The Republic of Rwanda

NATIONAL INSTITUTE OF STATISTICS OF RWANDA

Labour Force Survey 2016

-Pilot-

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2016

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June 2016

Labour Force Survey 2016 Pilot report is produced by the National Institute of Statistics of Rwanda (NISR).

Additional information about Labour Force Survey 2016 Pilot report may be obtained from NISR:
P.O. Box 6139, Kigali, Rwanda; Telephone: (250) 252 571 035
E-mail: info@statistics.gov.rw; Website: http://www.statistics.gov.rw

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Foreword

Labour statistics play an essential role in the efforts of the country to achieve decent work for all. The statistics are needed for the development and evaluation of policies towards this goal and for assessing progress towards decent work. In the same context, Rwanda is committed to achieve the overarching objective set in vision 2020; transforming Rwanda into a middle income country. Guided by this vision, the Second Economic Development and Poverty Reduction Strategy (EDPRS 2) set out the target of creating 200,000 off-farm jobs annually to speed up employment growth. At the same time, labour market indicators of the sustainable development goals are also to be monitored. To assess the progress towards these goals and targets, relevant, reliable, coherent, timely and accessible labour statistics have to be produced. During the last fifteen years, NISR has collected labour market data from households and establishments. But the demand for data on labour statistics remains high compared to the production.

In order to bridge that gap, the National Institute of Statistics of Rwanda introduced the labour force survey program in line with the international standards on the topic and the specific data requirements of the main stakeholders, namely, Ministry of Public Service and Labour (MIFOTRA) and Ministry of Finance and Economic Planning (MINECOFIN), ILO, World Bank, and other users.

The ultimate goal of the labour force survey (LFS) programme is to collect data on employment and labour underutilization characteristics of the population on a continuous basis, providing quarterly estimates of the main labour force aggregates with sufficient precision at the district level. Given this ambitious measurement objective, it has been decided to consider a gradual approach starting with an annual survey with the sample spread over two points in time.

The survey programme begun with a pilot survey conducted in February 2016. The principal objective of the pilot LFS was a full rehearsal of the operations of a national labour force survey including sample selection, listing of sample enumeration areas, household interviewing data processing and report writing. The pilot survey has been designed such that national estimates of the main labour force indicators could be obtained for evaluation purposes, and such that they could be combined with the results of the full-fledge LFS to be conducted in August 2016 to derive annual estimates of the main labour force aggregates for the calendar year 2016.

Findings from the pilot revealed that the survey tools were efficient to collect needed information, even though improvement needs to be made. Many lessons which will contribute to the success of the implementation of the labour force survey program were learnt from this pilot. Section 2 of the report provides a summary of the main labour force indicators obtained from the Pilot survey. NISR congratulate all those who contributed in one way or other in this exercise. In Particular, NISR expresses its gratitude to the Rwanda – German Development Cooperation for providing technical assistance by Farhad Mehran for the design and analysis of The Rwanda LFS program as part of its technical cooperation project GIZ Eco-Emploi.

Yusuf Murangwa
Director General

1. Introduction

The National Institute of Statistics of Rwanda, as the coordinator of the National Statistics System, has launched a regular labour force survey programme (LFS) starting in 2016.[1] The survey programme is part of the National Strategy for the Development Statistics covering the period 2014/15 to 2018/19.[2] It is conducted in partnership with the Ministry of Public Service and Labour (MIFOTRA), and with technical support from the Rwanda-German Development Cooperation as part of its Technical Cooperation program GIZ Eco-Emploi.

The main objective of the survey programme is to monitor the trend of employment and labour underutilization including unemployment at the national and province levels and to the extent possible also at district level. The survey programme is also meant to provide relevant data for the design, implementation and evaluation of economic and social policies related to employment creation, income generation, skills development including vocational education and training, and related decent work policies. It is further designed to provide data on particular categories of persons such as women and youth and on required data for other bodies of statistics such as volume of work and labour input for national production accounts and calculation of labour productivity.

The survey programme begun with a pilot survey conducted in February 2016. The principal objective of the pilot LFS was a full rehearsal of the operations of a national labour force survey including sample selection, listing of sample enumeration areas, household interviewing, data processing and report writing. The pilot survey has been designed such that national estimates of the main labour force indicators could be obtained for evaluation purposes, and such that they could be combined with the results of the full-fledge LFS to be conducted in August-September 2016 to derive annual estimates of the main labour force aggregates for the calendar year 2016.

The purpose of the present report is to analyze the results of the pilot LFS and to assess the survey instrument for possible modifications in preparation for the main survey to be conducted in August 2016. The analysis of the pilot LFS results is presented in the main body of the report. The presentation follows the layout of a full-fledge LFS report and is intended to provide a test of report writing and documentation of survey results. The body of the report is organized into 14 sections including the present introduction (Section 1).

Section 2 presents the main results at the national level and comparisons with the past surveys. Section 3 examines the age structure of the population and the labour force participation of the working age population. Section 4 presents the data on employment and its composition in terms of status in employment followed by the distribution of employment in terms of branch of economic activity and occupation (Section 5), informal sector and

[1] NISR, *Labour Statistics Framework of Rwanda*, National Institute of Statistics of Rwanda Kigali, 2014.
[2] NISR, *National Strategy for the Development of Statistics, 2014/15-2018/19,* National Institute of Statistics of Rwanda, Kigali, September 2014.

informal employment (Section 6). Section 7 presents the data on working time and median monthly income from employment at main job.

Section 8 deals with unemployment and other components of labour underutilization (time-related underemployment and potential labour force) and compares the unemployment rate with broader indicators of labour underutilization. Section 9 presents the data on the characteristics of the population outside the labour force, including main source of livelihood and past work experience. The last five sections examine the labour market situation of particular categories of workers, namely, women (Section 10), young persons (Section 11), participants in training programmes (Section 12), own-use producers (Section 13), and working children (Section 14).

The assessment of the survey instrument is documented in Annexes A and B of the report. Annex A describes the main concepts and definitions used for the survey, in particular, the working age population, employment, unemployment and other components of labour underutilization, and own-use producers. The definitions of other concepts are presented in the body of the report including hours actually or usually worked, status in employment, informal sector and informal employment. Annex B describes the survey design and quality of the data, in particular, sampling errors, coverage errors, non-responses and response errors. The annex also describes the questionnaire design and issues experienced during the field operations. The statistical tables are presented in Annex C. A specimen of the survey questionnaire is reproduced in Annex D and the list of officials involved in the survey design and operations is given in Annex E.

2. Main labour force indicators

According to the results of the Pilot LFS (Table 1 below) there were 6,611,000 persons 16 years old and over living in regular households in Rwanda in February 2016. About 3,161,000 of them were in the labour force, either employed (2,831,000) or unemployed (430,000). An additional 3,350,000 persons were outside the labour force including some 2,205,000 persons engaged wholly or mostly in subsistence foodstuff production, not classified as employment according to the new international standards on statistics of work, employment and labour underutilization.

The national labour force participation rate, that is the percentage of the working age population engaged in the labour force, was 49.3 percent indicating that slightly less than half of the working age population was either working for pay or profit or seeking employment. The male labour force participation rate was 58.1 percent, higher than the female rate of 41.5 percent. Similarly, the labour force participation rate in urban areas (64.5 percent) was higher than the rate in rural areas (46.9 percent).

Table 1: Main labour force indicators

('000)	Total	Male	Female	Urban	Rural	Participated in Subsistence agriculture	Not participated in subsistance agriculture
Population 16 years old and over	6,611	3,116	3,495	910	5,701	4,104	2,506
Labour force	3,261	1,810	1,451	586	2,675	1,900	1,362
- Employed	2,831	1,577	1,254	493	2,338	1,620	1,211
- Unemployed	430	233	197	93	337	279	151
Outside labour force	3,350	1,306	2,043	323	3,026	2,205	1,145
Labour underutilization	3,126	1,365	1,761	338	2,787	2,339	786
- Unemployed	430	233	197	93	337	279	151
- Time-related underemployed	777	363	413	70	706	573	204
- Potential labour force	1,919	769	1,150	175	1,744	1,487	432
Labour force participation rate	49.3%	58.1%	41.5%	64.5%	46.9%	46.3%	54.3%
Employment-to-population ratio	42.8%	50.6%	35.9%	54.2%	41.0%	39.5%	48.3%
Time-related underemployment rate	27.4%	23.0%	32.9%	14.2%	30.2%	35.4%	16.8%
LU1 - Unemployment rate	13.2%	12.9%	13.6%	15.9%	12.6%	14.7%	11.1%
LU2 - Combined rate of unemployment and time-related underemployment	37.0%	32.9%	42.1%	27.9%	39.0%	44.9%	26.0%
LU3 - Combined rate of unemployment and potential labour force	45.4%	38.8%	51.8%	35.2%	47.1%	52.2%	32.5%
LU4 - Composite measure of labour underutilization	60.3%	52.9%	67.7%	44.5%	63.1%	69.1%	43.8%

The employment-to-population ratio, i.e., the percentage of the working age population who is employed, is an indicator of the performance of the national economy in providing employment to its growing population. The ratio was 42.8 percent according to the pilot survey results. Similar to the labour force participation rate, the employment-to-population ratio was higher among men than women, and higher in urban areas than in rural areas.

The unemployment rate represents the percentage of the labour force that is unemployed. The rate shown in Table 1 as LU1 stood at 13.2 percent, indicating that roughly for seven employed persons there was one person unemployed. The female unemployment rate (13.6 percent) was higher than the male rate (12.9 percent) and that the urban rate (15.9 percent) was higher than the rural rate (12.6 percent).

The unemployment rate is not the only indicator of the unmet needs for employment. Other indicators combine unemployment and time-related underemployment and potential labour force. The potential labour force includes persons who were available for employment

but were not seeking employment during the reference period as well as persons who were indeed seeking employment during the reference period but were not currently available for work.

According to the pilot LFS the combined rate of unemployment and time-related underemployment (LU2) was 34.0 percent more than twice the unemployment rate. The combined rate of unemployment and potential labour force (LU3) was even higher at 45.4 percent. The composite measure of labour underutilization (LU4) that combines unemployment, time-related underemployment and potential labour force was 60.3 percent indicating that more than half of the labour force was affected by some form of labour underutilization. In general, labour underutilization affected female workers more than male workers, and rural areas more than urban areas.

These results are considerably different from those obtained from earlier household surveys and population censuses. The 2012 population census measured the labour force participation rate as 73.6 percent and the unemployment rate as 3.4 percent. Estimates with the same order of magnitude were obtained from the 2014 integrated household living conditions survey (EICV-4): labour force participation rate was 87.4 percent and unemployment rate equals to 2.0 percent.

The main reason explaining the difference between these results and those of the Pilot LFS February 2016 is the application of the new international standards according to which employment includes only persons working for pay or profit, excluding persons engaged wholly or mostly in subsistence foodstuff production. When the data of the Pilot LFS are re-analyzed using the same definition of employment as in the 2012 population census and the 2014 household survey, comparable results are obtained as shown in Table 2 below.

Table 2: Recalculated rates of labour force participation and unemployment and comparison with results from earlier census and survey

	Labour force participation rate	Unemployment rate
Population and housing census 2012	73.6%	3.4%
Integrated Household Living Conditions Survey 2014 (EICV-4)	87.4%	2.0%
Pilot Labour Force Survey February 2016 (recalculated in line with definitions used in earlier census and household survey)	82.7%	2.8%

The recalculation of the Pilot LFS labour force participation and unemployment rates is carried out using the data presented in Table 1. Employment is recalculated as follows: the total number of subsistence foodstuff producers (4,104,000) is added to the number of persons employed (2,831,000) and the overlap is deducted from the result. The overlap is the number persons who were engaged in work for pay or profit as well as in subsistence foodstuff production (1,620,000). The recalculated estimate gives an employment figure of 5,315,000 (= 2,831,000 + 4,104,000 - 1,620,000) according to the old definition.

The corresponding recalculated measure of unemployment is 151,000. It represents the number of unemployed persons who were not engaged in subsistence foodstuff production (151,000 = 430,000 – 279,000), and therefore not already counted as employed in

the recalculation. The resulting recalculated labour force is 5,466,000 (= 5,315,000 + 151,000) and the recalculated unemployment rate 2.8 percent (= 151,000/5,466,000).

According to the recalculated results, the labour force participation rate has slightly decreased from 87.4 percent in 2014 to 82.7 percent in 2016 and the unemployment rate has similarly slightly increased from 2.0 percent to 2.8 percent during the same period.

3. Population, labour force and subsistence foodstuff producers

The population constitutes the human capital of a nation and defines its potential labour supply. From an economic point of view, the working population is a factor of production and its aptitude and skills level contribute to the productivity of the national economy. From a social point of view, different categories of the population form social groups of particular concern and meeting their needs are major challenges faced by public institutions and society at large.

According to the results of the Pilot LFS, the working age population 16 years old and over includes 6,611,000 persons of whom 3,261,000 are in the labour force. This represents a relatively low labour force participation rate (49.3%) as a very large number of subsistence foodstuff producers are not counted in the labour force in line with the new international standards on statistics of work, employment, and labour underutilization.

Diagram 1 shows the size of the labour force relative to the size of the subsistence foodstuff producers and the overlap between them. As it can be observed there are more subsistence foodstuff producers (4,104,000) than the person in labour force (3,261,000). The overlap (1,900,000) represents the subsistence foodstuff producers who were engaged in an employment activity for pay or profit as a secondary job (1,620,000) or were seeking and available for employment during the reference period of the survey (279,000).

Diagram 1: Labour force and subsistence foodstuff producers 2016

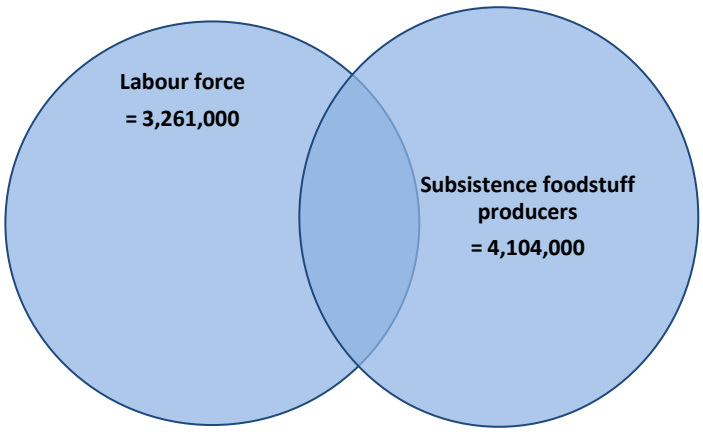

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Diagram 2 compares the demographic and educational characteristics of the subsistence foodstuff producers with those of the labour force. In general, subsistence foodstuff producers

are virtually all living in rural areas (98%) while the labour force is 82% rural and 18% urban. The majority of subsistence foodstuff producers are women (57%) while women constitute less than half of the labour force (46%). Subsistence foodstuff producers are generally older (median age 32.5 years) and less educated (57% with primary education or below) than person in the labour force (median age 31.0 years and 45% with primary education or below).

Diagram 2: Demographic and educational characteristics of labour force versus subsistence foodstuff producers.

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4. Labour force participation

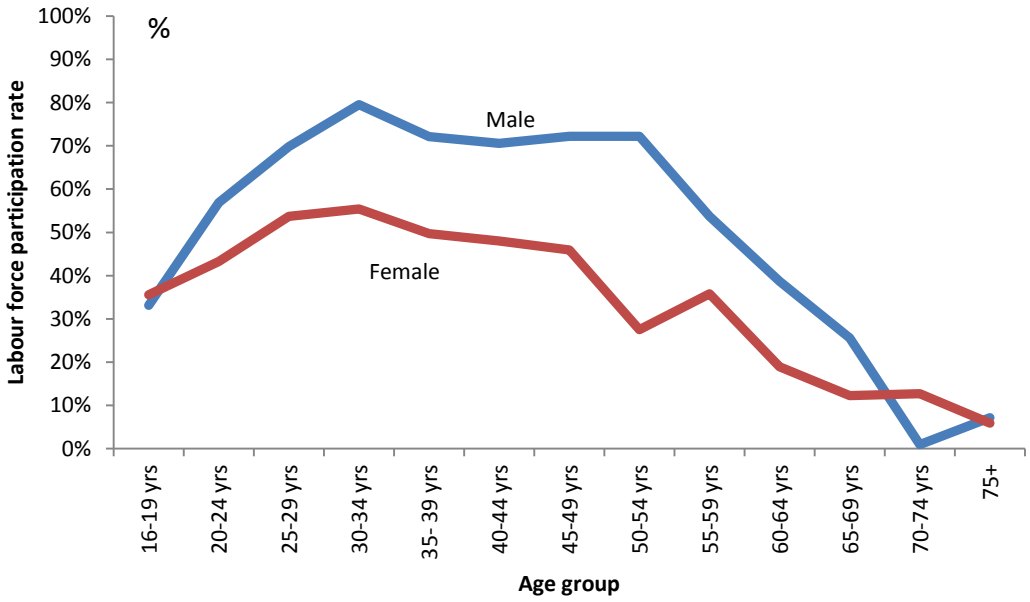
The labour force participation rate, i.e., the ratio of the labour forces to the working age population expressed in percentage terms, is an indicator of the level of labour market activity. It measures the extent of the working age population who is in the labour force. The breakdown of the labour force participation rate by sex and age group gives a profile of the labour force participation as shown in Diagram 3.

Like most national rates, the Rwanda labour force participation rate has an inverted-U shape, more pronounced for men than for women. The male curve is above the female curve,

reflecting a higher labour force participation of men at virtually all age groups. For each sex, the curve increases for young people when they leave school and enter the labour market. It reaches a peak in the age group 30-34 years for both men and women, before decreasing, slowly for women and more sharply for men, as people leave and retire from the labour market at older ages. The erratic pattern of the curves particularly at the higher age groups reflect the possible misreporting of age and the sampling errors of the estimates due to the small sample size of the pilot survey.

It can nevertheless be observed that the shape of the female labour force participation rate is somewhat like an M-pattern, with multiple peaks reflecting the change in labour force participation with marital status. One peak is at the age group 30-34 years when young women tend to marry and a second peak at about 45-49 years, suggesting a return of some married women into the labour market after young children in the household attain school age.

Diagram 3: Labour force participation rate by sex and age group



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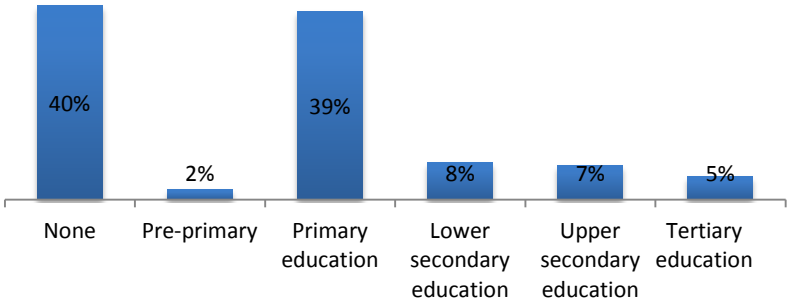
The skill level of the labour force may be assessed by the educational attainment of the labour force participants. Diagram 4 presents the distribution of the labour force by educational attainment. The bulk of the labour force has primary education or below (81%). The share of the labour force with secondary education is about 15% and the share with tertiary education is about 5%.

Diagram 4: Educational attainment of the labour force



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The educational attainment of the youth population 16 to 30 years old in the labour force tends to be higher than the overall labour force. About 23% of the youth labour force has secondary or higher education against 20% for the labour force as a whole. In terms of gender, educational attainment among the youth male in the labour force tends to be slightly higher than the educational attainment of the youth female labour force: 24% of the youth male labour force is with secondary or higher education against 22% for the female counterpart.

5. Employment

Aggregate employment generally increases with growing population. Therefore, the ratio of employment to the working age population is an important indicator of the capacity of the economy to provide employment to a growing population. A decline in the employment-to-population ratio is often regarded as an indicator of economic slowdown and a decline in total employment as an indicator of a more severe economic downturn. In February 2016, the employment-to-population ratio was 42.8 percent.

Status in employment classifies jobs held by persons at a given point of time with respect to the type of explicit or implicit contract of employment of the person with other persons or organizations. It may refer to the current job or jobs of an employed person or the last job of an unemployed person who had with past work experience. The International Standard Classification of Status in Employment (ICSE-1993) identifies five main categories of persons with respect to their status in employment:[3]

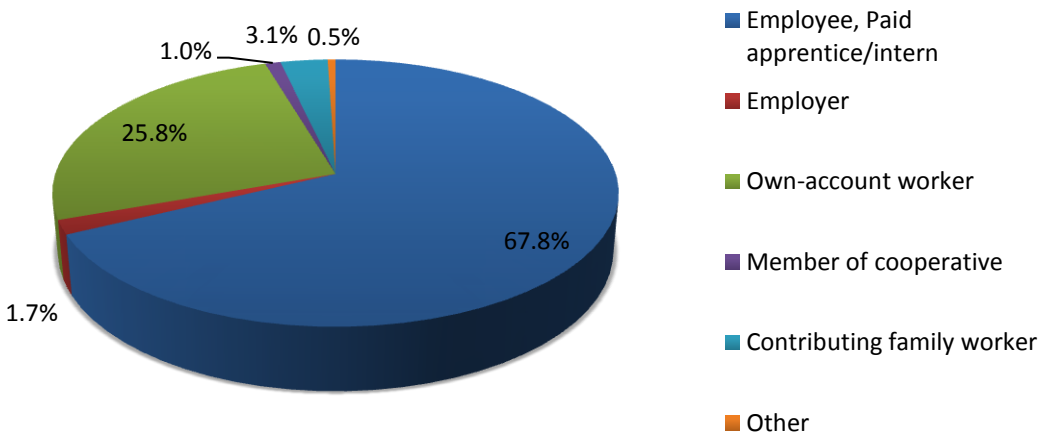
- Employees: Persons working in "paid employment jobs", i.e., holding explicit (written or oral) or implicit employment contract with remuneration not directly dependent upon the revenue of the unit for which they work. Remuneration could be in the form of wages or salaries, commission from sales, piece-rates, bonuses, or in-kind payments such as food, housing or training.

[3] ILO, *International Classification of Status in Employment, ICSE-93*, Fifteenth International Conference of Labour Statisticians, Geneva, http://laborsta.ilo.org.

- Employers: Persons working on own-account or with one or a few partners in "self employment jobs", i.e., (a) remuneration is directly dependent on the profits (or potential for profits) derived from the goods and services produced or for own consumption, and (b) engaging one or more "employees," on a continuous basis.
- Own-account workers: Persons working on own-account or with one or a few partners in a "self employment job", not engaging any "employees," on a continuous basis.
- Contributing family workers: Persons working in a market-oriented establishment operated by a household member, who cannot be regarded as partner, in a "self employment job", not engaging any "employee" on a continuous basis.
- Members of producers' cooperatives: Persons working in a cooperative producing goods and services, in a "self employment job", not engaging any "employee" on a continuous basis

Diagram 5 shows the composition of the employed population by status in employment in main job according to the pilot LFS. More than two-third of the employed population (67.8%) were employees or paid apprentices or trainees. The share of own-account workers (25.8%), followed by contributing family workers (3.1%), employers (1.7%) and members of producers' cooperatives (1.0%). The relatively low number of contributing family workers is due to the fact that most contributing family workers are engaged in subsistence foodstuff production not considered as employment in the Pilot LFS.

Diagram 5: Status in employment at main job



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The data by gender show that women tend to be employed in dependent jobs as employees or contributing family workers is a great extent than men. The percentage of women employed as employees is 70 percent against 66 percent among men. Similarly, the percentage of women engaged as contributing family workers is 6% against less than 1 percent among men.

The distribution of the employed population by sector of employment reveals that the majority of employment was in private sector (50 percent) or in household enterprises or activities (33 percent). The share of employment in the public sector was about 9 percent and less than 2% in the mixed sector. The remaining part of the employed population was engaged in the cooperative sector (2 percent) or in international or local non-governmental organizations (1 percent) or other institutions (4 percent).

5.1 Branches of economic activity and occupations

Branch of economic activity refers to the activity of the establishment in which an employed person worked during the reference period. An establishment may be a farm, a mine, a factory, a workshop, a store, an office or a similar type of economic unit. It is important to distinguish enterprises from establishments. "Enterprise" is a broader concept than "establishment". An enterprise is a legal entity (or group of legal entities) and may have a number of establishments with different economic activities and different locations.

Table 3 presents the distribution of the employed population by branch of economic activity in main job. The data show that agriculture employment was by far the most frequent branch of economic activity, comprising almost half of total employment (46.8 percent). The branch of economic activity with the next highest number of employed persons was trade (14.1 percent) followed by construction (7.5 percent) and activities of households as employers of domestic personnel (5.8 percent). The other branches of economic activity comprised each less than five percent of total employment.

Table 3: Employed persons by branch of economic activity in main job

Branch of economic activity	Number	%
Total	**2,831,000**	**100.0%**
Agriculture, forestry and fishing	1,324,000	46.8%
Mining and quarrying	80,000	2.8%
Manufacturing	127,000	4.5%
Electricity, gas, steam and air conditioning supply	10,000	0.4%
Water supply, sewerage and waste management	0	0.0%
Construction	212,000	7.5%
Wholesale, retail trade, repair of motor vehicles, motorcycles	399,000	14.1%
Transportation and storage	80,000	2.8%
Accommodation and food service activities	48,000	1.7%
Information and communication	5,000	0.2%
Financial and insurance activities	11,000	0.4%
Real estate activities	0	0.0%
Professional, scientific and technical activities	18,000	0.6%
Administrative and support service activities	61,000	2.2%
Public administration and defense	59,000	2.1%
Education	67,000	2.4%
Human health and social work activities	83,000	2.9%
Arts, entertainment and recreation	2,000	0.1%
Other service activities	79,000	2.8%
Activities of households as employers	164,000	5.8%
Activities of extraterritorial organizations and bodies	0	0.0%

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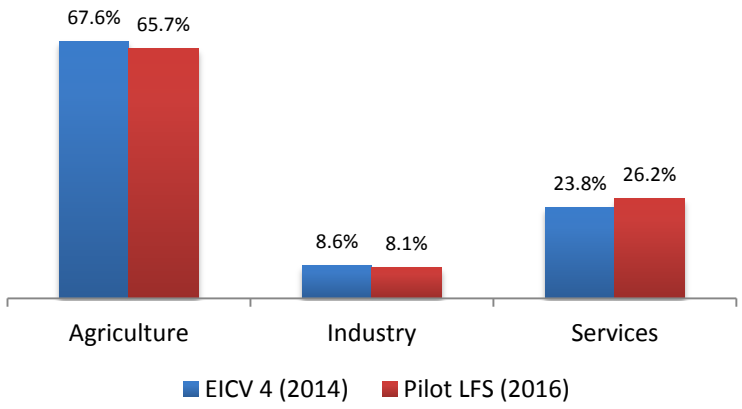
A full account of agriculture activity requires the inclusion of subsistence foodstuff producers in the calculation.[4] This means adding to agriculture employment (1,324,000), the number of workers engaged wholly in subsistence foodstuff production not already included in agriculture employment (estimated at 1,986,000 persons). One should also account for those mostly in subsistence foodstuff production, but not engaged in selling part of the product (estimated at 498,000 persons).

The result gives a total of 3,310,000 persons engaged in agriculture, representing 65.7 percent of total employment adjusted for subsistence foodstuff production and made comparable with past data. Diagram 6 compares the change in the composition of the work force by broad branch of economic activity with corresponding data from the Integrated Household Living Conditions Survey (EICV 4).

Diagram 6: Trend of share of work force by broad branch of economic activity



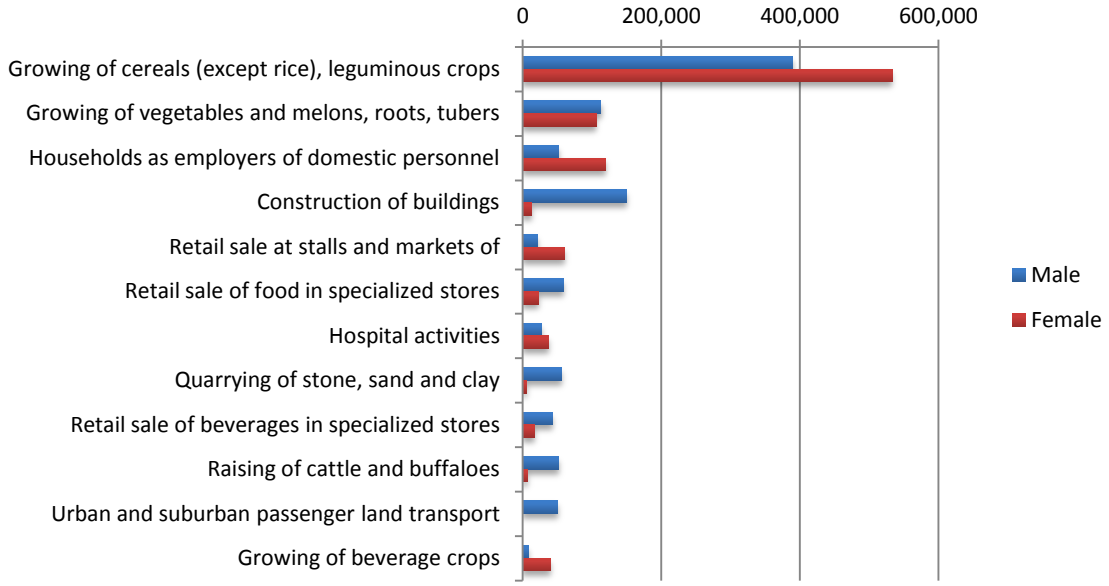
Note: Agriculture includes forestry, fishing and animal husbandry. Industry includes Mining and quarrying, Manufacturing, Electricity, gas, steam and air conditioning supply, Water supply, sewerage and waste management, and Construction. Services cover the remaining branches of economic activity.

The results show that the share of agriculture workers has slightly decreased from 67.6 percent in 2014 to 65.7 percent in 2016, while the share of industry has essentially remained unchanged at around 8 percent and the share of services increased from 23.8 percent in 2014 to 26.2 percent in 2016.

Diagram 7 shows the top twelve 4-digit branches of economic activity according to the Pilot LFS 2016. It is instructive to note that growing of cereals, households as employers of domestic personnel, retail sale at stalls and markets as well as growing of beverage crops were branches of economic activity dominated by female workers, while construction of buildings, retail sale of food in specialized stores, quarrying of stone, sand and clay, as well as raising of cattle, and urban and suburban passengers land transport were branches of economic activity dominated by male workers.

[4] In principle, a full account of the role of agriculture activities should also include agricultural employment in secondary jobs.

Diagram 7: Top twelve branches of economic activity of employed persons at main job



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Similar data were obtained by occupation. Occupation refers to the kind of work done by a person employed (or the kind of work done previously or wanted if the person is unemployed), irrespective of the branch of economic activity or the status in employment of the person. Table 4 presents the distribution of the employed population by occupation category in the main job. The occupation category with the highest frequency (42.5 percent) was elementary occupations involving the performance of simple and routine tasks. It includes cleaners and helpers, agricultural, forestry and fishery labourers, labourers in mining, construction, manufacturing and transport, food preparation assistants, street and related sales and service workers refuse workers and other elementary workers.

Table 4: Employed persons by occupation in main job

Branch of economic activity	Number	%
Total	**2,831,000**	**100.0%**
Legislators, Managers and Senior Officials	44,000	1.6%
Professionals	80,000	2.8%
Technicians and Associate Professionals	66,000	2.3%
Clerical Support Workers	27,000	1.0%
Service and Sales Workers	616,000	21.8%
Skilled Agricultural, Forestry and Fishery Workers	390,000	13.8%
Craft and Related Trades Workers	328,000	11.6%
Plant and Machine Operators and Assemblers	52,000	1.8%
Elementary Occupations	1,204,000	42.5%
Armed forced occupations	24,000	0.8%

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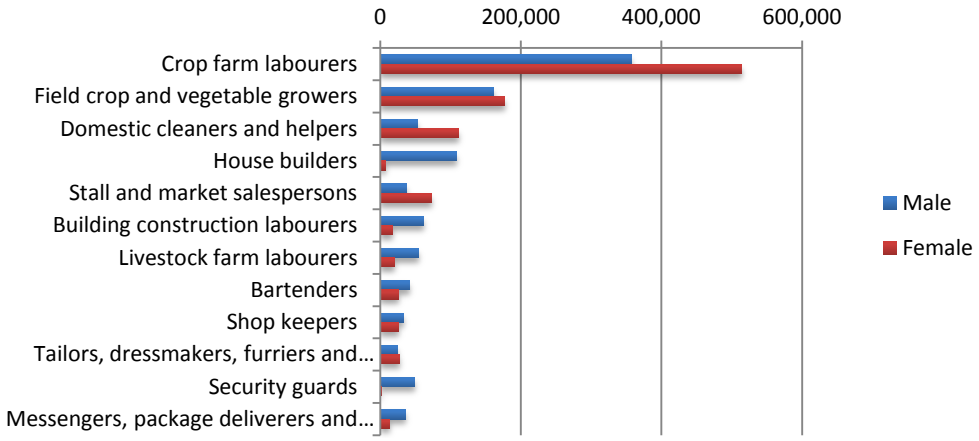
The occupation category with second highest frequency was services and sales workers (21.8 percent), followed by skilled agricultural, forestry and fishery workers (13.8 percent) and craft and related trades workers (11.6 percent). The other occupation categories each covered less than ten percent of the employed population.

Diagram 8 lists the top twelve 4-digit occupations and compares their frequency among male and female employed persons. It can be observed that there were more women than men employed as crop farm labourers, field crop and vegetable growers, domestic housekeepers and stall and market salespersons.

Diagram 8: Top twelve occupations of employed persons at main job



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In each of the other top occupations, there were more men than women. In particular, house builders and labourers in building construction as well as security guards were virtually all men.

The degree of segregation of occupations by sex may be measured with the occupational segregation index. It measures extent to which labour markets are separated into "male" and "female" occupations. The occupational segregation index (D) is commonly used as a proxy indicator for equality of opportunity in employment and occupation.[5] It is defined by

$$D = \frac{1}{2}\sum_i \left| \frac{n_{Ai}}{n_A} - \frac{n_{Bi}}{n_B} \right|$$

where n_{Ai} and n_{Bi} are, respectively, the number of men and women in a given occupational i and n_A and n_B are, respectively, the total number of men and women in all occupations. The value of the index ranges from 0 to 1, 0 indicating no segregation and 1 indicating complete segregation. The index may be interpreted as the fraction of persons that need to change occupations to achieve zero segregation.

[5] ILO, *Decent Work Indicators Concepts and definitions, ILO Manual (First version)*, May 2012, pp. 127-130.

5.2 Informal sector and informal employment

The concept of informal sector may be broadly characterized as unincorporated enterprises owned by households.[6] In these economic units the fixed capital and other assets of the enterprise do not belong to the production units as such but to their owners, and may be used both for production and personal purposes. Production expenditure can hardly be separated from household expenditure. In the Pilot LFS February 2016, employment in the informal sector was defined as all persons 16 years of age and over who were engaged in unregistered private business enterprises that did not keep written record of accounts. Unregistration meant not registered with the Rwanda Revenue Authority or not paying PAYE/TPR. Domestic workers engaged by households were not classified as employed in the informal sector.

The results of the survey show that there were about 1,920,000 employed persons in the informal sector, corresponding to about 67.8 percent of total employment. The employed persons in the informal sector were mostly male (57 percent), employees (62 percent) or own-account workers (33 percent). Employment in the informal sector was mostly in agriculture (60 percent), followed by services (27 percent) and industry (12 percent).

In contrast to the concept of informal sector that refers to production units as observation units, the concept of informal employment refers to jobs as observation units.[7] In the case of employees, informal employment is defined in terms of the employment relationship. A job held by an employee is considered informal, if there is no social security contribution by the employer, and is not entitled of paid sick leave and paid annual leave.

In the case of own-account workers and employers, the informal employment status of the job is determined by the informal sector nature of the enterprise. Thus, own-account workers (without hired workers) operating an informal enterprise are classified as in informal employment. Similarly, employers (with hired workers) operating an informal enterprise are classified as in informal employment. All contributing family workers are classified as having informal employment, irrespective of whether they work in formal or informal sector enterprises.

According to the Pilot LFS, there were in total 2,340,000 persons with informal employment at main job, constituting almost 83 percent of total employment. Informal employment jobs were held mostly by male workers (53 percent), working as employees or own-account workers, in agriculture, followed by services and industry.

The joint analysis of the informal or formal sector status of production units and the informal or formal status of jobs reveals the existence of a significant number of persons with informal employment engaged in the formal sector. Table 5 gives the cross-classification of the

[6] ILO, *Resolution on the measurement of employment in the informal sector*, Fifteenth International Conference of Labour Statisticians (ICLS), Geneva, 1993.
[7] ILO, *Guidelines concerning a statistical definition of informal employment*, Seventeenth International Conference of Labour Statisticians, Geneva, 2003.

employed population according to informal or formal sector status of the production unit and informal or formal status of the job.

Table 5: Cross-classification of employment by informal or formal job and informal or formal production unit.

Classification of production units	Classification of jobs		Total
	Informal employment	Formal employment	
Informal sector	1,881,000	38,000	1,920,000
Formal sector	459,000	453,000	911,000
Total	2,340,000	491,000	2,831,000

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The results show that there were few people with formal jobs working in the informal sector (38,000 persons). But, there were a significant number of persons with informal jobs in the formal sector (459,000 persons). An example is an employee with short-term contract without social security contribution by the employer working in a large private corporation or a government agency.

5.3 Working time and income from employment

The international definition of employment is expansive covering even one hour of work during a week. It is thus important that employment is analyzed in conjunction with data on hours of work in order to distinguish the various intensities of employment. Data on hours of work are also necessary to calculate time-related underemployment and hourly income from employment so that the resulting income data are comparable across different categories of workers. The Pilot LFS measured two concepts of hours of work:

- Hours actually worked. The time spent in a job for the performance of activities that contribute to the production of goods and services during a specified reference period. It includes the direct hours that the person is engaged in the activities, as well as the related hours such as waiting time, on-call, resting time, coffee break, prayer, etc. It excludes annual leave, public holidays, sick leave and other leave, as well as commuting time between work and home, longer breaks such as meal breaks and educational activities, even if authorized by the employer.

- Hours usually worked. The hours actually worked in a job during a typical week (or in general any specific reference period). In principle, it may be calculated as the most frequent number of hours that a person actually worked per week during the past month.

According to the results shown in Table 6, the average number of hours usually worked per week by employed persons in their main job was 40.0 hours. The corresponding average number of hours actually worked during the reference week was 38.0 hours. Around 212,000 persons representing 7.5 percent of the employed population reported to have been engaged in secondary jobs during the reference week. The average number of hours usually worked on secondary jobs was 14.6 hours per week while the average number of hours actually worked on secondary jobs was 9.9 hours during the reference week.

Table 6: Usual and actual hours of work at main and secondary jobs

	Number of employed persons	Average hours usually worked per week	Average hours actually worked in reference week
Main job	2,831,000	40.0	38.0
Secondary jobs	212,000	14.5	9.9
All jobs	2,831,000	40.6	38.7

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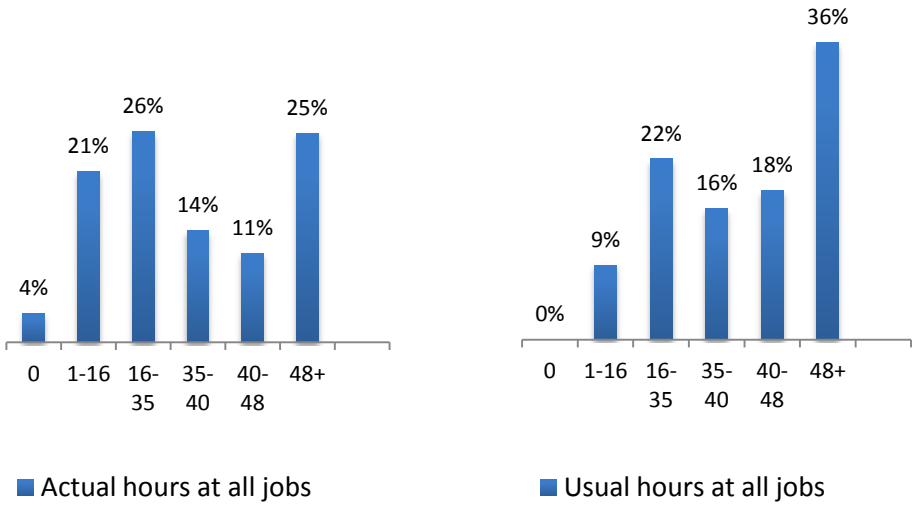
The average number of hours usually worked at all jobs was 40.6 hours per week, and 38.7 hours for the corresponding actual hours worked during the reference week. For most people (59 percent), the weekly usual and actual hours of work at all jobs were the same. For certain others (31 percent), the usual number of hours worked was higher than the actual number of hours due to various reasons, including vacation or holidays or sickness during part or the whole of the reference week. Some 4 percent of the employed persons had a job but were temporarily absent from work during the reference week. For 10 percent of the employed persons, the usual number of hours worked was lower than the actual number of hours of work. In total, the volume of employment in terms of actual hours worked at all jobs in the reference week was:

Total volume of employment during the reference week = 106 million hours

Diagram 9 shows the size distribution of total weekly usual and actual hours of work of the employed population. The percentage of persons working part-time or short hours 35 hours or less per week was 51 percent measured in terms of actual hours worked and 31 percent measured in terms of usual hours of work.

Diagram 9: Usual and actual hours of work of employed persons at all jobs



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The percentage of persons working long hours was about 25 percent, when measured in terms of actual hours of work and 36 percent when measured in terms of usual hours of

work. Excessive work is defined as usual hours of work more than 48 hours per week at all jobs. Very long or excessive hours of work is a threat to physical and mental health, interfering with the balance between work and family life, reducing productivity and often signaling an inadequate hourly pay.[8] The data show that male workers are affected relatively more by excessive hours of work than female workers (36 percent for male against 23 percent for female).

The fact that the proportion of persons reporting long usual hours of work is significantly higher than the proportion reporting long actual hours suggests that usual hours of work are over-reported in the survey. Another indication of over-reporting is that the median number of hours usually worked at all jobs (41.8 hours) is higher than the corresponding average (40.6 hours).

An attempt has been made in the Pilot LFS to measure income from employment in cash and in-kind at the main job for both paid employees and self-employed workers. Because of the differences in the nature of income generation in self-employment and paid employment jobs, the international definition of *employment-related income* distinguishes between paid employment and self-employment.[9] In the case of paid employment, the concept is defined in terms of its components, namely, remuneration in cash and in kind, profit-related pay and current receipts of employment-related social benefits. In the case of self-employment, the concept is defined as the difference between gross value of output and operating expenses.

Given that respondents are generally reluctant about providing information on their income in surveys, the LFS questionnaire was designed in a way so as to make response as easy as possible. The series of questions (D12 to D19) thus begun by asking paid employees the amount earned at their main job in cash the last time they were paid and then by asking the period it covered. If the respondent refused to provide the information or did not know the amount, another question was asked phrased in terms of income ranges rather than exact figures. Similar questions were designed for in-kind income and income from self-employment. The data were processed on the basis of the procedure presented in Annex B.5 below.

Table 7 shows the period of coverage of last payment of paid employees at main job. More than of half of paid employees (288,000 out of 547,000) reported that their last cash payment covered one month. For another 11,000 paid employees, the last payment covered two weeks, 43,000 covered one week, and 140,000 covered one day. The remaining 63,000 paid employees received their last cash payment for other time periods. The corresponding median monthly cash payment was 30,000 RWF, the median two-week cash payment was 24,200 RWF, the median one-week cash payment was 6000 RWF and the median daily cash payment was 1000 RWF.

[8] [ILO, *Decent Work Indicators Concepts and definitions, ILO Manual (First version)*, May 2012, pp. 86-87.

[9] ILO, *Resolution concerning the measurement of employment-related income*, Sixteenth ICLS, October 1998. For the sake of simplicity, the term "income from employment" is used in this chapter in preference to the more exact term "employment-related income".

Table 7: Period of coverage of last income payment of paid employees at main job

Period of payment	Cash income from employment		In-kind income from employment	
	Number of responses	Median response	Number of responses	Median response
Total	**547**	-	**43**	-
Month	288	30000	17	20000
Two weeks	13	24200	1	4200
One week	43	6000	1	5600
One day	140	1000	14	700
Other	63	3000	10	6500

Note: Un-weighted numbers and medians

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Based on these results, it was decided to use the conversion factor 1 for monthly payments, 2 for two-weekly payments, 52/12 for weekly payments, and 26 for daily payments. For payments on other time periods, the fix conversion factor of 10 was used. The factor 10 was derived by calculating the ratio of median income from employment for those reporting "monthly" period of payment to the corresponding median for those reporting "other" period of payment. The same set of conversion factors was used for monthly in-kind payments.

Table 8 presents the size distribution of harmonized monthly income from employment of paid employees and self-employed persons. According to these results, the median income from paid employment at main job was about 24,400 RWF per month. The corresponding median income from self-employment at main job was significant higher at about 35, 800 RWF. The overall median income from employment at main job was 31,300 RWF per month.

Table 8: Size distribution of harmonized monthly income from employment at main job

Monthly income from employment (RWF)	Number of paid employees	Number of self-employed	Total paid employees and self-employed
Total	**1,546,000**	**767,000**	**2,313,000**
Less than 2,0000	617,000	239,000	856,000
20,000 to 30,000	350,000	116,000	466,000
30,000 to 50,000	235,000	99,000	334,000
50,000 to 100,000	188,000	84,000	272,000
100,000 to 750,000	145,000	51,000	196,000
750,000 and above	11,000	178,000	189,000
Median	**24,449 RWF**	**35,803 RWF**	**31,264 RWF**
Average	46,615 RWF	155,706 RWF	80,304 RWF

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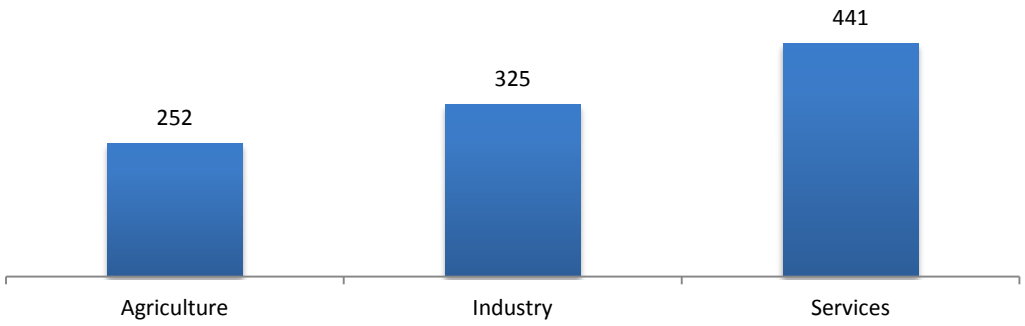
The difference between the total number of paid employees and self-employed persons in Table 8 with the corresponding totals in statistical Table 20 of the Statistical Annex reflects the number of non-responses on the series of questions on income (about 20 percent among paid employees and 5 percent among the self-employed).

It should also be mentioned that the data presented in Table 8 above have been edited for large outliers. There were five cases with reported income from employment above 1 million RWF per month. It should also be mentioned that the income data should be compared with the corresponding results from the Integrated Household Living Conditions

Survey 2014 (EICV 4) and the data quality be assessed before a decision is made for the main LFS to be conducted in August 2016. The evaluation of data quality may include the calculation and test of specific indicators such as the percentage of low pay workers and the Mincer earnings equation.

Finally, the average hourly income from employment of employees at main job was calculated by broad branch of economic activity for evaluation purposes. The results are shown in diagram 10. The overall average hourly income from employment of employees at main job was 334 RWF per hour, and the corresponding values were 252 RWF per hour in agriculture, 325 RWF per hour in industry and 441 RWF per hour in services.

Diagram 10. Average hourly income from employment of employees at main job by broad branch of economic activity (RWF per hour)



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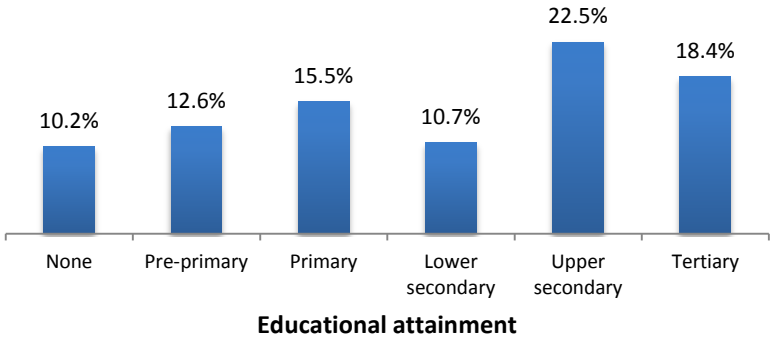
6. Unemployment and labour underutilization

Unemployment is a particular form of labour underutilization. It reflects the pressure on the labour market as it is measured in terms of the number of persons without employment, actively seeking and available for employment. Labour underutilization is a more general concept. It refers to mismatches between labour supply and demand, which translate into an unmet need for employment among the population. Labour underutilization includes unemployment, time-related underemployment, and the potential labour force referring to persons not in employment who express an interest in this form of work but for whom existing conditions limit their active job search and/or their availability.

The unemployment rate, defined as the ratio of the number of unemployed persons to the total labour force, is the most commonly used indicator of the labour market. It is sometimes used in a general sense as an indicator of the health of the economy, not just the labour market. According to the results of the Pilot LFS, the unemployment rate in Rwanda stood at 13.2 percent in February 2016. The rate was higher in urban areas (15.9 percent) than in rural areas (12.6 percent). Similarly, it was higher among the female labour force (13.6 percent) than the male labour force (12.9 percent), and among the youth 16 to 30 years old (15.9 percent) than among adults (10.6 percent).

In terms of educational attainment, the results shown in Diagram 11 indicate that unemployment rate was highest among persons with upper secondary education (22.5 percent) and tertiary education (18.4 percent). It was lowest among persons with no education attainment (10.2 percent) and with lower secondary education (10.7 percent), followed by persons with pre-primary education (12.6 percent) and primary education (15.5 percent).

Diagram 11: Unemployment rate by level educational attainment



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On average each unemployed used 1.2 methods for seeking employment. The most frequent method used by the unemployed was applying to employers directly, checking at worksites, farms, factory gates, placement (41.7 percent), followed by Seeking the assistance of friends, relatives or other types of intermediaries (13.8 percent) and registering with or contacting public or private employment services (10.9 percent). Other methods of job search were placing or answering newspaper or online job advertisements or response to job advertisements (8.7 percent) and placing or updating resumes on professional or social networking sites online (7.5 percent). Search for setting up own business was relatively more limited: arranging for financial resources, applying for permits, licenses (8.0 percent) and Looking for land, premises, machinery, supplies, farming inputs (6.5 percent).

The Pilot LFS provides also data on duration of job search that can be used to estimate long-term unemployment. Long-term unemployment refers to unemployed persons with duration of search for employment lasting 12 months or more, including the reference period. Duration of search for employment is measured from when the unemployed person began carrying out activities to seek employment, or from the end of the last job, whichever is shorter. Duration of unemployment is the length of time that an unemployed person has been without employment, available for employment, and actively seeking employment.

Table 9 shows that about 23 percent of the unemployed who reported duration of job search were long-term unemployed, i.e., seeking employment for 12 months or more. Most unemployed persons were however seeking employment for less than a month (33.2 percent) or less than three months one month (25.5 percent). The general shape of the curve of unemployment by duration of job search is U-shaped with concentration at the two tails of the distribution.

Table 9: Duration of unemployment: Elapsed duration of job search

Elapsed duration of job search	Number of unemployed reporting duration of job search	%
Total	**298,000**	**100.0%**
Less than 1 month	99,000	33.2%
1 – less than 3 months	76,000	25.7%
3 – less 6 months	43,000	14.5%
6 – less 12 months	11,000	3.7%
1 – less 2 years	15,000	5.1%
2 years or more	53,000	17.9%

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The median reported duration of search for employment by the unemployed was about 2.3 months. This is the median duration of job search until the date of the survey.[10] The duration of unemployment however continues after the survey. The median duration of completed spells of unemployment may be estimated as twice the duration of the interrupted spells of unemployment (2x2.3=4.6 months).

This figure is somewhat higher than the corresponding estimate of completed spells of unemployment under steady state conditions obtained by the ratio of total (298,000) to the number of unemployed with short-duration of job search less than 1 month (99,000), generally more accurately measured in surveys. This estimate gives 298,000/99,000 = 3 months. It is somewhat lower than 4.6 months suggesting that there is a tendency of over-reporting the length of job-search in surveys, particularly among the long-term unemployed.

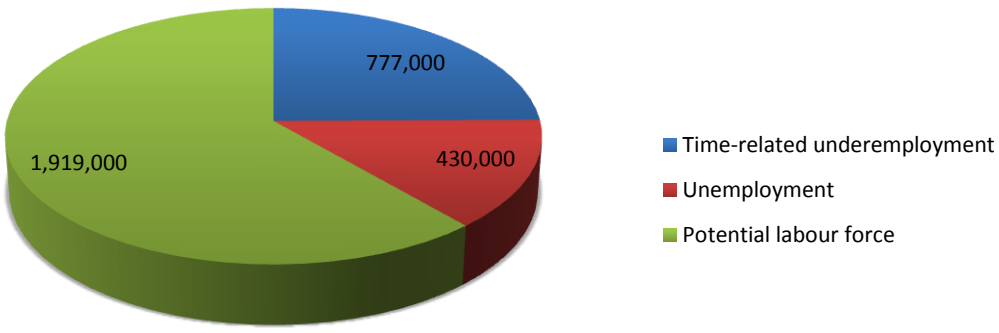
Unemployment is a particular form of labour underutilization. As mentioned earlier, other forms of labour underutilization include time-related underemployment and potential labour force. Time-related underemployment refers to the situation when the working time of persons in employment is insufficient in relation to alternative employment situations in which they are willing and available to engage. Time-related underemployment is measured here as all persons in employment who, during the specified reference period of the survey (a) wanted to work additional hours, (b) were working in all jobs less than 35 hours during the reference week, and (c) were available to work additional hours given an opportunity for more work. The hour-threshold was set at 35 hours because it corresponded to the median value of the distribution of hours actually worked at all jobs during the reference week.

Potential labour force is defined as all persons of working age outside the labour force who, during the 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).

[10]Kiefer, Nicholas, M & Lundberg, Shelly J & Neumann, George R, "How Long Is a Spell of Unemployment? Illusions and Biases in the Use of CPS Data," *Journal of Business & Economic Statistics*, American Statistical Association, vol. 3(2), April 1985, pp. 118-128.

Potential labour force together with time-related underemployment and unemployment are different dimensions of labour underutilization. Diagram 12 shows the composition of labour underutilization. It is instructive to note that unemployment is only a small part of labour underutilization in Rwanda comprising 430,000 persons, representing about 14 percent of labour underutilization. By far, the largest part of labour underutilization is the potential labour force close to 2 million persons, representing more than 61 percent of labour underutilization. These are available persons not in the labour force who were currently available for employment but did not carry out activities to seek employment during the specified reference period as well as those seeking employment but not currently available for work.

Diagram 12: Composition of labour underutilization



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The remaining part of labour underutilization is the time-related underemployed, consisting of 777,000 persons or about 25 percent of labour underutilization.

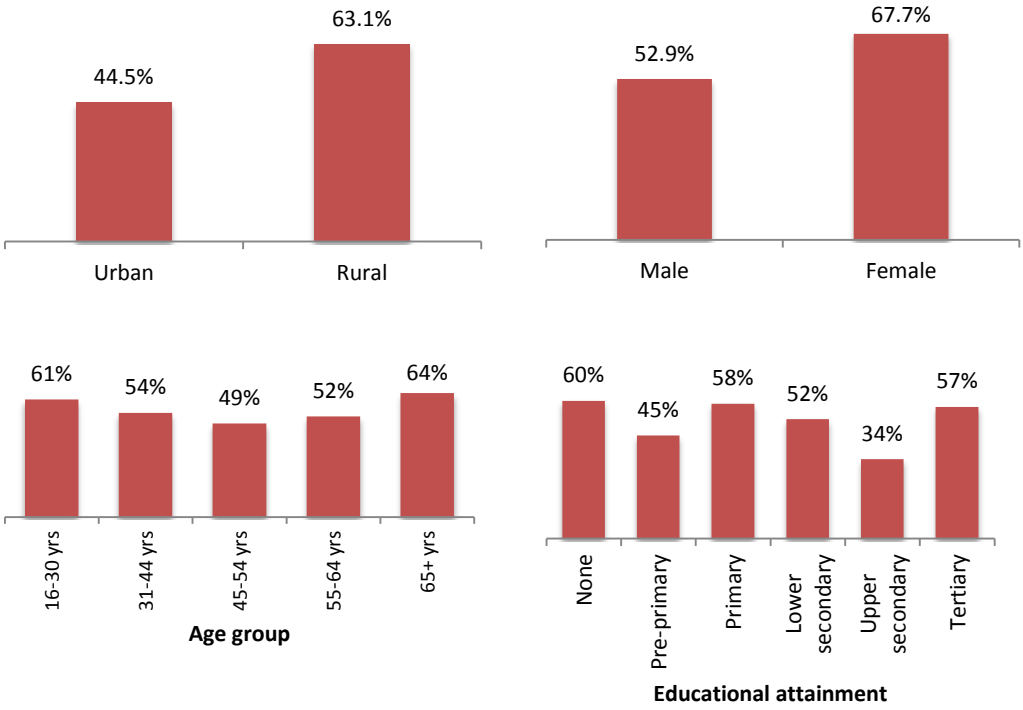
An important sub-category of the potential labour force is the discouraged jobseekers, i.e., those outside the labour force who did not "seek employment" for labour market-related reasons, such as past failure to find a suitable job, lack of experience, qualifications or jobs matching the person's skills, lack of jobs in the area, considered too young or too old by prospective employers). According to the Pilot LFS there were about 1,303,000 discouraged jobseekers in Rwanda in February 2016.

The international standards further suggest the identification of a separate group with an expressed interest in employment not included within the potential labour force but relevant for social and gender analysis in specific contexts. This group called *willing non-jobseekers* is defined as persons neither employed or unemployed who wanted employment

but did not seek employment and were not currently available for work. The estimate of the number of willing non-jobseekers obtained from the Pilot LFS was 1,779,000.

Diagram 13 shows the composite measure of labour underutilization for different socio-demographic characteristics of the population. While the unemployment rate (LU1) is the narrowest measure of labour underutilization, the composite measure (LU4) is the broadest measure of labour underutilization. It is the ratio of total labour underutilization to the extended labour force, calculated as the sum of the labour force and the potential labour force.

Diagram 13: Composite measure of labour underutilization by urban/rural area, sex, age group and educational attainment, Pilot LFS February 2016



It is instructive to note that the pattern of the composite measure of labour underutilization is not in all cases identical to that of the unemployment rate. While the rate of labour of underutilization is higher in rural areas (61.3 percent) than in urban areas (44.5 percent), the reverse pattern is true for the unemployment rate. This is because there is a large of pool of subsistence foodstuff producers in the rural areas outside the labour force, who is available for employment but not seeking work.

In terms of gender and age group, the composite measure of labour underutilization closely follows the pattern of the unemployment rate though at a much higher level. The female rate of labour underutilization (67.7 percent is relatively higher than the male rate (52.9 percent). Similarly, the youth (16 to 30 years of age) and the elderly (65 years old and over) are affected by labour underutilization at a relatively higher rate (61 percent and 64 percent, respectively) than the core age population groups (54 percent for persons 31 to 44

years old, 49 percent for persons 45 to 54 years old, and 52 percent for persons 55 to 64 years old),

In terms of level of educational attainment, the composite measure of labour underutilization also differs from the pattern of the unemployment rate. While the unemployment rate is highest among persons with upper secondary and tertiary education, the rate of labour underutilization is highest among persons with no educational attainment or primary education.

7. Persons outside the labour force

A particular characteristic of countries with large subsistence foodstuff production is the fact that the size of the working age population outside the labour force may be as big or larger than the size of the labour force itself. In Rwanda, the Pilot LFS shows that the number of persons 16 years old and over who are outside the labour force is about 3,350,000 against 3,261,000 in the labour force. The majority of the persons outside the labour force are subsistence foodstuff producers (66 percent). The others are mostly young persons attending school, or men and women with family responsibilities, or elderly people not economically active.

It should be mentioned that a review of the survey questionnaire reveals that a question on main status of people outside the labour force was inadvertently missed from the Pilot LFS. The question properly formulated would be inserted in the revised questionnaire for the main LFS to be conducted in August 2016.

The Pilot LFS includes however a question on main source of livelihood of persons outside the labour force. Table 10 shows the results by sex and broad age group. For most people outside the labour force, the main source of livelihood is own-production irrespective of sex and age group, except for the young population between 16 and 30 years old outside the labour force, for whom the main source of livelihood is from their parents. Table 10 also shows that for elderly persons 65 years old and above outside the labour force, the main source of livelihood after own production is from their children or other family members. Persons outside the labour force who reported that their main source of livelihood is assistance received from special programmes such as VUP or FARG or from the church or other non-government organizations does not exceed in total 1 or 2 percent.

Table 10: Main source of livelihood of persons outside the labour force by sex and age group,

Main source of livelihood	Total	Sex		Broad age group		
		Male	Female	16-30 yrs	31-64 yrs	65+yrs
Total ('000)	**3,350**	**1,306**	**2,043**	**1,550**	**1,371**	**429**
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Parents	25.2%	32.3%	20.7%	52.9%	1.8%	0.0%
Husband/Wife	9.7%	4.0%	13.3%	11.2%	9.9%	3.8%
Child	3.2%	1.9%	4.0%	0.0%	2.1%	17.8%
Other family members	5.3%	7.5%	3.9%	7.1%	2.6%	7.5%
Pension	0.0%	0.1%	0.0%	0.0%	0.1%	0.2%
Own production	51.2%	49.9%	51.9%	24.9%	79.2%	56.4%
Assistance received [VUP]	0.4%	0.0%	0.7%	0.0%	0.1%	2.9%
Assistance received [FARG]	0.5%	0.7%	0.4%	0.8%	0.4%	0.0%
Assistance received [Church, Other NGO]	0.3%	0.1%	0.5%	0.4%	0.4%	0.0%
Assistance from friends	1.9%	1.3%	2.4%	1.0%	1.8%	6.0%
Revenue from own property or savings	1.2%	1.1%	1.3%	0.2%	1.0%	5.4%
Others	1.0%	0.9%	1.0%	1.5%	0.6%	0.0%

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Persons outside the labour force have different degrees of attachment to the labour force. Some are in the potential labour force as discussed in the preceding section. Others may not be in the potential labour force but have had past work experience or are willing to work although they were not currently seeking or available for work.

Among the population outside the labour force, about 922,000 persons representing 27% of the total reported to have had past work experience. For some, the reason for stopping employment was illness, injury or disability (22 percent), or unsatisfactory working conditions (16 percent) such as low pay, late payment of wages, difficult work, or faraway place of work.

Diagram 14: Past work experience and reason for stopping employment of persons outside the labour force

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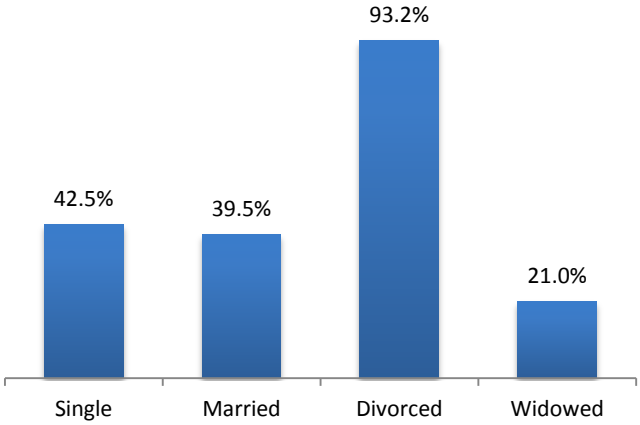
It can be observed in diagram 14 that a relatively large number of persons (about 20%) reported a main source of livelihood other than those listed in the questionnaire. It would therefore be appropriate to review the information given and accordingly revise the answer categories for implementation in the LFS August 2016.

8. Women and equal opportunities

Women account for close to 45 percent of the labour force in Rwanda. The Pilot LFS provides a rich set of current information on their labour force participation. Here a few aspects are examined: female labour force participation rate by marital status, pay gap between women and men, and the proportion of women in managerial positions.

The overall female labour force participation rate is 41.5 percent, roughly corresponding to the rate for single women (42.5 percent). As shown in Diagram 15 below, the rate is lower for married women (39.5 percent and widowers (21.6 percent), and much higher for divorced women (93.2 percent). This pattern of female labour force participation rate is in line with that of many other countries and provides evidence on the robustness of the measurement in the Pilot LFS.

Diagram 15: Female labour force participation by marital status



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Another test of data consistency is provided by the measurement of the gender pay gap. Gender pay gap measures the relative difference between the male average hourly pay and the female average hourly pay for doing the same type of work. In line with the ILO decent work indicator, gender pay gap may be measured as the difference between the gross average hourly earnings of male and female employees expressed as percentage of gross average hourly earnings of male employees.[11] The results are shown in Table 11.

Table 11: Gender pay gap

	Male	Female	Gap pay gap
Average monthly income from employment of employees at main job	49,371 RWF	32,713 RWF	-33.7%
Average hourly income from employment of employees at main job	301 RWF	221 RWF	-26.6%

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According to these data, the average monthly income from employment of employees at main job was 49,371 RWF for men and 32,713 RWF for women, representing a gender pay gap of -33.7 percent. This means that female employees earn per month less than one-third of their male counterparts. When account is taken of the differences of working time between of men and women, the data show that the average hourly income from employment of male employees at main job is 301 RWF per hour while that of female employees is 221 RWF per hour. Thus, the gender pay gap is somewhat reduced (-26.6 percent) when measured on an hourly basis, but it is still considerable. It indicates that female employees earn roughly less than one fourth of male employees for the same working time.

Because income from employment is also influenced by level of skill and length of work experience, further adjustment to the gender pay gap may be made using education attainment as a proxy for skill and age as a proxy for length of work experience. Such

[11] ILO, *Decent Work Indicators Concepts and definitions, ILO Manual (First version)*, May 2012, pp. 130-131.

considerations give rise to the Mincer earnings equation[12] that can be fitted to the Pilot LFS data. A statistically significant negative coefficient of the gender variable would indicate that gender pay gap persists even after adjustment for differences in age and education attainment.

Women are gradually increasing their numbers as managers. A recent global report prepared by the ILO states that women own and manage over 30 percent of all businesses, ranging from self-employed (or own-account workers), micro and small enterprises to medium and large companies.[13] Occupations in senior and middle management correspond to the ISCO sub-major occupation groups occupational categories 11 (Chief executives, senior officials and legislators) and 12 (Administrative and commercial managers).

The data in Table 12 show that there were in 1,600 women working as chief executives, senior officials and legislators and about the same number (1,300) as administrative and commercial managers, giving a total of 2,900 women in managerial positions. The corresponding total for men was 17,600 persons. Thus, the overall share of women in managerial positions was 14.1 percent, considerably lower than the world average.

Table 12: Women and men in managerial positions

ISCO code	Sub-major occupation groups	Persons			%		
		Total	Male	Female	Total	Male	Female
	Total Persons in managerial positions	20,500	17,600	2,900	100.0%	85.9%	14.1%
11	Chief Executives, Senior Official and Legislators	16,600	15,000	1,600	100.0%	90.4%	9.6%
12	Administrative and Commercial Managers	3,900	2,600	1,300	100.0%	66.7%	33.3%

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9. Youth, education and skills mismatch

In general there is a two-way relationship between the education system and the labour market. The education system supplies the labour market with an educated labour force, while the labour market – through the wage structure of occupations and other labour market variables – transmits signals on the types of qualifications expected from the education system. The data collected by the Pilot LFS contain the elements for carrying such types of analysis. This section focuses on two aspects: the relationship between educational attainment and labour force participation and unemployment, and the extent of skill mismatch among the youth population.

In Rwanda, youth is defined as young person's 16 to 30 years of age. The international definition of the youth population is "persons aged 15-24 years old."[14] To cover

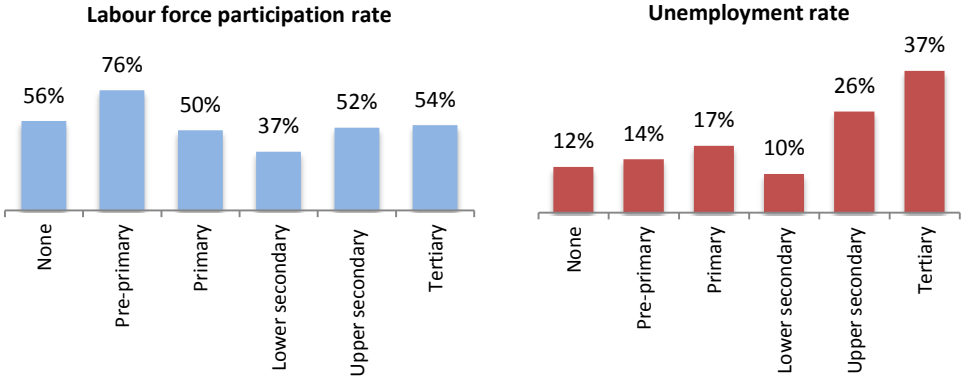
[12] Heckman, James J., Lochner, Lance J., and Todd, Petra E., "Fifty Years of Mincer Earnings Regressions," First draft June 1998, Revised March 19, 2003.
[13] ILO, *Women in Business and Management Gaining Momentum*, Abridged version of the Global Report, Geneva, 2015.

[14] ILO, *Global Employment Trends for Youth 2015*, Employment Policy Department, International Labour Office, Geneva, 2015.

countries where entry into the labour market occurs at a later stage, the ILO extends the definition to include young adults aged 25-29 years old for certain purpose.

Diagram 16 presents in the left panel the youth labour force participation rate by educational attainment and in the right panel the youth unemployment rate by educational attainment. The data show that the labour force participation rate is essentially constant around 50 percent for youth at different levels of educational attainment, except for young people with pre-primary education and lower secondary education.

Diagram 16 : Youth (16-30 years old) labour force participation rate and Unemployment rate by educational attainment



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The relationship between educational attainment and the unemployment rate is however significantly different, showing a clear upward slope. The unemployment increases from about 12 percent for young people with no educational attainment to 37 percent for youth with tertiary education. This means that the higher the educational attainment of a young person, the higher his or her risk of unemployment. One could suggest a number of reasons for this phenomenon. First, persons with higher educational attainment have a higher reservation wage, preferring to wait for a suitable employment rather than accepting an inadequate or low paying job. Another reason may be the existence of mismatch between the qualification of the young and the skill requirements of jobs in the labour market.

Incompatibility between education and occupation of a young person occurs when the educational attainment of the person is above the skill requirement of his or her job. The reverse may also occur when the educational attainment is below the skill requirement of the job. In both cases, it means that the return on investment in education and training has been below optimum. Different indicators have been used to measure education and occupation mismatch.

A simple approximate method that uses level of educational attainment and one-digit occupation data defines a mismatch when the educational attainment of the worker is higher than the educational level required by the main current job. Table 13 shows the measurement

of mismatch in terms of ISCO and ISCED, where the shaded area represents mismatch (over qualification).

Table 13: Youth (16 -30 years old) skill mismatches in main job

ISCO-08 Major groups		ISCED-97 Educational attainment				
		0	1	2-4	5	6
		ISCO-08 Skill level				
		1st		2nd	3rd	4th
1	Managers	0	0	0	14,000	30,000
2	Professionals	0	4,000	0	43,000	3,000
3	Technicians. associate professions	6,000	11,000	0	19,000	30,000
4	Clerical support workers	1,000	0	1,000	19,000	5,000
5	Service and sales workers	202,000	276,000	69,000	53,000	16,000
6	Skilled agriculture, forestry, fishery workers	160,000	180,000	46,000	4,000	0
7	Craft and related trade workers	148,000	125,000	27,000	21,000	7,000
8	Plant and machine operators, assemblers	20,000	25,000	5,000	2,000	1,000
9	Elementary occupations	695,000	432,000	72,000	6,000	0

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ILO, *International Standard Classification of Occupations, ISCO-08*

UNESCO, International Standard Classification of Education ISCED-97

According to these data, about 12.3 percent of the young people are employed in their main jobs in occupations with skill requirements below their educational attainment. One sizeable component is the youth with tertiary education working as technicians or associate professionals (30,000) or as service and sales workers (16,000). Among youth with upper secondary education, there are many working as service and sales workers (53,000), as plant and machine operators or assemblers (21,000) or as clerical support workers (19,000).

Table 13 also permits the calculation of the skill mismatch (under qualification) covering persons with low educational attainment (below secondary education) working in jobs with relatively high qualification requirement youth such as managers and professionals). More elaborate measures of skill mismatch are being tested at the ILO for discussion at the next International Conference of Labour Statisticians in 2018.

11. Participation in training programmes

The role of training in insertion or reinsertion into the labour market is widely recognized. In order to assess the outreach of training among the youth and adults as well as to understand the nature of the demand for training in terms of subject of courses and type of training providers, the Pilot LFS questionnaire included a series of four questions (B08-B10) on current participation or past acquisition of in any trade or technical vocational course.

In total an estimated 532,868 persons attended a trade or technical vocational course in the past. Table 14 gives the distribution of training courses attended and the current employment of the participants. The most popular training course was tailoring with participation rate 32.5 percent, followed by Masonry and carpentry with participation rates 20.4 percent and 12.8 percent, respectively.

Table 14: Participation in trade or technical vocational course and current employment status,

Training course	Participants in the past		Currently employed	
	Number Persons	%	Number Persons	%
Total	**532,868**	**100.0%**	**331,698**	**61.6%**
Masonry	120,877	20.4%	73,414	60.7%
Carpentry	75,434	12.8%	69,155	91.7%
Automotive technology.	9,153	1.5%	2,572	28.1%
Culinary arts	8,939	1.5%	7,024	78.6%
Domestic Electricity	633	0.1%	633	100.0%
Welding	12,935	2.2%	7,242	56.0%
Plumbing	276	0.0%	276	100.0%
Food processing	23,870	4.0%	17,326	72.6%
Auto- Electricity	899	0.2%	899	100.0%
Automotive body repair	25,766	4.4%	23,520	91.3%
Computer maintenance	6,449	1.1%	0	0.0%
Engine mechanics	5547	0.9%	3,855	69.5%
Tailoring	192,051	32.5%	88,552	46.1%
Civil construction	4,264	0.7%	0	0.0%
Food & Beverage services	11,774	2.0%	3,682	31.3%
Front office	1,226	0.2%	848	69.2%
Hairdressing	21,077	3.6%	16,420	77.9%
Biding and Jewelries	1,915	0.3%	1,915	100.0%
Screen printing	575	0.1%	575	100.0%
Crochet embroidery	27,200	4.6%	19,148	70.4%
Motor vehicle engine mechanics	29,418	5.0%	16,608	56.5%
Film making	11,053	1.9%	10,574	95.7%

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Evaluating the success or non-success of the training courses in terms of the current employment status of the participants, it may be said that training courses with the highest number of participants currently employed are the most successful, and training courses with the lowest number of participants currently employed are the most unsuccessful. In this sense, it appears that among the most popular training course, carpentry is the most successful, with employment rate of 91.3 percent. By contrast, training courses Computer maintenance and civil construction with low participation rates (1.1 percent and 0.7 percent) and no currently employed persons appear to be the most unsuccessful training courses.

Similar analyses may be conducted with more stringent definitions of "success", for example, formal employment or employment in a permanent job after participation in the training course. The success of the training course may also be evaluated by analyzing the responses given to the survey question (B14) on "what happened three months after the completion of the course".

The data on participation in training courses may be further analyzed in terms of the length of training course and the year of its completion as well as in terms of the type of institution providing the training course and the main sponsor.

11. Working children

In many countries, children below the legal working age are engaged in economic activity, earning money in a variety of casual or informal jobs or helping without pay in family enterprises. Not all work performed by children is however *child labour*. According to the international standards concerning statistics of child labour adopted by the 18th ICLS in 2008, the term *child labour* refers to the engagement of children in prohibited work and, more generally, in types of work to be eliminated as socially and morally undesirable as guided by national legislation and relevant ILO conventions and recommendations. It includes all persons aged 5 to 17 years who, during a specified time period, were engaged in one or more of the following categories of activities:[15]

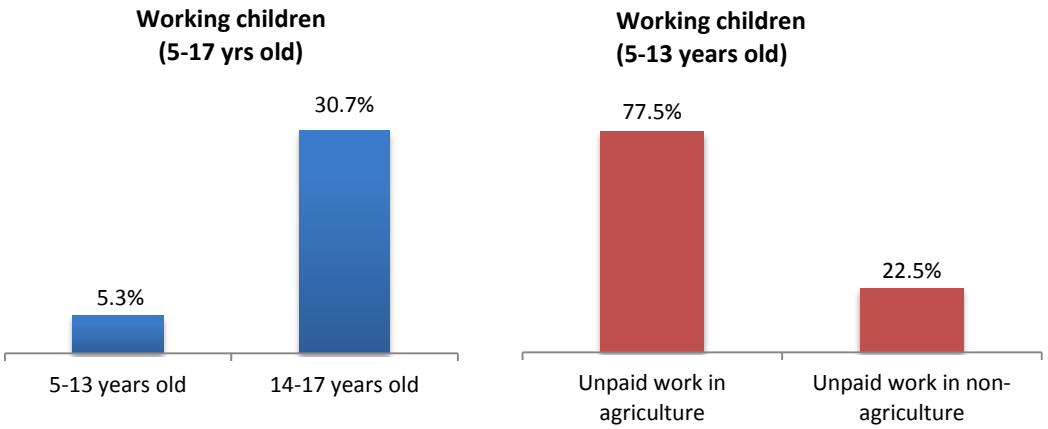
(a) Worst forms of child labour, including all forms of slavery or practices similar to slavery, sexual exploitation, child illicit activities, and other hazardous work likely to harm the health, safety or morals of children
(b) Employment below the minimum age, including any work that is carried out by a child below the minimum age specified for the kind of work performed, excluding *permissible light work* applicable to children aged 12 years and over;
(c) Hazardous unpaid household services, including activities performed in the child's own household for long hours, or in an unhealthy environment, involving unsafe equipment or heavy loads, or in dangerous locations, and so on.

While the Pilot LFS was not designed to measure child labour, the survey collected data on the school attendance and work activity of children 5-13 years old, in addition to the labour force data on the population 14 years old and over. Thus, some aspects of the activities of children in category (b) of the international classification presented above can be estimated using the Pilot LFS data.

According to the combined results, there were in total 437,000 children 5 to 17 years old who were working during the reference period, representing 11.4 percent of the total number of children in that age category. This rate is about equal to the world average (11.8 percent) and below the average rate of children in employment in Sub-Saharan Africa (26.2 percent) estimated for 2012 by the ILO.[16] Diagram 18 presents the percentage number of working children by broad age group and by type of work for children 5 to 13 years old. According to these results, the percentage of working children in the age category 5 to 13 years old was only 5.3%, most working without pay in agriculture (77.5 percent) and the others working without pay in non-agriculture activities (22.5 percent).

[15] ILO, "Resolution concerning statistics of child labour," adopted by the 18th International Conference of Labour Statisticians, Geneva, 24 November – 5 December 2008.
[16] ILO, *Global child labour rends 2008 to 2012*, Yacouba Diallo, Alex Etienne and Farhad Mehran, International Programme on the Elimination of Child Labour (IPEC), International Labour Office, Geneva, 2013.

Diagram 17: Working children by age group and type of work



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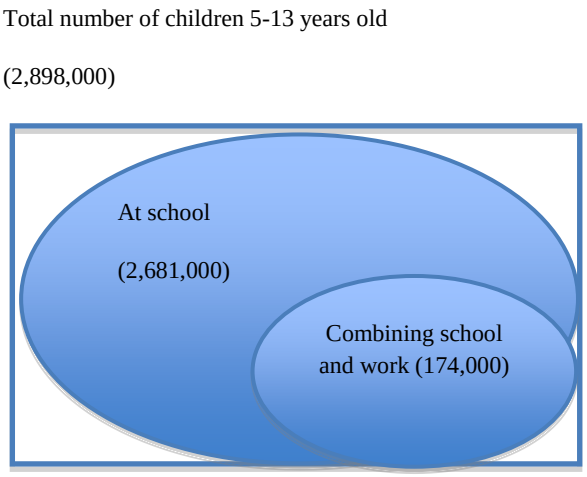
The percentage of working children 14 to 17 years old was 30.7 percent, almost half of them working with pay in an employment activity.

As shown in Diagram 18 out of the total number of children 5 to 13 years old (2,898,000), almost all were attending school (2,681,000). Some 174,000 were combining school and work, but there were no working children among those not attending school.

Diagram 18: School and work among children (5-13 years old)



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The Pilot LFS survey also collected data on the number of days of work per week and number of hours of work per day children usually works, including data on hours of work in in different types of activities such as collecting firewood for the household including travel time, fetching water for the household including travel time, searching for fodder or gazing for the household's animals, doing household chores including shopping or preparing meals, and looking after other children and elderly in the household.

The information on hours of work in the different activities can be used to calculate the number of children working long hours. In the ILO methodology for global estimation of child labour, the threshold on hours of work for defining child labour is set at 43 hours of work per week for children 15-17 years old, at 14 hours of work per week for children 12-14 years old and any number of hours of work per week for children 5-11 years old.

12. Own-use producers

The international standards on statistics of work, employment and labour underutilization define *own-use producers* as all persons of working age who were engaged in own-use production work for at least one hour during the reference period. Own-use production comprises any activity to produce goods or provide services for own final use, interpreted to mean production where the intended destination of the output as self-declared is *mainly* for final use by the producer 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.

Production of goods is within the SNA production boundary and covers: (i) producing or processing for storage agricultural, fishing, hunting and gathering products; (ii) collecting or processing for storage mining and forestry products, including firewood and other fuels; (iii) fetching water from natural and other sources; (iv) manufacturing household goods (such as furniture, textiles, clothing, footwear, pottery or other durables, including boats and canoes); (v) building, or effecting major repairs to, one's own dwelling, farm buildings, etc.

Provision of services is within the SNA general production boundary and covers (i) household activities of accounting and management, purchasing or transporting goods; (ii) preparing or serving meals, household waste disposal and recycling; (iii) cleaning, decorating and maintaining one's own dwelling or premises, durables and other goods, and gardening; (iv) childcare and instruction, transporting and caring for elderly, dependent or other household members and domestic animals or pets, etc.

The Pilot LFS questionnaire contained 7 questions on time spent on different types of own-use production work. The results are shown in Table 15. The data indicate that some 5,450,000 persons 16 years old and over were engaged in at least one type of own-use production work during the reference week, representing 82.4 percent of the total working age population. They devoted on average 26.7 hours per week on this activity. The type of activity in which the highest numbers of persons were engaged is household chores such as shopping and preparing meals, covering 60.7 percent of the working age population and involving on average 11.0 hours per week.

Table 15: Average time spend per week on own-use production

	Number of persons	Percent %	Average number of hours
Population 16 years old and over engaged in some type of own-use production work	**5,450,000**	**82.4%**	**26.7**
Collecting firewood for household including travel time	2,609,000	39.5%	5.6
Fetching water for household including travel time	3,339,000	51.3%	5.1
Constructing own dwelling, making repair on farm, well, private road	1,044,000	15.8%	5.8
Manufacturing household goods for family use	549,000	8.3%	4.9
Doing household chores including shopping, preparing meals	4,010,000	60.7%	11.0
Searching for fodder or gazing for household's animals	3,030,000	45.8%	10.2
Looking after children and elderly	2,697,000	40.8%	10.9
Own-use production work among the labour force			
Among labour force	2,597,000	79.6%	23.8
Among employed	2,197,000	77.6%	22.6
Among unemployed	399,000	92.9%	30.3

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The table also shows that some 2,597,000 persons combined labour force activity with own-use production work. The average time spent per week on own-use production work by labour force participants was 23.8 hours. As expected, the average number of hours of own-use production work was slightly lower among the employed and considerably higher among the unemployed.

Using data on hours usually worked at main and secondary jobs of the employed population, it can be calculated that the combined hours of work in employment activity and own-use production work of the employed population was about 58.7 hours per week.

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 activities specified above as *production of goods* in order to produce foodstuff from agriculture, fishing, hunting or gathering that contribute to the livelihood of the household or family. The definition excludes persons who engaged in such production as recreational or leisure activities.

The Pilot LFS questionnaire includes a section (H) with 11 questions on subsistence foodstuff production. The basic results are shown in Table 16 below. Among the population 16 years old and over, some 4,100,000 persons were engaged in subsistence foodstuff production during the past month, representing 62.0 percent of the total working age population. They have spent on average about 25.3 hours per week on this activity. The average number of hours of work on subsistence foodstuff production among the employed was 21. 7 hours per week and significantly higher among the unemployed (27.6 hours per week).

Table 16: Average time spend per week on subsistence foodstuff production

	Number of persons	Percent %	Average number of hours
Among total population 16 yrs old and over	4,100,000	62.0%	25.33
Among persons in employment	1,571,000	57.1%	21.72
Among persons not in employment	2,529,000	65.5%	27.58

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The Pilot LFS collected additional information on subsistence foodstuff production including on whether any part of the products are sold in the market and the net amount the household obtained from agricultural activities last season as well as the number of paid employees engaged in the activities in addition to family members.

Annex A. 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).[17] 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 pilot LFS February 2016 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. In the past, the minimum age in the definition of the working age population was 14 years. For international reporting, the international standards recommend the lowest age bracket starting with 15 years.

[17] ILO, *Resolution concerning statistics of work, employment and labour underutilization*, 19th International Conference of Labour Statisticians, Geneva, October 2013.

To enable comparison with the past and to conform to the international standards, the questionnaire of the pilot LFS 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. The tables in the statistical annex, however, provide data for 14 years old and 15 years old separately, thus enabling analysts to calculate the indicators with the desired age 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.[18] 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

[18] ILO, *Resolution concerning statistics of the economically active population, employment, unemployment and underemployment*, adopted by the 13th International Conference of Labour Statisticians, Geneva, 1982.

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.

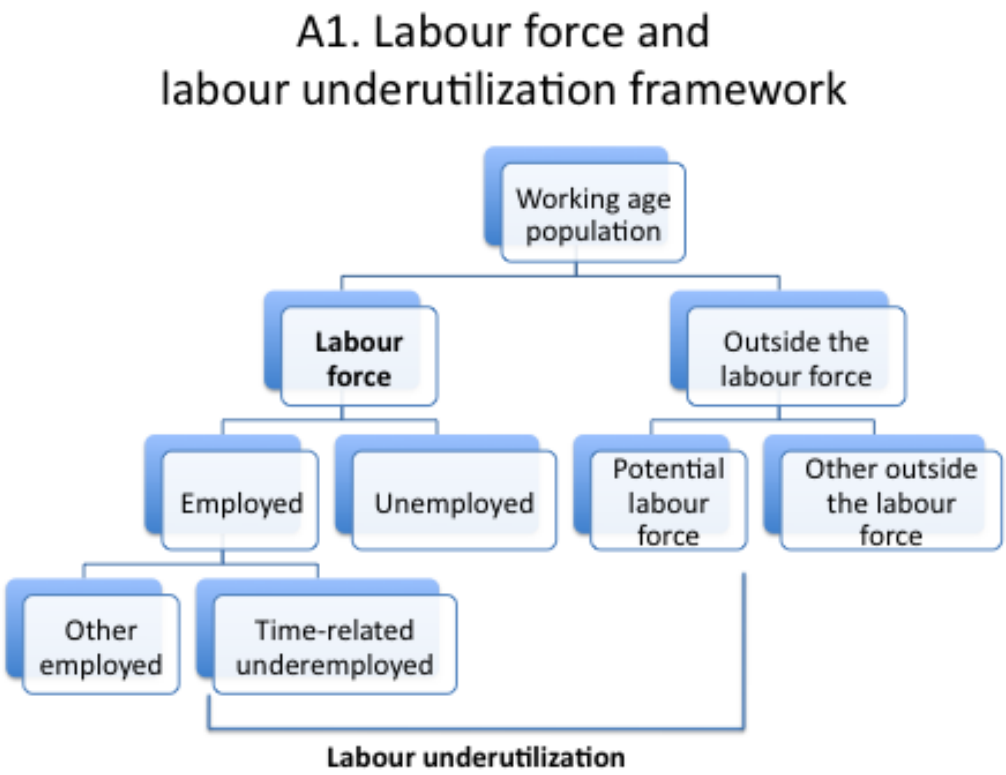
- Time-related underemployment

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 Figure 1 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.

- 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.

A2. 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 B. Survey methodology and data quality

The survey covered all persons living in private households. It excluded is the institutional population permanently residing in houses such as hostels; health resorts; correctional establishments etc., as well as persons living in seasonal dwellings not covered in the survey. It also excluded workers living at their work-sites. A household is a group of persons who live together and make common provision for food and other essentials for living. The people in the group may be related or unrelated or a combination of both. A household may consist of only one person or several persons.

- **Sample design**

The sample size of the Pilot LFS February 2016 was set at 720 households. This number of households was considered sufficient to provide the necessary diversity to test the survey procedures and gain experience from varied conditions. The sample size was also determined in line with the allocated budget for the pilot survey.

To provide national estimates, albeit with relatively low precision, the sample of the pilot survey is designed as a probability sample representing the country as a whole. A sample of two provinces was selected. Kigali City was selected with probability one. The other province was selected with probability proportional to size measured in terms of the population 15 years old and over the province according to the 2012 Population and Housing Census.

The total sample size was allocated among the provinces by equal allocation, and by square-root allocation among the districts within the sample provinces. An Excel sheet has been developed for sample selection of provinces. The total sample size and allocations between and within provinces are controlled with parameters that can be changed as required.

- Sample selection of provinces

The following table shows the procedure for sample selection of the provinces. The probability of selection of Kigali City is set 1.0 and that of the other provinces in proportion of the population 15 years old and over (Pop15+).

Province	Pop15+	Prob	Random	Sample
Rwanda	**5,846,266**	**-**	**-0.6287**	**2**
Kigali City	711,864	1.0000	0.3713	1
South	1,438,382	0.2801	0.6515	0
West	1,330,610	0.2592	0.9106	0
North	961,848	0.1873	1.0980	1
East	1,403,562	0.2734	1.3713	0

After generating a random number between -1 and 0 in column four at the top of the table, the sample is derived by calculating $e_k = e_{k-1}+p_k$

where e_k is the iterative value in column four and p_k is the probability of selection in column three. [19] The sample is determined whenever the integer value of e_k changes. If $Int(e_k)$ # $Int(e_{k-1})$, province k is in the sample and Sample = 1 in column five. Otherwise province k is not in the sample and Sample = 0. The selected sample comprised Kigali City and the North province.

- Sample allocation among provinces

The next step was to allocate the total sample size among the sample provinces. Equal allocation divides the total sample size equally among the sample provinces. Thus with 720 sample households, the sample allocation of Kigali City will be 360 households and that of the North province would also be 360 households. The division of the total sample among the sample provinces could however be based on different allocation rules, for example, proportional allocation or the square-root allocation that is a compromise between equal allocation and proportional allocation.

- Sample allocation among districts

With a sample-take of 15 households per enumeration area, the sample size of 720 households requires the selection of a sample of 48 enumeration areas 24 in Kigali City and 24 in North Province. The sample enumeration areas in each province were then allocated among the districts by proportional in terms of number of persons of working age. The

[19] Adaptation from Yves Tillé, *Sampling Algorithm*, Springer Series in Statistics, 2006, pp. 124-127.

procedure spreads the sample over all districts of the province and ensures a proportional representation of each district. The results are shown in the following tabulation:

Province	District	Sample enumeration areas	Number of sample households		
			Total	Urban	Rural
Rwanda	**Rwanda**	**48**	**720**	**315**	**405**
Kigali City	Nyarugenge	6	90	60	30
Kigali City	Gasabo	11	165	135	30
Kigali City	Kicukiro	7	105	90	15
North	Rulindo	4	60	-	60
North	Gakenke	5	75	-	75
North	Musanze	5	75	30	45
North	Burera	5	75	-	75
North	Gicumbi	5	75	-	75

The sample thus includes a total of 720 households in 48 enumeration areas, 21 urban enumeration areas with 315 urban households and 27 rural enumeration areas with 405 rural households. It should be mentioned that given the concentration of urban areas in Kigali City, it was deemed unnecessary to stratify the sample in terms of urban and rural areas. Stratification by district was deemed more appropriate as in effect encompassed also a degree of urban/rural stratification. It should also be mentioned that the Excel sheet usedfor sample selection provides for a wide range of stratification and allocation rules as well as flexibility in the choice of the sample-take.

- Selection of sample enumeration areas

The next step in sample design is the selection of the 48 sample enumeration areas. The sample was drawn in each district by probability proportional to size (pps) from the master sample of enumeration areas (EA/PSU segment) constructed by NISR based on the 2014 population and housing census. The results are shown in the next table:

Serial no.	Province	District	EA/PSU Segment no.	Probability of selection
1	Kigali City	Nyarugenge	1102020201	0.084891
2	Kigali City	Nyarugenge	1103030801	0.145091
3	Kigali City	Nyarugenge	1103040101	0.025162
4	Kigali City	Nyarugenge	1104031501	0.085597
5	Kigali City	Nyarugenge	1107030701	0.042798
6	Kigali City	Nyarugenge	1108040901	0.067255

7	Kigali City	Gasabo	1204010201	0.146789
8	Kigali City	Gasabo	1204020401	0.255395
9	Kigali City	Gasabo	1204020501	0.163359
10	Kigali City	Gasabo	1205031001	0.047369
11	Kigali City	Gasabo	1206030301	0.034761
12	Kigali City	Gasabo	1209020201	0.079969
13	Kigali City	Gasabo	1209021101	0.127157
14	Kigali City	Gasabo	1210030301	0.179209
15	Kigali City	Gasabo	1210030901	0.254675
16	Kigali City	Gasabo	1213020501	0.168222
17	Kigali City	Gasabo	1214070101	0.098160
18	Kigali City	Kicukiro	1301020401	0.133313
19	Kigali City	Kicukiro	1301060301	0.040047
20	Kigali City	Kicukiro	1303020101	0.070345
21	Kigali City	Kicukiro	1306040401	0.106967
22	Kigali City	Kicukiro	1307010701	0.156498
23	Kigali City	Kicukiro	1307030801	0.078249
24	Kigali City	Kicukiro	1308020201	0.055855
25	North	Rulindo	4103020101	0.025991
26	North	Rulindo	4108020101	0.029508
27	North	Rulindo	4111040101	0.026772
28	North	Rulindo	4116040301	0.039083
29	North	Gakenke	4202030401	0.065739
30	North	Gakenke	4206030701	0.039937
31	North	Gakenke	4210030501	0.022885
32	North	Gakenke	4214040301	0.026026
33	North	Gakenke	4218040101	0.025578
34	North	Musanze	4302010101	0.052588
35	North	Musanze	4303030201	0.043162
36	North	Musanze	4308040601	0.072598
37	North	Musanze	4309040701	0.024310
38	North	Musanze	4315030101	0.035720
39	North	Burera	4402051401	0.020706
40	North	Burera	4405030101	0.036891
41	North	Burera	4409030201	0.049029
42	North	Burera	4413010101	0.042127
43	North	Burera	4416020701	0.063309
44	North	Gicumbi	4502010201	0.017599
45	North	Gicumbi	4507020301	0.023465
46	North	Gicumbi	4512020201	0.037624
47	North	Gicumbi	4516030401	0.021644
48	North	Gicumbi	4520010301	0.027308

The pps selection of the sample enumeration areas from the master sample was a mistake. The selection should have been done with equal probability, as the enumeration areas of the master sample were themselves selected by pps. The double use of pps sampling contributed to high variation of the sample weights reported later in the annex.

- Selection sample households

The sample enumeration areas were freshly listed prior to selection of the final sample of households. According to the sample design, 15 sample households were selected from the list of households in each sample enumeration area. If the list contained 15 households or

less all households in the sample enumeration area were drawn in the sample. If the list contained more than 15 households, a sample of fixed size (15 households) was drawn from the list by systematic random sampling.

- Sample weights

The sample weight is the inverse of the probability of selection of a sample household. This probability is calculated as the product of three probabilities: (1) probability of selection of the province where the sample household is residing,

$$P(province) = \begin{cases} 1 & if\ province = KigaliCity \\ 0.1873 & if\ province = North \end{cases}$$

(2) probability of selection of the sample enumeration area (ea) within the stratum (district) in which it is located,

$$P(ea) = \frac{n \times s(ea)}{\sum_{district} s(ea)} \times P(mastersample)$$

where n is the number of enumeration areas in the master sample for the district, s(ea) is the measure of size of an enumeration area (ea) and P(mastersample) is the probability of selection of the enumeration area (ea) in the master sample; and (3) probability of selection of a given household (hh) in the sample enumeration area (ea),

$$P(hh) = \frac{15}{m(ea)}$$

where m(ea) is the number of households in the enumeration area (ea) from which household hh has been selected,

$$m(ea) = \max(List, Est)$$

List is the number of households listed in the enumeration area and Est is the estimated number of households in large enumeration areas. Est is obtained from a combination of the 2012 PHC and the Mortality Assessment Survey conducted in November 2015 just before the Pilot LFS.

The overall design weigh is the product of these three probabilities,

$$DesignWeight(hh) = {}^{1}\!\!\diagup\!\!{}_{P(province) \times P(ea) \times P(hh)}$$

The non-response adjusted final weight is then obtained by the dividing the design weight with the response rate,

$$FinalWeight(hh) = \frac{DesignWeight(hh)}{\mathrm{Re}\,sponseRate}$$

where the response rate is the percentage of responding households among the total eligible households in the sample enumeration area. All individuals in the same household are assigned the weight of the household in which they belong.

- Combining data from Pilot LFS February 2016 and LFS August 2016

The methodology for combining the pilot survey results for February 2016 with those of LFS August 2016 is described below for future use. Let X be a national estimate from the Pilot LFS and Y the corresponding estimate from the main LFS. Suppose o_X^2 is the variance of X under the sample design of the pilot survey and o_Y^2 the variance of Y under the LFS design. The combined annual estimate Z for 2016 is obtained as a weighted average of X and Y,

$$Z = a \times X + (1 - a) \times Y$$

where a is the value that minimizes the variance of Z is given by

$$a = \frac{\sigma_Y^2}{\sigma_X^2 + \sigma_Y^2}$$

In practice, it would not be convenient to calculate optimal combination for estimates of each variable. It is more convenient to calculate the optimal combination for a main variable, say unemployment, and apply that combination to all other variables. Let a and (1-a) be the optimal combination derived for a main variable, then weights of the record of a given individual i of the merged file of the Pilot LFS February 2016 and the LFS August 2016 would be given by

$$w_i = \begin{cases} a \times w_{1i} & if\_i \in Pilot \\ (1-a) \times w_{2i} & if\_i \in LFS \end{cases}$$

where the values w_{1i} are the weights of the sample individuals in the pilot survey and w_{2i} are the weights of the sample of the main LFS.

- **Questionnaire design**

The questionnaire of the Rwanda Labour Force Survey in its present form contains a total of 139 questions organized into 9 sections and a cover page, dealing with following topics:

A Household roster
B Education
C Identification of employed, time-related underemployed, unemployed and potential labour force
D Characteristics of main job/activity
E Characteristics of secondary job/activity
F Past employment
G Own-use production of goods and services
H Subsistence foodstuff production
I Housing and household assets

Not all questions are addressed to every household member. For children below 14 years of age, a maximum of 18 questions are asked. For older youngsters and adults 14 years of age and above, the number of questions ranges from 27 to 132 depending on their situation and activities during the reference period. The basic reference period is the last 7 days prior to the date of the interview. For certain questions, however, other reference periods are used. In each case, the relevant reference period is indicated in the text of the question.

The questionnaire was prepared both in Kinyarwanda and in English. The Kinyarwanda version was pre-tested in October 2015. The pre-test was conducted in selected urban and rural areas with the aim of assessing the integrity of the instrument, such as understanding of question wordings, duration of interviews, coding and data processing. The pre-test covered 35 households and 109 household members. The experience gained from the pre-test was used to finalize the questionnaire.

The final version of the questionnaire was accompanied with an extensive manual for interviewers, providing instructions on the role of interviewers, listing of household members, and procedures to be adopted for asking each question and recording the corresponding response.[20]

Experience gained from the Pilot LFS February 2016 has suggested further modifications on the LFS questionnaire for implementation in August 2016. Some of the issues are listed in the following table:

No.	Question	Comment
AA	Activities of children aged 3 to 13 years old	Limit section AA to children 5 to 13 years old. No responses were obtained for children 3-4 years old
B02	Educational attainment	Review of derived variable EDUC and if necessary revise categories, in particular, code 4 (Post-secondary)
B14	What happened three-months after … completed the course?	Review the effectiveness of the question and the relevance of the answer categories
C01	During the last 7 days, did … do any work for wage, salary, commissions, tips or any other pay, in cash or in kind, even if only for one hour?	A substantial number of persons for whom the response was positive were in fact engaged in a self-employment activity
C10	Did … any other paid job or business or performed any secondary activity to generate an income, even if only for one hour during the last 7?	Persons with multiple jobs but temporary absent from work (e.g. a teacher also running a business who is currently on maternity leave) would reply negatively to this question
C11 & C13	How many hours does … usually work per week? During the past 7 days, how many hours per day did … has actually worked?	A substantial number of respondents gave the same number of hours worked to both questions
C24	What was the main reason … did not try to find a paid job or start a business in the last 4 weeks?	The modalities need revision
C23 C25	Would … want to work if a paid job or business opportunity became available? If a paid job or business opportunity become available, could … have started work during the last 7 days or within the next two weeks?	Persons who do not want to work (C23 = No) and persons not available for work (C25=No) are directed to section F without identifying their main status as "studying", "family responsibility", "income recipient", etc.
D02	What do you think could be the minimum level of education to carry out the job … does?	Many respondents could not answer the question
D02B	Does … need additional training in his/her current occupation to increase the productivity?	Subjective question. Difficult to respond particularly when proxy response
D03A	What is the name of … 's workplace?	Answer category 2 (Household) should be restricted to (Domestic worker). Persons who work in their own

[20] NISR, *Rwanda Labour Force Survey, Interviewers Manual (RLFS, 2016)*, National Institute of Statistics of Rwanda, Kigali, December 2015.

		house and the workplace does not have a name should be recorded as 3 (No name)
D18	What is the net monthly earnings of … from his/her business or activity? (Note: Net monthly earnings should be gross income minus associated total expenditures. This should include payments to contributing family workers, as well as off-take by the individual and contributing family members.)	Respondents generally report their take-home pay. It corresponds essentially to gross monthly earnings. Most do not known their net monthly earnings.
D22	Including … , how many regular paid or unpaid workers worked at …'s place of work?	Some persons selling bananas in a market gave the total number of banana sellers in the market as reply

- **Field operations**

The field operations were conducted from 3rd February to 30th March 2016. They involved 15 interviewers and 4 supervisors organized in 3 teams composed of 5 interviewers and one supervisor each, under the technical director. The interviewers received a ten-day training in Kinyarwanda from the 24thJanuary to the 2nd February, two weeks prior to the field operations. Sufficient time was allocated for the interviewers to review the instructions contained in the Interviewers' Manual and to study their respective sample segments using the specialized maps and address lists of sample households selected for the survey.

Prior to household selection and interviewing, all households in the sample enumeration areas were listed in a special listing form. A separate manual was prepared for household listing, providing special instructions for segmentation of large clusters and quality control of the results.[21] Finally, procedures were developed for selecting sample households from the list as part of the field operations.[22]

- **Data processing**

Several questions of the questionnaire required textual responses. These were then coded into the corresponding national standard classifications. Three were concerned with education (highest level of educational attainment, major field of study in highest qualification attained, and subject of training). Others concerned occupation and branch of economic activity (at main and secondary job and past employment experience).

Following coding, responses of each questionnaire were edited for blanks, out-of-range values, and inconsistencies before data entry. Editing specifications on coverage and

[21] National Institute of Statistics of Rwanda, *Manual for Household Listing, Rwanda Pilot Labour Force Survey (RLFS-P 2016)*, NISR, Kigali, February 2016.
[22] 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.

demographic characteristics were based on the population and housing census (PHC4 2012). Other edit rules were developed for consistency checks on questions related to the measurement of the main labour force variables, including employment, unemployment, multiple jobholding, total hours usually worked at all jobs, total hours actually worked at all jobs, status in employment at main job, etc.

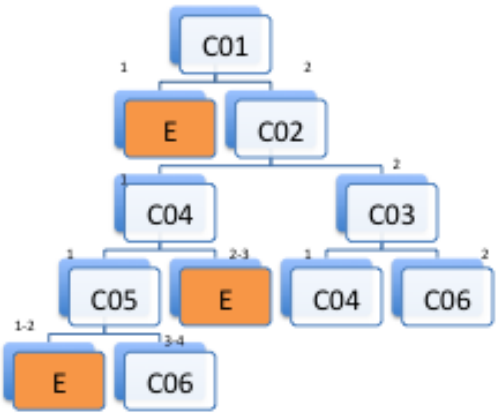
The resulting data file contained 2974 records, 1772 on persons of working age 16 years old and over, and 1202 on persons below 16 years of age. There were also 12 records corresponding to households who refused to participate in the survey or were not available for response after repeated visits.

As part of data processing, the data file was augmented by adding a field on sampling weights and a series of additional fields on derived variables constructed on the basis of the information on each record. The derived variables included employment (E), time-related underemployment (TRU), unemployment (U) and potential labour force (PLF), employment in informal sector (IS) and informal employment (IE) at main and secondary jobs, and monthly income from employment at main job (INC).

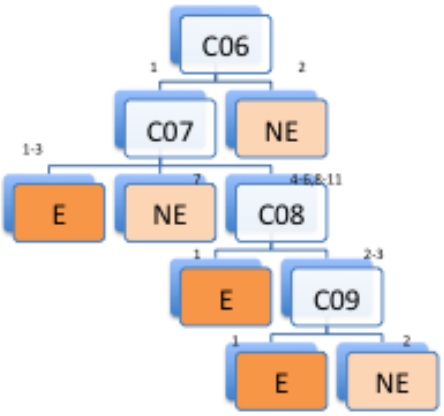
The construction of the derived variables is schematically shown in diagrams B1 to B5. The numbered elements of the diagrams refer to the question numbers and response categories of the LFS questionnaire. The end nodes of the diagrams refer to the derived variable categories, employed, time-related underemployed, unemployed, etc.

B.1 Derived variable: Employment (E)

Employed, at work

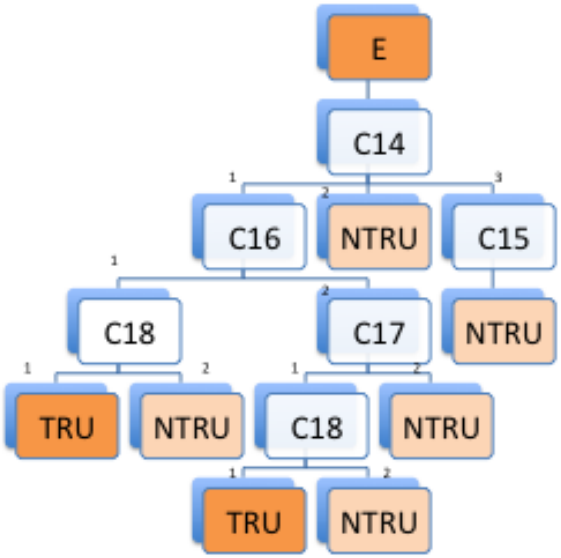


Employed, not at work



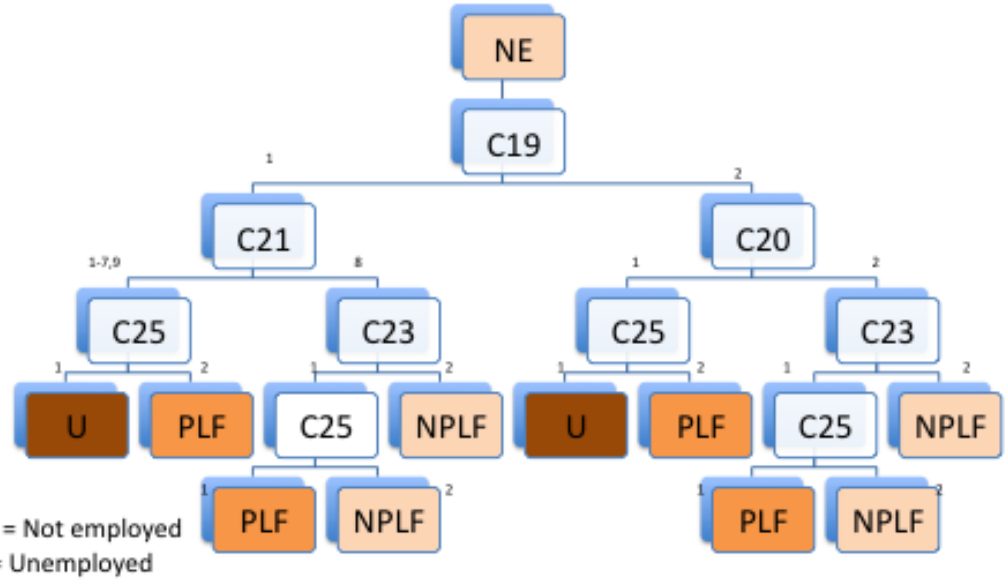
E = Employed
NE = Not employed

B.2 Derived variable: Time-related underemployment TRU)



E = Employed
TRU = Time-related underemployed
NTRU = Not time-related underemployed

B.3 Derived variables: Unemployment (U) and potential labour force (PLF)



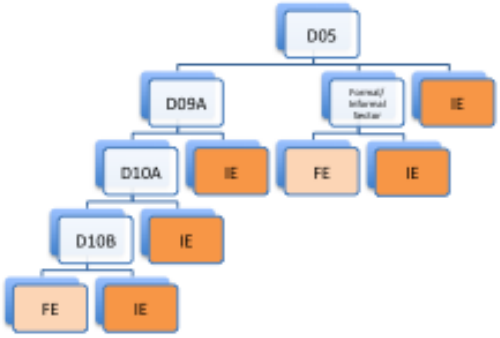
NE = Not employed
U = Unemployed
PLF = Potential labour force
NPLF = Not in potential labour force

B.4 Derived variables: Informal sector (IS) and informal employment (IE) at main job

Informal sector

IS = Informal sector
FS = Formal sector
X = Out-of-scope (Domestic workers engaged by households are excluded from the count of informal and formal sector)

Informal employment



IE = Informal employment
FE = Formal employment

B.5 Derived variable:
Monthly income from employment at current main job (INC)

Status in employment		Response	Monthly cash income from employment at main job		Response	Monthly in-kind income from employment at main job	
(1)	(2)	(3)	(4)		(5)	(6)	
Employee or Intern or Other	D05=1,2,7	D12=1 Amount	D12A x 1	if D13=1	D15=1 Amount	D15A x 1	if D16=1
			D12A x 26/12	if D13=2		D15A x 26/12	if D16=2
			D12A x 52/12	if D13=3		D15A x 52/12	if D16=3
			D12A x 52/2	if D13=4		D15A x 52/2	if D16=4
			D12A x 10	if D13=5		D15A x 10	if D16=5
		D12=8,9 Refusal, Don't know	(5,000+20,000)/2	if D17=1			
			(20,000+30,000)/	if D17=2			
			(30000 + 50000)/2	if D17=3			
			√(50000 x 100000)	if D17=4			
			100000 x 3	if D17=5			
Employer or Own-account worker or Member of producers' coperative	D05=3,4,5	D18 = Amount	D18A				
		D18 = Don't know	(5,000+20,000)/2	if D18B=1			
			(20,000+30,000)/	if D18B=2			
			(30000 + 50000)/2	if D18B=3			
			√(50000 x 100000)	if D18B=4			
			100000 x 3	if D18B=5			

Monthly income from employment at main job (INC) is then derived from the calculations of columns 4 and 6:

INC = Col 4 + Col 6 in the case of employees

INC = Col 4 in the case of employers, own-account workers and members of producers' cooperatives

Finally, the augmented data file with derived variables and sampling weights was used for producing the survey estimates specified in the tabulation programme of the survey as well as other analytical tables for the body of the report. The full tabulation programme of the survey envisages 82 tables. The statistical annex (Annex D) is however limited to 21 tables.

- **Data quality**

Like in all sample surveys, the results of the Pilot LFS February 2016 are subject to sampling and different forms of measurement errors. This section provides information on different sources of survey errors, namely, sampling errors, coverage errors, non-response errors, response errors and other errors such as coding and data entry errors.

- Sampling errors

Sampling errors arise due to the fact that the survey did not cover all elements of the population, but only a selected portion. The sampling error of an estimate is calculated on the basis of the difference between the estimate and the value that would have been obtained on the basis of a complete count of the population under otherwise identical conditions.

Information on sampling errors is used for interpreting the survey results. It provides an assessment of the precision of the estimates and on the degree of confidence that may be attached to them. In the same vein, it allows decision on the degree of detail with which the survey data may be meaningfully tabulated and analyzed. Information on sampling errors is also used for determining whether the survey estimates of change over time or the estimates of differences between two or more population subgroups are statistically significant. Finally, information on sampling errors may be used for future sample design. Rational decisions on the choice of sample size, sample allocation among strata, clustering and estimation procedures, can only be made on the basis of detail knowledge of their effect on the magnitude of sampling errors in the resulting statistics obtained from the survey.

The following table gives the sampling errors of the main labour force estimates obtained from the Pilot LFS February 2016.

B.6 Sampling errors of estimates of main labour force aggregates
Pilot LFS February 2016

Indicator	Estimate	Standard error	Relative standard error	Confidence interval	
				Lower	Upper
Population 16+ yrs	6,611,000	440,000	6.7%	5,749,000	7,473,000
Labour force	3,261,000	295,000	9.0%	2,683,000	3,839,000
Employment	2,831,000	269,000	9.5%	2,304,000	3,358,000
Unemployment	430,000	56,000	13.0%	320,000	540,000
Outside labour force	3,350,000	239,000	7.1%	2,882,000	3,818,000
Time-related underemployment	777,000	94,000	12.1%	593,000	961,000
Potential labour force	1,919,000	160,000	8.3%	1,605,000	2,233,000

As an illustration of the use of the table, consider the second row of the table on the labour force. The total labour force, 3,261,000 is estimated with a relative standard error of 9.0 percent. The true value at 95 percent confidence level lies within the interval 2,683,000

and 3,839,000. Similarly, it can be stated that the total number of unemployed persons, 430,000 is estimated with a relative standard error of 13.0 percent. And, the true value at 95 percent confidence level lies within the interval 320,000 and 540,000.

As expected the sampling errors of labour force estimates are relatively high. The relative standard error of the estimate of total number of employed persons is almost 10%, while that of the estimate of the total number of unemployed persons is 13.0%. The high relative standard errors are mainly due to the limited effective sample size of the pilot survey (708 sample households and 1772 sample persons in the target population 16 years old and over). The double pps sampling of the enumeration areas mentioned earlier also contributed to the high sampling errors by widening the deviation from a self-weighted design. The median sample weight is about 3122 with great variation around this value (min=275 and max=11822).

The next table gives the corresponding sampling errors for the main labour force indicators expressed in rates or percentages. For example the results indicate that the unemployment rate estimated at 13.0 percent has a standard error of 0.2 percentage points. This may be interpreted to mean that the true unemployment rate lies with 95 percent confidence within the interval, 12.8% to 13.6%.

B.7 Sampling errors of estimates of main labour force rates, ratios
Pilot LFS February 2016

Indicator	Estimate	Standard error	Confidence interval	
			Lower	Upper
Labour Force Participation Rate	49.3%	0.3	48.7%	49.9%
Employment-Population Ratio	42.8%	0.4	42.0%	43.6%
LU1 Unemployment rate	13.2%	0.2	12.8%	13.6%
LU2 Unemployment and TRU Rate	37.0%	0.2	36.6%	37.4%
LU3 Unemployment and PLF Rate	45.4%	0.2	45.0%	45.8%
LU4 Combined measure of labour underutilization	60.3%	0.2	59.9%	60.7%

As shown in table B.7, the sampling errors of estimates of rates and ratios are substantially lower than that of estimates of levels. The standard errors of the unemployment rate and other combined indicators of labour underutilization are about 0.2 percentage points, while those of the labour force participation rate and the employment-population ratio are about 0.3 and 0.4 percentage points, respectively.

It is not practical to compute and report sampling errors for every published statistics of a labour force survey. For this purpose, general variance estimates are typically calculated using the approximate relationship between the variance of an estimate and its size, expressed by $var(y)/y^2 = b + a/y$. Generalized variances have not been calculated for the pilot LFS because of the limited sample size of the survey, but it is envisaged to compute and presents generalized variances for the main LFS August 2016.

- Coverage errors

Probability sampling requires each element in the target population to have a known non-zero probability of being selected in the sample. This condition is violated if the target population is not fully represented in the sample frame or if the sample selection of units from the frame is not according to the procedures specified in the sample design. The violation of these conditions generates coverage errors.

Coverage errors may occur due to imperfect frame (under-coverage, over-coverage, or duplication of units) or to practical problems such as confusion in boundary of units or in rules of association between units of different types. Coverage errors may also occur at the stage of selection of individual persons in the sample household because of failure to identify some eligible persons, for example, lodgers, domestic workers or other non-family members of the household. It can even happen due to incorrect data on personal characteristics, for example, if the age of the person is incorrectly recorded as below the age set for measuring labour force characteristics (under-coverage error), or vice versa the age is incorrectly recorded as above the threshold age (over-coverage error).

A measure of coverage errors in the Pilot LFS February 2016 may be obtained by counting the number of sample addresses that were found vacant, demolished, out-of-scope (e.g., dwelling addresses turned to stores or workshops) or void of target households for other reasons (e.g., living quarters used as secondary housing units or for summer holidays). In total there were only 9 non-eligible sample addresses (1 Result code 2 "Refused", 1 Result code 3 "Enable to locate", 4 Result code 4 "Vacant", and 3 Result code 8 "Other non-response").

Another measure of coverage errors may be obtained by comparing the population estimates obtained from the survey with population projections based on demographic analysis of fertility and mortality rates. Table B.8 shows the estimates of total population and total number of households based on the Pilot LFS with corresponding demographic projections for 2015 and 2017.

B.8 Population estimates from Pilot LFS February 2016 compared with demographic projections

	Pilot LFS February 2016	Demographic projection		Difference from average 2015-17
		2015	2017	
Population	11,509,000	11,263,000	11,809,000	0.2%
Households	2,701,000	2,734,000	2,952,000	5.0%
Household size	4.3	4.1	4.0	0.2

Source: National Institute of Statistics of Rwanda, *Population Projections. Thematic report. Fourth Population and Housing Census, Rwanda, 2012*, NISR, Table 30.

The population estimate from the Pilot LFS is extremely close to the demographic projection. The percentage difference is about 0.2%. The percentage difference of the Pilot LFS estimate of the total number of households with the corresponding demographic projection is however more considerable, at around 5.0%. The Pilot LFS estimate of the number of households is likely to be more accurate than the demographic projection because it is based on observations obtained during the listing operations, while the demographic

projection is based on assumptions regarding the evolution of household formation and household size.

- Non-response errors

Non-response occurs due to failure to obtain the required information from the units selected in the sample (unit non-response) or to failure to obtain some items of information for the selected unit (item non-response). Unit non-response may occur due to incorrect address of the sample household, or inaccessibility of certain dwellings or refusal of the sample household to be interviewed, or because no one was at home when the interviewer contacted the household, or for other reasons.

Absence and refusal are considered as non-response while vacant demolished or out-of-scope housing units are considered as non-coverage. Based on the data in the table presented earlier, the non-response rate of the survey may be calculated:

$$Non-response-rate = \frac{3}{711} = 0.5\%$$

It is the number of non-responding households (3) relative to the total number of eligible households (711). The resulting non-response rate is only 0.5%.

It can be seen from Table B.9 that the non-response rates on the main employment items of the LFS questionnaire are very low, not exceeding one-third of one percent.

B.9 Non-response rate of selected items of questionnaire

Question no.	Item	Item non-response rate
D01	Occupation	0.28%
D03	Branch of economic activity	0.33%
D04	Sector of employment	0.28%
D05	Status in employment	0.31%
D23	Type of workplace	0.28%

Note: Calculated on basis of weighted data of Pilot LFS February 2016.

Similar calculations for other items such hours actually worked and hours usually worked as well as of work of the and past work experience of the unemployed and persons outside the labour force show also low non-response rates.

- Response errors

Response errors refer to errors originating at the data collection stage. In relation to an individual respondent, response errors may occur because the respondent was unwilling to divulge certain information or because the respondent did not know the answer to the question asked or did not fully understand the meaning of the question. Response errors can also occur due memory lapses, for example by forgetting to report an event, or incorrectly reporting the timing. Response errors may also occur because of errors made by the interviewer or by the instrument used for measurement. Interviewers may introduce errors because of haste and misreporting the responses, or because of misunderstanding of the

survey concepts and procedures, or preconceptions and subjective biases. The questionnaire itself may be faulty, with wrong question wordings and incorrect skipping patterns.

The measurement of response errors is one of the most difficult parts of quality assessment of survey data. It generally requires carefully designed re-interview programmes. In the absence of such data, the quality of survey responses may be assessed by comparing the survey results with corresponding information from more reliable external sources such as administrative sources, for example, reconciling the LFS estimate of employment with the corresponding estimate obtained from the Integrated Business Enterprise Survey.[23] More detailed assessment may be carried out by comparing the LFS estimates of employment in specific occupations such as primary and secondary school teachers, nurses, and civil servants with corresponding statistics from the line ministries. Due to the limited sample size, such as assessments were not carried out with the results of the Pilot LFS February 2016, but postponed for assessment of the main LFS in August 2016.

Other indicators of response errors may be obtained by measuring the degree of self-response against proxy-response, or by testing the internal consistency of certain sets of inter-related responses.

- Other errors

Other sources of errors in a survey include coding and editing errors, as well as errors in data entry and data processing. Here the occupation and industry coding of the Pilot LFS is evaluated. Table B.10 shows that the employed persons were coded in 127 distinct 4-digit occupation codes and 109 4-digit industry codes. The number of codes ending with the digit "9" was 3 for occupations (2.4%) and 12 for industry (11.0%). Codes ending with "9" indicate that the occupation or industry descriptions in the LFS questionnaire could not be precisely found in the classification system and had to be coded as "other", suggesting insufficient response in the LFS questionnaire.

B.10 Occupation and industry codes ending with "9"

	Occupation (ISCO-08)	Branch of economic activity (ISIC Rev 4)
4-digit codes	127	109
4-digit codes ending with "9"	3	12
%	2.4%	11.0%

Overall, the quality assessment of the results of the Pilot LFS shows relatively high sampling errors due to the limited sample size, but low coverage and non-response errors. A fuller assessment of response and coding errors should await the results of the main LFS in August 2016.

[23] National Institute of statistics of Rwanda, *Integrated Business Enterprise Survey*, NISR 2014.

Annex C: Statistical tables

LIST OF TABLES

Table 1. Summary labour force indicators, February 2016

	Total	Male	Female	Urban	Rural	Participated in Subsistence Agric.	Not Participated in Subsistance	Old definition
Population 16 years old and over	6610640	3115870	3494769	909649	5700990	4104156	2506484	6610640
Labour force	3261119	1809846	1451274	586418	2674702	1899550	1361569	5465725
- Employed	2830960	1577009	1253951	493307	2337653	1620421	1210539	5314695
- Unemployed	430159	232836	197323	93110	337049	279129	151030	151030
Outside labour force	3349520	1306025	2043495	323231	3026289	2204606	1144915	1144915
Labour underutilization	3125813	1364920	1760894	338401	2787413	2339471	786342	-
- Unemployed	430159	232836	197323	93110	337049	279129	151030	-
- Time-related underemployed	776539	363204	413335	70487	706052	573038	203501	-
- Potential labour force	1919116	768880	1150236	174803	1744312	1487304	431811	-
Labour force participation rate	49.3%	58.1%	41.5%	64.5%	46.9%	46.3%	54.3%	82.7%
Employment-to-population ratio	42.8%	50.6%	35.9%	54.2%	41.0%	39.5%	48.3%	80.4%
Time-related underemployment rate								
LU1 - Unemployment rate	13.2%	12.9%	13.6%	15.9%	12.6%	14.7%	11.1%	2.8%
LU2 - Combined rate of unemployment and time-related underemployment	37.0%	32.9%	42.1%	27.9%	39.0%	44.9%	26.0%	-
LU3 - Combined rate of unemployment and potential labour force	45.4%	38.8%	51.8%	35.2%	47.1%	52.2%	32.5%	-
LU4 - Composite measure of labour underutilization	60.3%	52.9%	67.7%	44.5%	63.1%	69.1%	43.8%	-
Youth unemployment rate (15-24 yrs)	15.1%	14.3%	15.9%	18.0%	14.4%	15.5%	14.5%	
Unemployment rate of young people (16-30 yrs)	15.9%	16.6%	15.1%	16.7%	15.7%	16.1%	15.6%	

Table 2: Population by sex, age group, and urban/rural area, February 2016

	Total	Male	Female	Urban	Rural	Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
Population	11509046	5410860	6098185	1490678	10018368	4245161	2813469
0-4 yrs	1540489	693057	847431	216169	1324319	0	0
5-9 yrs	1506163	706917	799246	197430	1308734	0	0
10-14 yrs	1625003	773447	851556	132893	1492110	79302	141938
15-19 yrs	1184694	552261	632433	152189	1032505	493309	691385
20-24 yrs	1076198	592215	483984	204204	871994	583048	493150
25-29 yrs	940182	454585	485597	157888	782294	583342	356840
30-34 yrs	843345	358415	484930	122404	720942	562511	280834
35- 39 yrs	520594	223629	296965	100145	420449	349650	170944
40-44 yrs	570584	292005	278579	67795	502789	391732	178852
50-54 yrs	296686	134833	161853	28152	268534	240784	55902
55-59 yrs							
60-64 yrs	262389	81686	180703	11864	250524	193161	69228
65-69 yrs	167665	90677	76988	6040	161625	129076	38590
70-74 yrs	114657	51197	63460	5222	109435	78510	36147
75+	200654	87506	113148	22338	178316	75591	125063

Table 4: Population 16 years old and over aged by education status and urban/rural area, February 2016

		Sex		Area of residence		Paricipated in subsistance	Not particpated in subsistence
Currentry studying	Total	Male	Female	Urban	Rural	agriculture	agriculture
Total	**6610640**	**3115870**	**3494769**	**909649**	**5700990**	**4104156**	**2506484**
Currently studying	700225	340020	360204	140296	559929	162714	537511
Not Currently studying	5910415	2775850	3134565	769353	5141062	3941442	1968973
Current level							
Primary education	133322	79497	53824	1401	131920	46197	87124
Lower secondary education	200972	66158	134814	24321	176651	58962	142010
Upper secondary education	205549	95627	109922	41049	164500	49707	155841
Post-secondary	4687	763	3924	763	3924	3924	763
Tertiary education		97975	57720	72762	82934	3924	151772

Table 3. Households by household size, sex of head of household, urban/rural area, February 2016

Household size	Total number of households	Head of household					
		Male	Female	Urban	Rural	Subsistence	Not subsistence
Total	2700754	2045154	655600	360798	2339955	1728978	971775
1	168603	90392	78211	54875	113728	48414	120189
2	394235	228806	165429	46208	348026	266490	127744
3	558818	404502	154316	61094	497725	372488	186330
4	478576	377593	100983	47550	431026	317927	160649
5	356123	298400	57723	54046	302077	220378	135745
6	336803	271785	65018	44335	292468	230747	106056
7	213397	211206	2192	23304	190093	126161	87236
8	138119	112056	26063	16879	121240	114435	23684
9	32991	31777	1214	2963	30028	23224	9768
10+	23088	18638	4450	9543	13545	8715	14373

Table 5: Population 16 years old and over by sex, level of educational attainment and urban/rural area, February 2016

		Sex		Area of residence		Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
	Total	Male	Female	Urban	Rural		
Total	**6610640**	**3115870**	**3494769**	**909649**	**5700990**	**4104156**	**2506484**
No education	2901186	1367743	1533444	237829	2663357	2044555	856631
Pre primary	105575	59893	45682	12501	93074	63569	42006
Primary	2408203	1068295	1339908	244561	2163642	1609514	798689
Lower Secondary	603066	277882	325184	137484	465582	261826	341241
Upper secondary	384365	209927	174438	155654	228711	95701	288664
Tertiary	208244	132131	76113	121620	86624	28991	179253

Table 6: Population 16years old and over with respective field of educatio by sex, urban/rural area, February 2016

		Sex		Area of residence		Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
	Total	Male	Female	Urban	Rural		
GENERAL PROGRAM	3501209	1615997	1885212	550200	2951009	2030610	1470599
EDUCATION	30389	19164	11225	8829	21560	8439	21950
HUMANITIES AND ARTS	2705	2152	553	2705	0	553	2152
SOCIAL SCIENCES,BUSINESS AND LAW	104559	66518	38041	65734	38825	9999	94560
SCIENCE	24041	14442	9599	13681	10360	0	24041
ENGINEERING,MANUFACTURING AND CONSTRUCTION	19768	8271	11497	15804	3964	0	19768
AGRICULTURE	4436	4436	0	4436	0	0	4436
HEALTH AND WELFARE	19233	15568	3665	7318	11915	9999	9233
SERVICES	3113	1580	1533	3113	0	0	3113
No DUCATION	2901186	1367743	1533444	237829	2663357	2044555	856631

Table 7: Population 16 years old and over in trade or training courses by sex, duration of training, and urban/rural area, February 2016

		Sex		Area of residence		Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
	Total	Male	Female	Urban	Rural		
Total	594920	346243	248678	147721	447200	304569	290352
Less than One month	4986	0	4986	848	4138	2222	2763
1-3 months	76888	36545	40343	24102	52786	29776	47112
3-6 Months	136115	80492	55622	23240	112875	80829	55286
One Year	155682	93491	62190	64188	91493	62280	93402
Two Years	63543	33960	29583	19941	43601	32956	30587
Three years or more	157707	101753	55954	15401	142306	96506	61201

Table 8: Population 16 years old and over who received trade and technical training outside formal education by sex, technical skills, and urban/rural area,

		Sex		Area of residence		Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
Technical skills learned	Total	Male	Female	Urban	Rural		
Total	594920	346243	248678	147721	447200	304569	290352
Carpentry	75434	75434	0	2939	72495	40409	35025
Automotive technology.	9153	9153	0	5188	3964	0	9153
Culinary arts	8939	2491	6449	7024	1915	8364	575
Domestic Electricity	4221	4221	0	4221	0	0	4221
Welding	12935	12935	0	3745	9191	3924	9012
Plumbing	276	276	0	276	0	0	276
Food processing	23870	12884	10986	11537	12332	4963	18907
Auto- Electricity	899	899	0	899	0	0	899
Automotive body repair	25766	25766	0	5822	19944	6147	19619
Computer maintenance	6449	0	6449	6449	0	0	6449
Engine mechanics	5547	5547	0	5547	0	0	5547
Tailoring	187726	33840	153886	28151	159575	121412	66313
Civil construction	4264	676	3588	4264	0	0	4264
Food & Beverage services	16099	993	15106	3959	12141	4325	11774
Front office	1226	0	1226	1226	0	0	1226
Hairdressing	21077	2002	19075	19850	1227	1674	19404
Biding and Jewelries	1915	0	1915	0	1915	0	1915
Screan printing	575	575	0	575	0	0	575
Crochet embroidery	27200	0	27200	0	27200	27200	0
Motor vehicle engine mechanics	29418	29418	0	23871	5547	9222	20196
Film making	11053	10478	575	1054	9999	9999	1054

Table 9: Population 16 years old and over who received trade and technical training outside formal education by sex, place of the training, main sponsor, Outcome of the Traning and urban/rural area, February 2016

		Sex		Area of residence		Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
Place of Technical skills	**Total**	**Male**	**Female**	**Urban**	**Rural**		
Total	**595975**	**346919**	**249056**	**148775**	**447200**	**304569**	**291406**
Vocational School Course	308322	162280	146042	72729	235593	159501	148821
Apprenticeship or on job Training	112151	93426	18725	31194	80958	47204	64947
Learned from a friend or Family	131974	84698	47277	39056	92918	66878	65096
NGO	34283	1409	32874	5520	28763	28763	5520
Community organization	2499	276	2222	276	2222	2222	276
Apprenticeship or on job Training	6746	4830	1915	0	6746	0	6746
main sponsor							
Government	54830	11498	43332	4305	50524	35043	19787
Employer	19652	10142	9510	8106	11546	5267	14385
Self-financing	396408	260588	135820	96118	300290	203953	192454
Private institutions/agencies/persons	3548	775	2773	775	2773	0	3548
Non-profit organization/charity	89197	38570	50627	36020	53177	44427	44770
Other(specify)	25349	18354	6994	848	24501	11491	13858
Thing happened after completion of the training							
Nothing	115251	62595	52656	27085	88165	59530	55721
I was able to get a job	151120	78464	72656	57528	93592	70745	80375
My salary increased	12614	12614	0	733	11882	0	12614
I was promoted at work	899	899	0	899	0	0	899
My job skills have improved	40809	33498	7312	4575	36235	26390	14419
Got internship/traineeship with a company	13805	4199	9606	2066	11739	4199	9606
Able to Create business	29576	20731	8845	3030	26546	16547	13029

Table 10. Population 16 years old and over by labour force status, sex, age group, and urban/rural area, February 2016

	Total	Labour force status				Labour force participation rate	Employment-population ratio	Unemployment rate
		Labour force	Employed	Unemployed	Outside labour force			
Population 16 yrs and over	6610640	3261119	2830960	430159	3349520	49.3%	42.8%	13.2%
15 yrs	226751	18852	10879	7973	207899	8.3%	4.8%	42.3%
16-24 yrs	2034142	876466	749635	126831	1157675	43.1%	36.9%	14.5%
25-34 yrs	1783527	1131686	963525	168162	651841	63.5%	54.0%	14.9%
35-54 yrs	1812358	1034843	901593	133250	777515	57.1%	49.7%	12.9%
55-64 yrs	552383	189627	187711	1915	362756	34.3%	34.0%	1.0%
65-74 yrs	227575	15560	15560	0	212015	6.8%	6.8%	0.0%
75+ yrs	200654	12936	12936	0	187718	6.4%	6.4%	0.0%
Population 16 yrs and over (Male)	2092963	1330205	1159777	170428	762758	63.6%	55.4%	12.8%
15 yrs	121568	11095	3122	7973	110474	9.1%	2.6%	71.9%
25-34 yrs	813001	602321	498632	103689	210679	74.1%	61.3%	17.2%
35-54 yrs	853352	613731	546993	66739	239621	71.9%	64.1%	10.9%
55-64 yrs	234331	101359	101359	0	132972	43.3%	43.3%	0.0%
65-74 yrs	104773	6514	6514	0	98259	6.2%	6.2%	0.0%
75+ yrs	87506	6279	6279	0	81227	7.2%	7.2%	0.0%
Population 16 yrs and over (Female)	3494769	1451274	1253951	197323	2043495	41.5%	35.9%	13.6%
15 yrs	105182	7757	7757	0	97425	7.4%	7.4%	0.0%
16-24 yrs	1011234	396825	332402	64423	614409	39.2%	32.9%	16.2%
25-34 yrs	970527	529365	464893	64472	441162	54.5%	47.9%	12.2%
35-54 yrs	959006	421112	354601	66512	537894	43.9%	37.0%	15.8%
55-64 yrs	318052	88268	86352	1915	229784	27.8%	27.2%	2.2%
65-74 yrs	122802	9046	9046	0	113756	7.4%	7.4%	0.0%
75+ yrs	113148	6657	6657	0	106491	5.9%	5.9%	0.0%

Table 10. Population 16 years old and over by labour force status, sex, age group, and urban/rural area, February 2016

	Total	Labour force status				Labour force participation rate	Employment-population ratio	Unemployment rate
		Labour force	Employed	Unemployed	Outside labour force			
Population 16 yrs and over (Urban)	909649	586418	493307	93110	323231	64.5%	54.2%	15.9%
15 yrs	34536	1304	1304	0	33232	3.8%	3.8%	0.0%
16-24 yrs	321857	169929	139125	30804	151928	52.8%	43.2%	18.1%
25-34 yrs	280291	201850	160727	41123	78441	72.0%	57.3%	20.4%
35-54 yrs	241301	187963	166780	21183	53338	77.9%	69.1%	11.3%
55-64 yrs	35545	24824	24824	0	10721	69.8%	69.8%	0.0%
65-74 yrs	8317	1472	1472	0	6844	17.7%	17.7%	0.0%
75+ yrs	22338	378	378	0	21960	1.7%	1.7%	0.0%
Population 16 yrs and over	5700990	2674702	2337653	337049	3026289	46.9%	41.0%	12.6%
15 yrs	192214	17548	9574	7973	174667	9.1%	5.0%	45.4%
16-24 yrs	1712285	706537	610510	96027	1005748	41.3%	35.7%	13.6%
25-34 yrs	1503236	929836	802798	127039	573400	61.9%	53.4%	13.7%
35-54 yrs	1571057	846880	734813	112067	724177	53.9%	46.8%	13.2%
55-64 yrs	516838	164802	162887	1915	352036	31.9%	31.5%	1.2%
65-74 yrs	219258	14088	14088	0	205170	6.4%	6.4%	0.0%
75+ yrs	178316	12558	12558	0	165758	7.0%	7.0%	0.0%

Table 11. Population 16 years old and over by labour force status, sex, educational attainment, and urban/rural area, February 2016

	Total	Labour force status				Labour force participation rate	Employment-population ratio	Unemployment rate
		Labour force	Employed	Unemployed	Outside labour force			
Population 16 yrs and over	6610640	3261119	2830960	430159	3349520	49.3%	42.8%	13.2%
None	2901186	1300104	1169959	130145	1601082	44.8%	40.3%	10.0%
Pre-primary	105575	67435	62143	5293	38140	63.9%	58.9%	7.8%
Primary education	2408203	1258821	1065641	193180	1149382	52.3%	44.3%	15.3%
Lower secondary education	603066	250543	226819	23724	352523	41.5%	37.6%	9.5%
Upper secondary education	384365	228432	180942	47490	155933	59.4%	47.1%	20.8%
Tertiary education	208244	155784	125456	30327	52460	74.8%	60.2%	19.5%

Table 12. Population 16 years old and over by labour force status, sex, marital status, and urban/rural area, February 2016

	Total	Labour force status				Labour force participation rate	Employment-population ratio	Unemployment rate
		Labour force	Employed	Unemployed	Outside labour force			
Population 16 yrs and over								
Married monogamously	2758776	1433930	1263522	170409	1324845	52.0%	45.8%	11.9%
Married polygamous	77444	30568	22735	7832	46876	39.5%	29.4%	25.6%
Living together	991466	598209	479791	118418	393256	60.3%	48.4%	19.8%
Divorced	28108	21829	16999	4830	6279	77.7%	60.5%	22.1%
Separated	95027	92337	92337	0	2690	97.2%	97.2%	0.0%
Single	2144385	969191	842437	126754	1175193	45.2%	39.3%	13.1%
Widow/Widower	515435	115055	113140	1915	400380	22.3%	22.0%	1.7%

Table 13. Employed population by sex, age group, and urban/rural area, February 2016

	Total	Male	Female	Urban	Rural	Participated in Subsistence Agric.	Not Participated in Subsistance Agric.
Employed population 16+	**2830960**	**1577009**	**1253951**	**493307**	**2337653**	**1620421**	**1210539**
15 yrs	141311	170970	-29659	55660	85652	100761	40551
16-19 yrs	304162	123131	181030	41733	262429	148833	155328
20-24 yrs	445473	294101	151372	97393	348081	249594	195879
25-29 yrs	462891	246782	216110	93438	369453	264902	197989
30-34 yrs	500633	251850	248783	67289	433344	297215	203419
35- 39 yrs	269257	141779	127479	81767	187490	139608	129649
40-44 yrs	286528	182318	104210	47953	238575	159386	127142
45-49 yrs	185665	113068	72597	24947	160718	86913	98752
50-54 yrs	120122	80442	39680	7086	113036	92785	27337
55-59 yrs	136267	81981	54286	22001	114266	105701	30565
60-64 yrs	65838	31575	34263	6439	59399	39096	26742
65-69 yrs	32656	23224	9432	2406	30251	15777	16880
70-74 yrs							
75+	12936	6279	6657	378	12558	12558	378

Table 14. Employed population by sex, occupation group, and urban/rural area, February 2016

	Total	Male	Female	Urban	Rural	Participated in Subsistence Agric.	Not Participated in Subsistance Agric.
Employed population	**2830960**	**1577009**	**1253951**	**493307**	**2337653**	**1620421**	**1210539**
Managers	44104	30051	14053	23151	20953	0	44104
Professionals	80283	51013	29271	35865	44419	20552	59732
Technicians and associate professions	66078	60342	5736	20821	45257	26447	39631
Clerical support workers	26665	10447	16218	6687	19978	3735	22929
Service and sales workers	462624	236430	226195	134297	328327	182469	280156
Skilled agricultural, forestry and fishery workers	390076	197725	192351	1981	388095	373555	16521
Craft and related trades workers	328230	285798	42432	79603	248627	121433	206797
Plant and machine operators, and assemblers	51555	51555	0	38937	12618	0	51555
Elementary occupations	1357063	629367	727696	141522	1215542	892231	464832
Armed forces occupations	24282	24282	0	10444	13839	0	24282

Table 15. Employed population by sex, current education attendance, and urban/rural area, February 2016

	Total	Male	Female	Urban	Rural	Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
Employed population	2830960	1577009	1253951	493307	2337653	1620421	1210539
Not currently studying	2757340	1534149	1223191	476608	2280732	1601668	1155671
Currently studying	73621	42860	30761	16700	56921	18753	54868
Blank	0	0	0	0	0	0	0
Primary education	20359	10360	9999	0	20359	9999	10360
Lower secondary education	0	0	0	0	0	0	0
Upper secondary education	20700	4830	15870	0	20700	4830	15870
Post-secondary	0	0	0	0	0	0	0
Tertiary education	32561	27670	4891	16700	15861	3924	28637

Table 16. Employed population by sex, educational attainment, and urban/rural area, February 2016

	Total	Male	Female	Urban	Rural	Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
Employed population	2830960	1577009	1253951	493307	2337653	1620421	1210539
None	1169959	642344	527615	129780	1040180	740321	429639
Pre-primary	62143	45787	16356	10898	51245	42450	19692
Primary education	1065641	565563	500078	153435	912206	667230	398411
Lower secondary education	226819	126957	99862	57209	169610	107292	119527
Upper secondary education	180942	103379	77563	70788	110153	43130	137811
Tertiary education	125456	92979	32477	71198	54258	19998	105458

Table 17. Employed population by sex, occupation group and level of educational attainment, February 2016

	Total	None	Pre-primary	Primary education	Lower secondary education	Upper secondary education	Tertiary education
Employed population	2,830,960	1,169,959	62,143	1,065,641	226,819	180,942	125,456
Legislators, Managers and Senior Officials	44,104	-	-	-	-	14,281	29,823
Professionals	80,283	-	-	3,588	-	42,559	34,137
Technicians and Associate Professionals	66,078	6,449	-	11,411	-	18,625	29,593
Clerical Support Workers	26,665	1,346	-	-	537	19,410	5,371
Service and Sales Workers	462,624	129,924	8,575	201,396	55,109	51,209	16,411
Skilled Agricultural, Forestry and Fishery Workers	390,076	146,403	14,082	179,576	45,936	4,078	-
Craft and Related Trades Workers	328,230	129,563	18,407	125,089	27,122	20,746	7,303
Plant and Machine Operators and Assemblers	51,555	16,097	3,588	24,733	4,540	2,045	553
Elementary Occupations	1,357,063	740,177	17,490	506,010	85,972	7,416	-
Armed forced occupations	24,282	-	-	13,839	7,603	575	2,266
Employed population (Male)	1,546,958	642,344	45,787	565,563	126,957	89,098	77,210
Legislators, Managers and Senior Officials							
Professionals	51,013	-	-	3,588	-	24,313	23,112
Technicians and Associate Professionals	60,342	6,449	-	11,411	-	14,199	28,283
Clerical Support Workers	10,447	1,346	-	-	537	4,594	3,969
Service and Sales Workers	236,430	67,756	-	135,399	7,508	14,043	11,723
Skilled Agricultural, Forestry and Fishery Workers	197,725	94,778	14,082	51,911	34,180	2,773	-
Craft and Related Trades Workers	285,798	106,543	17,928	112,605	20,673	20,746	7,303
Plant and Machine Operators and Assemblers	51,555	16,097	3,588	24,733	4,540	2,045	553
Elementary Occupations	629,367	349,374	10,188	212,078	51,915	5,811	-
Security organs occupations	24,282	-	-	13,839	7,603	575	2,266
Employed population (Female)	1,061,600	527,615	16,356	500,078	99,862	77,563	32,477
Legislators, Managers and Senior Officials	14,053	-	-	-	-	-	14,053
Professionals	29,271	-	-	-	-	18,246	11,025
Technicians and Associate Professionals	5,736	-	-	-	-	4,426	1,310
Clerical Support Workers	16,218	-	-	-	-	14,816	1,401
Service and Sales Workers	226,195	62,168	8,575	65,996	47,601	37,166	4,688
Skilled Agricultural, Forestry and Fishery Workers		51,625	-	127,665	11,756	1,304	-
Craft and Related Trades Workers	42,432	23,020	479	12,485	6,449	-	-
Plant and Machine Operators and Assemblers	-	-	-	-	-	-	-
Elementary Occupations	727,696	390,803	7,301	293,932	34,056	1,604	-

Table 18. Employed population by sex, branch of economic activity, and urban/rural area, February 2016

	Total	Male	Female	Urban	Rural	Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
Employed population	2830960	1577009	1253951	493307	2337653	1620421	1210539
Agriculture, forestry and fishing	1323652	607524	716128	25653	1297999	1122190	201462
Mining and quarrying	79657	73622	6035	7885	71773	41996	37661
Manufacturing	126886	96725	30161	37610	89276	61974	64912
Electricity, gas, steam and air conditioning supply	10471	4436	6035	4436	6035	0	10471
Water supply, sewerage and waste management	378	378	0	378	0	0	378
Construction	211884	184838	27046	59630	152254	81515	130369
Wholesale, retail trade, repair of motor vehicles, motorcylces	399017	214105	184913	99201	299817	180420	218598
Transportation and storage	80306	72332	7973	23855	56450	14120	66186
Accommodation and food service activities	48264	19838	28425	15122	33142	10485	37779
Information and communication	4734	3311	1423	1960	2773	0	4734
Financial and insurance activities	10992	5165	5826	10992	0	0	10992
Real estate activities							
Professional, scientific and technical activities	17602	17223	378	7602	9999	9999	7602
Administrative and support service activities	61223	43471	17752	30401	30822	18670	42553
Public administration and defence	59469	47467	12002	20023	39446	0	59469
Education	66979	53463	13516	25933	41046	22467	44512
Human health and social work activities	83393	38807	44586	12398	70995	24828	58565
Arts, entertainment and recreation	2491	575	1915	575	1915	0	2491
Other service activities	78732	41139	37593	18949	59784	31757	46975
Activities of households as employers	164453	52209	112244	90327	74126	0	164453
Activities of extraterritorial organizations and bodies	378	378	0	378	0	0	378

Table 19. Employed population by sex, branch of economic activity and level of educational attainment, February 2016

	Total	None	Pre-primary	Primary education	Lower secondary education	Upper secondary education	Tertiary education
Employed population	2830960	1169959	62143	1065641	226819	180942	125456
Agriculture, forestry and fishing	1323652	684070	28610	526989	75982	8001	0
Mining and quarrying	79657	47889	9999	9516	5267	6986	0
Manufacturing	126886	45180	4444	50891	17819	8552	0
Electricity, gas, steam and air conditioning supply	10471	0	3588	6035	0	0	848
Water supply, sewerage and waste management	378	0	0	0	0	0	378
Construction	211884	83784	3964	78266	18186	17949	9734
Wholesale, retail trade, repair of motor vehicles, motorcylces	399017	123384	8575	176353	42093	38931	9681
Transportation and storage	80306	22620	0	43901	10830	2402	553
Accommodation and food service activities	48264	23197	0	10457	13166	1443	0
Information and communication	4734	0	0	0	0	3621	1112
Real estate activities	0	0	0	0	0	0	0
Professional, scientific and technical activities	17602	0	0	0	0	9999	7602
Administrative and support service activities							
Public administration and defence	59469	0	0	13839	7603	2578	35449
Education	66979	3244	1328	1016	0	34078	27313
Human health and social work activities	83393	16804	0	15308	3122	30967	17192
Arts, entertainment and recreation	2491	1915	0	0	575	0	0
Other service activities	78732	32991	0	29193	14330	1861	357
Activities of households as employers	164453	67938	1155	76011	17367	1982	0
Activities of extraterritorial organizations and bodies	378	0	0	0	0	0	378

Table 19. Employed population by sex, branch of economic activity and level of educational attainment, February 2016

	Total	None	Pre-primary	Primary education	Lower secondary education	Upper secondary education	Tertiary education
Employed population (Male)	1577009	642344	45787	565563	126957	103379	92979
Agriculture, forestry and fishing	607524	329365	22464	196654	52344	6697	0
Mining and quarrying	73622	41854	9999	9516	5267	6986	0
Manufacturing	96725	28958	3964	47001	11371	5431	0
Electricity, gas, steam and air conditioning supply	4436	0	3588	0	0	0	848
Water supply, sewerage and waste management	378	0	0	0	0	0	378
Construction	184838	74864	3964	61890	17288	17673	9159
Wholesale, retail trade, repair of motor vehicles, motorcylces		58231	0	127811	10683	11635	5744
Transportation and storage	72332	22620	0	35928	10830	2402	553
Accommodation and food service activities	19838	15444	0	357	3423	614	0
Information and communication	3311	0	0	0	0	2773	537
Financial and insurance activities	5165	733	0	775	0	537	3120
Real estate activities	0	0	0	0	0	0	0
Professional, scientific and technical activities	17223	0	0	0	0	9999	7224
Administrative and support service activities	43471	14906	479	16244	479	4067	7296
Public administration and defence	47467	0	0	13839	7603	575	25450
Education	53463	1915	1328	537	0	30384	19298
Human health and social work activities	38807	9999	0	10478	3122	2574	12635
Arts, entertainment and recreation	575	0	0	0	575	0	0
Other service activities	41139	24384	0	15089	276	1032	357
Activities of households as employers	52209	19070	0	29444	3695	0	0
Activities of extraterritorial organizations and bodies	378	0	0	0	0	0	378

Table 19. Employed population by sex, branch of economic activity and level of educational attainment, February 2016

	Total	None	Pre-primary	Primary education	Lower secondary education	Upper secondary education	Tertiary education
Employed population (Female)	1253951	527615	16356	500078	99862	77563	32477
Agriculture, forestry and fishing	716128	354705	6147	330335	23638	1304	0
Mining and quarrying	6035	6035	0	0	0	0	0
Manufacturing	30161	16221	479	3890	6449	3122	0
Electricity, gas, steam and air conditioning supply	6035	0	0	6035	0	0	0
Water supply, sewerage and waste management	0	0	0	0	0	0	0
Construction	27046	8920	0	16376	899	276	575
Wholesale, retail trade, repair of motor vehicles, motorcylces	184913	65153	8575	48542	31409	27296	3937
Transportation and storage	7973	0	0	7973	0	0	0
Accommodation and food service activities	28425	7753	0	10100	9743	829	0
Information and communication	1423	0	0	0	0	848	575
Financial and insurance activities	5826	0	0	848	0	537	4441
Real estate activities	0	0	0	0	0	0	0
Professional, scientific and technical activities	378	0	0	0	0	0	378
Administrative and support service activities	17752	1304	0	9999	0	6449	0
Public administration and defence	12002	0	0	0	0	2002	9999
Education	13516	1328	0	479	0	3694	8014
Human health and social work activities	44586	6805	0	4830	0	28393	4557
Arts, entertainment and recreation	1915	1915	0	0	0	0	0
Other service activities	37593	8607	0	14104	14053	829	0
Activities of households as employers	112244	48868	1155	46567	13671	1982	0
Activities of extraterritorial organizations and bodies	0	0	0	0	0	0	0

Table 20. Employed population by sex, status in employment, and urban/rural area, February 2016

	Total	Sex		Area of Residence		Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
		Male	Female	Urban	Rural		
Employed population	2830960	1577009	1253951	493307	2337653	1620421	1210539
Employee,Paid apprentice/intern	1920580	1045844	874736	353223	1567357	1037515	883065
Employer	48578	30091	18488	9428	39150	20033	28545
Own-account worker	731186	452425	278761	118413	612773	495328	235858
Member of cooperative	28714	23884	4830	0	28714	12678	16036
Contributing family worker	87411	15106	72306	12244	75168	50038	37374
Other	14491	9661	4830	0	14491	4830	9661

Table 21: Youth Population by sex, and residential area,February 2016

			Sex		Area of residence		Paricipated in subsistance agriculture	Not particpated in subsistence agriculture
		Total	Male	Female	Urban	Rural		
Rwanda	**Total**	**6610640**	**3115870**	**3494769**	**909649**	**5700990**	**4104156**	**2506484**
Employed	16 - 30	1334411	708221	626190	246726	1087685	760062	574350
	30+	1496549	868788	627761	246581	1249968	860360	636190
Unemployed	16 - 30	252056	141058	110998	49532	202523	145662	106394
	30+	178103	91778	86325	43578	134525	133467	44637
Outside Labour Force	16 - 30	1549743	681302	868441	202073	1347670	823967	725776
	30+	1799777	624723	1175054	121158	1678619	1380638	419139

Table 22. Formal and informal employment by sex, branch of economic activity, February 2016

	Both sexes			Male		Female	
	Total	Informal	Formal	Informal	Formal	Informal	Formal
Employed population	2830960	2340033	490928	1239603	337406	1100429	153522
Agriculture, forestry and fishing	1323652	1306733	16920	590605	16920	716128	0
Mining and quarrying	79657	64826	14832	58791	14832	6035	0
Manufacturing	126886	104555	22331	76980	19745	27574	2586
Electricity, gas, steam and air conditioning supply	10471	6035	4436	0	4436	6035	0
Water supply, sewerage and waste management	378	0	378	0	378	0	0
Construction	211884	204437	7447	178243	6596	26195	851
Wholesale, retail trade, repair of motor vehicles, motorcylces	399017	250842	148176	128553	85552	122288	62624
Transportation and storage	80306	54047	26258	46074	26258	7973	0
Accommodation and food service activities	48264	42948	5316	19225	614	23723	4702
Information and communication	4734	575	4159	0	3311	575	848
Financial and insurance activities	10992	3430	7562	2045	3120	1385	4441
Real estate activities	0	0	0	0	0	0	0
Professional, scientific and technical activities							
Administrative and support service activities	61223	38507	22716	27204	16268	11303	6449
Public administration and defence	59469	0	59469	0	47467	0	12002
Education	66979	6452	60527	3797	49666	2655	10861
Human health and social work activities	83393	32537	50856	25179	13628	7358	37228
Arts, entertainment and recreation	2491	2491	0	575	0	1915	0
Other service activities	78732	47240	31492	20199	20940	27041	10552
Activities of households as employers	164453	163900	553	51656	553	112244	0
Activities of extraterritorial organizations and bodies	378	0	378	0	378	0	0

Table 23. Average number of hours usually worked per week at main job by sex, branch of economic activity, urban/rural area February 2016

	Rwanda			Urban		Rural	
	Total	Male	Female	Male	Female	Male	Female
Employed population	40.0	43.1	36.1	52.2	52.0	41.0	32.2
Agriculture, forestry and fishing	30.3	32.4	28.6	45.8	32.6	32.1	28.5
Mining and quarrying	51.8	55.8	4.0	53.5		56.0	4.0
Manufacturing	41.7	47.3	23.6	57.1	18.8	43.6	26.3
Electricity, gas, steam and air conditioning supply	47.4	22.1	66.0	22.1			66.0
Water supply, sewerage and waste management	50.0	50.0		50.0			
Construction	38.8	38.5	40.6	43.4	41.6	36.8	39.8
Wholesale, retail trade, repair of motor vehicles, motorcylces	39.6	45.4	32.4	56.1	49.9	42.5	24.4
Transportation and storage	45.2	48.6	14.0	57.9		44.1	14.0
Accommodation and food service activities	58.3	65.0	53.6	84.2	26.5	62.6	76.1
Information and communication	51.9	46.7	64.0	40.0	64.0	48.0	
Financial and insurance activities	53.7	55.1	52.4	55.1	52.4		
Real estate activities							
Professional, scientific and technical activities	53.7	54.0	40.0	45.7	40.0	60.0	
Administrative and support service activities	56.2	62.5	40.6	49.4	84.0	76.7	7.0
Public administration and defence	55.4	56.9	49.4	67.2	46.3	50.6	50.0
Education	48.1	49.7	42.1	42.1	42.6	52.7	40.0
Human health and social work activities	48.7	49.1	48.4	42.5	52.7	50.3	47.6
Arts, entertainment and recreation	12.3	30.0	7.0	30.0			7.0
Other service activities	38.7	36.5	41.2	47.1	50.3	34.4	36.9
Activities of households as employers	69.2	67.2	70.2	60.2	66.2	71.5	76.8
Activities of extraterritorial organizations and bodies	68.0	68.0		68.0			

Table 24. Youth population 16–30 years old by sex, level of educational attainment, labour force status and urban/rural area, February 2016

	Total	Labour force status				Labour force participation rate	Employment-population ratio	Unemployment rate
		Labour force	Employed	Unemployed	Outside labour force			
Youth population 16-30 yrs	3136210	1586467	1334411	252056	1549743	50.6%	42.5%	15.9%
1. None	1008302	567201	499367	67834	441100	100.2%	88.2%	12.0%
2. Pre-primary	37510	28377	24413	3964	9133	75.7%	65.1%	14.0%
3. Primary education	1238742	623039	514455	108584	615703	50.3%	41.5%	17.4%
4. Lower secondary education	504116	185525	166710	18815	318590	36.8%	33.1%	10.1%
5. Upper secondary education	263049	136948	100869	36078	126102	52.1%	38.3%	26.3%
6. Tertiary education	84491	45376	28596	16780	39114	53.7%	33.8%	37.0%
Youth population 16-30 yrs (Male)	1025625	534308	457269	77039	491318	52.1%	44.6%	14.4%
1. None	566147	307775	265927	41848	258373	54.4%	47.0%	13.6%
2. Pre-primary	22570	19859	15895	3964	2711	88.0%	70.4%	20.0%
3. Primary education								
4. Lower secondary education	243215	108200	97827	10373	135015	44.5%	40.2%	9.6%
5. Upper secondary education	142137	69176	54835	14341	72961	48.7%	38.6%	20.7%
6. Tertiary education	51556	29298	22786	6512	22258	56.8%	44.2%	22.2%
Youth population 16-30 yrs (Female	1605629	737187	626190	110998	868441	45.9%	39.0%	15.1%
1. None	442154	259426	233440	25986	182728	58.7%	52.8%	10.0%
2. Pre-primary	14940	8518	8518	0	6422	57.0%	57.0%	0.0%
3. Primary education	733786	308067	263503	44564	425719	42.0%	35.9%	14.5%
4. Lower secondary education	260901	77326	68884	8442	183575	29.6%	26.4%	10.9%
5. Upper secondary education	120912	67772	46035	21737	53140	56.1%	38.1%	32.1%
6. Tertiary education	32935	16078	5811	10268	16856	48.8%	17.6%	63.9%

Table 24. Youth population 16–30 years old by sex, level of educational attainment, labour force status and urban/rural area, February 2016

Youth population 16-30 yrs (Urban)	498332	296258	246726	49532	202073	59.5%	49.5%	16.7%
1. None	105318	78119	72450	5669	27199	74.2%	68.8%	7.3%
2. Pre-primary	5894	5619	5619	0	275	95.3%	95.3%	0.0%
3. Primary education	133079	81369	73651	7717	51710	61.1%	55.3%	9.5%
4. Lower secondary education	106439	41858	38734	3125	64581	39.3%	36.4%	7.5%
5. Upper secondary education	99884	58242	37675	20567	41642	58.3%	37.7%	35.3%
6. Tertiary education	47719	31052	18597	12455	16667	65.1%	39.0%	40.1%
Youth population 16-30 yrs (Rural)	2637878	1290208	1087685	202523	1347670	48.9%	41.2%	15.7%
1. None	902984	489082	426917	62165	413901	54.2%	47.3%	12.7%
2. Pre-primary	31616	22759	18794	3964	8858	72.0%	59.4%	17.4%
3. Primary education	1105664	541670	440804	100866	563994	49.0%	39.9%	18.6%
4. Lower secondary education	397677	143667	127977	15690	254010	36.1%	32.2%	10.9%
5. Upper secondary education	163166	78705	63194	15511	84460	48.2%	38.7%	19.7%
6. Tertiary education	36772	14324	9999	4325	22447	39.0%	27.2%	30.2%

Table 25. Average time spent in own-use production work by sex, type of own-use production and urban/rural area, February 2016

	Rwanda			Urban		Rural	
	Total	Male	Female	Male	Female	Male	Female
Total own-use production	25.6	17.7	31.7	8.2	21.8	18.7	33.0
Collecting firewood for the household including travel time	5.6	4.8	6.1	4.4	4.8	4.8	6.1
Fetching water for the household, including travel time	5.1	5.1	5.1	3.9	4.3	5.2	5.1
Constructing your dwelling, making major repairs on it, farm buildings, private roads, or wells	5.8	6.6	4.3	3.0	3.7	6.7	4.3
Manufacturing household goods for own or family use	4.9	2.2	5.6	3.4	3.4	2.0	5.7
Doing household chores including shopping, preparing meals	11.0	6.2	13.0	5.4	11.0	6.4	13.3
Searching for fodder or grazing for the household's animals	10.2	12.1	8.7	7.3	4.4	12.1	8.7
Looking after children and elderly	10.9	9.3	11.5	7.2	14.6	9.5	11.2
Total number of persons	5449897	2369584	3080314	232981	373260	2136602	2707054
Collecting firewood for the household including travel time	2609145	933242	1675902	21632	63350	911611	1612552
Fetching water for the household, including travel time	3393859	1327718	2066141	86232	146534	1241486	1919607
Manufacturing household goods for own or family use	549097	114430	434667	15909	13999	98520	420668
Doing household chores including shopping, preparing meals	4009980	1156796	2853184	147299	355778	1009497	2497406
Searching for fodder or grazing for the household's animals	3030430	1371547	1658883	15362	16984	1356185	1641900
Looking after children and elderly	2696677	711473	1985204	71003	217576	640471	1767628

Table 26. Children 5-13 years old by sex, school attendance, current work status, and urban/rural area, February 2016

	Total	Schooling		Male		Female	
		Schooling	Not schooling	Schooling	Not schooling	Schooling	Not schooling
Total children 5-13 years old	2897684	2680856	216828	1249942	116875	1430914	99954
Not working	2723608	2506780	216828	1165906	116875	1340874	99954
Work with pay	16097	16097	0	15420	0	676	0
Work without pay	157979	157979	0	68615	0	89364	0
Total children in urban areas	312647	299207	13440	155950	6270	143256	7170
Not working	311970	298530	13440	155950	6270	142580	7170
Work with pay	676	676	0	0	0	676	0
Work without pay	0	0	0	0	0	0	0
Total children in rural areas	2585038	2381649	203388	1093992	110605	1287657	92783
Not working	2411638	2208250	203388	1009956	110605	1198294	92783
Work with pay	15420	15420	0	15420	0	0	0
Work without pay	157979	157979	0	68615	0	89364	0

Annex D: Questionnaire

REPUBLIC OF RWANDA
NATIONAL INSTITUTE OF STATISITCS OF RWANDA (NISR)

RWANDA LABOUR FORCE SURVEY (RLFS)

February 2016

QUESTIONNAIRE

PROVINCE/KIGALI CITY.....|__|

DISTRICT.....|__|

SECTOR.....|__||__|

CELL.....|__||__|

VILLAGE.....|__||__|

PSU CODE.....|__||__|

HOUSEHOLD NUMBER.....|__||__||__|

REPORT ON FIELD WORK ACTIVITIES

Names of Interviewer:_____ Code |__|__|__|

A: Visit one				B: Visit Two				C: Visit Three				D: Reason for non-response
		Time				Time				Time		
Day	MM	Start	End	Day	MM	Start	End	Day	MM	Start	End	
|__|__|	|__|__|			|__|__|	|__|__|			|__|__|	|__|__|			
1. Fully completed 2. Partially completed 3. Non-interview 4. Posponed 5. Other (specify)				1. Fully completed 2. Partially completed 3. Non-interview 4. Posponed 5. Other (specify)				1. Fully completed 2. Partially completed 3. Non-interview 4. Posponed 5. Other (specify)				1. Temporaly absent 2. Refused 3. Enable to locate 4. Other non-response 5. Vacant 6. Under construction not ready 7. Converted to business, etc 8. Demolished
|___|				|___|				|___|				|___|	

NAMES AND SIGNATURE OF SURVEYS STAFFS

Code of interviewer	Code of field editor	Code of Team leader	Code of coder	Code of data entry cleark
|__|__|__|	|__|__|__|	|__|__|__|	|__|__|	|__|__|
Date	Date	Date of interview	Date	Date
|__|__| |__|__| |_____|	|__|__| |__|__| |_____|	|__|__| |__|__| |_____|	|__|__| |__|__| |_____|	|__|__| |__|__| |____|
Signature	Signature	Signature	Signature	Signature

CODES

CRITERIA OF MEMBERSHIP OF THE HOUSE

THOSE WHO ANSWERED ''6MONTHS'' OR
LESS ON QUESTION A16 OF SECTION A ARE
HOUSEHOLD MEMBERS. THE FOLLOWING

. Children less than 6 months
. People who recently joined the household and will reside there permanently
. New husbands or wives

IF THE ANSWER ON QUESTION A16 OF
SECTION A IS "MORE THAN 6 MONTHS"
ONLY THE FOLLOWING INDIVIDUALS ARE
. The head of the household (dejure)
. Those who answered 'no' on question A17 of section A
. Persons who are absent but not living in another household

District codes. Ouestion A08 and A11

11. Nyarugenge	35. Ngororero
12. Gasabo	36. Rusizi
13. Kicukiro	37. Nyamasheke
21. Nyanza	41. Rulindo
22. Gisagara	42. Gakenke
23. Nyaruguru	43. Musanze
24. Huye	44. Burera
25. Nyamagabe	45. Gicumbi
26. Ruhango	51. Rwamagana
27. Muhanga	52. Nyagatare
28. Kamonyi	53. Gatsibo
31. Karongi	54. Kayonza
32. Rutsiro	55. Kirehe
33. Rubavu	56. Ngoma
34. Nyabihu	57. Bugesera

TECHNICAL SKILLS CODE FOR B10

1. Masonry	24. Milk processing
2. Carpentry	25. Livestock
3. Automotive technology.	26. Horticulture production
4. Culinary arts	27. Food & Beverage services
5. Domestic Electricity	28. Front office
6. Welding	29. House keeping
7. Plumbing	30. Concrete masonry
8. Food processing	31. Leather craft
9. Animal health	32. Hairdressing
10. Auto- Electricity	33. Biding and Jewelries
11. Automotive body repair	34. Software Development
12. Computer maintenance	35. NCDs and Palliative Care Community Health
13. Crop production	36. Agriculture Mechanization
14. Engine mechanics	37. Agri-Business
15. Forestry	38. Bee Keeping
16. Music	39. Manicure and Pedicure
17. Painting and decoration	40. Beauty therapy
18. Multimedia	41. Screen printing
19. Networking	42. Sport and Medical Massage
20. Tailoring	43. Crochet embroidery
21. Industrial electricity	44. Pottery
22. Civil construction	45. Motor vehicle engine mechanics
23. nursery growing	46. Film making

INTRODUCTION AND CONSENT

Hello. My name is _____. I am working with National Institute of Statistics of Rwanda. We are conducting a pilot survey about labour in selected districts. The information we collect will help NISR to design a proper survey that will help the government to plan for employment in the country. Your household was selected for the survey. I would like to ask you some questions about your household. The questions usually take about 15 to 20 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your answers are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

Do you have any questions?

May I begin the interview now?

1. RESPONDENT AGREES TO BE INTERVIEWED	→ Continue the interview	|___|
2. RESPONDENT DOES NOT AGREE TO BE INTERVIEWED	→ END	

SIGNATURE OF INTERVIEWER:_____ DATE:_____

LIST MEMBERS OF THE HOUSEHOLD

RESPONDENT: Preferably every member aged 14 year and above should respond on his/her behalf. If unavailable the head of household should respond. In the case of the absence of head of household: the wife, or any other knowledgeable adult member of the household can provide information on other members.

Name of the respondent: _____ ID: |___|___| (to refer to the list of Members of the household)
Tel: _____

SECTION A: HOUSEHOLD ROSTER

All household members

	PID			01	02	03	04
	NAMES						
	List the usual Household members starting with Household head, followed by his wife and children form the eldest to the youngest. Include other relatives and domestic servants if they are considered as household members. Do not forget babies.						
A01	Sex 1. Male	2. Female		|___|	|___|	|___|	|___|
A02	What is the relationship of (NAME) to head of household? 01. Head 03. Child (Son/daughter) 05. Grandchild 07. Brother or Sister/In law 09. Other relative 11. Non-relative	02. Spouse (Wife/Husband) 04. Adopted/Foster/step child 06. Parent/Parent-in-law 08. Son/Daughter-in-law 10. Domestic helper 12. Other(specify)		|__|__|	|__|__|	|__|__|	|__|__|
A03	What is (NAME)'s date of birth?	MONTHS YEAR	**M** **Y**	|__|__| |__|__|__|__|	|__|__| |__|__|__|__|	|__|__| |__|__|__|__|	|__|__| |__|__|__|__|
A04	What was (NAME)'s age at last birthday?			|__|__|	|__|__|	|__|__|	|__|__|
A05	What is (NAME'S) present marital status? (**Ask all above age 12**) 1. Married monogamously 3. Living together 5. Separated 7. Widow/Widower	2. Married polygamous 4. Divorced 6. Single		|___|	|___|	|___|	|___|
A06	What is (NAME'S) nationality? 1.Rwanda 3.Congo-Kinshasa DRC 5. Tanzania 7. Rest of Africa	2.Burundi 4. Kenya 6. Uganda 8. Other country		|___|	|___|	|___|	|___|
A07	What is (NAME'S) Residential Status in Rwanda? 1. Permanent Resident	2. Temporary Resident		|___|	|___|	|___|	|___|
A08	What is (NAME'S) Country/Area of birth? 1. Rwanda **IF (1) in A** **WRITE CODE OF DISTRICT IN B** 2. Burundi 3. Congo-Kinshasa DRC 4. Kenya 5.Tanzania 6. Uganda 7. Rest of Africa 8. Other country		**A** **B**	|___| |__|__|	|___| |__|__|	|___| |__|__|	|___| |__|__|
A09	Has the usual place of residence of (NAME) always been in this district? 1. Yes ***→A15***	2. No		|___|	|___|	|___|	|___|
A10	For how long (NAME)'s usual place of residence has been here since the last move? REGISTER 0 IF LESS THAN 1 YEAR **YEARS**		**Y**	|__|__|	|__|__|	|__|__|	|__|__|
A11	In which district or foreign country did (NAME) live in prior to arrival here? 1. Rwanda **IF (1) in A** **WRITE CODE OF DISTRICT IN B** 2. Burundi 3. Congo-Kinshasa DRC 4. Kenya 5. Tanzania 6. Uganda 7. Rest of Africa 8.Other country		**A** **B**	|___| |__|__|	|___| |__|__|	|___| |__|__|	|___| |__|__|
A12	In Which place did (NAME) live prior to arriving here? READ ANSWER 1. Capital City 3. Country Side	2. District City 4. Other (Specify)		|___|	|___|	|___|	|___|
A13	How long did (Name) live in the previous location prior to arriving here? REGISTER 0 IF LESS THAN 1 YEAR			|__|__|	|__|__|	|__|__|	|__|__|
A14	What is the main reason Why did (NAME) move away from previous location? 01. Parents moved 03. To attend school 05. Family quarrel 07. Found job 09. To look for work 11. Loss of employment 13. Coming back in country	02. To live with relatives 04. Marriage 06. Divorce 08. Job transfer 10. Looking for land to farm 12. Employment of spouse 14. Other		|__|__|	|__|__|	|__|__|	|__|__|
A15	Has (NAME) been away from home for more than one month last 12 months? 1. Yes	2. No **→ A18**		|___|	|___|	|___|	|___|
A16	For how many months during the past 12 months has (NAME) been away from this household? (IF 6 MONTHS OR MORE > A18)			|__|__|	|__|__|	|__|__|	|__|__|
A17	While absent, is/was (NAME) a member of another household? ***(Including single person household)*** 1. Yes	2. No		|___|	|___|	|___|	|___|
A18	HOUSEHOLD MEMBER **(Check instruction)** 1. Yes	2. No		|___|	|___|	|___|	|___|

0-2 years old → NEXT PERSON
3-4 years old→ AA1
5-13 years old →AA2
14 years old →NEXT PERSON

SECTION AA: ACTIVITIES OF CHILDREN AGED 3 TO 13 YEARS OLD

	FOR HOUSEHOLD MEMBERS 3-4 YEARS OLD	ID	**01**	**02**	**03**	**04**
AA1	IS [NAME] currently studying in Nursury? 1. Yes 2. No	**→ NEXT PERSON**	|___|	|___|	|___|	|___|
	FOR HOUSEHOLD MEMBERS 5-13 YEARS OLD					
AA2	Is (NAME) currently studying or working? 1. Studying only → **AA6** 2. Studying and working 3. Working only 4. Not studying, nor working → **AA6**		|___|	|___|	|___|	|___|
AA3	What type of work does (NAME) do? 1. Work for pay 2. Work without pay in non-agriculture family/ household enterprise 3. Work without pay in family farm or fishing 4.Self -employed 5. Other		|___|	|___|	|___|	|___|
AA4	How many days per week did [NAME] usually work in these activities?	days	|___|	|___|	|___|	|___|
AA5	How many hours per day did [NAME] usually work in these activities?	hours	|___|___|	|___|___|	|___|___|	|___|___|
AA6	In the last 7 days, how many hours did [NAME] spend collecting firewood for the household, including travel time?	hours	|___|___|	|___|___|	|___|___|	|___|___|
AA7	In the last 7 days, how many hours did [NAME] spend fetching water for the household, including travel time?	hours	|___|___|	|___|___|	|___|___|	|___|___|
AA8	In the last 7 days, how many hours did [NAME] spend constructing your dwelling, making major repairs on it, farm buildings and private roads?	hours	|___|___|	|___|___|	|___|___|	|___|___|
AA9	In the last 7 days, how many hours did [NAME] spend doing household chores including shopping, preparing meals?	hours	|___|___|	|___|___|	|___|___|	|___|___|
AA10	In the last 7 days, how many hours did [NAME] spend looking after children and elderly?	hours	|___|___|	|___|___|	|___|___|	|___|___|

	Names	_____ |___|___|		_____ |___|___|	

SECTION B.EDUCATION

For household members 14 yrs old and above

B01	IS [NAME] currently studying?	1. Yes 2. No → B02		1. Yes 2. No → B02	
B01A	What is the current level of education (Name) is attending?	1. Primary education → B06 2. Lower secondary education → B07 3. Upper secondary education → B05 4. Post-secondary → B03 5. Tertiary education → B03	|___|	1. Primary education → B06 2. Lower secondary education → B07 3. Upper secondary education → B05 4. Post-secondary → B03 5. Tertiaryeducation → B03	|___|
B02	What is the Highest educational level have [NAME] successfully completed?	1. None → B06 2. Pre-primary → B06 3. Primary education → B07 4. Lower secondary education → B07 5. Upper secondary education 6. Post-secondary 7. Tertiary education	|___|	1. None → B06 2. Pre-primary → B06 3. Primary education → B07 4. Lower secondary education → B07 5. Upper secondary education 6. Post-secondary 7. Tertiaryeducation	|___|
B03	What is the highest certificate [NAME] obtained	01. A3 02. D4 03. D5 04. A2/D6/D7 05. A1 06. A0 07. Post graduate diploma 08. Masters 09. PHD 10. Other	|___|___|	01. A3 02. D4 03. D5 04. A2/D6/D7 05. A1 06. A0 07. Post graduate diploma 08. Masters 09. PHD 10. Other	|___|___|
B04	In which country (place) was [NAME]'S highest qualification obtained?	01. Rwanda Public school 02. Rwanda Private school 03. Burundi 04. Congo-Kinshasa DRC 05. Kenya 06. Tanzania 07. Uganda 08. Rest of Africa 09. Europe 10. Asia 11. America 12. Australia	|___|___|	01. Rwanda Public school 02. Rwanda Private school 03. Burundi 04. Congo-Kinshasa DRC 05. Kenya 06. Tanzania 07. Uganda 08. Rest of Africa 09. Europe 10. Asia 11. America 12. Australia	|___|___|
B05	In which area did/is [NAME] specialize? **Write the area of specialization in detail** **Code (ESCED 4 Digit)**	_____ _____ **Fill → B07** NISR |___|___|___|___|		_____ _____ **Fill → B07** NISR |___|___|___|___|	
B06	Is [NAME] able to read and write?	1.Yes 2. No	|___|	1.Yes 2. No	|___|
B07	Is [NAME] currently attending any trade or technical vocational course?	1.Yes → B9 2. No	|___|	1.Yes → B9 2. No	|___|
B08	Did [NAME] learn any trade or technical vocational course?	1. Yes 2. No → B15	|___|	1. Yes 2. No → B15	|___|
B09	How long will/did this course take?	1. Less than one month 2. 1-3 Months 3. 3-6 Months 4. One year 5. Two years 6. Three years or more	|___|	1. Less than one month 2. 1-3 Months 3. 3-6 Months 4. One year 5. Two years 6. Three years or more	|___|
B10	What type of technical skills did [NAME] learn?	_____ **Check List of Training Courses**	|___|___|	_____ **Check List of Training Courses**	|___|___|
B11	Where did (NAME) acquire these skills	1. Vocational School Course 2. Apprenticeship or on job Training 3. Learned from a friend or family 4. NGO 5. Community organization 6. Other (Specify): _____	|___|	1. Vocational School Course 2. Apprenticeship or on job Training 3. Learned from a friend or family 4. NGO 5. Community organization 6. Other (Specify): _____	|___|
B12	"Who was the main sponsor for this course?	1. Government 2. Employer 3. Self-financing 4. Private institutions/agencies/persons 5. Non-profit organization/charity 6. International organization 7. Other"	|___|	1. Government 2. Employer 3. Self-financing 4. Private institutions/agencies/persons 5. Non-profit organization/charity 6. International organization 7. Other"	|___|
B13	Did [NAME] complete the course?	1.Yes with certificate 2. Yes without certificate 3. No → B15	|___|	1.Yes with certificate 2. Yes without certificate 3. No → B15	|___|
B 13A	In which year did (Name) complete this course?	Year |___|___|___|___|		Year |___|___|___|___|	
B14	What happened three months after you completed the course?	1. Nothing 2. I was able to get a job 3. My salary increased 4. I was promoted at work 5. My job skills have improved 6. I got internship/traineeship with a company 7. Other specify_____	|___|	1. Nothing 2. I was able to get a job 3. My salary increased 4. I was promoted at work 5. My job skills have improved 6. I got internship/traineeship with a company 7. Other specify_____	|___|
B15	At what level, Could [NAME] use a computer?	1. Very well 2. Well 3. Less 4. Don't know	|___|	1. Very well 2. Well 3. Less 4. Don't know	|___|
B16	At what level could (Name) speak these languages?	A. English B. French C. Swahili **1. Good 2. Fair 3. Don't know**	|___| |___| |___|	A. English B. FRench C. Swahili **1. Good 2. Fair 3. Don't know**	|___| |___| |___|

SECTION C. IDENTIFICATION OF EMPLOYED, TIME-RELATED UNDEREMPLOYED, UNEMPLOYED, AND PERSONS IN POTENTIAL LABOUR FORC

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 internees)	1. Yes → C10 2. No	|___|	1. Yes → C10 2. No	|___|
C02	During the past 7 days, did (NAME) run or do any kind of business, farming or other activity to generate income, if only for one hour?	1. Yes → C04 2. No	|___|	1. Yes → C04 2. No	|___|
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?	1. Yes 2. No → C06	|___|	1. Yes 2. No → C06	|___|
C04	Was this work in agriculture, farming or fishing?	1. Yes 2. No → C10 3. Don't know → C10	|___|	1. Yes 2. No → C10 3. Don't know → C10	|___|
C05	In general, are the products obtained from this activity for sale or for family use?	1. Only for sale/barter → C11 2. Mainly for sale/barter → C11 3. Mainly for family use 4. Only for family use	|___|	1. Only for sale/barter → C11 2. Mainly for sale/barter → C11 3. Mainly for family use 4. Only for family use	|___|
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?	1. Yes 2. No → C19	|___|	1. Yes 2. No → C19	|___|
C07	What was the main reason (NAME) was absent from work during the last 7 days? **[Interviewer not to read answer categories]**	**Check list and enter code** Codes 1 to 3 → C10 Code 7 → C19 Other codes continue	|___|	**Check list and enter code** Codes 1 to 3 → C10 Code 7 → C19 Other codes continue	|___|
C08	What is the expected total absence from work for (NAME)?	1. Less than 3 months → C10 2. 3 months or more 3. Not sure to return to work	|___|	1. Less than 3 months → C10 2. 3 months or more 3. Not sure to return to work	|___|
C09	Does (NAME) continue receiving an income from his/her job during absence?	1. Yes 2. No → C19	|___|	1. Yes 2. No → C19	|___|
C10	Did [NAME] have any other paid job or business or performed any secondary activity to generate an income, even if only for one hour during the last 7?	1. Yes 2. No	|___|	1. Yes 2. No	|___|
C11	How many hours does [NAME] usually work per week?	A. Main job/Activity B. Secondary jobs/Activity	|___|___| |___|___|	A. Main job/Activity B. Secondary jobs/Activity	|___|___| |___|___|
C12	During the past 7 days, how many days did (NAME) actually work?	A. Main job/activity B. Secondary jobs/activity	|___| |___|	A. Main job/activity B. Secondary jobs/activity	|___| |___|
C13	During the past 7 days, how many hours per day did (NAME) has actually worked?	A. Main job/Activity B. Secondary jobs/Activity	|___|___| |___|___|	A. Main job/Activity B. Secondary jobs/Activity	|___|___| |___|___|
C14	**Interviewer.** How many hours has [NAME) usually worked at all jobs combined during the last 7 days?	1. Less than 35 hrs → C16 2. 35 hrs - 48hrs → SECTION D 3. 49 hrs or more	|___|	1. Less than 35 hrs → C16 2. 35 hrs - 48hrs → SECTION D 3. 49 hrs or more	|___|

CODES FOR QUESTION C07

1. Sick leave due to own illness or injury → C10
2. Public holidays, vacation or annual leave → C10
3. Maternity or paternity leave as specified by legislation → C10
4. Parental leave
5. Educational leave
6. Care for others and other personal absences
7. Seasonal work → C19
8. Strikes or lockouts
9. Reduction in economic activity (e.g. temporary lay-off, slack work)
10. Disorganization or suspension of work (e.g. due to bad weather, mechanical, electrical or communication breakdown
11. Other Specify

C15	What was the main reason (NAME) usually worked long hours per week?	1. Nature of work 2. To earn more money 3. Lack of employees 4. Meet deadlines 5. Other specify → Section D	|___|	1. Nature of work 2. To earn more money 3. Lack of employees 4. Meet deadlines 5. Other specify → Section D	|___|
C16	During the last 4 weeks, did (NAME) look for additional or other work?	1. Yes → 18 2. No	|___|	1. Yes → 18 2. No	|___|
C17	Would (NAME) want to work more hours per week than usually worked provided the extra hours are paid or profitable?	1. Yes 2. No → SECTION D	|___|	1. Yes 2. No → SECTION D	|___|
C18	If an opportunity for additional work became available, could (NAME) start working more hours within the next two weeks?	1. Yes 2. No → SECTION D	|___|	1. Yes 2. No → SECTION D	|___|
C19	During the last 4 weeks, did [NAME] look for any kind of paid job or try to start any kind of business?	1. Yes → C21 2. No	|___|	1. Yes → C21 2. No	|___|
C20	Has [NAME] already found a job or arranged to start a business in the next 4 weeks?	1. Yes → C25 2. No → C23	|___|	1. Yes → C25 2. No → 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*** If "No method" (code H) → C23	|___| |___| |___| |___|	***Check list and mark up to four codes*** If "No method" (code H) → C23	|___| |___| |___| |___|
C22	For how long has [NAME] been without work and trying to find a paid job or start a business?	1. Less than 1 month 2. 1 – less than 3 months 3. 3 – less than 6 months 4. 6 – less than 12 months 5. 1 – less than 2 years 6. 2 years or more → C25	|___|	1. Less than 1 month 2. 1 – less than 3 months 3. 3 – less than 6 months 4. 6 – less than 12 months 5. 1 – less than 2 years 6. 2 years or more → C25	|___|
C23	Would [NAME] want to work if a paid job or business opportunity became available?	1. Yes 2. No → SECTION F	|___|	1. Yes 2. No → SECTION 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?	**Check list and enter code** _____	|___|___|	**Check list and enter code** _____	|___|___|
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?	1. Yes → SECTION F 2. No	|___|	1. Yes → SECTION F 2. No	|___|
C26	What is the main reason why (NAME) could not start working in the last 7 days or next two weeks?	1. In Study, training 2. Maternity leave, child care 3. Injury, illness 4. Family member(s) consider that (NAME) should stay home 5. Other → SECTION F	|___|	1. In Study, training 2. Maternity leave, child care 3. Injury, illness 4. Family member(s) consider that (NAME) should stay home 5. Other → SECTION F	|___|

CODES FOR QUESTION C 21

A. Arranging for financial resources, applying for permits, licenses
B. Looking for land, premises, machinery, supplies, farming inputs
C. Seeking the assistance of friends, relatives or other types of intermediaries
D. Registering with or contacting public or private employment services
E. Applying to employers directly, checking at worksites, farms, factory gates, markets or other assembly places
F. Placing or answering newspaper or online job advertisements
G. Placing or updating resumes on professional or social networking sites online
H. No method → C23
I. Other, specify _____

D. CHARACTERISTICS OF EMPLOYMENT

FOR HOUSEHOLD MEMBERS, AGED 14 YEARS OLD AND ABOVE

CHARACTERISTICS OF THE MAIN JOB/BUSINESS ACTIVITY

D01	A. In the main job/business that (NAME) had during the last 7 days, what was his/her occupational position? (Example: policeman, primary school teacher, vegetable vendor, domestic worker, truck driver, registered nurse)	_____ _____ (Occupational title)	_____ _____ (Occupational title)
	B. What were (NAME)'s main tasks and duties?	_____ _____ NISR |___|___|___|	_____ _____ NISR |___|___|___|
D02	What do you think could be the minimum level of education to carry out the job (NAME) does?	1. None 2. Pre-primary education 3. Primary education 4. Lower secondary education 5. Upper secondary education 6. Post-secondary education 7. Tertiary education |___|	1. None 2. Pre-primary education 3. Primary education 4. Lower secondary education 5. Upper secondary education 6. Post-secondary education 7. Tertiary education |___|
D02B	Does (NAME) need additional training in his/her current occupation to increase the productivity?	1. Yes 2. No |___|	1. Yes 2. No |___|
D03	A. What is the name of (NAME)'s workplace?	1. _____ |___| (Name) 2. Household 3. No name	1. _____ |___| (Name) 2. Household 3. No name
	B. What are the main goods or services produced at (NAME)'s place of work or its main function?	_____ _____ NISR (Description) |___|___|___|	_____ _____ NISR (Description) |___|___|___|
D04	Does (NAME) work in…?	**READ** 1. Public institution/enterprise 2. Mixed public and private enterprise 3. Private 4. International NGO/International organisation 5. Local NGO/Religious organisation 6. Cooperative 7. Household 8. Others. Specify_____ |___|	**READ** 1. Public institution/enterprise 2. Mixed public and private enterprise 3. Private 4. International NGO/International organisation 5. Local NGO/Religious organisation 6. Cooperative 7. Household 8. Others. Specify_____ |___|
D05	In this job, is [NAME] working as…?	1. Employee 2. Paid apprentice/Internee 3. Employer (with regular employees) → D18 4. Own account worker(without regular employees) → D18 5. Member of cooperative → D18 6. Contributing family worker → D23 7. Other (please specify)_____ |___|	1. Employee 2. Paid apprentice/Internee 3. Employer (with regular employees) → D18 4. Own account worker(without regular employees) → D18 5. Member of cooperative → D18 6. Contributing family worker → D23 7. Other (please specify)_____ |___|
D06	Have [NAME] been employed on the basis of….?	1. Written contract 2. Oral agreement |___|	1. Written contract 2. Oral agreement |___|
D07	Is[NAME]'s contract or agreement,….?	1.Permanent (without a known limited duration) → D09 2.Temporary contract |___|	1.Permanent (without a known limited duration) → D09 2.Temporary contract |___|
D08	What is the duration of the contract or agreement?	1. Day 2. Week 3. Month 4. Less than one year 5. One year or more |___|	1. Day 2. Week 3. Month 4. Less than one year 5. One year or more |___|
D09	Does [NAME]'s employer pay contributions on [NAME]'s behalf to..	A. Social security fund B. Health insurance fund **1.Yes, 2. No, 3. Don't know** A. |___| B. |___|	A. Social security fund B. Health insurance fund **1.Yes, 2. No, 3. Don't know** A. |___| B. |___|
D10	Is (NAME) entitled to the following benefits from employer?	A. Paid annual leave B. Paid sick leave C. Paid maternity/paternity leave? **1.Yes, 2. No, 3. Don't know** A. |___| B. |___| C. |___|	A. Paid annual leave B. Paid sick leave C. Paid maternity/paternity leave? **1.Yes, 2. No, 3. Don't know** A. |___| B. |___| C. |___|
D11	Is [NAME] member of any trade union or syndicate ?	1. Yes 2. No |___|	1. Yes 2. No |___|
D12.	How much did(Name) earn at main job last time (Name) was paid in cash?	1. Enter amount FRW ____/____/_____/____/____/____/____/____/ 8. Refusal → D17 9. don't know → D17 |___|	1. Enter amount FRW ____/____/_____/____/____/____/____/____/____/ 8. Refusal → D17 9. don't know → D17 |___|
D13	How long did it cover?	1. Month 2. Two weeks 3. One week 4. One day 5. Other, specify _____ |___|	1. Month 2. Two weeks 3. One week 4. One day 5. Other, specify _____ |___|

D14	Does [NAME] receive in-kind payments in main job such as food, agricultural products, livestock ...?	1. Yes 2. No → D20	|___|	1. Yes 2. No → D20	|___|
D15	What is the value of these in-kind payments?	1. Enter amount FRw ____/____/_____/____/____/____/____/____/ 8. Refusal → D17 9. Don't know → D17	|___|	1. Enter amount FRw ____/____/_____/____/____/____/____/____/ 8. Refusal → D17 9. Don't know → D17	|___|
D16	What period did it cover?	1. Month 2. Two weeks 3. One week 4. One day 5. Other, specify_____	|___|	1. Month 2. Two weeks 3. One week 4. One day 5. Other, specify_____	|___|
D17	Taking into account both cash and in kind payments,Would you say the monthly amount of (NAME)'s earnings was in the range ...?	1. Less than 20,000 RWF 2. 20,000 – 29,999 RWF 3. 30,000 – 49,999 RWF 4. 50,000 – 99,999 RWF 5. 100,000 RWF and above 6. Refusal 7. Don't know → D20	|___|	1. Less than 20,000 RWF 2. 20,000 – 29,999 RWF 3. 30,000 – 49,999 RWF 4. 50,000 – 99,999 RWF 5. 100,000 RWF and above 6. Refusal 7. Don't know → D20	|___|
D18	What is the net monthly earnings of (NAME) from his/her business or activity? (Note: Net monthly earnings should be gross income minus associated total expenditures. This should include payments to contributing family workers, as well as off-take by the individual and contributing family members.)	A. Enter amount FRw 1. ___/____/_____/____/____/____/____/____/ → D19 2. Refusal 3. Don't know		A. Enter amount FRw 1. ___/____/_____/____/____/____/____/____/ → D19 2. Refusal 3. Don't know	
		B. 1. Less than 20,000 RWF 2. 20,000 – 29,999 RWF 3. 30,000 – 49,999 RWF 4. 50,000 – 99,999 RWF 5. 100,000 RWF and above 6. Refusal 7. Don't know	|___|	**B.** 1. Less than 20,000 RWF 2. 20,000 – 29,999 RWF 3. 30,000 – 49,999 RWF 4. 50,000 – 99,999 RWF 5. 100,000 RWF and above 6. Refusal 7. Don't know	|___|
D19	Was this below average, above average, or average of monthly earnings during last year?	1. Below average 2. Average 3. Above average	|___|	1. Below average 2. Average 3. Above average	|___|
D20	Is the business/establishment where [NAME] works registered with the Rwanda Revenue Authority or pay PAYE/TPR?	1.Yes 2. No 3. Don't know	|___|	1.Yes 2. No 3. Don't know	|___|
D21	In order to report to an authority, does the business/establishment where (NAME) works keep written records or accounts?	1.Yes 2. No 3. Don't know	|___|	1.Yes 2. No 3. Don't know	|___|
D22	Including (NAME), how many regular paid or unpaid workers worked at (NAME)'s place of work?	**A. Less than 10 give exact number. Otherwise mark 0** **B. Ten or more** 1. 10-30 workers 2. 31-50 workers 3. 51-100 workers 4. 100 workers or more	**A.** |____| **B.** |____|	**A. Less than 10 give exact number. Otherwise mark 0** **B. Ten or more** 1. 10-30 workers 2. 31-50 workers 3. 51-100 workers 4. 100 workers or more	**A.** |____| **B.** |____|
D23	In what type of place does[NAME] usually work?	01. At home 02. Structure attached to the home 03. At the client/employer's home 04. At an office, shop, factory, or other fixed workplace 05. Fixed stall in market 06. Non-fixed stall/stand in market 07. Street 08. Land, forest, sea, mining site. 09. Verranda of commercial house 10. Construction site 11. Other (specify):	|___|___|	01. At home 02. Structure attached to the home 03. At the client/employer's home 04. At an office, shop factory, or other fixed workplace 05. Fixed stall in market 06. Non-fixed stall/stand in market 07. Street 08. Land, forest, sea, mining site. 09. Verranda of commercial house 10. Construction site 11. Other (specify):	|___|___|
D24	For how long has [NAME] been working (total experience)?	1. Less than 3 months 2. 3-less than 6 months 3. 6- less than 12 months 4. 1 year - Less than 2years 5 . 2 years - Less than 5years 6. 5 years or more	|___|	1. Less than 3 months 2. 3-less than 6 months 3. 6- less than 12 months 4. 1 year - Less than 2years 5 . 2 years - Less than 5years 6. 5 years or more	|___|
D25	In day to day work does [NAME] need the computer to perform his/her duties?	1.Yes 2. No → D27	|___|	1.Yes 2. No → D27	|___|
D26	Does (NAME) use computer in his/her day-to-day work?	1.Yes 2. No	|___|	1.Yes 2. No	|___|
D26	**INTERVIEWER:** Check on question C09 whether a secondary paid job or business/activity is reported	1. Yes → SECTION E 2. No → SECTION G	|___|	1. Yes → SECTION E 2. No → SECTION G	|___|

E. CHARACTERISTICS OF SECONDARY ACTIVITY

E01	A. What was (NAME)'s occupational position in his/her secondary job/activity?	_____ _____ _____ (Occupational title)		_____ _____ _____ (Occupational title)	
	B. What were (NAME)'s main tasks and duties?	_____ _____ _____ |___|___|___|	NISR	_____ _____ _____ |___|___|___|	NISR
E02	A. What is the name of (NAME)'s workplace at his/her secondary job/activity?	1. _____ (Name) 2. Domestic worker 3. No name	|___|	1. _____ (Name) 2. Domestic worker 3. No name	|___|
	B. What are the main goods or services produced at (NAME)'s workplace in his/her secondary	_____ _____ (Description) |___|___|___|	NISR	_____ _____ (Description) |___|___|___|	NISR
E03	In his/her secondary job/activity, does (NAME) work in …?	**READ** 1. Public institution/enterprise 2. Mixed public and private enterprise 3. Private 4. International NGO/International organisation 5. Local NGO/Religious organisation 6. Cooperative 7. Household 8. Others. Specify_____	|___|	**READ** 1. Public institution/enterprise 2. Mixed public and private enterprise 3. Private 4. International NGO/International organisation 5. Local NGO/Religious organisation 6. Cooperative 7. Household 8. Others. Specify_____	|___|
E04	In his/her secondary job/business, does (NAME) work as …?	1. Employee 2. Paid apprentice/Intern 3. Employer (with regular employees) → E07 4. Own account worker(without regular employees) → E07 5. Member of cooperative → E07 6. Contributing family worker → E10 7. Other (please specify)_____	|___|	1. Employee 2. Paid apprentice/Intern 3. Employer (with regular employees) → E07 4. Own account worker(without regular employees) → E07 5. Member of cooperative → E07 6. Contributing family worker → E10 7. Other (please specify)_____	|___|
E05	Does [NAME]'s employer pay contributions on [NAME]'s behalf to..	A. Social security fund B. Health insurance fund **1.Yes, 2. No, 3. Don't know**	A. |___| B. |___|	A. Social security fund B. Health insurance fund **1.Yes, 2. No, 3. Don't know**	A. |___| B. |___|
E06	Is (NAME) entitled to the following benefits from employer?	A. Paid annual leave B. Paid sick leave C. Paid maternity/paternity leave? **1.Yes, 2. No, 3. Don't know**	A. |___| B. |___| C. |___|	A. Paid annual leave B. Paid sick leave C. Paid maternity/paternity leave? **1.Yes, 2. No, 3. Don't know**	A. |___| B. |___| C. |___|
E07	Is the business/establishment where [NAME] works for registered with the Rwanda Revenue Authority or pay PAYE/TPR?	1.Yes 2. No 3. Don't know	|___|	1.Yes 2. No 3. Don't know	|___|
E08	In order to report to an authority, does the business/establishment where (NAME) works keep written	1.Yes 2. No 3. Don't know	|___|	1.Yes 2. No 3. Don't know	|___|
E09	Including (NAME), how many regular paid or unpaid workers worked at (NAME)'s place of work?	**A. Less than 10 give exact number. Otherwise mark 0** **B. Ten or more** 1. 10-30 workers 2. 31-50 workers 3. 51-100 workers 4. 100 workers or more	**A.** |___| **B.** |___|	**A. Less than 10 give exact number. Otherwise mark 0** **B. Ten or more** 1. 10-30 workers 2. 31-50 workers 3. 51-100 workers 4. 100 workers or more	**A.** |___| **B.** |___|
E10	In what type of place does[NAME] usually work?	01. At home 02. Structure attached to the home 03. At the client/employer's home 04. At an office, shop factory, or other fixed workplace 05. Fixed stall in market 06. Non-fixed stall/stand in market 07. Street 08. Land, forest, sea, mining site. 09. Verranda of commercial house 10. Construction site 11. Other (specify):_____ → SECTION G	|___|___|	01. At home 02. Structure attached to the home 03. At the client/employer's home 04. At an office, shop factory, or other fixed workplace 05. Fixed stall in market 06. Non-fixed stall/stand in market 07. Street 08. Land, forest, sea, mining site. 09. Verranda of commercial house 10. Construction site 11. Other (specify):_____ → SECTION G	|___|___|

F. PAST EMPLOYMENT

FOR PERSONS NOT IN EMPLOYMENT, AGED 14 YEARS OLD AND OVER

F01.	Has [NAME]ever worked previously for a wage, salary or for other income in cash or in kind, including in his/her own business or in a family business?	1.Yes 2. No → F05	|___|	1.Yes 2. No → F05	|___|
F02.	What was the main reason why [NAME] stopped working in his/her last paid job / business?	01. Dismissal or staff reduction. 02. Breakup of the enterprise, bankruptcy 03.Place of work closed down 04. Retirement 05. Illness, injury or disability 06. Beginning of studies or preparing for studies 07. Pregnancy, family responsibilities 08. Family member(s) consider that s/he should stay at home 09.To look for better job 10. Working conditions (low pay, late Payment,far location, difficult work.) 11. Temporary/seasonal job/project ended 12. Physical/ social harassment 13Other (Please specify)_____	|___||___|	01. Dismissal or staff reduction. 02. Breakup of the enterprise, bankruptcy 03.Place of work closed down 04. Retirement 05. Illness, injury or disability 06. Beginning of studies or preparing for studies 07. Pregnancy, family responsibilities 08. Family member(s) consider that s/he should stay at home 09.To look for better job 10. Working conditions (low pay, late Payment,far location, difficult work.) 11. Temporary/seasonal job/project ended 12. Physical/ social harassment 13Other (Please specify)_____	|___||___|
F03	A. What was (NAME)'s occupational position ?	_____ _____ (Occupational title)		_____ _____ (Occupational title)	
	B. What were (NAME)'s main tasks and duties?	_____ _____ |___||___||___|	NISR	_____ _____ |___||___||___|	NISR
F04	A. What was the name of (NAME)'s workplace at his/her job/activity?	1. _____ (Name) 2. Domestic worker 3. No name	|___|	1. _____ (Name) 2. Domestic worker 3. No name	|___|
	B. What were the main goods or services produced at (NAME)'s workplace in his/her job/activity?	_____ _____ (Description) |___||___||___|	NISR	_____ _____ (Description) |___||___||___|	NISR
F05	What is [NAME] main source of income at present?	01. Parents 02. Husband/Wife 03. Child 04. Other family members 05. Pension 06. Own production 07. Assistance received [VUP] 08. Assistance received [FARG] 09. Assistance received [Church, Other NGO] 10. Assistance from friends 11. Revenue from own property/Savings 12. Others (Please specify)	|___|	01. Parents 02. Husband/Wife 03. Child 04. Other family members 05. Pension 06. Own production 07. Assistance received [VUP] 08. Assistance received [FARG] 09. Assistance received [Church, Other NGO] 10. Assistance from friends 11. Revenue from own property/Savings 12. Others (Please specify)	|___|
F06	What Competencies do you need to increase your employment opportunities?	1. Technical skills 2. Soft Skills 3. Industrial attachment (practical skills) 4. Other (Please specify)_____	|___|	1. Technical skills 2. Soft Skills 3. Industrial attachment (practical skills) 4. Other (Please specify)_____	|___|

G. UN PAID HOME PRODUCTION GOODS AND SERVICES IN LAST 7 DAYS

Not to be asked to domestic workers who are paid)

G01	In the last 7 days, how many hours did [NAME] spend collecting firewood for the household, including travel time?	Hours	|___||___|	Hours	|___||___|
G02	In the last 7 days, how many hours did [NAME] spend fetching water for the household, including travel time?	Hours	|___||___|	Hours	|___||___|
G03	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?	Hours	|___||___|	Hours	|___||___|
G03B	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)?	Hours	|___||___|	Hours	|___||___|
G04	In the last 7 days, how many hours did [NAME] spend doing household chores including shopping, preparing meals?	Hours	|___||___|	Hours	|___||___|
G05	In the last 7 days, how many hours did [NAME] spend looking after children and elderly?	Hours	|___||___|	Hours	|___||___|

H. CHARACTERISTICS OF SUBSISTENCE AGRICULTURE WORK LAST MONTH

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	1. Yes 2. No→ SECTION I	|___|	1. Yes 2. No→ SECTION I	|___|
H02	How many days per week has [NAME] usually worked in these activities?	Days	|___|	Days	|___|
H03	How many hours per day has [NAME] usually worked in these activities?	Hours	|___||___|	Hours	|___||___|
H04	Is [NAME] the main decision maker on the farm?	1.Yes 2. No	|___|	1.Yes 2. No	|___|

Names _____ |___||___|

H05	In general, did the household sell or barter any part of the goods obtained from this work?	1. No, never sell → H07 2. Sell excess from time to time → H07 3. Yes, regularly	|___|
H06	About how much does the household regularly sell?	1. ¼ or less 2. More than ¼ but less than half 3. More than half (>50%)	|___|
H07	What was the net Value in FRW the household get from agricultural activities during the last season? *(Include both agricultural items sold for cash and own consumption from all crop, livestock, hunting, and fishing activities in the last four months, net of associated costs.)*	1. 0- 9,999 RWF 2. 10,000 - 39,999 3. 40,000 - 89,999 4. 90,000 - 179,999 5. 180,000 - 239,999 6. 240,000 and above	|___|
H08	Was the previous season below/above average or an average season for your household?	1. Above average 2. Average 3. Below average	|___|
H09	Do you regularly or sometimes engage paid employee in the farming activity?	1. Yes regularly 2. Yes sometimes 3. No, never → H11	|___|
H10	Excluding family members, how many paid employees do you usually engage in these agricultural activities?	1. 1 - 3 2. 4 - 5 3. More than 5	|___|
H11	How did you get access to the land for the agricultural work? (More than one answer is acceptable) **Read modalities and give answer for each**	a. leasing (have land title)/own/Household land b. Renting (share-cropping) c. Renting (fixed rent) d. Renting (free of charge) e. Communal rights/public **1. Yes, 2. No**	|___| |___| |___| |___| |___|

SECTION I: HOUSING AND HOUSEHOLD ASSETS

To be Responded by the Head of Household

Respondent ID

I01			I02	I03
What is the main material used in building this house? (For roof, exterior walls, and floor)			How many rooms in your household are used for sleeping? (excluding rooms extensively occupied by other HH)	What type of toilet does your household have?
Roof	**Exterior walls**	**Floor**		1. Flush toilet
1. Metal sheets/corrugated iron	01. Mud bricks	1. Beaten earth		2. Pit Latrine with constructed floor slab
2. Tiles clay	02. Mud bricks with cement (stucco)	2. Dung hardened		3. Pit latrine without constructed
3. Concrete	03. Oven fired bricks	3. Wooden floor		4. floor slab
4. Bamboo	04. Cement blocks	4. Clay tiles		5. No toilet (bush, channeled water,
5. Plastic/plywood/ impermanent material	05. Wooden planks	5. Cement		river, etc.)
6. Other (specify)	06. Stones	6. Bricks		6. Other (specify)
	07. Tree trunks with mud	7. Other (specify)		
	08. Tree trunks with mud and cement			
	09. Plastic Sheeting			
	10. Other (specify)			
|___|	|___||___|	|___|	Rooms |___||___|	|___|
_____	_____	_____		_____

I04	I05	I06		I07	
What is the main source of energy in your household for lighting?	What is the main source of energy in your household for cooking?	What is the main source of water in your household for drinking and other uses?		Does this household own the following assets? (More than one answer is acceptable) **The assets should be functional**	
		01. Piped Into Dwelling			**Yes=1/ No =2**
01. Electricity	01. Firewood	02. Piped To Yard/Plot		Refrigerator/Freezer……..	A. |___|
02. Biogas	02. Charcoal	03. Public Tap/Standpipe		Radio……	B. |___|
03. Generator	03. Gas	04. Tube Well Or Borehole		TV set…….	C. |___|
04. Oil lamp	04. Biogas	05. Protected Well		Satellite……	D. |___|
05. Firewood	05. Solar power	06. Unprotected Well		Video/DVD player……	E. |___|
06. Candle	06. Electricity	07. Protected Spring		Computer and accessories……	F. |___|
07. Lantern (*Agatadowa*)	07. Oil/Kerosene	08. Unprotected Spring		Music system……..……..	G. |___|
08. Solar Panel	08. Crop waste	09. Rainwater		Cooker.....	H. |___|
09. Batteries+Bulb	09. Animal dung	10. Tanker Truck		Sewing machine……	I. |___|
10. Other, Specify	10. Other, Specify	11. Surface Water (River/Lake/Pond/Stream/ Irrigation Channel)		Laundry machine…….	J. |___|
		12. Other (Specify)		Electric fan.....	K. |___|
				Camera.....	L. |___|
				Mobile phone.....	M. |___|
		Drinking Water	Other Uses	Car (for home use only).....	N. |___|
		I06a	I06b	Bicycle (for home use only).....	O. |___|
|___||___|	|___||___|	|___|	|___|	Motorcycle (for home use only).....	P. |___|

Annex E: List of officials involved in the survey

NATIONAL DIRECTOR

Yusuf MURANGWA

TECHNICAL DIRECTOR

Michel NDAKIZE RUGAMBWA

TECHNICAL ASSISTANT

Farhad MEHRAN

TECHNICAL TEAM

James BYIRINGIRO

Jean Marc MUKUNDABANTU

Evelyne KANYONGA INGABIRE

Nicolas MWIZERWA

Gilbert MUGENZI

DATA COLLECTION

Survey Coordinators

Michel NDAKIZE RUGAMBWA

Jean Marc MUKUNDABANTU

Survey Supervisors

Evelyne KANYONGA INGABIRE

Nicolas MWIZERWA

Gilbert MUGENZI

Interviewers

Janvier NIYIBIZI

Chantal MUKESHIMANA

Alain Eugene NIYIBIGIRA

Alipe NSHIZIRUNGU

Eric MUNYEMANA

Dieudonne MUNYENTWALI

Emmanuel NDAYISABYE

Emmanuel NTABANGANYIMANA

Sylvere MUNYANDEKWE

Epiphanie MUKANDAHIRO

Jean De Dieu NGOGA

Guillaume MURENGERANTWALI

Lambert NINDEMANA

Eric Kenny MUREGO

Damien NDUNGUTSE

Drivers

Method AKIMANAYIRAGIRIYE

Abba MUGENZI

Joseph GAKUBA

Jean KALISA

Charles RUGIRA

Jean Claude HAKIZIMANA

J. Paul HABARUGIRA

Oscal NDAHIMANA

Thierry NIYONSHUTI