could [NAME] have started work during the last 7 days or within the next two weeks?	Yes	01	→Sec. F
		No	02	

C26	What is the main reason why (NAME) could not start working in the last 7 days or next two weeks?	In Study, training	01	→Sec. F
		Maternity leave, child care	02	→Sec. F
		Injury, illness, disability	03	→Sec. F
		Family member(s) consider that (NAME) should stay home	04	→Sec. F
		In agriculture / fishing for family use	05	→Sec. F
		Retired, pensioner	06	→Sec. F

Section D: CHARACTERISTICS OF MAIN JOB

FOR HOUSEHOLD MEMBERS, AGED 14 YEARS OLD AND ABOVE						
D00	INTERVIEWER TO READ: I am now going to ask you some questions about characteristics of you main job/income generating activity in which (you/NAME) usually work the most hours.					
D01A	In (your/NAME's) job, what kind of work (do/does) (you/he/she) do? (Example: policeman, primary school teacher, vegetable vendor, domestic worker, truck driver, registered nurse)		_____ WRITE OCCUPATIONAL TITLE			
D01B2		ISCO CODE:				
D01B3		_____ MAIN TASKS AND DUTIES				
D03A	Does the place or business where (you/NAME) work(s) have a name?		Name of workplace	01		
		Domestic worker	02	→D03B		
		No name	03	→ D03B		
D03A1	What is the name?		_____ (NAME OF ESTABLISHMENT)			
D03B	What is the main activity of the place or business where (you/NAME) work(s) or its main function?		_____ WRITE MAIN ACTIVITY			
D03B1		ISIC CODE:				
D03B2		_____GOODS OR SERVICES				
D04	(Do/does) (You/NAME) work in?					
	READ ANSWER FOR RESPONDENT					
	Public institution/enterprise			01		
	Mixed public and private enterprise			02		
	Private/farm			03		
	International NGO/International organisation			04		
	Local NGO/Religious organisation			05		
	Cooperative			06		
	Household			07		
	VUP/community based jobs			08		

D05A	How many persons including (you/NAME) work at (your/NAME's) place of work?			
	Less than 10		01	
	10-30 workers		02	→DS07
	31-50 workers		03	→DS07
	51-100 workers		04	→DS07
	101 workers or more		05	→DS07
D05A1	Number of persons including (you/NAME) working at (your/NAME's) place of work if less than ten?			
	Write the number			
DS07	(Do/does) (You/NAME) work…?			
	READ ANSWER FOR RESPONDENT			
	As an [employee]		01	→DS10a
	In (your/his/her) own business activity		02	→DS09
	Helping in a family or household business		03	
	As an paid apprentice, paid intern		04	→DS10a
	Helping a family member who works for someone else		05	→DS10a
	Member of cooperative		06	→DS09
ASKED for self-identified contributing family workers				
DS08	Who usually makes the decisions about the running of the family/Household business?			
	READ			
	(You/NAME)		01	
	(You/NAME) together with others		02	
	Other family member(s) only		03	→DS10a
	Other (non-related) person(s) only		04	→DS10a
ASKED for those identified as self-employed				
DS09	Does the business hire/ have any paid employees on a regular basis?	YES	01	
	NO 02			
DS09AA	Is [NAME] 'S business registered with Rwanda Development Board(RDB)?	YES	01	
		→DS09_A		
	NO 02 Do not know 97	→DS09_A		

DS09AAA	Is [Name]'s business registered as…? Read the answers for respondent SKIP TO D10_E if DS09==1 SKIP TO D10_E if DS09==2 & inlist(DS09AAA,2,3,4) & DS09AA==1				Sole proprietorship/ individual	01	
		Limited by shares	02				
		Limited by guarantee	03				
		Limited by shares and guarantee	04				
		unlimited	05				
		Do not know	06				
DS09_A	Does more than half of the income from [NAME]'s business/activity come from ….? Read the answers to the respondent. Multiple clients/customers 02 Have not had any clients yet 03				One single client/customer	01	→ DS09_D
					→ DS09_C		
DS09_B	Does [NAME] get customers, clients or buyers through someone else, for example from another company, intermediary or person? Yes, most of them 02 Yes, but only some of them 03 No 04				Yes, all of them	01	→ DS09_D
					→ DS09_D		

DS09_C	In this business /activity Does [NAME]…? READ THE ANSWERS FOR RESPONDENTS Sell products or services from only one company B Work with materials or equipment provided by just one company C NONE OF THE ABOVE D	Make products or provide services for only one company	A	
DS09_D	In [NAME]'s business/activity does client/company/intermediary/or other person…? READ AND MARK ALL THAT APPLY			
	Set the price of the products or services that you offer		a.	→ D10_E
	Decide the minimum amount of sales or tasks you must complete		b.	→ D10_E
	Decide the places, routes or areas where you do your work		c.	→ D10_E
	Decide how to organize the work such as supervising or deciding on working time		d.	→ D10_E
	Decide the supplier(s) to use		e.	→ D10_E
	Provide the premises or machines you use		f.	→ D10_E
	NONE OF THE ABOVE		g.	→ D10_E
Asked for those identified as employees, apprentices or assisting family members. Questions from DS10a are also addressed to contributing family workers				
DS10a	Which of the following types of pay (do/does) (you/NAME) receive for this work?			
	READ AND MARK ALL THAT APPLY			
	A wage or salary		a.	
	Payment by piece of work completed		b.	
	Commissions		c.	
	Tips		d.	
	Fees for services provided		e.	
	Payment with meals or accommodation		f.	
	Payment in products		g.	
	Profit sharing from cooperative		h.	
	OTHER CASH PAYMENT (Specify):_____		i.	
	NOT PAID		j.	→ D10_E

D06	(Do/does)(you/NAME) have a written contract or oral agreement for the work (you/he/she) (do/does)? YES, ORAL AGREEMENT	YES, WRITTEN CONTRACT	01	
		02		
D07	Is [your/ NAME]'s contract or agreement,….? READ Temporary with a specific period of time Valid until date a task is completed Ongoing , until futher notice	Permanent (without a known limited duration)	01	→D09A
		02		
		03		
		04		

D08	What is the duration of the contract or agreement? Less than one month 1 to less than 3 months 3 to less than 6 months 6 to less than 12 months 12 to less than 24 months Two years or more	Daily contract/ agreement	01	
		02		
		03		
		04		
		05		
		06		
		07		
D08A	Does [NAME] have a minimum amount of hours or work agreed with his/her employer? Yes, Tasks or work to do No, Contacted when needed	Yes, Minimum hours to be worked	01	
		02		
		03		
D09A	Does [NAME]'s employer pay contributions on [NAME]'s behalf to Social security fund (RSSB)? NO DON'T KNOW	YES	01	→D10A
		02		
		03		
D10	Has [NAME] registered his/her economic activity with the Rwanda Revenue Authority(RRA)? Or Does [name] have a TIN connected to his/her economic activity? ASK IF DS07==1 & DS10a NOT EQUAL TO 1 & D09A=2,3 No DON'T KNOW	Yes	01	
		02		
		03		
D10A	Is (NAME) entitled to Paid annual leave benefits from employer? DON'T KNOW DON'T KNOW	NO	02	
		03		
		03		
D10B	Is (NAME) entitled to Paid sick leave benefits from employer? NO DON'T KNOW	YES	01	
		02		
		03		

D10C	Is (NAME) entitled to Paid maternity/ paternity leave? NO DON'T KNOW	YES	01	
		02		
		03		

D10D	Is (Name)'s salary subjected to deduction of tax (PAYE)	YES	01	
		NO	02	
		DON'T KNOW	03	
D10_E	Does "name" make contributions to the Ejo Heza scheme?	YES	01	
		NO	02	
		DON'T KNOW	03	
D12_1	How much did (You/ Name) earn at main job last time (NAME) was paid in cash? ASK IF DS07=1 | DS07==4 | (DS07==5 & DS10A!=J(NON PROFIT)) | (DS07==3 & inrange(DS08,3,4) & DS10A!=J)	AMOUNT	01	
		REFUSAL	02	→D17_1
		DON'T KNOW	03	→D17_1
D12_1A	Enter amount in FRW, Ask if D12_1=1			
D13_1	How long did it cover? ASK IF D12_1A IS NOT EQUAL TO MISSING	Month	01	
		Two weeks	02	
		One week	03	
		One day	04	
		One Year	05	
D14_1	On average, how much money did "NAME" earn from main job/business per month? Ask if DS07==2 | (DS07==3 & inrange (DS08,1,2)) |DS07==6	AMOUNT	01	
		REFUSAL	02	→D17_1
		DON'T KNOW	03	→D17_1
D14_1A	Enter amount in FRW , Ask if D14_1=1			
D17_1	Taking into account both cash and in kind payments, would you say the monthly amount of (NAME)'s earnings was in the range? Ask if (Inrange(D12_1,2,3) | inrange(D14_1,2,3))	Less than 30,000 RWF	01	
		30,000 – 49,999 RWF	02	
		50,000 – 79,999 RWF	03	
		80,000-99,999 RWF	04	
		100,000 RWF-199,999 FRW	05	
		200,000 RWF-399,999 RWF	06	
		400,000 RWF -599,999 RWF	07	
		600,000RWF-999,999 RWF	08	
		1,000,000RWF AND ABOVE	09	
		REFUSAL	10	

D18A	How did [you/Name] obtain your current employment? Ask if DS07=1 | DS07==4 | (DS07==5 & DS10A!=J(NON PROFIT))			
	Apply to prospective employers		01	
	Place or answer job advertisements		02	
	Post/update resume on professional/social networking sites online		03	
	Register with [public employment center]		04	
	Register with private employment center		05	
	Take a test or interview		06	
	Seek help from relatives, friends, others		07	
	Check at factories, work sites		08	
	Wait on the street to be recruited		09	
	Check in households		10	
	Through appointments of elections		11	
	VUP/community-based jobs		12	
	Other		13	
The following set of questions is for all respondents in employment				
D20	Is the business/establishment where [NAME] works registered with the Rwanda Revenue Authority or pay PAYE/TPR? DO NOT ASK IF (D04=1,2) and D09A==1 but fill in yes (1)	YES	01	
		NO	02	
		DON'T KNOW	03	
D21	In order to report to an authority, does the business/establishment where (NAME) works keep written records of accounts? DO NOT ASK IF (D04=1,2) and D09A==1 but fill in yes (1)	YES	01	
		NO	02	→D23
		DON'T KNOW	03	→D23
D21A	What kind of accounts or records does the (business/farm) keep? Are they… DO NOT ASK IF (D04=1,2) and D09A==1 but fill in yes (1)			
	READ	A complete set of written accounts for tax purposes	01	
		Simplified written accounts to be submitted for tax purposes	02	
		Simplified written accounts not for tax purposes	03	
		Informal records of orders, sales, purchases	04	
		No records are kept	05	

D23	Where is the business where [NAME] work located?		
	READ		
	AT (MY/NAME'S) OWN HOME	01	→D24
	Structure attached to the home	02	→D24
	At the client/employer's home	03	
	At an office, shop, factory, or other fixed workplace	04	
	Fixed stall in market	05	
	Non-fixed stall/stand in market	06	
	Street or another public space without a fixed structrure	07	
	Land, forest, fishing site,mining site.	08	
	Verranda of commercial house	09	
	Construction site	10	
	In/On a vehicle(without daily work base)	11	
	Door to door	12	
	Other (specify):	13	

D23A	What means of transportation do you mainly use to commute to your place of work?	walk	01	
		Public buses/ cars/ taxis	02	
		Public motocycle	03	
		Public Bicycle	04	
		Private car	05	
		Private Monobike	06	
		Private bicycle	07	
		boat	08	

D23B	How long does it normally take you to get to work? Write 0 if working at home	Time in minutes		
D24	For how long has [NAME] been working (total experience)? Write 0 if less than 1 year	Number of Years		
D24B	In your main job or business, How many months did [NAME] work over the last 12 months?	Number of Months 1<=D24A<=12		
D25A	Is this district the same as the district where (NAME) performs his/ her main job/business?	YES	01	→ Sec G
		NO	02	
D25B	In which district do (you/mame) mainly perform this work?	Choose district code		

Section F: PAST EMPLOYMENT

F01a	(Have/Has) (you/NAME) ever had a paid job or another income-generating activity, even if for a short period?	YES	01	
		NO	02	→F05	
F01B	How long ago was it that (you/NAME) last stop working?			
	Less than one month ago		01	
	1 to less than 3 months ago	02		
	3 to less than 6 months ago	03		
	6 to less than 12 months ago	04		
	1 to less than 3 years ago	05		

	3 to less than 5 years ago		06		
	5 to less than 8 years ago		07		
	8 years and more ago		08		
	Don't know		09		
F02		What was the main reason why [NAME] stopped working in his/her last paid job / business?			
	Dismissal or staff reduction.		01		
	Breakup of the enterprise, bankruptcy		02		
	Place of work closed down		03		
	Retirement		04		
	Illness, injury or disability		05		
	Beginning of studies or preparing for studies		06		
	Pregnancy, family responsibilities		07		
	Family member(s) consider that s/he should stay at home		08		
	To look for better job		09		
	Working conditions (low pay, late		10		
	Payment, far location, difficult work.)				
	Temporary/seasonal job/project ended		11		
F03A	What was the main job (you/NAME) when he/she was working? ISCO CODE:		_____ WRITE Occupation		
F03B1	_____ ISCO Description				
F03B2					
F04A	Does the place or business where (you/NAME) worked have a name? Domestic worker 02 No name 03		Name of workplace	01	
F04A1	What is the name?		_____ (NAME OF ESTABLISHMENT)		
F04B	What wasthe main activity of the place or business where (you/NAME) work(s) or its main function? ISIC CODE: _____ GOODS OR SERVICES		_____ WRITE MAIN ACTIVITY		
F04B1					
F04B2					

F05	What is [NAME] main source of income at present?		
	Parents	01	
	Husband/Wife	02	
	Child	03	
	Other family members	04	
	Pension	05	
	Own production	06	
	Assistance received [VUP]	07	
	Assistance received [FARG]	08	
	Assistance received [Church, Other NGO]	09	
	Assistance from friends	10	
	Revenue from own property/Savings	11	
	Past work	12	
	Schorlaship	13	

Section G: UNPAID HOME PRODUCTION OF GOODS AND SERVICES IN

FOR HOUSEHOLD MEMBERS AGED 14 YEARS AND ABOVE EXCEPT DOMESTIC WORKERS				
G01A	In the last 7 days, did [NAME] spend time collecting firewood for the household?	Yes	01	
		No	02	→G02A
G01	In the last 7 days, how many hours did [NAME] spend collecting firewood for the household, including travel time?	_____ NUMBER OF HOURS:		
G02A	In the last 7 days, Did [Name] spent time on fetching water for the household?	Yes	01	
		No	02	→G03A
G02	In the last 7 days, how many hours did [NAME] spend fetching water for the household, including travel time?	_____ NUMBER OF HOURS:		
G03A	In the last 7 days, Did [Name] spent time on grazing or feeding household animals?	Yes	01	
		No	02	→G04A
G03	In the last 7 days, how many hours did [NAME] spend searching for fodder or grazing for the household's animals?	_____ NUMBER OF HOURS:		
G04A	In the last 7 days, Did [Name] spent time on manufacturing of goods for family use?	Yes	01	
		No	02	→G05A
G04	In the last 7 days, how many hours did [NAME] spend manufacturing household goods for own or family use (such as furniture, textiles, clothing, footwear, pottery, crafts or other durables, excluding foodstuff)?	_____ NUMBER OF HOURS:		
G05A	In the last 7 days, Did [Name] spent time on construction of own building?	Yes	01	
		No	02	→G04A
G05	In the last 7 days, how many hours did [NAME] spend constructing your dwelling, making major repairs on it, farm buildings, private roads, or wells?	_____ NUMBER OF HOURS:		

G06A	In the last 7 days, Did [Name] spent time on doing household chores?	Yes	01	
		No	02	→G04A
G06	In the last 7 days, how many hours did [NAME] spend doing household chores including shopping, preparing meals?	_____ NUMBER OF HOURS:		
G07A	In the last 7 days, Did [Name] took time to look after children or adults	Yes	01	
		No	02	→G04A
G07	In the last 7 days, how many hours did [NAME] spend looking after children and elderly?	_____ NUMBER OF HOURS:		

Section H: CHARACTERISTICS OF SUBSISTENCE AGRICULTURE WORK LAST MONTH

FOR HOUSEHOLD MEMBERS AGED 14 YEARS AND ABOVE				
H01	During the last four weeks did [NAME] do any of the following work mainly for own consumption such as farm work, growing fodder, raising or tending animals Fishing, storage such flour, dry fish or other food and drink hunting,or gathering foodstaff, Preparing foodstaff for storage such flour and drinks.	Yes	01	
		No	02	→Sec. S
H02	How many days per week has [NAME] usually worked in these activities?	_____ NUMBER OF DAYS:		
H03	How many hours per day has [NAME] usually worked in these activities?	_____NUMBER OF HOURS:		
H04	INTERVIEWER: CHECK H01 IF AT LEAST ONE HAS DONE ANY AGRICULTURAL ACTIVITY	Yes	01	
		No	02	→H05
THE FOLLOWING QUESTIONS ARE ASKED AT HOUSEHOLD LEVEL				
H05	In general, did the household sell or barter any part of the goods obtained from this work?	No, never sell	01	→H09
		Sell excess from time to time	02	→H09
		Yes, regularly	03	
H06	About how much does the household regularly sell?	¼ or less	01	
		More than ¼ but less than half	02	
		More than half (>50%)	03	
H09	Do you regularly or sometimes engage paid employee in the farming activity?	Yes regularly	01	
		Yes sometimes	02	
		No, never	03	Finish or go to IT01Aif Q3
H10	Excluding family members, how many paid employees do you usually engage in these agricultural activities?	1 - 3	01	Finish or go to IT01A If Q3
		4 - 5	02	Finish or go to IT01Aif Q3
		More than 5	03	Finish or go to IT01Aif Q3

Household main source of energy for lighting-Asked at household level			
EN01	What is the main source of energy that your household uses for lighting?		
	Electricity from National Grid (EUCL)	01	
	Electricity from Mini Grid(Other distributors)	02	
	Private Solar Mini Grid	03	
	Standalone solar system	04	
	Solar lantern	05	
	Rechargeable lantern	06	
	Biogas	07	
	Generator (Own, Neighbor,Community)	08	
	Kerosene/paraffin Lamp	09	
	Firewood	10	
	Candle	11	
	Traditional Lantern	12	
	Batteries+ bulb	13	
	Rechargeable battery	01	
	Torch (rechargeable or not)/Phone flashlight	02	
	Other (specify)	03	

Section S: Special Section

Phone ownership and ICT skills-Administered in Quarter 3-All persons aged 10 years and above				
IT01A	Does any member of this household owns mobile phone? If No(02) autofill S01 with None(03)	Yes	01	
		No	02	→ IT02A
IT01B	Who owns mobile phone Choose from list of HHs members	_____		
IT01	What type of mobile phone does (you/Name) have?	Smart phone	01	
		Ordinary phone	02	
		None	03	
IT02A	Have (you/Name) used the Internet from any location in the last three months?	Yes	01	
		No	02	→ IT03
		Don't know	03	
IT02B	Have (you/Name) used any social media (facebook, whatsapp, tweeter, instagram, tiktok, telegram, other..) from any device in the last three months?	Yes	01	
		No	02	
		Don't know	03	

IT03	Are (you/Name) able to apply any of the following digital skills? (Read to respondent and choose all applicable skills)		
	Use only USSD code to access E-services or information	A	
	Use application-based system to access E-services or information	B	
	Use mobile financial services (MOMO/AIRTEL MONEY/MOCASH/PUSH AND PULL…)	C	
	Use any socila media	D	
	Access information through web browser	E	
	Access IREMBO services	F	
	Use any E-comerce plaforms	G	
	Access E-learning platforms	H	
	None	I	
	Don’t know	J