**Rwanda – DFID**
**Support for development**
**of Central Statistics Organisation**
**CNTR 02 4109**


# Recommendations on Sample Design and Estimation Methodology for The Rwanda Enquête Intégrale sur les Conditions de Vie des Ménages 2005

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Kigali, Rwanda June 2004

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## 1. Background

The *Direction de la Statistique* (DS) in the Rwanda Ministry of Finance and Economic Planning (MINECOFIN) is planning to conduct the new *Enquête Intégrale sur les Conditions de Vie des Ménages* (EICV) from January to December 2005, in order to represent the seasonality during a full 12-month period. One purpose of this mission is to assist the DS in developing the sample design for the EICV 2005 based on the 2002 Rwanda Census of Population and Housing frame. The British Department for International Development (DFID) is providing both technical and financial support for the EICV 2005.

The sample for the previous EIVC (2000-2001) was designed with the assistance of Christopher Scott, Sampling Consultant. That sample design is described in the report "*Enquête Intégrale sur les Conditions de Vie des Ménages (Avec Volet Budget - Consommation) - Plan de Sondage*" (Scott, July 1997). This report was used as a reference in the sample design for the EICV 2005 in order to ensure consistent methodology. The data collection for EICV 2000-2001was conducted in the urban areas between October 1999 and December 2000, and in the rural areas between July 2000 and June 2001.

The findings and recommendations in this report were developed in collaboration with Paul-Henri Wirrankoski, Resident Coordinator, OPM, Philippe Gafishi Ngango, Director of DS, Jacques Gashaka, National Statistician Expert and Oumar Sarr, UNDP Surveys Expert at DS. The *Service National de Recensement* (SNR) provided the frame from the 2002 Rwanda Census and the coding of the bio-climatic zones; this was implemented with the valuable support of Damien Mugabo, National Census Coordinator, Prosper Mutijima Nkaka, Chief of Technical Operations, Ananias Gichondo, Juvenal Munyarugerero and Vital Nzabanita. The consultant would like to thank all of these professionals and other staff for their support throughout this mission.

## 2. Objectives of EICV 2005

The objectives of the EICV 2005 are to provide information on poverty and living conditions in Rwanda and to monitor changes over time as part of the ongoing monitoring of the Poverty Reduction Strategy and other Government policies. The results of the EICV 2005 will be compared with the results of the EICV 2001 and the content of the questionnaire will be broadly similar to that of the previous survey. In addition the survey will provide data on household income and expenditures which can be used for updating the weights and market basket for the Consumer Price Index (CPI) and components of the national accounts. Survey data on agricultural activities have also proved to be important for national accounts and will complement information provided by future agricultural and rural sector surveys.

The geographic domains of analysis for EICV 2005 will be Kigali-Ville, other urban and rural strata at the national level, as well as each of the 11 provinces. Given that Rwanda is predominantly rural, the rural stratum of each province will also be a domain of analysis.

In order to provide survey results that are comparable to those of EICV 2000-2001, the sample design and survey methodology for the EICV 2005 will be consistent with those for the previous survey, described in the report by Dr. Scott.

## 3. Sampling Frame and Units of Analysis

The universe for EICV 2005 includes the households and population living in individual households within all urban and rural areas of Rwanda. The population living in institutions and group quarters such as hospitals, military bases and prisons, are excluded from the sampling frame. The units of analysis for the EICV 2005 are the individual households and persons within the households. The households are uniquely identified within the housing units.

The sampling frame for the EICV 2005 will be based on the data and cartographic materials from the 2002 Rwanda Census of Population and Housing. The 2002 Census data were used to examine the distribution of the households and population at different geographic levels. Rwanda is divided hierarchically into the following administrative areas: provinces, districts and *secteurs*. There are a total of 11 provinces, in addition to Kigali-Ville which is almost exclusively urban, 106 districts and 1,545 *secteurs* in Rwanda. The *secteurs* are further divided into *cellules*, which are the smallest administrative areas. For the 2002 census enumeration, the *secteurs* were divided into *zones de dénombrement* (ZDs), with an average of 227 households each, the workload for one census enumerator. A total of 7,727 ZDs were defined for the census, or about five ZDs per *secteur*. Table 1 shows the number of ZDs and households in Rwanda by province, urban and rural, based on the 2002 Rwanda Census data, as well as the corresponding percent distribution of households in the frame.

Table 1. Distribution of ZDs and Households by Province, Urban/Rural, in Sampling Frame for the EICV 2005 Based on 2002 Rwanda Census Data

| PROVINCE | Total | | | Urban | | | Rural | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. ZDs | No. Hhs. | % Hhs. | No. ZDs | No. Hhs. | % Hhs. | No. ZDs | No. Hhs. | % Hhs. |
| RWANDA | 7,727 | 1,757,426 | 100.0% | 1,178 | 272,981 | 15.5% | 6,549 | 1,484,445 | 84.5% |
| Kigali-Ville | 565 | 124,964 | 7.1% | 565 | 124,964 | 7.1% | 0 | 0 | 0.0% |
| Kigali ngali | 735 | 172,480 | 9.8% | 41 | 11,513 | 0.7% | 694 | 160,967 | 9.2% |
| Gitarama | 814 | 184,313 | 10.5% | 116 | 27,205 | 1.5% | 698 | 157,108 | 8.9% |
| Butare | 681 | 164,643 | 9.4% | 113 | 27,117 | 1.5% | 568 | 137,526 | 7.8% |
| Gikongoro | 493 | 107,091 | 6.1% | 28 | 6,258 | 0.4% | 465 | 100,833 | 5.7% |
| Cyangugu | 601 | 120,551 | 6.9% | 42 | 9,284 | 0.5% | 559 | 111,267 | 6.3% |
| Kibuye | 472 | 102,401 | 5.8% | 40 | 9,654 | 0.5% | 432 | 92,747 | 5.3% |
| Gisenyi | 812 | 187,213 | 10.7% | 51 | 12,360 | 0.7% | 761 | 174,853 | 9.9% |
| Ruhengeri | 840 | 193,160 | 11.0% | 61 | 14,474 | 0.8% | 779 | 178,686 | 10.2% |
| Byumba | 665 | 151,939 | 8.6% | 50 | 12,294 | 0.7% | 615 | 139,645 | 7.9% |
| Umutara | 400 | 91,660 | 5.2% | 7 | 1,843 | 0.1% | 393 | 89,817 | 5.1% |
| Kibungo | 649 | 157,011 | 8.9% | 64 | 16,015 | 0.9% | 585 | 140,996 | 8.0% |

A stratified two-stage sample design will be used for the EICV 2005. The ZDs will be used as the primary sampling units (PSUs) at the first stage, since the average number of households per ZD will be effective for the listing operation, and census sketch maps are available to identify the ZD boundaries. In the case of sample ZDs with census maps of poor quality, it may be necessary to clarify the ZD boundaries for the listing operation. For EICV 2000-2001 the *cellules* were used as the PSUs, since a frame of *cellules* was developed at that time based on administrative data on the number of households in each *cellule.* One advantage of using the *cellule* as the PSU is that the residents of each area know the *cellule* boundaries. However, the number of households varies considerably by *cellule*, and the urban *cellules* are generally too large for the listing operation. For this reason it was necessary to subdivide the larger sample *cellules* into smaller segments, and one segment was selected within each sample *cellule* for the EICV 2000-2001 listing operation. The *cellule* was not considered for the new sampling frame since the identification of the *cellules* in the 2002 Rwanda Census data has not yet been verified. One advantage of using the ZDs as PSUs is they are less variable in size than the cellules and most have a reasonable number of households for the listing operation. However, in the case of a few large sample ZDs it may be necessary to define smaller segments similar to the procedures used for the previous survey. Table 2 shows the distribution of the ZDs in the 2002 Rwanda Census frame by the number of households. It can be seen in Table 2 that most of the ZDs are in the range between 150 to 300 households. However, there are 48 ZDs with 400 or more households which may have to be subdivided into smaller segments if they are selected.

Table 2. Distribution of ZDs by Number of Households and Stratum, Based on 2002 Rwanda Census

| Number of Households in ZD | RWANDA | Kigali-Ville | Other Urban | Rural |
|---|---|---|---|---|
| Total | 7,727 | 565 | 613 | 6,549 |
| Less than 50 hhs. | 5 | 2 | 1 | 2 |
| 50 to 99 hhs. | 52 | 29 | 4 | 19 |
| 100 to 149 hhs. | 341 | 69 | 23 | 249 |
| 150 to 199 hhs. | 1,889 | 132 | 136 | 1,621 |
| 200 to 249 hhs. | 3,062 | 146 | 214 | 2,702 |
| 250 to 299 hhs. | 1,787 | 105 | 146 | 1,536 |
| 300 to 349 hhs. | 441 | 46 | 55 | 340 |
| 350 to 399 hhs. | 102 | 20 | 16 | 66 |
| 400 to 499 hhs. | 35 | 12 | 12 | 11 |
| 500 to 599 hhs. | 10 | 3 | 4 | 3 |
| 600 or more hhs. | 3 | 1 | 2 | 0 |
| Average | 227 | 221 | 241 | 227 |
| Minimum | 29 | 45 | 35 | 29 |
| Maximum | 807 | 623 | 807 | 598 |
| Standard Deviation | 54 | 83 | 71 | 48 |

Given the variability in number of households by ZD shown in Table 2, the ZDs will be selected with probability proportional to size (PPS), where the measure of size is based on the number of households. This will increase the efficiency of the sample design, and provide an approximately self-weighting sample within each stratum when a constant number of households is selected within each sample ZD in the stratum.

A listing operation will be conducted to enumerate all housing units and households within the boundaries of each sample ZD or segment. At the last sampling stage the households will be selected from this listing for the survey.

**4. Review of the Urban and Rural Distribution of Sampling Frame**

In comparing the distribution of the households in Rwanda by urban and rural residence from the 2002 Rwanda Census frame to the corresponding distribution from the sampling frame for the EICV 2000-2001, it was found that the percent of urban households increased from 5.8 to 15.5. The difference is especially high in the other urban stratum, where the number of households went from 39,356 in the previous frame to 148,017 in the 2002 Rwanda Census. This is mostly due to changes in the administrative boundaries of the towns (*villes*), where some *secteurs* previously considered rural were added to the towns. Table 3 compares the distribution of households by stratum from the EICV 2000-2001 sampling frame to that from the 2002 Rwanda Census. The 2002 Rwanda Census data were also used to determine the number of households by stratum in the *secteurs* according to their previous urban/rural category. It can be seen that only 9.4 percent of the households would be urban according to the previous official classification of the *secteurs*. These figures should only be considered approximate, because the administrative changes were actually more complex, with some of the previous *secteurs* being split. However, Table 3 illustrates that this is the main reason for the large difference in the percentage of urban households. Of course, the relatively higher growth rate of the urban population has also contributed to this difference in the percent of urban households over time.

Table 3. Distribution of Households by Stratum from Sampling Frame for EICV 2000-2001 and 2002 Rwanda Census Frame

| Stratum | Sampling Frame, EICV 2000-2001 | | 2002 Rwanda Census | | | |
|---|---|---|---|---|---|---|
| | | | Current Urban *Secteurs* | | Previous Urban *Secteurs* | |
| | No. Hhs. | % Hhs. | No. Hhs. | % Hhs. | No. Hhs. | % Hhs. |
| Rwanda | 1,587,495 | 100.0% | 1,757,426 | 100.0% | 1,757,426 | 100.0% |
| Urban Total | 92,312 | 5.8% | 272,981 | 15.5% | 164,353 | 9.4% |
| Kigali-Ville | 52,956 | 3.3% | 124,964 | 7.1% | 82,586 | 4.7% |
| Other Urban | 39,356 | 2.5% | 148,017 | 8.4% | 81,767 | 4.7% |
| Rural | 1,495,183 | 94.2% | 1,484,445 | 84.5% | 1,593,073 | 90.6% |

This issue also has important implications for the analysis of the EICV 2005 data, when the urban and rural results are compared to those of the previous survey. Given the differences in

the definition of the urban domain for each survey, the urban results will not be directly comparable. However, it will be possible to conduct a special comparative analysis by post-stratifying the urban ZDs in the EICV 2005 data by the previous urban/rural classification of the *secteur*. This would make it possible to estimate trends in the urban population while controlling for the changes in administrative boundaries. A similar approach can be used for any other geographic changes between the two surveys.

Given the expansion in the number of urban households, it was also necessary to increase the urban sample size compared to EICV 2000-2001, as explained later in the report. This will facilitate the type of special comparative analysis described above.
The administrative changes in the urban domain also affected the sampling frame for the Agricultural Surveys based on the 2002 Rwanda Census, since more agricultural operations are now found in the urban stratum. Therefore it was necessary to identify a "semi-rural" substratum within the urban stratum with significant crop and livestock activities, which will be included in the sampling frame for the Agricultural Surveys.

An agricultural form was used during the 2002 Rwanda Census enumeration to identify the households in each ZD with agricultural and livestock operations, including information on the types of crops grown and the type and number of livestock. After examining the distribution of urban ZDs by the percentage of households with agricultural operations, it was decided to classify the ZDs with at least 70 percent agricultural households as semi-rural. This stratification can also benefit the sampling frame for EICV 2005, so the corresponding semi-rural codes were introduced into the sampling frame database. Given the predominance of agricultural activities, some characteristics of the semi-rural households will be different from those of the "de facto" urban households. The stratification of the sampling frame is discussed in the next section. Table 4 shows the distribution of the urban sampling frame for EICV 2005 by province, "de facto" urban and semi-rural substrata.

Table 4. Distribution of Urban ZDs and Households by Province, "de Facto" Urban and Semi-Rural, in the Sampling Frame for the EICV 2005 Based on 2002 Rwanda Census Data

| PROVINCE | Total Urban | | | De Facto Urban | | | Semi-Rural | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. ZDs | No. Hhs. | % Hhs. | No. ZDs | No. Hhs. | % Hhs. | No. ZDs | No. Hhs. | % Hhs. |
| RWANDA | 1,178 | 272,981 | 100.0% | 645 | 149,077 | 54.6% | 533 | 123,904 | 45.4% |
| Kigali_Ville | 565 | 124,964 | 45.8% | 487 | 107,647 | 39.4% | 78 | 17,317 | 6.3% |
| Kigali ngali | 41 | 11,513 | 4.2% | 13 | 4,015 | 1.5% | 28 | 7,498 | 2.7% |
| Gitarama | 116 | 27,205 | 10.0% | 12 | 4,017 | 1.5% | 104 | 23,188 | 8.5% |
| Butare | 113 | 27,117 | 9.9% | 28 | 6,320 | 2.3% | 85 | 20,797 | 7.6% |
| Gikongoro | 28 | 6,258 | 2.3% | 4 | 1,023 | 0.4% | 24 | 5,235 | 1.9% |
| Cyangugu | 42 | 9,284 | 3.4% | 9 | 2,494 | 0.9% | 33 | 6,790 | 2.5% |
| Kibuye | 40 | 9,654 | 3.5% | 2 | 626 | 0.2% | 38 | 9,028 | 3.3% |
| Gisenyi | 51 | 12,360 | 4.5% | 43 | 10,715 | 3.9% | 8 | 1,645 | 0.6% |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ruhengeri | 61 | 14,474 | 5.3% | 20 | 4,789 | 1.8% | 41 | 9,685 | 3.5% |
| Byumba | 50 | 12,294 | 4.5% | 14 | 3,656 | 1.3% | 36 | 8,638 | 3.2% |
| Umutara | 7 | 1,843 | 0.7% | 1 | 608 | 0.2% | 6 | 1,235 | 0.5% |
| Kibungo | 64 | 16,015 | 5.9% | 12 | 3,167 | 1.2% | 52 | 12,848 | 4.7% |

**5. Stratification**

In order to increase the efficiency of the sample design for EICV 2005, it is important to divide the sampling frame of ZDs into strata which are as homogeneous as possible. The first stage sample selection is carried out independently within each explicit stratum. The nature of the stratification depends on the most important characteristics to be measured in the survey, as well as the domains of analysis; the strata should be consistent with the geographic disaggregation to be used in the survey tables. It is also desirable to order the ZDs within each stratum by certain criteria that are correlated with key survey variables, in order to provide further implicit stratification when systematic selection is used.

The first level of stratification will correspond to the geographic domains of analysis defined for EICV 2005. The three major domains at the national level are Kigali-Ville, other urban and rural. Each province will be an individual domain of analysis as well as the rural stratum of each province.

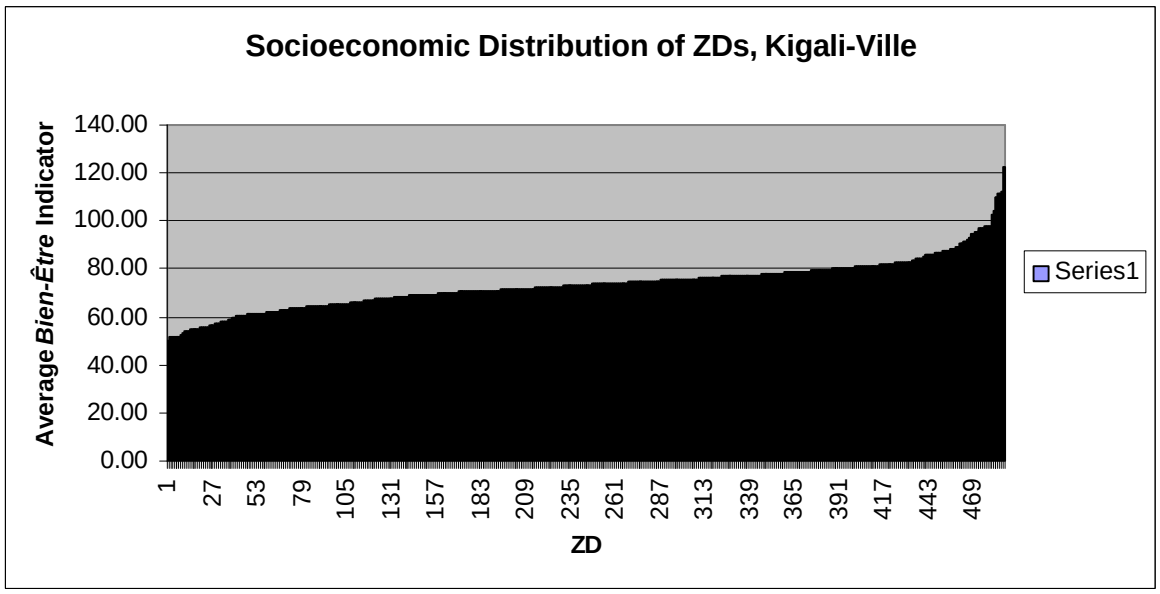
The issues related to the urban and rural stratification of the sampling frame are discussed in the previous section. Given the expansion of the urban stratum which now includes *secteurs* formerly classified as rural, a new stratification code for "semi-rural" was introduced into the sampling frame to identify urban ZDs with at least 70 percent of households with agricultural operations. This "semi-rural" code is also used as one of the sorting criteria for Kigali-Ville and other urban sampling frame, in order to provide a corresponding implicit stratification. For EICV 2000-2001 the sampling frame was stratified at the national level by Kigali-Ville, other urban and rural. The rural areas were also stratified by province, since provincial-level results were produced from the survey data. The survey results could be tabulated for the rural stratum of each province, or for the entire province by combining the urban and rural data. For the last survey a single systematic selection of *cellules* was carried out for the other urban stratum at the national level. Only one urban *cellule* had been selected for Umutara Province because of its small size, so it was necessary to "collapse" (combine) this urban stratum with the urban stratum of another province for calculating the standard errors from the EICV 2000-2001 data.

In the case of the EICV 2005 sample design, it is recommended that the first level of stratification correspond to the urban and rural areas of each province. The urban part of a province will be a separate sampling stratum, but it will not be a domain of analysis, so it is only necessary to ensure that a minimum of two ZDs are selected in the urban stratum of each province. The allocation of the sample ZDs for the other urban stratum by province will be proportional to size (based on the number of households).

In the case of Kigali-Ville, there is a higher variability in socioeconomic characteristics

compared to the other domains, and the proportion of semi-rural ZDs is smaller than in the other urban stratum. Therefore it is recommended to introduce socioeconomic stratification of the PSUs in Kigali-Ville to improve the efficiency of the sample design. Director Philippe Gafishi Ngango did a poverty study in which he defined an indicator of *bien-être* (well-being) based on housing characteristics in the 2002 Rwanda Census data. Each household was assigned a value for the *bien-être* indicator from a minimum of 0 to a maximum of 136 based on the census data for the housing characteristics. The specifications for this indicator are presented in Annex A. A simple yet effective socioeconomic indicator for each ZD can be based on the average *bien-être* indicator for all the households within the ZD. The 78 semi-rural ZDs in Kigali-Ville are classified in a separate stratum, so they are excluded from the socioeconomic stratification. Figure 1 shows a graph of the distribution of the 487 "de facto" urban ZDs in Kigali-Ville by the average *bien-être* indicator. The extreme lowest and highest socioeconomic strata can be clearly identified in this graph. There is a gradual increase in the average *bien-être* indicator for the ZDs in the middle socioeconomic groups.

Figure 1. Distribution of ZDs in Kigali-Ville by Average *Bien-Être* Indicator




The urban ZDs in Kigali-Ville were divided into quartiles based on the distribution of the average *bien-être* indicator. These quartiles were assigned socioeconomic stratum codes from 1 to 4, with 4 representing the highest stratum. Table 5 defines the range of values of the average *bien-être* indicator by quartile, and the corresponding code. The sampling frame of ZDs for Kigali-Ville was ordered by the socioeconomic codes to provide an implicit socioeconomic stratification.

Table 5. Socioeconomic Codes for Classifying ZDs in Kigali-Ville According to Quartiles of Average *Bien-Être* Indicator by ZD

| Code | Description of Socioeconomic Quartile | Range of Values of *Bien-Être* Indicator by Quartile | |
|---|---|---|---|
| | | Lower Limit | Upper Limit |
| 1 | Low | 50.00 | 67.66 |
| 2 | Medium Low | 67.67 | 73.47 |
| 3 | Medium High | 73.48 | 78.53 |
| 4 | High | 78.54 | 122.47 |

In the case of the rural stratum, the following 10 bio-climatic zones were identified for the Agricultural Surveys sampling frame:

(01) *Arrière Pays de Cyangugu*
(02) *Bords du Lac Kivu*
(03) *Cônes et hautes plaines volcaniques*
(04) *Crête Congo Nil*
(05) *Crêtes et plateau bordant les savanes de l'Est*
(06) *Hautes terres du Buberuka*
(07) *Mayaga et Bugesera*
(08) *Plaine du Bugarama*
(09) *Plateau central*
(10) *Savanes de l'Est et du Bugesera central*

Given that the rural economy is primarily agricultural, the socioeconomic characteristics of the households are generally correlated with the crop and livestock activities found in the different bio-climatic zones. Therefore the bio-climatic zones were also introduced into the rural sampling frame for the EICV 2005 to provide a corresponding implicit stratification within each province.

## 6. Calculation of Sampling Errors from EICV 2000-2001 Data

The data from EICV 2000-2001 were used to calculate the standard errors, coefficients of variation and design effects of the most important survey estimates based on the previous sample design. These results can also be used as an indicator of the approximate level of precision that can be expected for the results from EICV 2005 for each domain based on a similar sample design.

The sampling error of a survey estimate is measured by its standard error, which is the square root of the variance of the estimate. The CENVAR software was used to calculate the standard errors for selected survey estimates from the EICV 2000-2001 data, taking into account the

stratification and clustering in the sample design. CENVAR is a component of the Integrated Microcomputer Processing System (IMPS) developed by the U.S. Census Bureau for processing survey and census data. The methodology used by CENVAR to calculate the variances is described in Section 11.3.

The CENVAR analysis based on the EICV 2000-2001data included estimates of average household expenditures, average food and non-food expenditures, and the percent of food and non-food expenditure, for the different geographic domains (Kigali-Ville, other urban, rural and province). For each variable CENVAR tabulates the estimate, standard error, coefficient of variation (CV), 95 percent confidence interval and design effect. The data dictionary listing for the CENVAR data input file is presented in Annex B, and the CENVAR results are shown in Annex C.

The CV is defined as the standard error of the estimate divided by the value of the estimate, and is therefore a measure of the relative standard error. It can be seen from the results in Annex C that the CVs are quite reasonable at the provincial level for most estimates. For the survey estimate of average household expenditures all the provinces have a CV lower than 10 percent except Byumba, which has a CV of 11.5 percent due to a high design effect. Apparently the sample for Byumba had a higher between-PSU variance because of some higher expenditure values in two sample ZDs, but the results are still very reasonable.

The design effect (DEFF) is defined as the variance of an estimate based on the actual sample design for the survey (in this case, a stratified cluster design) divided by the corresponding variance of the estimate based on a simple random sample of the same size; it is therefore a measure of the relative efficiency of the sample design. The design effects are mostly due to clustering effects from the homogeneity of the households within sample segments. The design effect for the estimate of average household expenditures was slightly higher for the rural domain (3.4) than for the urban domain (3.2), probably due to the selection of 12 households in each sample rural segment, compared to 9 households in each urban segment. Overall the design effects are quite reasonable. These CENVAR results indicate that the sampling strategy for EICV 2000-2001 provided a good level of precision, and a similar sample design can be used for EICV 2005.

Additional CENVAR tabulations were produced using the data from the *Questionnaire Unifié sur les Indicateurs de Bien-être de Base* (QUIBB) 2002, which was based on a sample design similar to that of EICV 2000-2001. Two CENVAR analyses were conducted: one for estimates at the household level and one for characteristics of individual persons. A separate CENVAR data input file was generated for each analysis: one with a record for each sample household and the other with one record for each sample person. The IMPS data dictionaries for these two CENVAR data input files are presented in Annex D and the CENVAR results for selected estimates from the QUIBB 2002 data are presented in Annex E.

## 7. Sample Size and Allocation

The sample size for a particular survey is determined by the accuracy required for the survey estimates for each domain, as well as by the resource and operational constraints. The accuracy of the survey results depends on both the sampling error, which can be measured through

variance estimation, and the nonsampling error, which can only partially be measured through expensive reinterview or validation studies. The sampling error is inversely proportional to the square root of the sample size. On the other hand, the nonsampling error may increase with the sample size, since it is more difficult to control the quality of a larger operation. It is therefore important that the overall sample size be manageable for quality and operational control purposes. Table 6 presents the distribution of the sampling frame for the EICV 2000-2001 by stratum and province, and the corresponding allocation of sample *cellules* and households.

Table 6. Distribution of Segments and Households in Frame and Sample for EICV 2000-2001, by Stratum

| DOMAIN | Frame | | EICV Sample | |
|---|---|---|---|---|
| | No. *Cellules*/ Segments | Number of Households | No. *Cellules*/ Segments | Number of Households |
| RWANDA | 9,136 | 1,587,495 | 570 | 6,450 |
| URBAN TOTAL | 571 | 92,312 | 130 | 1,170 |
| Kigali-ville | 402 | 52,956 | 80 | 720 |
| Other Urban | 169 | 39,356 | 50 | 450 |
| RURAL TOTAL | 8,565 | 1,495,183 | 440 | 5,280 |
| Butare | 615 | 135,573 | 40 | 480 |
| Byumba | 615 | 148,289 | 40 | 480 |
| Cyangugu | 680 | 99,005 | 40 | 480 |
| Gikongoro | 851 | 94,294 | 40 | 480 |
| Gisenyi | 826 | 237,591 | 40 | 480 |
| Gitarama | 1,079 | 157,160 | 40 | 480 |
| Kibungo | 641 | 127,686 | 40 | 480 |
| Kibuye | 627 | 84,277 | 40 | 480 |
| Kigali (Rural) | 1,339 | 166,112 | 40 | 480 |
| Ruhengeri | 923 | 168,791 | 40 | 480 |
| Umutara | 369 | 76,405 | 40 | 480 |

The CENVAR analysis of the EICV 2000-2001 data described in the previous section indicated that the sample size and allocation for that survey were effective. In the case of EICV 2005 the allocation of sample rural ZDs by province will be similar to that for the EICV 2000-2001. A sample of 40 rural ZDs will be selected within each province, for a total rural sample of 480 ZDs. However, in the case of Kigali-Ville and the other urban stratum, it is necessary to take into account the changes in the urban administrative areas described in Section 4. Since some *secteurs* previously classified as rural are now included in the urban domain, there may be an increase in the variability within the urban strata. Given the large increase in the number of

households considered urban because of the administrative changes and the increase in between-ZD variability, the sample size for Kigali-Ville and the other urban strata will be increased. This will also improve any special comparative analysis of the urban data from the two surveys if the ZDs are post-stratified by the previous urban/rural classification of the *secteur*. Based on these considerations, the number of sample ZDs for Kigali-Ville was increased from 80 in the previous survey to 100, and the number of sample ZDs in the other urban stratum was increased from 50 to 80.

For EICV 2000-2001 the number of households selected per sample ZD was 9 for Kigali-Ville and the other urban stratum, and 12 for the rural stratum. This is a reasonable sampling strategy because the urban strata generally have more variability between ZDs and homogeneity of households within ZDs. This approach will also provide a reasonable workload for the enumerators in the urban and rural ZDs based on the data collection procedures each cycle, and provide consistency with the EICV 2000-2001 methodology.

Table 7 shows the allocation of sample ZDs and households by urban and rural stratum within each province for EICV 2005. The 80 sample ZDs for the other urban stratum were allocated to each province proportionally to the total number of households; a slight adjustment was made to ensure a minimum of two sample ZDs in the urban stratum of Umutara Province.

Table 7. Allocation of Sample ZDs and Households by Province, Urban and Rural, for EICV 2005

| PROVINCE | Total | | Urban | | Rural | |
|---|---|---|---|---|---|---|
| | No. ZDs | No. Hhs. | No. ZDs | No. Hhs. | No. ZDs | No. Hhs. |
| RWANDA | 620 | 6,900 | 180 | 1,620 | 440 | 5,280 |
| Kigali_Ville | 100 | 900 | 100 | 900 | - | - |
| Kigali ngali | 46 | 534 | 6 | 54 | 40 | 480 |
| Gitarama | 54 | 606 | 14 | 126 | 40 | 480 |
| Butare | 54 | 606 | 14 | 126 | 40 | 480 |
| Gikongoro | 43 | 507 | 3 | 27 | 40 | 480 |
| Cyangugu | 45 | 525 | 5 | 45 | 40 | 480 |
| Kibuye | 45 | 525 | 5 | 45 | 40 | 480 |
| Gisenyi | 47 | 543 | 7 | 63 | 40 | 480 |
| Ruhengeri | 48 | 552 | 8 | 72 | 40 | 480 |
| Byumba | 47 | 543 | 7 | 63 | 40 | 480 |
| Umutara | 42 | 498 | 2 | 18 | 40 | 480 |
| Kibungo | 49 | 561 | 9 | 81 | 40 | 480 |

The ZDs within each stratum (province, urban/rural) are selected systematically with probability proportional to size (PPS) based on the total number of households. The ordering of the ZDs within each stratum prior to the first stage sample selection will provide a corresponding implicit stratification given the systematic selection procedures.

## 8. Sample Selection Procedures

The sample selection methodology for the EICV 2005 is based on a stratified two-stage sample design. The procedures used for each sampling stage are described separately here.

### 8.1. First Stage Selection of Sample ZDs

At the first sampling stage the sample ZDs for EICV 2005 were selected within each stratum (province, urban/rural) systematically with PPS from the ordered list of ZDs in the sampling frame. The measure of size for each ZD is based on the total number of households enumerated in the 2002 Rwanda Census. The frame of ZDs was sorted in the following order: province, urban/rural, semi-rural, bio-climatic zone and 7-digit ZD code (which includes the province and district codes). With systematic sampling, this ordering of the sample ZDs will provide a high level of implicit stratification by the corresponding criteria. The sorting by ZD code within each implicit stratification category will also ensure an effective geographic distribution of the sample. The sampling frame for Kigali-Ville was sorted separately by semi-rural and then socioeconomic code for the "de facto" urban substratum. Within each explicit stratum (province, urban/rural) the following first stage sample selection procedures were used:

(1) Cumulate the measures of size (number of households) down the ordered list of ZDs within the stratum. The final cumulated measure of size will be the total number of households in the frame for the stratum ($M_h$).

(3) To obtain the sampling interval for stratum h ($I_h$), divide $M_h$ by the total number of ZDs to be selected in stratum h ($n_h$) specified in Table 7:
$I_h = M_h/n_h$.

(4) Select a random number ($R_h$) between 0 and $I_h$. The sample ZDs in stratum h will be identified by the following selection numbers:

$S_{hi} = R_h + [\, I_h \times (i - 1)]$, rounded up,

where i = 1, 2, ..., $n_h$

The i-th selected ZD is the one with a cumulated measure of size closest to $S_{hi}$ but not less than $S_{hi}$.

An Excel file was used for selecting the sample of 620 sample ZDs for the EICV 2005 following these procedures, based on the allocation of the sample ZDs specified in Table 7. The Excel file has a separate spreadsheet for each province, showing the ordered frame of ZDs with the corresponding information from the 2002 Rwanda Census. It documents the first stage systematic selection of sample ZDs with PPS for each stratum within the province. The file has a summary spreadsheet with the frame information for the 620 sample ZDs, and formulas for calculating the weights, as described in Section 11 on Estimation Procedures.

### 8.2. Segmenting of Large Sample ZDs

In the case of a sample ZD with a very large number of households (for example, greater than 400), it will be possible to subdivide the ZD into smaller segments, and select one segment for the listing operation. The segments should have well-defined boundaries in order to facilitate the listing and avoid coverage problems. If the ZD is divided into segments of similar size, one sample segment can be selected at random with equal probability. If the number of households varies considerably by segment, it would be ideal to select one segment with PPS. In this case it would be necessary to have a quick count of the number of households in each segment. The selection of one segment with PPS would involve the following procedures:

(1) Cumulate the measures of size (number of households) down the list of segments within the ZD. The final cumulated measure of size will be the total number of households in the ZD ($M_{hi}$).

(2) Select a random number ($R_{hi}$) between 0 and $M_{hi}$. The selected segment within the sample ZD will be the one with a cumulated measure of size closest to $R_{hi}$ but not less than $R_{hi}$.

An Excel spreadsheet can be used to select one segment with PPS in the large sample ZDs which are subdivided.

### 8.3. Listing of Households in Sample ZDs or Segments

A listing of households will be conducted in each sample ZD prior to the EICV enumeration in order to select the sample households. The supervisor should verify the boundaries of the sample ZD in order to ensure good coverage of the sample households. The number of households listed in each ZD should be compared to the corresponding number from the frame, and any large differences should be investigated.

### 8.4. Selection of Sample Households within Sample ZD or Segment

A systematic sample of 9 households will be selected from the listing for each sample urban ZD and 12 households for each sample rural ZD. This will be similar to the sampling scheme for the EICV 2000-2001. At the same time a sample of 3 potential substitute households will be selected for each sample urban ZD and 4 substitute households for each rural ZD. Therefore a total of 12 households will be selected initially in each sample urban ZD and 16 in each sample rural ZD. Within each sample urban ZD the 3 substitute households will be selected systematically from the 12 households selected initially, and the remaining 9 households will be identified as the original sample. In the same way, the 4 substitute households for each sample rural ZD will be selected systematically from the initial sample of 16, and the remaining 12 households will be in the original sample. The initial systematic sample of $m_{hi}$ households (12 urban, 16 rural) will be selected from the household listing for each sample ZD using the following procedures:

(1) All the households in valid (occupied) housing units should be assigned a serial number from 1 to $M'_{hi}$, the total number of households listed.

(2) To obtain the sampling interval for the selection of households within the sample ZD ($I_{hi}$), divide $M'_{hi}$ by $m_{hi}$, and maintain 2 decimal places.

(3) Select a random number ($R_{hi}$) with 2 decimal places, between 0.01 and $I_{hi}$. The sample households within the sample ZD will be identified by the following selection numbers:

$$S_{hij} = R_{hi} + [I_{hi} \times (j-1)], \text{ rounded up,}$$

where j = 1, 2, 3,..., $n_{hi}$

The j-th selected household is the one with a serial number equal to $S_{hij}$.

A spreadsheet can be used for calculating the sampling interval, generating the random start and identifying the systematic selection of households in a sample ZD.

In order to select the substitute households from the initial sample in each ZD, a random integer between 1 and 4 can be generated, which will identify the first substitute sample household. Starting with this first household, every fourth sample household would be selected to be a substitute household. In this way 3 substitute households will be selected from the initial sample in each urban ZD, and 4 will be selected in each rural ZD. For example, if the random start for a sample urban ZD is 3, the substitute households will be 3, 7 and 11.

A strong effort should be made by the enumerator and supervisor to interview the original sample household before deciding to use a substitute sample household. The supervisor will assign the substitute household when it is not possible to interview the original sample household.

**9. Data Collection Methodology in Urban and Rural Areas**

The data collection procedures for EICV 2005 will be similar to those for the previous survey, described in Dr. Scott's report. This methodology was effective for EICV 2000-2001 and will improve the comparability between the results of the two surveys.

Each sample urban ZD will be enumerated by one enumerator during a cycle of 33 days. The sample urban ZDs will be divided into 10 cycles throughout the year. The 9 sample households in each ZD will be divided into 3 groups of 3 households each. The enumerator will visit one group of 3 sample households each day, the next group of 3 households will be visited the following day, etc. This sequence will be repeated so that each household is interviewed every third day. This 33-day cycle in the urban ZDs will ensure that the payday is covered for salaried employees.

In the case of the rural stratum, a team of four enumerators and supervisors will be assigned to each province. The year will be divided into 10 data collection cycles of 32 days each, and 4 sample rural ZDs will be enumerated within each province during one cycle . The cycles will be further subdivided into two periods of 16 days each for the data collection in each sample

rural ZD. The sample rural ZDs will be paired each cycle so that a group of two enumerators can be assigned to each sample ZD. The 12 sample households in each rural ZD will be divided into two groups of 6 households each, corresponding to the workload of one rural enumerator during the 16 day period. Each enumerator will visit a group of 3 sample households every other day.

## 10. Distribution of Sample ZDs by Data Collection Cycle within the Year

In order for the EICV 2005 to represent seasonality in the household income and expenditure data, it is important to have a sample that is representative across space and time throughout the 12-month data collection period. Ideally, a nationally-representative sample of ZDs should be enumerated each cycle. Sometimes it may be necessary to adjust the set of sample ZDs to be enumerated each cycle to take into account logistical considerations, weather conditions, etc. In the case of EICV 2000-2001, the distribution of the sample segments over time appears to have been mostly determined by operational considerations, which affected the geographic representativeness of the sample each cycle. This can result in a potential bias when there are geographic differences in seasonality.

For EICV 2005 it is recommended to select a representative subsample of ZDs to be assigned to each cycle for data collection. Therefore the 620 sample ZDs can assigned cycle codes from 1 to 10 systematically. In this way a nationally-representative sample of 62 sample ZDs (10 in Kigali-Ville, 8 other urban and 44 rural) can be assigned to each cycle. Then adjustments can be made to these cycle assignments based on logistical considerations, weather conditions, etc. Given the greater dispersion of a nationally-representative subsample of ZDs each cycle, this may increase the cost of the field operations slightly, but this investment will improve the seasonal representativeness of the EICV 2005 sample. In the case of the other urban stratum, the sample ZDs in each town should be spread evenly across the four quarters of the survey year as much as possible.

## 11. Estimation Procedures

### 11.1. Weighting Procedures

In order for the sample estimates from the EICV 2005 to be representative of the population, it is necessary to multiply the data by a sampling weight, or expansion factor. The DS has experience in using appropriate weighting procedures for the previous EICV and other household surveys. The basic weight for each sample household would be equal to the inverse of its probability of selection (calculated by multiplying the probabilities at each sampling stage). The EICV 2005 sample design will be approximately self-weighting within stratum. Since all survey data will be processed by computer, it should be easy to attach a weight to each sample household record in the computer files, and the tabulation programs can weight the data automatically. The sampling probabilities at each stage of selection will be maintained in an Excel spreadsheet so that the overall probability and corresponding weight can be calculated for each sample ZD. The weights will probably vary somewhat by sample ZD, since in most cases the measure of size in the sampling frame may be slightly different from the actual number of households listed.

Given that some of the large sample ZDs may be segmented, the overall probability of selection for sample households includes factors for up to three sampling stages, expressed as follows:

$$p_{hij} = \frac{n_h \times M_{hi}}{M_h} \times p_{2hij} \times \frac{m_{hij}}{M'_{hij}},$$

where:

$p_{hij}$ = probability of selection for the sample households in the j-th sample segment within the i-th sample ZD in stratum (province, urban/rural) h

$n_h$ = number of sample ZDs selected in stratum h for EICV 2005

$M_h$ = total number of households in the frame (based on 2002 Rwanda Census) for stratum h

$M_{hi}$ = total number of households in the frame for the i-th sample ZD in stratum h

$p_{2hij}$ = probability of selecting the j-th sample segment within the i-th sample ZD in stratum h

$m_{hij}$ = number of sample households selected in the i-th sample ZD in stratum h (9 for urban ZDs and 12 for rural ZDs)

$M'_{hij}$ = total number of households listed in the j-th sample segment within the i-th sample ZD in stratum h

The three components of this probability of selection correspond to the individual sampling stages. In the case of ZDs that are not segmented, the segment would be the entire ZD, and $p_{2hij}$ would be equal to 1. For the large ZDs which are segmented, the value of $p_{2hij}$ depends on the selection procedures. If the segment is selected with PPS, this probability would be calculated as follows:

$$p_{2hij} = \frac{Q_{hij}}{Q_{hi}},$$

where:

$Q_{hij}$ = quick count of households for the j-th segment in the i-th sample ZD in stratum h

$Q_{hi}$ = total quick count of households for the i-th sample ZD in stratum h

If the segment within each sample ZD is selected with equal probability, $p_{2hij}$ would be calculated as follows:

$$p_{2hij} = \frac{1}{S_{hi}},$$

where:

$S_{hi}$ = total number of segments in the i-th sample ZD in stratum h

The basic sampling weight, or expansion factor, is calculated as the inverse of this probability of selection. Based on the previous expression for the probability, the weight can be simplified as follows:

$$W_{hijk} = \frac{M_h \times M'_{hij}}{n_h \times M_{hi} \times p_{2hij} \times m_{hij}},$$

where:

$W_{hij}$ = basic weight for the sample households in the j-th sample segment within the i-th sample ZD in stratum h

If $m_{hij}$ is constant for each stratum (for example, 9 households in the urban strata and 12 households in the rural strata) and $p_{2hij}$ is based on a PPS selection, the sample will be approximately self-weighting within each stratum. These weights will actually vary slightly based on the difference between the number of households in the frame, quick count and listing, for the sample ZDs and segments.

It is also important to adjust the weights to take into account the noninterview rate for EICV 2005. Since the weights will be calculated at the level of the sample segment, it would be advantageous to adjust the weights at this level. The final weight ($W'_{hij}$) for the sample households in the j-th sample segment within the i-th sample ZD in stratum h can be expressed as follows:

$$W'_{hij} = W_{hij} \times \frac{m'_{hij}}{m''_{hij}},$$

where:

$m'_{hij}$ = total number of valid (occupied) sample households selected in the j-th sample segment within the i-th sample ZD in stratum h (that is, the number of interviews plus the number of noninterviews in the sample segment)

$m''_{hij}$ = total number of interviewed sample households selected in the j-th sample segment within the i-th sample ZD in stratum h, including replacement households

**11.2. Survey Estimates**

The most common survey estimates to be calculated from the EICV 2005 data will be in the form of totals and ratios. The survey estimate of a total can be expressed as follows:

$$\hat{Y} = \sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{k=1}^{m_{hj}} W'_{hij}\, y_{hijk} \quad ,$$

where:

L = number of strata

$y_{hijk}$ = value of variable y for the k-th sample household in the j-th sample segment within the i-th sample ZD in stratum h

The survey estimate of a ratio is defined as follows:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}} \, ,$$

where $\hat{Y}$ and $\hat{X}$ are estimates of totals for variables y and x, respectively, calculated as specified previously.

When cluster designs are involved, means and proportions are special types of ratios. In the case of the mean, the variable X, in the denominator of the ratio, is defined to equal 1 for each element so that the denominator is the sum of the weights. For a proportion, the variable X in the denominator is also defined to equal 1 for all elements; the variable Y in the numerator is binomial and is defined to equal either 0 or 1, depending on the absence or presence, respectively, of a specified attribute in the element observed.

**11.3. Variance Estimation Procedures**

In the publication of the results for EICV 2005 it is important to include a statement on the accuracy of the survey data. In addition to presenting tables with calculated sampling errors for the most important survey estimates, the different sources of nonsampling error should be described.

The standard error, or square root of the variance, is used to measure the sampling error, although it may also include a small part of the nonsampling error. The variance estimator should take into account the different aspects of the sample design, such as the stratification and clustering. In order to avoid the time and effort it would require to develop custom variance programs, it would be ideal to use an available software package to tabulate the

variances. One such program available for calculating the variances for survey data from stratified multi-stage sample designs such as the EICV 2005 is CENVAR, which is menu-driven and user-friendly. It uses the data dictionary defined in the DATADICT component of IMPS. It can be used to calculate the variances of totals, means, proportions and other ratios. It produces subpopulation estimates for each category of a classification variable, and these variables can be cross-classified. For each estimate, CENVAR calculates the standard error, coefficient of variation (CV), 95 percent confidence interval and the design effect (DEFF). This software package uses an ultimate cluster variance estimator. CENVAR was used for calculating the precision for the estimates of average household income and expenditures from the EICV 2000-2001 data and selected estimates from the QUIBB 2002 data presented in Annexes C and E. The DS has a copy of the IMPS software. The DS statisticians had some practice using this software to tabulate standard errors.

In order to tabulate estimates of standard errors using CENVAR, it is generally necessary to produce a new data input file from the original survey data. Since the CENVAR package will only accept one type of record, it is necessary to generate one record for each unit of analysis in the CENVAR data input file. For example, in the case of the estimates by person, such as the unemployment rate, the CENVAR input file should have one record for each in-scope sample person. For household estimates, such as average household income and expenditures, it is necessary to generate one record for each sample household. Each record in the CENVAR data input file should include fields for the stratum, cluster and weight, in addition to the classification and analysis variables that are required for the particular CENVAR analysis. The classification variables are used to produce subpopulation estimates for all their respective categories. The analysis variables are generally continuous variables, such as income and expenditures, or count variables, which are equal to 1 if the unit has a certain characteristic and 0 otherwise. CENVAR automatically creates a count variable named INTERCEPT, which is equal to 1 for each record. The INTERCEPT variable can be used to obtain the estimate of the weighted total number of units (for example, the total number of persons or households), or it can be used in the denominator of a ratio in order to obtain a mean or proportion.

CENVAR does not accept any blanks in the file. In the case of classification variables, any record with a blank should be imputed with a special code to identify "missing" or "not applicable." The CENVAR output will include estimates for these categories, which can be deleted from the tabulations that will be published. For analysis variables, CENVAR assumes that any missing values are imputed. Once the file is zero-filled, CENVAR will treat any missing value as 0, thus introducing a downward bias in the estimates of means when there are missing values.

The ultimate cluster variance estimator for a total used by CENVAR can be expressed as follows:

Variance Estimator of a Total

$$V(\hat{Y}) = \sum_{h=1}^{L} \left[ \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left( \hat{Y}_{hi} - \frac{\hat{Y}_h}{n_h} \right)^2 \right],$$

where:

$$\hat{Y}_{hi} = \sum_{k=1}^{m_{hj}} W'_{hij}\, y_{hijk}$$

$$\hat{Y}_h = \sum_{i=1}^{n_h} \hat{Y}_{hi}$$

The variance estimator of a ratio used by CENVAR can be expressed as follows:

Variance Estimator of a Ratio

$$V(\hat{R}) = \frac{1}{\hat{X}^2} \left[ V(\hat{Y}) + \hat{R}^2 V(\hat{X}) - 2\, \hat{R}\, COV(\hat{X},\hat{Y}) \right],$$

where:

$$COV(\hat{X},\hat{Y}) = \sum_{h=1}^{L} \left[ \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left( \hat{X}_{hi} - \frac{\hat{X}_h}{n_h} \right) \left( \hat{Y}_{hi} - \frac{\hat{Y}_h}{n_h} \right) \right]$$

$V(\hat{Y})$ and $V(\hat{X})$ are calculated according to the formula for the variance of a total.

**ANNEX A. Methodology for Calculating *Bien-Être* Indicator**

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# Construction de l'indicateur composite de bien-être

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## 1.2. Aspects Méthodologiques

### 1.2.1. Définition des concepts de bien-être

La pauvreté présente de multiples facettes selon les milieux d'une part et selon les analystes d'autre part. L'appréhension de la pauvreté implique, préalablement, une clarification de l'environnement conceptuel et méthodologique, les manques en terme de progrès social pouvant être appréhendés par rapport à la pauvreté monétaire ou à la pauvreté non monétaire.

Les fondements théoriques consistants permettent de baser l'analyse de la pauvreté sur les dépenses et consommations des ménages considérées comme une bonne approximation du bien-être à défaut du revenu dont l'appréhension est quasi impossible dans les pays en développement. Parallèlement à cette approche, la pauvreté peut également être analyser sur base des informations relatives au niveau de confort du logement du ménage.

**Dans une société donnée, la pauvreté suppose que des ménages ou des individus sont dans l'impossibilité d'acquérir un niveau de vie correspondant à un minimum acceptable par les normes de cette société. Dans ce chapitre, ces normes se traduisent par la détermination d'un niveau minimum de bien-être basé principalement sur le confort du ménage appelé seuil par rapport auquel les individus sont classés en pauvres et non pauvres. Ce seuil varie selon le temps et le lieu et chaque pays en adopte un qui lui est propre et qui reflète son niveau de développement ainsi que les normes et les valeurs de sa société.**

Dans ce contexte, le seuil du niveau de bien-être a été défini par la méthode qualitative d'appréciation relative des matériaux de construction du logement, de la qualité des services attachées au ménage et les avoir du ménage qui ont fait l'objet de collecte pendant le recensement général de la population et de l'habitat.

Dans cette optique, la pratique courante implique une stratégie en trois phases :

1. en premier lieu, l'identification d'un indicateur qualitatif simple de bien-être des ménages basé principalement sur le niveau de confort du logement dans lequel habite le ménage.
2. ensuite, l'évaluation de toutes les composantes du confort du logement et les avoirs du ménage par une appréciation relative qualitative qui permet de déterminer une ligne de pauvreté.
3. enfin, une mesure agrégée du niveau de bien-être des ménages pour mesurer les informations relatives à l'indice composite de niveau de bien-être.

Ainsi, l'incidence du bas niveau de bien-être (P0), appelé aussi taux de pauvreté est l'indicateur standard le plus couramment utilisé. Il correspond ici au pourcentage des ménages ordinaires ou de la population correspondante dont le niveau de bien-être est inférieur à celui de la classe moyenne.

## 1.2.2. Construction de l'indice composite du niveau de bien-être fondé sur les caractéristiques du logement et les conditions de vie des ménages.

Le niveau de bien-être est très corrélée au type du logement et aux services y afférents (conditions de vie des ménages) ainsi qu'aux avoirs du ménage. Dans ce chapitre, l'analyse va se concentrer sur la détermination d'un indice composite de niveau de vie basé sur le niveau du confort de l'unité d'habitation dans laquelle vivait le ménage au moment du recensement. En d'autres termes il s'agit d'un indicateur de niveau de vie construit à partir des types matériaux de construction de l'unité d'habitation, des services attachés au logement tels que l'approvisionnement en eau potable, le mode d'éclairage, le mode de cuisson, les types de toilettes et des quelques avoirs du ménage (téléphone, véhicule, radio et télévision).

Il sera question de faire une appréciation de chacune de ces variables selon son importance relative dans le bien-être du ménage. Le poids attribués a chaque variable est fonction de son importance relative dans le confort global du ménage. Les modalités correspondantes a chaque variable sont évaluées par rapport a une note maximale de 20 points selon qu'elles présentent relativement ou non les standards exigés par la société.

Cette appréciation permet d'attribuer à chaque ménage une note synthétique. On peut ainsi dégager une échelle de classement a partir de la plus petite note et la note maximale.

### 1.2.2.1. Quel type de classement du niveau de bien-être des ménages ?

Ce classement se base sur la notion de quintiles qui divise l'échelle en cinq parties égales de vingt pour cent chacune.

(i) Les premiers vingt pour cent de ménages dont les indices sont compris entre la valeur minimale des indices de bien-être et le premier quintile sont considérés comme ayant un niveau de vie ***très bas ;***

(ii) les vingt pour cent suivants dont les indices sont compris entre le premier quintile et le deuxième quintile ont un niveau de vie ***bas ;***

(iii) les vingt pour cent du milieu dont les indices sont compris entre le deuxième et le troisième quintile ont un niveau de vie ***moyen ;***

(iv) les vingt pour cent suivant dont les indices sont compris entre le troisième et le quatrième quintile ont un niveau de vie ***élevé*** et

(v) les vingt pour cent des ménages dont les indices sont compris entre le quatrième quintile et la valeur maximale des indices de bien-être ont un niveau de vie ***très élevé.***

La grille d'appréciation ci-après a permis de construire les quintiles de bien-être des ménages.

## Tableau 1.1. Grille des Pondérations pour l'indice composite du niveau de bien-être des ménages

*BASE : HABITAT ET AVOIRS DU MENAGE*

| Variable | Poids | Modalités | Points | Total |
|---|---|---|---|---|
| **Matériaux pour la toiture** | **0.9** | Beton/Ardoise Industrielle | 20 | 18 |
| | | Tôle | 17 | 15.3 |
| | | Tuile locale | 12 | 10.8 |
| | | Carton/Sheeting/Paille/Autres | 0 | 0 |
| | | Béton/ Blocs de ciment/Pierres | 20 | 16 |
| **Matériaux pour les Murs extérieurs** | **0.8** | Briques cuites | 18 | 14.4 |
| | | Bois/Pissé cimenté | 15 | 12 |
| | | Bois/ Pissé non cimenté/Briques adobes/Briques | 9 | 7.2 |
| | | Plastics/Sheeting/Autres | 0 | 0 |
| **Matériaux pour le sol** | **0.8** | Carreaux | 20 | 16 |
| | | Ciment | 15 | 12 |
| | | Pierres/ Briques cuites | 13 | 10.4 |
| | | Terre battue/Autres | 0 | 0 |
| **Source d'Approvisionnement en eau** | **0.9** | Eau de robinet dans la maison | 20 | 18 |
| | | Eau de robinet dans la concession | 15 | 13.5 |
| | | Fontaine publique/ Robinet en dehors de la concession | 13 | 11.7 |
| | | Source puis aménagé | 12 | 10.8 |
| | | Source puits non aménagé | 5 | 4.5 |
| | | Eau de pluie/ Rivière/ Lacs Marigot/Etang de surface/Autres | 0 | 0 |
| **Mode d'Eclairage** | **0.6** | Electricité Electrogaz/Electricité / Hydroélectricité Privée/Panneau/Groupe électrogène | 20 | 12 |
| | | Lampe à pétrole | 13 | 7.8 |
| | | Lampion/ Bougie | 5 | 3 |
| | | Bois/ Autres | 0 | 0 |
| **Source d'Energie pour cuisson** | **0.6** | Electricité /Gaz | 20 | 12 |
| | | Pétrole | 15 | 9 |
| | | Charbon | 12 | 7.2 |
| | | Bois | 5 | 3 |
| | | Matériaux végétaux/Autres | 0 | 0 |
| **Type de toilette** | **0.6** | WC avec chasse eau | 20 | 12 |
| | | Latrines privée | 13 | 7.8 |
| | | Latrines collective | 8 | 4.8 |
| | | Dans la nature / Autres | 0 | 0 |
| **Possession Radio/ Télévision** | **0.6** | Radio et Télévision | 20 | 12 |
| | | Télévision | 17 | 10.2 |
| | | Radio | 12 | 7.2 |
| | | Aucune | 0 | 0 |
| **Possession Téléphone** | **0.3** | Téléphone fixe et mobile | 20 | 6 |
| | | Téléphone mobile | 15 | 4.5 |
| | | Téléphone fixe | 15 | 4.5 |
| | | Aucun | 0 | 0 |
| **Possession véhicule** | **0.7** | Possession de 2 véhicules et plus | 20 | 14 |
| | | Possession d`un véhicule | 17 | 11.9 |
| | | Aucun | 0 | 0 |

### 1.2.2.2. Les valeurs issues de la construction de l'indice composite du niveau de bien-être des ménages

L'indice composite de niveau de bien-être des ménages a les valeurs comprises, après constriction, entre 0 et 136 qui est la valeur maximale. Les ménages se classent ainsi suivant leurs indices respectifs de niveau de bien-être selon les différents quintiles comme suit :

(i) les ménages dont le niveau de bien-être ***très bas*** ont les indices de bien-être compris entre 00 et 27,2, correspondant aux vingt pour cent les plus faibles de la distribution de niveau de bien-être ;

(ii) les ménages dont le niveau de bien-être est ***bas*** ont les indices de niveau de vie compris entre 27,2 et 54,4;

(iii) les ménages dont le niveau de bien-être est ***moyen*** ont les indices de niveau de vie est compris entre 54,4 et 81,6 ;

(iv) les ménages dont le niveau de bien-être est ***élevé*** ont les indices de niveau de vie est compris entre 81,6 et 108,8;

(v) les ménages dont le niveau de bien-être est ***très élevé*** ont les indices de niveau de vie est compris entre 108,8 et 136;

### 1.2.3. Construction de l'indice composite du niveau de confort du logement.

**L'indice composite du logement permet de définir la qualité du logement dans lequel vivait le ménage au moment du recensement. Cet indice est un sous-indice de l'indice composite (global) de bien-être que a été décrit au point précédent. Il est constitué de trois variables qui composent les principaux matériaux de construction du logement. Il s'agit des matériaux de toiture, de murs et ceux du pavement.**

**Pour construire l'indice, nous avons créé une variable dichotomique. On attribue aux modalités dont les matériaux sont relativement bons une cote 1, et le reste c'est à dire les modalités qui présentent des matériaux mauvais, une cote 0.**

**Par exemple, en ce qui concerne les matériaux de toiture du logement, il a été attribué la cote 1 au logement ayant la toiture en *Tôle, Tuile locale, Tuile ou ardoises industrielles et Béton*. Le reste comme toiture en *carton/sheeting, paille et autres* ont eu la cote 0.**

**Il en découle ainsi 3 indicateurs dichotomiques élémentaires du logement : *Etat de la toiture,, Etat du pavement et Etat de murs.***

**Cette approche a permis de classer tous les ménages selon la qualité du logement en quatre catégorie suivante:**

**(i) les ménages dont le confort du logement satisfont aux matériaux de construction considérés comme relativement très bons et ayant la valeur maximale de l'échelle, soit 3, sont considères comme ayant un** *Très bon logement* ***;***

(ii) **les ménages dont la valeur de l'indice est égale à 2 sont considérés comme ayant un** *Bon logement ;*

(iii) **les ménages dont la valeur de l'indice est égale à 1 sont considérés comme ayant un** *Mauvais logement* ***et***

(iv) **les ménages dont la valeur de l'indice est égale à 0 sont considérés comme ayant un** *très mauvais logement****.***

### 1.2.4. Construction de l'indice élémentaire de la qualité de l'eau utilisée par les ménages.

**La variable mode d'approvisionnement en eau dans le ménage a été transformée en variable dichotomique pour identifier les ménages qui ont l'accès à l'eau potable et ceux n'ayant accès à l'eau potable.**

**Les modalités d'approvisionnement en eau telles que** *eau de robinet dans la maison, eau de robinet et source aménagée* **ont été considérée comme eau potable et on les a attribué la cote 1. Tandis que** *l'eau de pluie, eau de rivière, eau de lac ou de surface et autres sources***, ont été classée comme eau non potable et on les a attribué la cote 0.**

**Ce classement à permis d'identifier tous le ménages :**

**(i) ayant accès à l'eau potable et**
**(ii) ceux n'ayant pas accès à l'eau potable.**

### 1.2.5. Construction de l'indice élémentaire de la qualité de toilette utilisées par les ménages.

**Les types de toilettes utiles par les ménages ont été classés en cinq catégories ou modalités suivante par le recensement général de la population et de l'habitat de 2002 :** ***toilettes avec chasse eau, latrines privés, latrines collectives, dans la nature et autres type de toilette*****.**

**Pour rendre dichotomique cette variable, on a attribué la cote 1 à chaque ménage ayant une** ***toilette avec chasse eau*** **et** ***ceux ayant des latrines privées*** **; et la cote 0 au ménage qui** ***n'a pas de toilette*** **ou ayant des** ***latrines collectives*****. Cela permet de cibler les ménages qui n'ont pas de toilettes pour permettre d'orienter efficacement les politiques et programmes d'assainissement.**

**1.2.6. Construction de l'indice élémentaire de la qualité de l'énergie utilisée pour la cuisson.**

**Les différentes qualités d'énergie utilisée par les ménages pour faire la cuisine sont : *électricité, le gaz, le pétrole, le bois de chauffe, le charbon de bois, les matériaux végétaux et autres qualités non mentionnées ici*.**

**On a classé comme qualité bonne de l'énergie pour la cuisson, *l'électricité, le gaz et le charbon* et nous y avons attribué la cote 1. Ceci pour cibler les ménages qui utilise le *bois de chauffe ou les matériaux végétaux,* à qui nous avons attribué la cote 0 et qui sont assimilés aux ménages dont le niveau de bien-être est très bas ou bas.**

**Le fait de classer le charbon de bois comme « *bonne qualité d'énergie pour la cuisson* » traduit ici le niveau de bien-être relativement élevé des ménages qui l'utilisent et ne doit donc pas être considéré comme bonne qualité d'énergie pour la cuisson au sens strict avec ses conséquences sur l'environnement.**

**1.2.7. Construction de l'indice élémentaire de la qualité de l'énergie utilisée pour l'éclairage.**

**Les sources d'énergie qu'utilisent les ménages pour éclairer la maison sont reparties en huit modalités par le recensement. Il s'agit de : *électricité d'Electrogaz, centrale hydroélectricité privée, panneau solaire ou groupe électrogène, lampe* à *pétrole, lampion, bougie, bois et autres*.**

**Pour un classement dichotomique, on a attribué aux quatre premiers modes d'éclairage (*électricité d'Electrogaz, centrale hydroélectricité privée, panneau solaire ou groupe électrogène, lampe* à *pétrole)* la cote 1 et 0 pour le reste. Cela permet d'identifier les ménages qui utilisent l'énergie non appropriée pour une bonne qualité de bien-être.**

**Classer l'utilisation de la lampe à pétrole comme « bonne qualité d'énergie » pour l'éclairage doit se traduire par le niveau de bien-être relativement moyen ou élevé des ménages qui l'utilisent au Rwanda compte tenu du coût de la lampe et du pétrole utilisé.**

# ANNEX B. IMPS Data Dictionary for CENVAR Analysis of EICV 2000-2001 Data



Data Dictionary: EICV00 IMPS Version 3.1
Created: 26/05/04 04:16:44

Record Length: 53

The following records have been defined:

| Record Name | Record Type Value (RECTYPE) | Required | Max. Records |
|---|---|---|---|
| MENAGE | | Y | 99 |

The following COMMON items have been defined. They occur on all records.

| Item (occurs) / Subitem (occurs) | Data Type | Position | Item Len. | Value Name | Values |
|---|---|---|---|---|---|
| CVSTRATE | N | 1-3 | 3 | | |
| STRATE | N | 3 | 1 | Kigali-Ville | 1 |
| | | | | Autre Urbain | 2 |
| | | | | Rural | 3 |
| GRAPPE | N | 4-13 | 10 | | |
| PROVINCE | N | 4-5 | 2 | BUTARE | 01 |
| | | | | BYUMBA | 02 |
| | | | | CYANGUGU | 03 |
| | | | | GIKONGORO | 04 |
| | | | | GISENYI | 05 |
| | | | | GITARAMA | 06 |
| | | | | KIBUNGO | 07 |
| | | | | KIBUYE | 08 |
| | | | | KIGALI | 09 |
| | | | | KIGALI-VILLE | 10 |
| | | | | RUHENGERI | 11 |
| | | | | UMUTARA | 12 |

Record Name: MENAGE Record Type:

| Item (occurs) Subitem (occurs) | Data Type | Position | Item Len. | Dec. | Value Name | Values |
|---|---|---|---|---|---|---|
| PONDERATION | N | 14-21 | 8 | 4 | | |
| URBRUR | N | 22 | 1 | 0 | Urbain | 1 |
| | | | | | Rural | 2 |
| DEPALIMENTAIRE | N | 23-32 | 10 | 0 | | |
| DEPNALIMENTAIRE | N | 33-42 | 10 | 0 | | |
| DEPENSETOTAL | N | 43-53 | 11 | 2 | | |

## ANNEX C. Calcul des estimations et erreurs de sondage pour les doneés de l'EICV 2000-2001

1. Dépense moyenne par ménage

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 344,552 | 11,647 | 3.38 | 321,724 | 367,381 | 3.61 | 6,420 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 1,129,116 | 78,745 | 6.97 | 974,777 | 1,283,456 | 3.20 | 1,149 |
| Rural | 258,528 | 5,856 | 2.26 | 247,052 | 270,005 | 3.41 | 5,271 |
| STRATE | | | | | | | |
| Kigali-Ville | 1,237,650 | 102,447 | 8.28 | 1,036,854 | 1,438,447 | 3.54 | 702 |
| Autre Urbain | 865,414 | 82,666 | 9.55 | 703,388 | 1,027,439 | 1.44 | 447 |
| Rural | 258,528 | 5,856 | 2.26 | 247,052 | 270,005 | 3.41 | 5,271 |
| PROVINCE - TOTAL | | | | | | | |
| BUTARE | 265,649 | 25,443 | 9.58 | 215,779 | 315,518 | 1.87 | 559 |
| BYUMBA | 286,936 | 32,892 | 11.46 | 222,468 | 351,403 | 5.73 | 504 |
| CYANGUGU | 300,747 | 28,277 | 9.40 | 245,325 | 356,170 | 3.63 | 506 |
| GIKONGORO | 218,419 | 15,316 | 7.01 | 188,400 | 248,438 | 1.75 | 497 |
| GISENYI | 300,793 | 12,496 | 4.15 | 276,300 | 325,285 | 0.98 | 543 |
| GITARAMA | 320,007 | 13,969 | 4.37 | 292,628 | 347,386 | 1.83 | 514 |
| KIBUNGO | 324,399 | 22,359 | 6.89 | 280,576 | 368,222 | 2.95 | 524 |
| KIBUYE | 219,951 | 8,561 | 3.89 | 203,172 | 236,730 | 1.11 | 496 |
| KIGALI | 260,830 | 11,480 | 4.40 | 238,329 | 283,330 | 1.11 | 543 |
| KIGALI-VILLE | 1,237,650 | 102,447 | 8.28 | 1,036,854 | 1,438,447 | 3.54 | 702 |
| RUHENGERI | 234,827 | 17,458 | 7.43 | 200,610 | 269,045 | 2.90 | 543 |
| UMUTARA | 325,099 | 22,546 | 6.94 | 280,908 | 369,289 | 1.50 | 489 |
| PROVINCE - RURAL | | | | | | | |
| BUTARE | 223,616 | 10,959 | 4.90 | 202,136 | 245,096 | 1.72 | 479 |
| BYUMBA | 283,097 | 33,457 | 11.82 | 217,522 | 348,672 | 5.93 | 477 |
| CYANGUGU | 284,792 | 27,882 | 9.79 | 230,144 | 339,441 | 4.27 | 479 |
| GIKONGORO | 207,596 | 10,086 | 4.86 | 187,828 | 227,365 | 1.20 | 479 |
| GISENYI | 267,628 | 11,565 | 4.32 | 244,960 | 290,297 | 1.79 | 480 |
| GITARAMA | 312,378 | 14,034 | 4.49 | 284,872 | 339,884 | 2.05 | 479 |
| KIBUNGO | 309,280 | 22,711 | 7.34 | 264,766 | 353,793 | 3.89 | 479 |
| KIBUYE | 213,594 | 7,514 | 3.52 | 198,866 | 228,322 | 1.00 | 479 |
| KIGALI | 227,054 | 10,087 | 4.44 | 207,283 | 246,825 | 2.42 | 480 |
| RUHENGERI | 217,743 | 16,492 | 7.57 | 185,417 | 250,068 | 3.50 | 480 |
| UMUTARA | 318,638 | 21,760 | 6.83 | 275,989 | 361,287 | 1.45 | 480 |

2. Dépense alimentaire moyenne par ménage

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 195,350 | 4,276 | 2.19 | 186,969 | 203,731 | 3.82 | 6,420 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 396,047 | 22,488 | 5.68 | 351,969 | 440,124 | 3.60 | 1,149 |
| Rural | 173,345 | 3,474 | 2.00 | 166,536 | 180,153 | 3.60 | 5,271 |
| STRATE | | | | | | | |
| Kigali-Ville | 418,846 | 29,300 | 7.00 | 361,419 | 476,274 | 4.27 | 702 |
| Autre Urbain | 340,650 | 23,760 | 6.97 | 294,081 | 387,220 | 1.27 | 447 |
| Rural | 173,345 | 3,474 | 2.00 | 166,536 | 180,153 | 3.60 | 5,271 |
| PROVINCE - TOTAL | | | | | | | |
| BUTARE | 156,561 | 8,477 | 5.41 | 139,947 | 173,175 | 1.77 | 559 |
| BYUMBA | 200,004 | 18,722 | 9.36 | 163,310 | 236,699 | 6.05 | 504 |
| CYANGUGU | 193,301 | 17,079 | 8.84 | 159,825 | 226,776 | 4.34 | 506 |
| GIKONGORO | 142,502 | 7,364 | 5.17 | 128,070 | 156,935 | 1.54 | 497 |
| GISENYI | 201,961 | 6,462 | 3.20 | 189,295 | 214,626 | 1.27 | 543 |
| GITARAMA | 195,194 | 9,702 | 4.97 | 176,177 | 214,210 | 3.18 | 514 |
| KIBUNGO | 205,227 | 10,577 | 5.15 | 184,495 | 225,958 | 2.59 | 524 |
| KIBUYE | 162,496 | 5,682 | 3.50 | 151,360 | 173,632 | 1.01 | 496 |
| KIGALI | 158,213 | 7,761 | 4.91 | 143,001 | 173,425 | 2.43 | 543 |
| KIGALI-VILLE | 418,846 | 29,300 | 7.00 | 361,419 | 476,274 | 4.27 | 702 |
| RUHENGERI | 151,926 | 8,696 | 5.72 | 134,882 | 168,969 | 3.45 | 543 |
| UMUTARA | 213,528 | 13,263 | 6.21 | 187,533 | 239,523 | 1.64 | 489 |
| PROVINCE - RURAL | | | | | | | |
| BUTARE | 144,407 | 6,639 | 4.60 | 131,394 | 157,420 | 1.86 | 479 |
| BYUMBA | 199,467 | 19,001 | 9.53 | 162,226 | 236,709 | 6.11 | 477 |
| CYANGUGU | 187,086 | 17,074 | 9.13 | 153,621 | 220,551 | 4.76 | 479 |
| GIKONGORO | 140,271 | 6,933 | 4.94 | 126,682 | 153,859 | 1.42 | 479 |
| GISENYI | 193,098 | 6,707 | 3.47 | 179,954 | 206,243 | 1.70 | 480 |
| GITARAMA | 194,412 | 9,973 | 5.13 | 174,865 | 213,959 | 3.31 | 479 |
| KIBUNGO | 201,019 | 10,854 | 5.40 | 179,745 | 222,292 | 2.94 | 479 |
| KIBUYE | 160,680 | 5,849 | 3.64 | 149,215 | 172,145 | 1.05 | 479 |
| KIGALI | 148,745 | 7,754 | 5.21 | 133,547 | 163,942 | 3.08 | 480 |
| RUHENGERI | 146,954 | 8,579 | 5.84 | 130,138 | 163,769 | 3.79 | 480 |
| UMUTARA | 209,646 | 12,796 | 6.10 | 184,566 | 234,726 | 1.62 | 480 |

3. Dépenses non-alimentaires moyennes par ménage

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 146,196 | 7,913 | 5.41 | 130,687 | 161,705 | 3.19 | 6,420 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 720,301 | 57,472 | 7.98 | 607,656 | 832,946 | 2.77 | 1,149 |
| Rural | 83,248 | 2,695 | 3.24 | 77,966 | 88,530 | 2.49 | 5,271 |
| STRATE | | | | | | | |
| Kigali-Ville | 805,091 | 74,771 | 9.29 | 658,540 | 951,642 | 3.00 | 702 |
| Autre Urbain | 514,289 | 61,270 | 11.91 | 394,200 | 634,377 | 1.38 | 447 |
| Rural | 83,248 | 2,695 | 3.24 | 77,966 | 88,530 | 2.49 | 5,271 |
| PROVINCE - TOTAL | | | | | | | |
| BUTARE | 106,318 | 18,420 | 17.33 | 70,215 | 142,421 | 1.84 | 559 |
| BYUMBA | 83,176 | 12,990 | 15.62 | 57,716 | 108,636 | 3.95 | 504 |
| CYANGUGU | 104,786 | 12,226 | 11.67 | 80,824 | 128,748 | 2.21 | 506 |
| GIKONGORO | 72,917 | 9,815 | 13.46 | 53,680 | 92,154 | 1.98 | 497 |
| GISENYI | 98,023 | 7,940 | 8.10 | 82,460 | 113,585 | 0.94 | 543 |
| GITARAMA | 122,750 | 6,901 | 5.62 | 109,224 | 136,276 | 1.20 | 514 |
| KIBUNGO | 117,908 | 12,997 | 11.02 | 92,434 | 143,381 | 2.75 | 524 |
| KIBUYE | 56,412 | 5,043 | 8.94 | 46,527 | 66,296 | 1.80 | 496 |
| KIGALI | 100,943 | 5,872 | 5.82 | 89,434 | 112,452 | 0.65 | 543 |
| KIGALI-VILLE | 805,091 | 74,771 | 9.29 | 658,540 | 951,642 | 3.00 | 702 |
| RUHENGERI | 79,963 | 9,562 | 11.96 | 61,222 | 98,704 | 1.84 | 543 |
| UMUTARA | 109,676 | 10,830 | 9.87 | 88,450 | 130,902 | 1.19 | 489 |
| PROVINCE - RURAL | | | | | | | |
| BUTARE | 77,127 | 5,305 | 6.88 | 66,728 | 87,526 | 1.55 | 479 |
| BYUMBA | 79,881 | 13,231 | 16.56 | 53,948 | 105,813 | 4.32 | 477 |
| CYANGUGU | 95,165 | 11,874 | 12.48 | 71,893 | 118,438 | 2.64 | 479 |
| GIKONGORO | 64,540 | 4,862 | 7.53 | 55,009 | 74,070 | 1.39 | 479 |
| GISENYI | 74,190 | 6,555 | 8.84 | 61,342 | 87,039 | 1.90 | 480 |
| GITARAMA | 116,277 | 6,565 | 5.65 | 103,410 | 129,145 | 1.37 | 479 |
| KIBUNGO | 107,425 | 13,101 | 12.20 | 81,746 | 133,103 | 4.07 | 479 |
| KIBUYE | 51,889 | 2,636 | 5.08 | 46,723 | 57,055 | 0.93 | 479 |
| KIGALI | 76,945 | 4,291 | 5.58 | 68,535 | 85,355 | 1.94 | 480 |
| RUHENGERI | 67,955 | 8,687 | 12.78 | 50,930 | 84,981 | 2.13 | 480 |
| UMUTARA | 107,069 | 10,598 | 9.90 | 86,298 | 127,841 | 1.14 | 480 |

4. Pourcentage de dépenses alimentaires dans les dépenses totales

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 56.7 | 1.0 | 1.70 | 54.8 | 58.6 | 2.53 | 6,420 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 35.1 | 0.9 | 2.53 | 33.3 | 36.8 | 1.23 | 1,149 |
| Rural | 67.1 | 0.5 | 0.77 | 66.0 | 68.1 | 1.85 | 5,271 |
| STRATE | | | | | | | |
| Kigali-Ville | 33.8 | 1.0 | 3.00 | 31.9 | 35.8 | 1.30 | 702 |
| Autre Urbain | 39.4 | 1.7 | 4.25 | 36.1 | 42.6 | 0.92 | 447 |
| Rural | 67.1 | 0.5 | 0.77 | 66.0 | 68.1 | 1.85 | 5,271 |
| PROVINCE - TOTAL | | | | | | | |
| BUTARE | 58.9 | 3.3 | 5.53 | 52.6 | 65.3 | 1.72 | 559 |
| BYUMBA | 69.7 | 1.9 | 2.76 | 65.9 | 73.5 | 2.14 | 504 |
| CYANGUGU | 64.3 | 1.5 | 2.40 | 61.2 | 67.3 | 1.18 | 506 |
| GIKONGORO | 65.2 | 2.7 | 4.07 | 60.0 | 70.4 | 2.06 | 497 |
| GISENYI | 67.1 | 1.6 | 2.32 | 64.1 | 70.2 | 1.00 | 543 |
| GITARAMA | 61.0 | 1.4 | 2.33 | 58.2 | 63.8 | 1.81 | 514 |
| KIBUNGO | 63.3 | 1.8 | 2.82 | 59.8 | 66.8 | 2.02 | 524 |
| KIBUYE | 73.9 | 1.7 | 2.23 | 70.6 | 77.1 | 2.12 | 496 |
| KIGALI | 60.7 | 1.5 | 2.44 | 57.8 | 63.6 | 1.02 | 543 |
| KIGALI-VILLE | 33.8 | 1.0 | 3.00 | 31.9 | 35.8 | 1.30 | 702 |
| RUHENGERI | 64.7 | 1.7 | 2.68 | 61.3 | 68.1 | 1.03 | 543 |
| UMUTARA | 65.7 | 1.7 | 2.54 | 62.4 | 69.0 | 0.98 | 489 |
| PROVINCE - RURAL | | | | | | | |
| BUTARE | 64.6 | 1.3 | 2.02 | 62.0 | 67.1 | 1.59 | 479 |
| BYUMBA | 70.5 | 2.1 | 2.91 | 66.4 | 74.5 | 2.47 | 477 |
| CYANGUGU | 65.7 | 1.7 | 2.51 | 62.5 | 68.9 | 1.36 | 479 |
| GIKONGORO | 67.6 | 1.6 | 2.43 | 64.4 | 70.8 | 2.08 | 479 |
| GISENYI | 72.2 | 1.5 | 2.11 | 69.2 | 75.1 | 1.90 | 480 |
| GITARAMA | 62.2 | 1.4 | 2.25 | 59.5 | 65.0 | 2.17 | 479 |
| KIBUNGO | 65.0 | 1.9 | 3.00 | 61.2 | 68.8 | 3.16 | 479 |
| KIBUYE | 75.2 | 0.8 | 1.09 | 73.6 | 76.8 | 0.94 | 479 |
| KIGALI | 65.5 | 1.5 | 2.28 | 62.6 | 68.4 | 2.95 | 480 |
| RUHENGERI | 67.5 | 1.8 | 2.69 | 63.9 | 71.0 | 1.17 | 480 |
| UMUTARA | 65.8 | 1.7 | 2.62 | 62.4 | 69.2 | 0.99 | 480 |

5. Pourcentage de dépenses non-alimentaires dans les dépenses totales

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 42.4 | 1.0 | 2.28 | 40.5 | 44.3 | 2.58 | 6,420 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 63.8 | 0.9 | 1.35 | 62.1 | 65.5 | 1.14 | 1,149 |
| Rural | 32.2 | 0.5 | 1.51 | 31.2 | 33.2 | 1.75 | 5,271 |
| STRATE | | | | | | | |
| Kigali-Ville | 65.0 | 1.0 | 1.47 | 63.2 | 66.9 | 1.15 | 702 |
| Autre Urbain | 59.4 | 1.7 | 2.89 | 56.1 | 62.8 | 0.92 | 447 |
| Rural | 32.2 | 0.5 | 1.51 | 31.2 | 33.2 | 1.75 | 5,271 |
| PROVINCE - TOTAL | | | | | | | |
| BUTARE | 40.0 | 3.3 | 8.27 | 33.5 | 46.5 | 1.74 | 559 |
| BYUMBA | 29.0 | 1.5 | 5.07 | 26.1 | 31.9 | 1.62 | 504 |
| CYANGUGU | 34.8 | 1.5 | 4.31 | 31.9 | 37.8 | 1.14 | 506 |
| GIKONGORO | 33.4 | 2.5 | 7.64 | 28.4 | 38.4 | 2.00 | 497 |
| GISENYI | 32.6 | 1.5 | 4.75 | 29.6 | 35.6 | 1.02 | 543 |
| GITARAMA | 38.4 | 1.4 | 3.64 | 35.6 | 41.1 | 1.82 | 514 |
| KIBUNGO | 36.3 | 1.8 | 4.86 | 32.9 | 39.8 | 2.05 | 524 |
| KIBUYE | 25.6 | 1.6 | 6.40 | 22.4 | 28.9 | 2.12 | 496 |
| KIGALI | 38.7 | 1.4 | 3.59 | 36.0 | 41.4 | 0.93 | 543 |
| KIGALI-VILLE | 65.0 | 1.0 | 1.47 | 63.2 | 66.9 | 1.15 | 702 |
| RUHENGERI | 34.1 | 1.8 | 5.24 | 30.6 | 37.5 | 1.04 | 543 |
| UMUTARA | 33.7 | 1.5 | 4.57 | 30.7 | 36.8 | 0.92 | 489 |
| PROVINCE - RURAL | | | | | | | |
| BUTARE | 34.5 | 1.2 | 3.45 | 32.2 | 36.8 | 1.49 | 479 |
| BYUMBA | 28.2 | 1.6 | 5.59 | 25.1 | 31.3 | 1.95 | 477 |
| CYANGUGU | 33.4 | 1.6 | 4.82 | 30.3 | 36.6 | 1.31 | 479 |
| GIKONGORO | 31.1 | 1.5 | 4.85 | 28.1 | 34.0 | 2.03 | 479 |
| GISENYI | 27.7 | 1.5 | 5.48 | 24.7 | 30.7 | 1.89 | 480 |
| GITARAMA | 37.2 | 1.4 | 3.72 | 34.5 | 39.9 | 2.15 | 479 |
| KIBUNGO | 34.7 | 1.9 | 5.59 | 30.9 | 38.5 | 3.12 | 479 |
| KIBUYE | 24.3 | 0.8 | 3.33 | 22.7 | 25.9 | 0.94 | 479 |
| KIGALI | 33.9 | 1.4 | 4.04 | 31.2 | 36.6 | 2.77 | 480 |
| RUHENGERI | 31.2 | 1.9 | 5.97 | 27.6 | 34.9 | 1.18 | 480 |
| UMUTARA | 33.6 | 1.6 | 4.74 | 30.5 | 36.7 | 0.92 | 480 |

6. Nombre total pondéré de ménages

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 1,610,147 | 26,200 | 1.63 | 1,558,795 | 1,661,498 | ****** | 6,420 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 159,101 | 9,828 | 6.18 | 139,838 | 178,363 | 2.69 | 1,149 |
| Rural | 1,451,046 | 24,287 | 1.67 | 1,403,445 | 1,498,648 | 16.40 | 5,271 |
| STRATE | | | | | | | |
| Kigali-Ville | 112,711 | 9,420 | 8.36 | 94,249 | 131,173 | 3.37 | 702 |
| Autre Urbain | 46,389 | 2,803 | 6.04 | 40,896 | 51,883 | 0.70 | 447 |
| Rural | 1,451,046 | 24,287 | 1.67 | 1,403,445 | 1,498,648 | 16.40 | 5,271 |
| PROVINCE - TOTAL | | | | | | | |
| BUTARE | 141,071 | 5,785 | 4.10 | 129,733 | 152,409 | 1.04 | 559 |
| BYUMBA | 152,475 | 7,288 | 4.78 | 138,191 | 166,759 | 1.53 | 504 |
| CYANGUGU | 112,511 | 4,074 | 3.62 | 104,526 | 120,497 | 0.63 | 506 |
| GIKONGORO | 101,889 | 2,173 | 2.13 | 97,630 | 106,148 | 0.20 | 497 |
| GISENYI | 152,389 | 12,988 | 8.52 | 126,933 | 177,845 | 4.87 | 543 |
| GITARAMA | 170,983 | 5,072 | 2.97 | 161,042 | 180,924 | 0.67 | 514 |
| KIBUNGO | 133,324 | 12,534 | 9.40 | 108,757 | 157,890 | 5.12 | 524 |
| KIBUYE | 96,310 | 3,338 | 3.47 | 89,767 | 102,852 | 0.49 | 496 |
| KIGALI | 187,095 | 8,009 | 4.28 | 171,397 | 202,792 | 1.55 | 543 |
| KIGALI-VILLE | 112,711 | 9,420 | 8.36 | 94,249 | 131,173 | 3.37 | 702 |
| RUHENGERI | 187,188 | 6,612 | 3.53 | 174,230 | 200,147 | 1.05 | 543 |
| UMUTARA | 62,201 | 4,578 | 7.36 | 53,228 | 71,175 | 1.40 | 489 |
| PROVINCE - RURAL | | | | | | | |
| BUTARE | 133,951 | 5,684 | 4.24 | 122,810 | 145,092 | 1.05 | 479 |
| BYUMBA | 150,026 | 7,283 | 4.85 | 135,751 | 164,301 | 1.55 | 477 |
| CYANGUGU | 109,660 | 3,995 | 3.64 | 101,831 | 117,489 | 0.62 | 479 |
| GIKONGORO | 99,707 | 2,135 | 2.14 | 95,522 | 103,891 | 0.19 | 479 |
| GISENYI | 146,203 | 12,952 | 8.86 | 120,817 | 171,589 | 5.03 | 480 |
| GITARAMA | 165,716 | 4,914 | 2.97 | 156,085 | 175,347 | 0.65 | 479 |
| KIBUNGO | 128,792 | 12,488 | 9.70 | 104,316 | 153,268 | 5.25 | 479 |
| KIBUYE | 93,377 | 3,122 | 3.34 | 87,258 | 99,497 | 0.44 | 479 |
| KIGALI | 181,299 | 7,976 | 4.40 | 165,667 | 196,931 | 1.58 | 480 |
| RUHENGERI | 181,029 | 6,530 | 3.61 | 168,229 | 193,828 | 1.06 | 480 |
| UMUTARA | 61,286 | 4,486 | 7.32 | 52,494 | 70,079 | 1.36 | 480 |

## ANNEX D. IMPS Data Dictionary for CENVAR Analysis of QUIBB 2002 Data

Page 1 Data Dictionary: QUIBBMEN IMPS Version 3.1
Created: 30/05/04 12:02:41

Record Length: 44

The following records have been defined:

| Record Name | Record Type Value (RECTYPE) | Required | Max. Records |
|---|---|---|---|
| MENAGE | | Y | 99 |

The following COMMON items have been defined. They occur on all records.

| Item (occurs) / Subitem (occurs) | Data Type | Position | Item Len. | Value Name | Values |
|---|---|---|---|---|---|
| CVSTRATE | N | 1-3 | 3 | | |
| STRATE | N | 3 | 1 | Kigali-Ville | 1 |
| | | | | Autre Urbain | 2 |
| | | | | Rural | 3 |
| GRAPPE | N | 4-6 | 3 | | |

Record Name: MENAGE Record Type:

| Item (occurs) Subitem (occurs) | Data Type | Position | Item Len. | Dec. | Value Name | Values |
|---|---|---|---|---|---|---|
| PONDERATION | N | 7-15 | 9 | 4 | | |
| PROVINCE | N | 16-17 | 2 | 0 | BUTARE | 01 |
| | | | | | BYUMBA | 02 |
| | | | | | CYANGUGU | 03 |
| | | | | | GIKONGORO | 04 |
| | | | | | GISENYI | 05 |
| | | | | | GITARAMA | 06 |
| | | | | | KIBUNGO | 07 |
| | | | | | KIBUYE | 08 |
| | | | | | KIGALI | 09 |
| | | | | | KIGALI-VILLE | 10 |
| | | | | | RUHENGERI | 11 |
| | | | | | UMUTARA | 12 |
| URBRUR | N | 18 | 1 | 0 | Urbain | 1 |
| | | | | | Rural | 2 |
| FEMMECHEF | N | 19 | 1 | 0 | | |
| CHEFVEUF | N | 20 | 1 | 0 | | |
| TEMPSEAU | N | 21-23 | 3 | 0 | | |
| TEMPSMARCHE | N | 24-26 | 3 | 0 | | |
| TEMPSTRANSPORT | N | 27-29 | 3 | 0 | | |
| TEMPSROUTE | N | 30-32 | 3 | 0 | | |
| TEMPPRIMAIRE | N | 33-35 | 3 | 0 | | |
| TEMPSSECONDAIRE | N | 36-38 | 3 | 0 | | |
| TEMPSHOPITAL | N | 39-41 | 3 | 0 | | |
| TEMPSBUREAU | N | 42-44 | 3 | 0 | | |

Record Length: 27

The following records have been defined:

| Record Name | Record Type Value (RECTYPE) | Required | Max. Records |
|---|---|---|---|
| INDIVIDU | | Y | 99 |

The following COMMON items have been defined. They occur on all records.

| Item (occurs) / Subitem (occurs) | Data Type | Position | Item Len. | Value Name | Values |
|---|---|---|---|---|---|
| CVSTRATE | N | 1-3 | 3 | | |
| STRATE | N | 3 | 1 | Kigali-Ville | 1 |
| | | | | Autre Urbain | 2 |
| | | | | Rural | 3 |
| GRAPPE | N | 4-6 | 3 | | |

Record Name: INDIVIDU Record Type:

| Item (occurs) / Subitem (occurs) | Data Type | Position | Item Len. | Dec. | Value Name | Values |
|---|---|---|---|---|---|---|
| PONDERATION | N | 7-15 | 9 | 4 | | |
| PROVINCE | N | 16-17 | 2 | 0 | BUTARE | 01 |
| | | | | | BYUMBA | 02 |
| | | | | | CYANGUGU | 03 |
| | | | | | GIKONGORO | 04 |
| | | | | | GISENYI | 05 |
| | | | | | GITARAMA | 06 |
| | | | | | KIBUNGO | 07 |
| | | | | | KIBUYE | 08 |
| | | | | | KIGALI | 09 |
| | | | | | KIGALI-VILLE | 10 |
| | | | | | RUHENGERI | 11 |
| | | | | | UMUTARA | 12 |
| URBRUR | N | 18 | 1 | 0 | Urbain | 1 |
| | | | | | Rural | 2 |
| SEXE | N | 19 | 1 | 0 | Homme | 1 |
| | | | | | Femme | 2 |
| GROUPAGE | N | 20 | 1 | 0 | Moins de 15 ans | 1 |
| | | | | | 15 a 19 ans | 2 |
| | | | | | 20 a 29 ans | 3 |
| | | | | | 30 a 39 ans | 4 |
| | | | | | 40 a 49 ans | 5 |
| | | | | | 50 a 59 ans | 6 |
| | | | | | 60 ans et plus | 7 |
| AGE7A13 | N | 21 | 1 | 0 | | |
| ESCOLARITE | N | 22 | 1 | 0 | | |
| AGE15PLUS | N | 23 | 1 | 0 | | |
| ALFABET | N | 24 | 1 | 0 | | |
| ECONOMICACT | N | 25 | 1 | 0 | | |
| EMPLOYE | N | 26 | 1 | 0 | | |
| CHOMEUR | N | 27 | 1 | 0 | | |

**ANNEX E. Calcul des estimations et erreurs de sondage pour les donneés du QUIBB 2002**

A. Estimations au niveau individuel

1. Taux de scolarisation (pourcentage), enfants de 7 a 13 ans

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 79.1 | 0.8 | 0.95 | 77.7 | 80.6 | 1.90 | 28,511 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 89.7 | 1.2 | 1.34 | 87.3 | 92.0 | 1.05 | 6,043 |
| Rural | 77.7 | 0.8 | 1.08 | 76.0 | 79.3 | 1.97 | 22,468 |
| STRATE | | | | | | | |
| Kigali-Ville | 90.7 | 1.5 | 1.62 | 87.8 | 93.6 | 0.96 | 3,772 |
| Autre Urbain | 88.4 | 2.0 | 2.24 | 84.5 | 92.3 | 1.17 | 2,271 |
| Rural | 77.7 | 0.8 | 1.08 | 76.0 | 79.3 | 1.97 | 22,468 |
| PROVINCE | | | | | | | |
| BUTARE | 72.4 | 2.7 | 3.67 | 67.2 | 77.6 | 1.50 | 2,215 |
| BYUMBA | 78.6 | 2.5 | 3.18 | 73.7 | 83.5 | 1.78 | 2,215 |
| CYANGUGU | 72.3 | 2.6 | 3.61 | 67.2 | 77.4 | 1.34 | 2,273 |
| GIKONGORO | 75.4 | 3.4 | 4.45 | 68.8 | 81.9 | 1.88 | 2,161 |
| GISENYI | 78.4 | 3.0 | 3.80 | 72.5 | 84.2 | 3.09 | 2,273 |
| GITARAMA | 81.5 | 2.0 | 2.50 | 77.5 | 85.4 | 1.70 | 2,447 |
| KIBUNGO | 77.6 | 2.5 | 3.21 | 72.7 | 82.5 | 1.85 | 2,273 |
| KIBUYE | 80.3 | 2.3 | 2.88 | 75.8 | 84.8 | 1.17 | 2,162 |
| KIGALI NGALI | 79.3 | 2.9 | 3.62 | 73.7 | 84.9 | 2.49 | 2,063 |
| KIGALI-VILLE | 90.7 | 1.5 | 1.62 | 87.8 | 93.6 | 0.96 | 3,772 |
| RUHENGERI | 82.7 | 2.1 | 2.59 | 78.5 | 86.9 | 2.17 | 2,356 |
| UMUTARA | 78.1 | 3.3 | 4.27 | 71.5 | 84.6 | 2.21 | 2,301 |
| SEXE | | | | | | | |
| Masculin | 78.2 | 1.0 | 1.30 | 76.2 | 80.2 | 1.66 | 13,383 |
| Féminin | 80.1 | 0.9 | 1.11 | 78.3 | 81.8 | 1.41 | 15,128 |
| MILIEU DE RÉSIDENCE PAR SEXE | | | | | | | |
| Urbain | | | | | | | |
| Homme | 89.8 | 1.6 | 1.80 | 86.6 | 93.0 | 0.93 | 2,888 |
| Femme | 89.6 | 1.4 | 1.54 | 86.9 | 92.3 | 0.71 | 3,155 |
| Rural | | | | | | | |
| Homme | 76.6 | 1.1 | 1.47 | 74.4 | 78.8 | 1.71 | 10,495 |
| Femme | 78.7 | 1.0 | 1.27 | 76.8 | 80.7 | 1.47 | 11,973 |

1. Taux de scolarisation (pourcentage), enfants de 7 a 13 ans – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| PROVINCE PAR SEXE | | | | | | | |
| BUTARE | | | | | | | |
| Homme | 69.2 | 3.6 | 5.24 | 62.1 | 76.3 | 1.22 | 966 |
| Femme | 75.1 | 3.1 | 4.07 | 69.1 | 81.1 | 1.14 | 1,249 |
| BYUMBA | | | | | | | |
| Homme | 78.1 | 3.1 | 3.95 | 72.1 | 84.2 | 1.35 | 1,040 |
| Femme | 79.0 | 3.4 | 4.29 | 72.4 | 85.7 | 1.66 | 1,175 |
| CYANGUGU | | | | | | | |
| Homme | 67.9 | 3.8 | 5.66 | 60.4 | 75.4 | 1.30 | 1,046 |
| Femme | 76.5 | 2.8 | 3.60 | 71.1 | 81.9 | 0.85 | 1,227 |
| GIKONGORO | | | | | | | |
| Homme | 73.4 | 4.6 | 6.31 | 64.3 | 82.4 | 1.74 | 1,056 |
| Femme | 77.4 | 3.8 | 4.93 | 70.0 | 84.9 | 1.27 | 1,105 |
| GISENYI | | | | | | | |
| Homme | 77.2 | 4.1 | 5.28 | 69.2 | 85.2 | 2.55 | 1,070 |
| Femme | 79.3 | 3.6 | 4.50 | 72.3 | 86.3 | 2.50 | 1,203 |
| GITARAMA | | | | | | | |
| Homme | 78.5 | 3.0 | 3.79 | 72.7 | 84.4 | 1.57 | 1,137 |
| Femme | 84.2 | 2.4 | 2.80 | 79.6 | 88.8 | 1.33 | 1,310 |
| KIBUNGO | | | | | | | |
| Homme | 79.4 | 3.2 | 3.98 | 73.2 | 85.6 | 1.62 | 1,060 |
| Femme | 75.7 | 3.4 | 4.49 | 69.1 | 82.4 | 1.59 | 1,213 |
| KIBUYE | | | | | | | |
| Homme | 79.8 | 3.5 | 4.37 | 73.0 | 86.7 | 1.34 | 1,047 |
| Femme | 80.8 | 2.9 | 3.54 | 75.2 | 86.4 | 0.89 | 1,115 |
| KIGALI NGALI | | | | | | | |
| Homme | 78.3 | 3.6 | 4.59 | 71.3 | 85.4 | 1.92 | 953 |
| Femme | 80.3 | 3.3 | 4.08 | 73.9 | 86.7 | 1.65 | 1,110 |
| KIGALI-VILLE | | | | | | | |
| Homme | 91.3 | 1.9 | 2.12 | 87.5 | 95.1 | 0.89 | 1,829 |
| Femme | 90.2 | 1.7 | 1.92 | 86.8 | 93.5 | 0.62 | 1,943 |
| RUHENGERI | | | | | | | |
| Homme | 83.8 | 2.9 | 3.48 | 78.1 | 89.5 | 2.06 | 1,086 |
| Femme | 81.8 | 2.3 | 2.79 | 77.3 | 86.2 | 1.20 | 1,270 |
| UMUTARA | | | | | | | |
| Homme | 77.0 | 4.1 | 5.32 | 68.9 | 85.0 | 1.65 | 1,093 |
| Femme | 79.3 | 3.6 | 4.51 | 72.3 | 86.3 | 1.28 | 1,208 |

2. Taux de alphabétisation (pourcentage)

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 58.8 | 0.6 | 1.10 | 57.6 | 60.1 | 2.72 | 28,511 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 79.1 | 1.5 | 1.86 | 76.2 | 82.0 | 2.73 | 6,043 |
| Rural | 55.8 | 0.7 | 1.27 | 54.4 | 57.2 | 2.79 | 22,468 |
| STRATE | | | | | | | |
| Kigali-Ville | 82.7 | 2.0 | 2.38 | 78.9 | 86.6 | 3.42 | 3,772 |
| Autre Urbain | 73.5 | 2.2 | 3.05 | 69.1 | 77.9 | 2.08 | 2,271 |
| Rural | 55.8 | 0.7 | 1.27 | 54.4 | 57.2 | 2.79 | 22,468 |

2. Taux de alphabétisation (pourcentage) – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| PROVINCE | | | | | | | |
| BUTARE | 53.4 | 2.1 | 3.87 | 49.4 | 57.5 | 2.42 | 2,215 |
| BYUMBA | 57.4 | 2.4 | 4.15 | 52.7 | 62.0 | 3.11 | 2,215 |
| CYANGUGU | 53.8 | 2.5 | 4.57 | 49.0 | 58.7 | 2.72 | 2,273 |
| GIKONGORO | 51.8 | 2.3 | 4.42 | 47.3 | 56.2 | 2.05 | 2,161 |
| GISENYI | 56.8 | 2.4 | 4.21 | 52.1 | 61.5 | 3.67 | 2,273 |
| GITARAMA | 61.5 | 1.8 | 2.86 | 58.1 | 64.9 | 2.37 | 2,447 |
| KIBUNGO | 58.2 | 1.7 | 3.00 | 54.7 | 61.6 | 1.70 | 2,273 |
| KIBUYE | 56.7 | 2.3 | 4.02 | 52.2 | 61.1 | 1.91 | 2,162 |
| KIGALI NGALI | 60.1 | 2.4 | 3.96 | 55.4 | 64.7 | 3.68 | 2,063 |
| KIGALI-VILLE | 82.7 | 2.0 | 2.38 | 78.9 | 86.6 | 3.42 | 3,772 |
| RUHENGERI | 51.7 | 2.3 | 4.53 | 47.1 | 56.3 | 3.57 | 2,356 |
| UMUTARA | 62.2 | 2.3 | 3.74 | 57.6 | 66.7 | 1.92 | 2,301 |
| SEXE | | | | | | | |
| Homme | 65.0 | 0.8 | 1.18 | 63.5 | 66.5 | 1.83 | 13,383 |
| Femme | 53.8 | 0.7 | 1.39 | 52.3 | 55.2 | 1.95 | 15,128 |
| GROUPE D'ÂGE | | | | | | | |
| 15 a 19 ans | 71.2 | 1.0 | 1.46 | 69.2 | 73.2 | 1.94 | 3,626 |
| 20 a 29 ans | 72.0 | 0.9 | 1.23 | 70.2 | 73.7 | 1.77 | 4,608 |
| 30 a 39 ans | 63.4 | 1.1 | 1.73 | 61.3 | 65.6 | 1.38 | 2,724 |
| 40 a 49 ans | 47.3 | 1.2 | 2.54 | 44.9 | 49.6 | 1.32 | 2,282 |
| 50 a 59 ans | 32.5 | 1.5 | 4.56 | 29.6 | 35.4 | 1.26 | 1,248 |
| 60 ans et plus | 17.4 | 1.1 | 6.60 | 15.2 | 19.7 | 1.27 | 1,353 |
| MILIEU DE RÉSIDENCE PAR SEXE | | | | | | | |
| Urbain | | | | | | | |
| Homme | 83.8 | 1.4 | 1.68 | 81.1 | 86.6 | 1.41 | 2,888 |
| Femme | 75.0 | 1.7 | 2.24 | 71.7 | 78.3 | 1.68 | 3,155 |
| Rural | | | | | | | |
| Homme | 62.0 | 0.9 | 1.37 | 60.4 | 63.7 | 1.89 | 10,495 |
| Femme | 50.7 | 0.8 | 1.62 | 49.0 | 52.3 | 2.04 | 11,973 |

2. Taux de alphabétisation (pourcentage) – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| PROVINCE PAR SEXE | | | | | | | |
| BUTARE | | | | | | | |
| Homme | 57.5 | 2.6 | 4.53 | 52.4 | 62.6 | 1.61 | 966 |
| Femme | 50.6 | 2.3 | 4.46 | 46.2 | 55.0 | 1.70 | 1,249 |
| BYUMBA | | | | | | | |
| Homme | 67.7 | 2.7 | 4.03 | 62.4 | 73.1 | 2.14 | 1,040 |
| Femme | 48.2 | 2.8 | 5.87 | 42.7 | 53.8 | 2.30 | 1,175 |
| CYANGUGU | | | | | | | |
| Homme | 60.9 | 3.0 | 4.87 | 55.1 | 66.7 | 1.80 | 1,046 |
| Femme | 48.4 | 2.6 | 5.34 | 43.3 | 53.4 | 1.67 | 1,227 |
| GIKONGORO | | | | | | | |
| Homme | 53.9 | 2.7 | 4.94 | 48.6 | 59.1 | 1.31 | 1,056 |
| Femme | 49.9 | 2.5 | 5.02 | 45.0 | 54.8 | 1.30 | 1,105 |
| GISENYI | | | | | | | |
| Homme | 66.4 | 2.7 | 4.02 | 61.2 | 71.6 | 2.38 | 1,070 |
| Femme | 48.1 | 2.8 | 5.81 | 42.6 | 53.6 | 2.57 | 1,203 |
| GITARAMA | | | | | | | |
| Homme | 64.4 | 2.2 | 3.38 | 60.2 | 68.7 | 1.70 | 1,137 |
| Femme | 59.1 | 2.3 | 3.87 | 54.6 | 63.6 | 2.16 | 1,310 |
| KIBUNGO | | | | | | | |
| Homme | 63.5 | 2.1 | 3.25 | 59.4 | 67.5 | 1.08 | 1,060 |
| Femme | 54.1 | 2.0 | 3.69 | 50.2 | 58.0 | 1.24 | 1,213 |
| KIBUYE | | | | | | | |
| Homme | 61.1 | 2.5 | 4.15 | 56.1 | 66.1 | 1.10 | 1,047 |
| Femme | 53.0 | 2.6 | 4.96 | 47.9 | 58.2 | 1.38 | 1,115 |
| KIGALI NGALI | | | | | | | |
| Homme | 63.7 | 2.8 | 4.34 | 58.3 | 69.1 | 2.29 | 953 |
| Femme | 57.2 | 2.6 | 4.50 | 52.1 | 62.2 | 2.34 | 1,110 |
| KIGALI-VILLE | | | | | | | |
| Homme | 86.9 | 1.9 | 2.21 | 83.2 | 90.7 | 1.93 | 1,829 |
| Femme | 79.0 | 2.2 | 2.79 | 74.6 | 83.3 | 1.96 | 1,943 |
| RUHENGERI | | | | | | | |
| Homme | 60.5 | 3.0 | 4.93 | 54.6 | 66.3 | 2.72 | 1,086 |
| Femme | 44.6 | 2.9 | 6.57 | 38.8 | 50.3 | 3.12 | 1,270 |
| UMUTARA | | | | | | | |
| Homme | 72.1 | 2.5 | 3.50 | 67.2 | 77.1 | 1.21 | 1,093 |
| Femme | 53.7 | 2.7 | 4.93 | 48.5 | 58.9 | 1.28 | 1,208 |
| MILIEU DE RÉSIDENCE PAR GROUPE D'ÂGE | | | | | | | |
| Urbain | | | | | | | |
| 15 a 19 ans | 85.4 | 1.6 | 1.89 | 82.2 | 88.6 | 0.92 | 731 |
| 20 a 29 ans | 87.5 | 1.3 | 1.49 | 85.0 | 90.1 | 1.10 | 1,186 |
| 30 a 39 ans | 85.8 | 1.9 | 2.18 | 82.2 | 89.5 | 1.14 | 662 |
| 40 a 49 ans | 69.2 | 2.9 | 4.12 | 63.6 | 74.8 | 1.08 | 469 |
| 50 a 59 ans | 59.1 | 3.9 | 6.56 | 51.5 | 66.6 | 0.76 | 205 |
| 60 ans et plus | 31.4 | 3.7 | 11.94 | 24.0 | 38.7 | 0.83 | 211 |
| Rural | | | | | | | |
| 15 a 19 ans | 69.3 | 1.2 | 1.67 | 67.0 | 71.6 | 2.04 | 2,895 |
| 20 a 29 ans | 69.1 | 1.0 | 1.47 | 67.1 | 71.1 | 1.83 | 3,422 |
| 30 a 39 ans | 59.5 | 1.2 | 2.07 | 57.1 | 61.9 | 1.43 | 2,062 |
| 40 a 49 ans | 44.2 | 1.3 | 2.94 | 41.7 | 46.8 | 1.37 | 1,813 |
| 50 a 59 ans | 29.6 | 1.6 | 5.36 | 26.5 | 32.7 | 1.37 | 1,043 |
| 60 ans et plus | 16.0 | 1.2 | 7.51 | 13.6 | 18.4 | 1.35 | 1,142 |

2. Taux de alphabétisation (pourcentage) – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| SEXE PAR GROUPE D'ÂGE | | | | | | | |
| Homme | | | | | | | |
| 15 a 19 ans | 70.6 | 1.4 | 1.91 | 68.0 | 73.3 | 1.57 | 1,756 |
| 20 a 29 ans | 73.7 | 1.1 | 1.56 | 71.4 | 75.9 | 1.35 | 2,035 |
| 30 a 39 ans | 69.5 | 1.4 | 2.07 | 66.7 | 72.3 | 1.12 | 1,186 |
| 40 a 49 ans | 60.2 | 1.7 | 2.87 | 56.8 | 63.6 | 1.32 | 1,059 |
| 50 a 59 ans | 50.6 | 2.2 | 4.44 | 46.2 | 55.0 | 1.12 | 554 |
| 60 ans et plus | 32.2 | 2.1 | 6.52 | 28.1 | 36.3 | 1.20 | 585 |
| Femme | | | | | | | |
| 15 a 19 ans | 71.8 | 1.3 | 1.80 | 69.2 | 74.3 | 1.55 | 1,870 |
| 20 a 29 ans | 70.6 | 1.2 | 1.63 | 68.4 | 72.9 | 1.61 | 2,573 |
| 30 a 39 ans | 58.8 | 1.4 | 2.31 | 56.2 | 61.5 | 1.17 | 1,538 |
| 40 a 49 ans | 36.2 | 1.4 | 3.98 | 33.3 | 39.0 | 1.10 | 1,223 |
| 50 a 59 ans | 18.3 | 1.6 | 8.75 | 15.1 | 21.4 | 1.21 | 694 |
| 60 ans et plus | 6.2 | 0.8 | 13.33 | 4.6 | 7.9 | 0.93 | 768 |

3. Taux de chômage (pourcentage)

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 1.7 | 0.2 | 9.30 | 1.3 | 2.0 | 1.89 | 28,511 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 10.6 | 1.1 | 10.72 | 8.4 | 12.9 | 1.91 | 6,043 |
| Rural | 0.6 | 0.1 | 17.57 | 0.4 | 0.8 | 2.08 | 22,468 |
| STRATE | | | | | | | |
| Kigali-Ville | 14.5 | 1.8 | 12.41 | 11.0 | 18.0 | 2.15 | 3,772 |
| Autre Urbain | 5.1 | 1.1 | 20.92 | 3.0 | 7.1 | 1.33 | 2,271 |
| Rural | 0.6 | 0.1 | 17.57 | 0.4 | 0.8 | 2.08 | 22,468 |
| PROVINCE | | | | | | | |
| BUTARE | 0.2 | 0.1 | 50.14 | 0.0 | 0.4 | 0.66 | 2,215 |
| BYUMBA | 0.9 | 0.3 | 35.24 | 0.3 | 1.6 | 1.40 | 2,215 |
| CYANGUGU | 1.9 | 0.6 | 33.15 | 0.7 | 3.1 | 1.94 | 2,273 |
| GIKONGORO | 0.5 | 0.3 | 64.95 | -0.1 | 1.1 | 1.71 | 2,161 |
| GISENYI | 1.3 | 0.4 | 32.58 | 0.5 | 2.2 | 1.91 | 2,273 |
| GITARAMA | 0.6 | 0.3 | 53.91 | -0.0 | 1.2 | 2.58 | 2,447 |
| KIBUNGO | 0.5 | 0.2 | 51.70 | -0.0 | 1.0 | 1.46 | 2,273 |
| KIBUYE | 0.4 | 0.3 | 70.00 | -0.2 | 1.0 | 1.56 | 2,162 |
| KIGALI NGALI | 0.8 | 0.4 | 57.56 | -0.1 | 1.6 | 3.37 | 2,063 |
| KIGALI-VILLE | 14.5 | 1.8 | 12.41 | 11.0 | 18.0 | 2.15 | 3,772 |
| RUHENGERI | 0.5 | 0.2 | 35.35 | 0.2 | 0.9 | 0.85 | 2,356 |
| UMUTARA | 1.3 | 0.5 | 38.62 | 0.3 | 2.2 | 1.26 | 2,301 |
| SEXE | | | | | | | |
| Homme | 1.9 | 0.2 | 10.09 | 1.6 | 2.3 | 1.16 | 13,383 |
| Femme | 1.4 | 0.2 | 13.11 | 1.1 | 1.8 | 1.80 | 15,128 |
| GROUPE D'ÂGE | | | | | | | |
| 15 a 19 ans | 2.3 | 0.4 | 15.79 | 1.6 | 3.0 | 1.23 | 3,626 |
| 20 a 29 ans | 2.6 | 0.3 | 11.04 | 2.0 | 3.1 | 1.29 | 4,608 |
| 30 a 39 ans | 1.6 | 0.2 | 15.67 | 1.1 | 2.1 | 1.01 | 2,724 |
| 40 a 49 ans | 0.7 | 0.1 | 21.10 | 0.4 | 0.9 | 0.64 | 2,282 |
| 50 a 59 ans | 0.3 | 0.1 | 40.26 | 0.1 | 0.6 | 0.58 | 1,248 |
| 60 ans et plus | 0.6 | 0.2 | 37.33 | 0.2 | 1.0 | 0.81 | 1,353 |

3. Taux de chômage (pourcentage) – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| MILIEU DE RÉSIDENCE PAR SEXE | | | | | | | |
| Urbain | | | | | | | |
| Homme | 10.6 | 1.2 | 11.43 | 8.2 | 13.0 | 1.06 | 2,888 |
| Femme | 10.7 | 1.6 | 14.52 | 7.6 | 13.7 | 1.79 | 3,155 |
| Rural | | | | | | | |
| Homme | 0.8 | 0.1 | 17.93 | 0.5 | 1.1 | 1.28 | 10,495 |
| Femme | 0.4 | 0.1 | 28.64 | 0.2 | 0.7 | 2.26 | 11,973 |
| PROVINCE PAR SEXE | | | | | | | |
| BUTARE | | | | | | | |
| Homme | 0.1 | 0.1 | 99.79 | -0.1 | 0.4 | 0.65 | 966 |
| Femme | 0.3 | 0.2 | 68.53 | -0.1 | 0.7 | 0.92 | 1,249 |
| BYUMBA | | | | | | | |
| Homme | 1.1 | 0.5 | 41.65 | 0.2 | 2.0 | 1.03 | 1,040 |
| Femme | 0.8 | 0.4 | 43.31 | 0.1 | 1.5 | 1.01 | 1,175 |
| CYANGUGU | | | | | | | |
| Homme | 2.3 | 0.7 | 32.66 | 0.8 | 3.7 | 0.96 | 1,046 |
| Femme | 1.6 | 0.6 | 39.93 | 0.3 | 2.9 | 1.39 | 1,227 |
| GIKONGORO | | | | | | | |
| Homme | 1.0 | 0.7 | 64.95 | -0.3 | 2.4 | 1.72 | 1,056 |
| Femme | 0.0 | 0.0 | ****** | 0.0 | 0.0 | ****** | 1,105 |
| GISENYI | | | | | | | |
| Homme | 1.7 | 0.4 | 21.78 | 1.0 | 2.5 | 0.51 | 1,070 |
| Femme | 1.0 | 0.6 | 63.14 | -0.2 | 2.2 | 2.90 | 1,203 |
| GITARAMA | | | | | | | |
| Homme | 0.8 | 0.4 | 43.35 | 0.1 | 1.5 | 1.02 | 1,137 |
| Femme | 0.4 | 0.3 | 84.07 | -0.3 | 1.1 | 2.43 | 1,310 |
| KIBUNGO | | | | | | | |
| Homme | 0.7 | 0.5 | 73.24 | -0.3 | 1.7 | 1.88 | 1,060 |
| Femme | 0.3 | 0.2 | 63.58 | -0.1 | 0.7 | 0.80 | 1,213 |
| KIBUYE | | | | | | | |
| Homme | 0.2 | 0.2 | 100.03 | -0.2 | 0.7 | 0.80 | 1,047 |
| Femme | 0.5 | 0.4 | 74.08 | -0.2 | 1.3 | 1.31 | 1,115 |
| KIGALI NGALI | | | | | | | |
| Homme | 0.8 | 0.4 | 51.01 | 0.0 | 1.7 | 1.23 | 953 |
| Femme | 0.7 | 0.7 | 100.15 | -0.7 | 2.1 | 5.45 | 1,110 |
| KIGALI-VILLE | | | | | | | |
| Homme | 13.9 | 1.9 | 13.36 | 10.2 | 17.5 | 1.21 | 1,829 |
| Femme | 15.2 | 2.5 | 16.43 | 10.3 | 20.0 | 1.94 | 1,943 |
| RUHENGERI | | | | | | | |
| Homme | 0.3 | 0.2 | 63.87 | -0.1 | 0.8 | 0.80 | 1,086 |
| Femme | 0.7 | 0.3 | 48.98 | 0.0 | 1.3 | 1.16 | 1,270 |
| UMUTARA | | | | | | | |
| Homme | 2.4 | 1.0 | 40.52 | 0.5 | 4.2 | 1.17 | 1,093 |
| Femme | 0.4 | 0.3 | 68.24 | -0.1 | 0.9 | 0.65 | 1,208 |
| MILIEU DE RÉSIDENCE PAR GROUPE D'ÂGE | | | | | | | |
| Urbain | | | | | | | |
| 15 a 19 ans | 16.2 | 3.0 | 18.85 | 10.2 | 22.1 | 0.85 | 731 |
| 20 a 29 ans | 15.3 | 1.8 | 11.55 | 11.9 | 18.8 | 1.18 | 1,186 |
| 30 a 39 ans | 9.1 | 1.3 | 14.73 | 6.4 | 11.7 | 0.76 | 662 |
| 40 a 49 ans | 5.7 | 1.2 | 21.02 | 3.3 | 8.0 | 0.67 | 469 |
| 50 a 59 ans | 3.4 | 1.4 | 40.94 | 0.7 | 6.1 | 0.62 | 205 |
| 60 ans et plus | 5.2 | 2.1 | 40.00 | 1.1 | 9.3 | 0.60 | 211 |
| Rural | | | | | | | |
| 15 a 19 ans | 1.4 | 0.3 | 23.66 | 0.8 | 2.1 | 1.59 | 2,895 |
| 20 a 29 ans | 0.8 | 0.2 | 21.83 | 0.5 | 1.1 | 1.35 | 3,422 |
| 30 a 39 ans | 0.4 | 0.2 | 46.29 | 0.0 | 0.7 | 1.85 | 2,062 |
| 40 a 49 ans | 0.0 | 0.0 | ****** | 0.0 | 0.0 | ****** | 1,813 |
| 50 a 59 ans | 0.0 | 0.0 | ****** | 0.0 | 0.0 | ****** | 1,043 |
| 60 ans et plus | 0.2 | 0.2 | 73.16 | -0.1 | 0.6 | 1.18 | 1,142 |

3. Taux de chômage (pourcentage) – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| SEXE PAR GROUPE D'ÂGE | | | | | | | |
| Homme | | | | | | | |
| 15 a 19 ans | 2.6 | 0.5 | 18.79 | 1.7 | 3.6 | 0.92 | 1,756 |
| 20 a 29 ans | 2.9 | 0.4 | 14.84 | 2.0 | 3.7 | 1.14 | 2,035 |
| 30 a 39 ans | 1.9 | 0.4 | 19.11 | 1.2 | 2.7 | 0.79 | 1,186 |
| 40 a 49 ans | 0.7 | 0.2 | 30.34 | 0.3 | 1.0 | 0.59 | 1,059 |
| 50 a 59 ans | 0.7 | 0.3 | 40.33 | 0.2 | 1.3 | 0.59 | 554 |
| 60 ans et plus | 1.1 | 0.5 | 40.03 | 0.2 | 2.0 | 0.83 | 585 |
| Femme | | | | | | | |
| 15 a 19 ans | 2.0 | 0.5 | 22.43 | 1.1 | 2.9 | 1.17 | 1,870 |
| 20 a 29 ans | 2.3 | 0.3 | 14.46 | 1.7 | 3.0 | 1.13 | 2,573 |
| 30 a 39 ans | 1.3 | 0.2 | 18.84 | 0.8 | 1.8 | 0.69 | 1,538 |
| 40 a 49 ans | 0.7 | 0.2 | 25.63 | 0.3 | 1.0 | 0.53 | 1,223 |
| 50 a 59 ans | 0.0 | 0.0 | ****** | 0.0 | 0.0 | ****** | 694 |
| 60 ans et plus | 0.1 | 0.1 | 99.89 | -0.1 | 0.3 | 0.65 | 768 |

4. Taux de participation économique (pourcentage)

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 82.4 | 0.4 | 0.52 | 81.6 | 83.3 | 1.99 | 28,511 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 67.1 | 1.4 | 2.04 | 64.4 | 69.7 | 1.75 | 6,043 |
| Rural | 84.8 | 0.4 | 0.52 | 83.9 | 85.6 | 2.08 | 22,468 |
| STRATE | | | | | | | |
| Kigali-Ville | 65.0 | 1.9 | 2.94 | 61.3 | 68.8 | 2.03 | 3,772 |
| Autre Urbain | 70.2 | 1.8 | 2.55 | 66.7 | 73.7 | 1.24 | 2,271 |
| Rural | 84.8 | 0.4 | 0.52 | 83.9 | 85.6 | 2.08 | 22,468 |
| PROVINCE | | | | | | | |
| BUTARE | 82.0 | 1.4 | 1.74 | 79.2 | 84.8 | 1.96 | 2,215 |
| BYUMBA | 88.4 | 1.2 | 1.39 | 86.0 | 90.8 | 1.98 | 2,215 |
| CYANGUGU | 82.6 | 1.5 | 1.84 | 79.6 | 85.6 | 1.80 | 2,273 |
| GIKONGORO | 86.4 | 1.3 | 1.52 | 83.8 | 89.0 | 1.43 | 2,161 |
| GISENYI | 86.3 | 1.2 | 1.41 | 83.9 | 88.7 | 1.96 | 2,273 |
| GITARAMA | 83.6 | 1.0 | 1.25 | 81.6 | 85.7 | 1.46 | 2,447 |
| KIBUNGO | 83.8 | 1.5 | 1.74 | 81.0 | 86.7 | 2.15 | 2,273 |
| KIBUYE | 85.8 | 1.2 | 1.44 | 83.4 | 88.2 | 1.13 | 2,162 |
| KIGALI NGALI | 84.6 | 1.6 | 1.89 | 81.5 | 87.7 | 3.06 | 2,063 |
| KIGALI-VILLE | 65.0 | 1.9 | 2.94 | 61.3 | 68.8 | 2.03 | 3,772 |
| RUHENGERI | 80.7 | 1.5 | 1.92 | 77.6 | 83.7 | 2.50 | 2,356 |
| UMUTARA | 79.0 | 1.8 | 2.23 | 75.5 | 82.4 | 1.56 | 2,301 |
| SEXE | | | | | | | |
| Homme | 80.4 | 0.6 | 0.72 | 79.3 | 81.6 | 1.54 | 13,383 |
| Femme | 84.1 | 0.5 | 0.57 | 83.2 | 85.0 | 1.50 | 15,128 |
| GROUPE D'ÂGE | | | | | | | |
| 15 a 19 ans | 57.1 | 1.1 | 1.88 | 55.0 | 59.2 | 1.73 | 3,626 |
| 20 a 29 ans | 89.0 | 0.6 | 0.65 | 87.8 | 90.1 | 1.57 | 4,608 |
| 30 a 39 ans | 95.9 | 0.4 | 0.40 | 95.2 | 96.7 | 1.02 | 2,724 |
| 40 a 49 ans | 94.1 | 0.5 | 0.55 | 93.1 | 95.1 | 1.11 | 2,282 |
| 50 a 59 ans | 92.3 | 0.8 | 0.85 | 90.7 | 93.8 | 1.09 | 1,248 |
| 60 ans et plus | 74.1 | 1.2 | 1.69 | 71.6 | 76.5 | 1.12 | 1,353 |

4. Taux de participation économique (pourcentage) – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| MILIEU DE RÉSIDENCE PAR SEXE | | | | | | | |
| Urbain | | | | | | | |
| Homme | 70.7 | 1.4 | 1.97 | 67.9 | 73.4 | 0.90 | 2,888 |
| Femme | 63.9 | 1.8 | 2.88 | 60.3 | 67.5 | 1.63 | 3,155 |
| Rural | | | | | | | |
| Homme | 82.0 | 0.6 | 0.77 | 80.7 | 83.2 | 1.68 | 10,495 |
| Femme | 87.1 | 0.5 | 0.55 | 86.1 | 88.0 | 1.52 | 11,973 |
| PROVINCE PAR SEXE | | | | | | | |
| BUTARE | | | | | | | |
| Homme | 78.8 | 2.2 | 2.75 | 74.5 | 83.0 | 1.63 | 966 |
| Femme | 84.2 | 1.4 | 1.67 | 81.5 | 87.0 | 1.24 | 1,249 |
| BYUMBA | | | | | | | |
| Homme | 85.5 | 2.1 | 2.43 | 81.4 | 89.5 | 2.18 | 1,040 |
| Femme | 90.9 | 1.3 | 1.40 | 88.4 | 93.4 | 1.41 | 1,175 |
| CYANGUGU | | | | | | | |
| Homme | 79.2 | 2.3 | 2.89 | 74.7 | 83.7 | 1.55 | 1,046 |
| Femme | 85.3 | 1.5 | 1.71 | 82.4 | 88.1 | 1.06 | 1,227 |
| GIKONGORO | | | | | | | |
| Homme | 84.2 | 1.6 | 1.90 | 81.1 | 87.3 | 0.88 | 1,056 |
| Femme | 88.4 | 1.6 | 1.84 | 85.2 | 91.5 | 1.32 | 1,105 |
| GISENYI | | | | | | | |
| Homme | 82.6 | 1.5 | 1.80 | 79.6 | 85.5 | 1.15 | 1,070 |
| Femme | 89.7 | 1.4 | 1.58 | 86.9 | 92.5 | 1.79 | 1,203 |
| GITARAMA | | | | | | | |
| Homme | 80.6 | 1.9 | 2.30 | 77.0 | 84.2 | 1.80 | 1,137 |
| Femme | 86.1 | 1.2 | 1.38 | 83.8 | 88.5 | 1.18 | 1,310 |
| KIBUNGO | | | | | | | |
| Homme | 82.6 | 1.8 | 2.14 | 79.1 | 86.0 | 1.28 | 1,060 |
| Femme | 84.8 | 1.7 | 2.01 | 81.5 | 88.2 | 1.74 | 1,213 |
| KIBUYE | | | | | | | |
| Homme | 83.4 | 2.2 | 2.63 | 79.1 | 87.7 | 1.42 | 1,047 |
| Femme | 87.8 | 1.1 | 1.26 | 85.6 | 89.9 | 0.57 | 1,115 |
| KIGALI NGALI | | | | | | | |
| Homme | 81.9 | 2.2 | 2.67 | 77.6 | 86.2 | 2.24 | 953 |
| Femme | 86.8 | 1.7 | 1.93 | 83.5 | 90.1 | 2.12 | 1,110 |
| KIGALI-VILLE | | | | | | | |
| Homme | 70.8 | 1.8 | 2.48 | 67.4 | 74.3 | 0.89 | 1,829 |
| Femme | 59.9 | 2.8 | 4.60 | 54.5 | 65.3 | 2.11 | 1,943 |
| RUHENGERI | | | | | | | |
| Homme | 78.4 | 2.2 | 2.79 | 74.1 | 82.7 | 2.05 | 1,086 |
| Femme | 82.5 | 1.6 | 2.00 | 79.3 | 85.8 | 1.69 | 1,270 |
| UMUTARA | | | | | | | |
| Homme | 77.2 | 2.2 | 2.80 | 72.9 | 81.4 | 1.02 | 1,093 |
| Femme | 80.5 | 2.0 | 2.46 | 76.6 | 84.4 | 1.14 | 1,208 |
| MILIEU DE RÉSIDENCE PAR GROUPE D'ÂGE | | | | | | | |
| Urbain | | | | | | | |
| 15 a 19 ans | 28.4 | 2.4 | 8.39 | 23.7 | 33.0 | 1.22 | 731 |
| 20 a 29 ans | 68.9 | 2.2 | 3.13 | 64.7 | 73.2 | 1.54 | 1,186 |
| 30 a 39 ans | 88.5 | 1.4 | 1.54 | 85.9 | 91.2 | 0.72 | 662 |
| 40 a 49 ans | 90.2 | 1.5 | 1.64 | 87.3 | 93.1 | 0.70 | 469 |
| 50 a 59 ans | 86.0 | 3.0 | 3.46 | 80.2 | 91.8 | 0.91 | 205 |
| 60 ans et plus | 53.8 | 3.7 | 6.87 | 46.6 | 61.0 | 0.70 | 211 |
| Rural | | | | | | | |
| 15 a 19 ans | 61.0 | 1.2 | 1.93 | 58.7 | 63.3 | 1.88 | 2,895 |
| 20 a 29 ans | 92.7 | 0.5 | 0.56 | 91.7 | 93.7 | 1.54 | 3,422 |
| 30 a 39 ans | 97.2 | 0.4 | 0.39 | 96.5 | 98.0 | 1.22 | 2,062 |
| 40 a 49 ans | 94.7 | 0.6 | 0.58 | 93.6 | 95.8 | 1.21 | 1,813 |
| 50 a 59 ans | 93.0 | 0.8 | 0.87 | 91.4 | 94.5 | 1.13 | 1,043 |
| 60 ans et plus | 76.1 | 1.3 | 1.72 | 73.6 | 78.7 | 1.19 | 1,142 |

4. Taux de participation économique (pourcentage) – contin.

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| SEXE PAR GROUPE D'ÂGE | | | | | | | |
| Homme | | | | | | | |
| 15 a 19 ans | 54.4 | 1.4 | 2.59 | 51.6 | 57.1 | 1.42 | 1,756 |
| 20 a 29 ans | 88.1 | 0.8 | 0.94 | 86.5 | 89.7 | 1.31 | 2,035 |
| 30 a 39 ans | 95.7 | 0.6 | 0.67 | 94.4 | 97.0 | 1.15 | 1,186 |
| 40 a 49 ans | 92.0 | 0.9 | 0.99 | 90.2 | 93.7 | 1.17 | 1,059 |
| 50 a 59 ans | 88.7 | 1.4 | 1.53 | 86.0 | 91.3 | 1.01 | 554 |
| 60 ans et plus | 75.3 | 1.9 | 2.46 | 71.7 | 79.0 | 1.10 | 585 |
| Femme | | | | | | | |
| 15 a 19 ans | 59.7 | 1.4 | 2.37 | 56.9 | 62.4 | 1.57 | 1,870 |
| 20 a 29 ans | 89.7 | 0.7 | 0.77 | 88.3 | 91.0 | 1.31 | 2,573 |
| 30 a 39 ans | 96.1 | 0.5 | 0.48 | 95.2 | 97.0 | 0.87 | 1,538 |
| 40 a 49 ans | 96.0 | 0.5 | 0.55 | 94.9 | 97.0 | 0.89 | 1,223 |
| 50 a 59 ans | 95.1 | 0.9 | 0.91 | 93.4 | 96.8 | 1.13 | 694 |
| 60 ans et plus | 73.1 | 1.6 | 2.21 | 69.9 | 76.3 | 1.05 | 768 |

5. Effectif de la population

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 8,062,277 | 55,464 | 0.69 | 7,953,568 | 8,170,987 | ****** | 28,511 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 1,025,987 | 15,129 | 1.47 | 996,334 | 1,055,640 | 0.90 | 6,043 |
| Rural | 7,036,290 | 53,361 | 0.76 | 6,931,703 | 7,140,878 | 11.24 | 22,468 |
| STRATE | | | | | | | |
| Kigali-Ville | 606,096 | 12,027 | 1.98 | 582,523 | 629,668 | 0.91 | 3,772 |
| Autre Urbain | 419,891 | 9,178 | 2.19 | 401,902 | 437,880 | 0.75 | 2,271 |
| Rural | 7,036,290 | 53,361 | 0.76 | 6,931,703 | 7,140,878 | 11.24 | 22,468 |
| PROVINCE | | | | | | | |
| BUTARE | 684,456 | 16,447 | 2.40 | 652,220 | 716,693 | 1.53 | 2,215 |
| BYUMBA | 712,826 | 14,929 | 2.09 | 683,565 | 742,087 | 1.21 | 2,215 |
| CYANGUGU | 556,824 | 9,983 | 1.79 | 537,258 | 576,391 | 0.68 | 2,273 |
| GIKONGORO | 486,925 | 10,427 | 2.14 | 466,488 | 507,362 | 0.84 | 2,161 |
| GISENYI | 835,394 | 18,764 | 2.25 | 798,617 | 872,171 | 1.66 | 2,273 |
| GITARAMA | 886,100 | 22,944 | 2.59 | 841,130 | 931,071 | 2.36 | 2,447 |
| KIBUNGO | 707,181 | 18,021 | 2.55 | 671,861 | 742,501 | 1.78 | 2,273 |
| KIBUYE | 480,614 | 11,949 | 2.49 | 457,194 | 504,035 | 1.12 | 2,162 |
| KIGALI NGALI | 758,871 | 19,423 | 2.56 | 720,801 | 796,940 | 1.94 | 2,063 |
| KIGALI-VILLE | 606,096 | 12,027 | 1.98 | 582,523 | 629,668 | 0.91 | 3,772 |
| RUHENGERI | 895,058 | 19,607 | 2.19 | 856,628 | 933,489 | 1.71 | 2,356 |
| UMUTARA | 451,932 | 11,049 | 2.44 | 430,275 | 473,589 | 1.01 | 2,301 |
| SEXE | | | | | | | |
| Homme | 3,765,559 | 37,577 | 1.00 | 3,691,909 | 3,839,209 | 2.49 | 13,383 |
| Femme | 4,296,718 | 34,661 | 0.81 | 4,228,783 | 4,364,654 | 2.12 | 15,128 |
| GROUPE D'ÂGE | | | | | | | |
| Moins de 15 ans | 3,594,917 | 38,531 | 1.07 | 3,519,396 | 3,670,437 | 2.64 | 12,670 |
| 15 a 19 ans | 1,038,333 | 19,927 | 1.92 | 999,275 | 1,077,390 | 1.55 | 3,626 |
| 20 a 29 ans | 1,278,344 | 20,751 | 1.62 | 1,237,672 | 1,319,016 | 1.42 | 4,608 |
| 30 a 39 ans | 755,887 | 15,292 | 2.02 | 725,916 | 785,859 | 1.21 | 2,724 |
| 40 a 49 ans | 646,737 | 15,280 | 2.36 | 616,787 | 676,686 | 1.39 | 2,282 |
| 50 a 59 ans | 356,310 | 11,240 | 3.15 | 334,280 | 378,340 | 1.31 | 1,248 |
| 60 ans et plus | 391,750 | 12,246 | 3.13 | 367,748 | 415,751 | 1.42 | 1,353 |

5. Effectif de la population – contin.

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| MILIEU DE RÉSIDENCE PAR SEXE | | | | | | | |
| Urbain | | | | | | | |
| Homme | 489,690 | 9,854 | 2.01 | 470,377 | 509,003 | 0.75 | 2,888 |
| Femme | 536,297 | 10,185 | 1.90 | 516,335 | 556,258 | 0.73 | 3,155 |
| Rural | | | | | | | |
| Homme | 3,275,869 | 36,262 | 1.11 | 3,204,796 | 3,346,942 | 2.39 | 10,495 |
| Femme | 3,760,422 | 33,131 | 0.88 | 3,695,485 | 3,825,358 | 1.93 | 11,973 |
| PROVINCE PAR SEXE | | | | | | | |
| BUTARE | | | | | | | |
| Homme | 298,156 | 11,548 | 3.87 | 275,522 | 320,789 | 1.64 | 966 |
| Femme | 386,301 | 10,961 | 2.84 | 364,818 | 407,784 | 1.16 | 1,249 |
| BYUMBA | | | | | | | |
| Homme | 333,590 | 10,736 | 3.22 | 312,548 | 354,632 | 1.27 | 1,040 |
| Femme | 379,236 | 9,861 | 2.60 | 359,908 | 398,564 | 0.95 | 1,175 |
| CYANGUGU | | | | | | | |
| Homme | 255,960 | 7,537 | 2.94 | 241,187 | 270,733 | 0.81 | 1,046 |
| Femme | 300,864 | 6,023 | 2.00 | 289,060 | 312,669 | 0.44 | 1,227 |
| GIKONGORO | | | | | | | |
| Homme | 238,121 | 8,079 | 3.39 | 222,285 | 253,956 | 1.00 | 1,056 |
| Femme | 248,805 | 5,594 | 2.25 | 237,840 | 259,769 | 0.46 | 1,105 |
| GISENYI | | | | | | | |
| Homme | 394,024 | 13,550 | 3.44 | 367,466 | 420,581 | 1.73 | 1,070 |
| Femme | 441,370 | 10,447 | 2.37 | 420,893 | 461,847 | 0.93 | 1,203 |
| GITARAMA | | | | | | | |
| Homme | 412,753 | 15,284 | 3.70 | 382,797 | 442,709 | 2.11 | 1,137 |
| Femme | 473,347 | 13,461 | 2.84 | 446,964 | 499,730 | 1.44 | 1,310 |
| KIBUNGO | | | | | | | |
| Homme | 330,578 | 9,579 | 2.90 | 311,803 | 349,353 | 1.02 | 1,060 |
| Femme | 376,603 | 12,305 | 3.27 | 352,486 | 400,720 | 1.49 | 1,213 |
| KIBUYE | | | | | | | |
| Homme | 232,681 | 6,784 | 2.92 | 219,384 | 245,977 | 0.72 | 1,047 |
| Femme | 247,933 | 7,506 | 3.03 | 233,222 | 262,645 | 0.83 | 1,115 |
| KIGALI NGALI | | | | | | | |
| Homme | 349,375 | 13,728 | 3.93 | 322,468 | 376,283 | 1.99 | 953 |
| Femme | 409,495 | 12,140 | 2.96 | 385,702 | 433,289 | 1.34 | 1,110 |
| KIGALI-VILLE | | | | | | | |
| Homme | 293,889 | 7,548 | 2.57 | 279,095 | 308,682 | 0.71 | 1,829 |
| Femme | 312,207 | 8,031 | 2.57 | 296,466 | 327,947 | 0.76 | 1,943 |
| RUHENGERI | | | | | | | |
| Homme | 411,750 | 14,111 | 3.43 | 384,093 | 439,408 | 1.80 | 1,086 |
| Femme | 483,308 | 11,717 | 2.42 | 460,342 | 506,274 | 1.07 | 1,270 |
| UMUTARA | | | | | | | |
| Homme | 214,683 | 6,465 | 3.01 | 202,012 | 227,353 | 0.71 | 1,093 |
| Femme | 237,249 | 8,318 | 3.51 | 220,946 | 253,553 | 1.06 | 1,208 |
| MILIEU DE RÉSIDENCE PAR GROUPE D'ÂGE | | | | | | | |
| Urbain | | | | | | | |
| Moins de 15 ans | 439,458 | 11,228 | 2.55 | 417,451 | 461,465 | 1.07 | 2,579 |
| 15 a 19 ans | 124,020 | 5,301 | 4.27 | 113,630 | 134,410 | 0.81 | 731 |
| 20 a 29 ans | 200,012 | 6,571 | 3.29 | 187,133 | 212,890 | 0.78 | 1,186 |
| 30 a 39 ans | 111,892 | 4,690 | 4.19 | 102,700 | 121,084 | 0.70 | 662 |
| 40 a 49 ans | 79,549 | 3,564 | 4.48 | 72,563 | 86,534 | 0.57 | 469 |
| 50 a 59 ans | 34,877 | 2,474 | 7.09 | 30,028 | 39,725 | 0.62 | 205 |
| 60 ans et plus | 36,180 | 2,995 | 8.28 | 30,310 | 42,049 | 0.88 | 211 |
| Rural | | | | | | | |
| Moins de 15 ans | 3,155,458 | 36,859 | 1.17 | 3,083,215 | 3,227,702 | 2.50 | 10,091 |
| 15 a 19 ans | 914,313 | 19,209 | 2.10 | 876,663 | 951,963 | 1.61 | 2,895 |
| 20 a 29 ans | 1,078,332 | 19,683 | 1.83 | 1,039,753 | 1,116,911 | 1.47 | 3,422 |
| 30 a 39 ans | 643,995 | 14,555 | 2.26 | 615,468 | 672,522 | 1.26 | 2,062 |
| 40 a 49 ans | 567,188 | 14,859 | 2.62 | 538,065 | 596,312 | 1.48 | 1,813 |
| 50 a 59 ans | 321,433 | 10,964 | 3.41 | 299,943 | 342,923 | 1.38 | 1,043 |
| 60 ans et plus | 355,570 | 11,874 | 3.34 | 332,297 | 378,843 | 1.47 | 1,142 |

5. Effectif de la population – contin.

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Intervalle de confiance 95% Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| SEXE PAR GROUPE D'ÂGE | | | | | | | |
| Homme | | | | | | | |
| Moins de 15 ans | 1,749,999 | 26,447 | 1.51 | 1,698,164 | 1,801,835 | 1.81 | 6,208 |
| 15 a 19 ans | 503,428 | 13,021 | 2.59 | 477,907 | 528,948 | 1.27 | 1,756 |
| 20 a 29 ans | 565,168 | 13,775 | 2.44 | 538,168 | 592,168 | 1.28 | 2,035 |
| 30 a 39 ans | 322,858 | 9,420 | 2.92 | 304,395 | 341,321 | 1.01 | 1,186 |
| 40 a 49 ans | 298,697 | 9,471 | 3.17 | 280,133 | 317,260 | 1.10 | 1,059 |
| 50 a 59 ans | 156,457 | 7,085 | 4.53 | 142,569 | 170,344 | 1.16 | 554 |
| 60 ans et plus | 168,953 | 7,112 | 4.21 | 155,014 | 182,892 | 1.08 | 585 |
| Femme | | | | | | | |
| Moins de 15 ans | 1,844,917 | 26,303 | 1.43 | 1,793,363 | 1,896,472 | 1.72 | 6,462 |
| 15 a 19 ans | 534,905 | 13,326 | 2.49 | 508,787 | 561,023 | 1.26 | 1,870 |
| 20 a 29 ans | 713,176 | 13,096 | 1.84 | 687,508 | 738,844 | 0.93 | 2,573 |
| 30 a 39 ans | 433,029 | 10,078 | 2.33 | 413,277 | 452,782 | 0.88 | 1,538 |
| 40 a 49 ans | 348,040 | 9,667 | 2.78 | 329,092 | 366,989 | 0.99 | 1,223 |
| 50 a 59 ans | 199,854 | 7,336 | 3.67 | 185,476 | 214,231 | 0.98 | 694 |
| 60 ans et plus | 222,797 | 7,928 | 3.56 | 207,259 | 238,335 | 1.03 | 768 |

B. Estimations au niveau de ménage

1. Pourcentage de ménages avec chef de ménage femme

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 29.3 | 0.7 | 2.40 | 27.9 | 30.7 | 1.38 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 28.4 | 1.5 | 5.25 | 25.5 | 31.3 | 0.74 | 1,140 |
| Rural | 29.4 | 0.8 | 2.63 | 27.9 | 30.9 | 1.46 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 27.4 | 1.9 | 6.93 | 23.6 | 31.1 | 0.73 | 720 |
| Autre Urbain | 30.0 | 2.4 | 8.03 | 25.3 | 34.7 | 0.75 | 420 |
| Rural | 29.4 | 0.8 | 2.63 | 27.9 | 30.9 | 1.46 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 39.6 | 2.1 | 5.41 | 35.4 | 43.8 | 1.03 | 492 |
| BYUMBA | 28.0 | 2.1 | 7.37 | 23.9 | 32.0 | 1.06 | 444 |
| CYANGUGU | 26.7 | 2.3 | 8.45 | 22.3 | 31.1 | 0.99 | 444 |
| GIKONGORO | 23.9 | 2.1 | 8.79 | 19.8 | 28.0 | 0.85 | 444 |
| GISENYI | 25.8 | 2.5 | 9.62 | 20.9 | 30.6 | 1.94 | 468 |
| GITARAMA | 27.5 | 2.8 | 9.99 | 22.2 | 32.9 | 2.33 | 480 |
| KIBUNGO | 33.1 | 2.3 | 7.07 | 28.5 | 37.7 | 1.27 | 468 |
| KIBUYE | 25.0 | 2.4 | 9.79 | 20.2 | 29.8 | 1.10 | 444 |
| KIGALI NGALI | 31.8 | 2.8 | 8.85 | 26.3 | 37.3 | 2.11 | 444 |
| KIGALI-VILLE | 27.4 | 1.9 | 6.93 | 23.6 | 31.1 | 0.73 | 720 |
| RUHENGERI | 29.2 | 2.0 | 6.93 | 25.2 | 33.1 | 1.24 | 468 |
| UMUTARA | 30.2 | 2.8 | 9.15 | 24.8 | 35.6 | 1.11 | 444 |

2. Pourcentage de femmes chefs de ménage veuves

| Catégorie | Valeur (%) | Erreur Type (%) | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 81.1 | 1.0 | 1.22 | 79.2 | 83.1 | 1.08 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 79.2 | 2.5 | 3.11 | 74.4 | 84.1 | 0.71 | 1,140 |
| Rural | 81.4 | 1.1 | 1.32 | 79.3 | 83.5 | 1.13 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 75.6 | 3.7 | 4.95 | 68.3 | 83.0 | 0.84 | 720 |
| Autre Urbain | 84.1 | 2.8 | 3.37 | 78.6 | 89.7 | 0.49 | 420 |
| Rural | 81.4 | 1.1 | 1.32 | 79.3 | 83.5 | 1.13 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 83.7 | 2.5 | 2.95 | 78.8 | 88.5 | 0.95 | 492 |
| BYUMBA | 77.7 | 3.6 | 4.61 | 70.7 | 84.8 | 1.04 | 444 |
| CYANGUGU | 75.6 | 3.7 | 4.90 | 68.4 | 82.9 | 0.76 | 444 |
| GIKONGORO | 85.7 | 3.0 | 3.51 | 79.8 | 91.6 | 0.62 | 444 |
| GISENYI | 82.5 | 3.3 | 3.95 | 76.1 | 88.9 | 1.15 | 468 |
| GITARAMA | 88.8 | 2.3 | 2.62 | 84.2 | 93.3 | 0.92 | 480 |
| KIBUNGO | 76.8 | 3.3 | 4.31 | 70.4 | 83.3 | 1.04 | 468 |
| KIBUYE | 83.8 | 3.5 | 4.17 | 76.9 | 90.6 | 0.78 | 444 |
| KIGALI NGALI | 79.6 | 3.7 | 4.66 | 72.3 | 86.9 | 1.56 | 444 |
| KIGALI-VILLE | 75.6 | 3.7 | 4.95 | 68.3 | 83.0 | 0.84 | 720 |
| RUHENGERI | 82.6 | 3.8 | 4.56 | 75.2 | 89.9 | 1.80 | 468 |
| UMUTARA | 78.3 | 3.6 | 4.53 | 71.4 | 85.3 | 0.69 | 444 |

3. Temps moyen ( en minutes) pour les ménages d'atteindre à pied la plus proche source d'eau utilisée pour boire

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 21 | 1 | 3.78 | 19 | 22 | 4.87 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 10 | 1 | 11.58 | 8 | 13 | 4.00 | 1,140 |
| Rural | 22 | 1 | 3.95 | 21 | 24 | 5.01 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 10 | 2 | 18.04 | 7 | 14 | 4.47 | 720 |
| Autre Urbain | 10 | 1 | 10.48 | 8 | 12 | 2.37 | 420 |
| Rural | 22 | 1 | 3.95 | 21 | 24 | 5.01 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 19 | 1 | 7.41 | 17 | 22 | 3.31 | 492 |
| BYUMBA | 22 | 3 | 12.28 | 17 | 27 | 5.36 | 444 |
| CYANGUGU | 17 | 2 | 9.85 | 14 | 20 | 3.01 | 444 |
| GIKONGORO | 17 | 1 | 8.38 | 14 | 20 | 2.60 | 444 |
| GISENYI | 17 | 2 | 12.04 | 13 | 21 | 5.87 | 468 |
| GITARAMA | 16 | 2 | 10.55 | 12 | 19 | 5.01 | 480 |
| KIBUNGO | 29 | 3 | 10.71 | 23 | 36 | 6.10 | 468 |
| KIBUYE | 13 | 1 | 5.29 | 12 | 14 | 1.06 | 444 |
| KIGALI NGALI | 28 | 3 | 10.82 | 22 | 34 | 4.62 | 444 |
| KIGALI-VILLE | 10 | 2 | 18.04 | 7 | 14 | 4.47 | 720 |
| RUHENGERI | 27 | 4 | 14.25 | 19 | 34 | 7.12 | 468 |
| UMUTARA | 33 | 6 | 17.44 | 22 | 45 | 4.21 | 444 |

4. Temps moyen ( en minutes) pour les ménages d'atteindre à pied le plus proche marché de produits alimentaires

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 84 | 3 | 3.19 | 79 | 90 | 7.54 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 35 | 4 | 11.43 | 27 | 42 | 4.99 | 1,140 |
| Rural | 91 | 3 | 3.30 | 85 | 97 | 8.17 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 39 | 6 | 16.14 | 27 | 52 | 5.31 | 720 |
| Autre Urbain | 28 | 3 | 10.15 | 22 | 33 | 3.34 | 420 |
| Rural | 91 | 3 | 3.30 | 85 | 97 | 8.17 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 75 | 8 | 10.63 | 60 | 91 | 7.95 | 492 |
| BYUMBA | 77 | 9 | 11.45 | 60 | 94 | 9.11 | 444 |
| CYANGUGU | 99 | 10 | 10.13 | 79 | 118 | 6.57 | 444 |
| GIKONGORO | 79 | 6 | 8.11 | 66 | 91 | 3.20 | 444 |
| GISENYI | 87 | 10 | 11.77 | 67 | 107 | 9.76 | 468 |
| GITARAMA | 64 | 6 | 10.02 | 51 | 76 | 8.23 | 480 |
| KIBUNGO | 92 | 9 | 10.31 | 73 | 110 | 8.27 | 468 |
| KIBUYE | 101 | 10 | 10.36 | 80 | 121 | 5.75 | 444 |
| KIGALI NGALI | 100 | 10 | 9.58 | 81 | 119 | 9.90 | 444 |
| KIGALI-VILLE | 39 | 6 | 16.14 | 27 | 52 | 5.31 | 720 |
| RUHENGERI | 107 | 10 | 9.66 | 87 | 127 | 9.59 | 468 |
| UMUTARA | 91 | 12 | 13.35 | 67 | 115 | 6.27 | 444 |

5. Temps moyen ( en minutes) pour les ménages d'atteindre à pied le plus proche transport public

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 111 | 4 | 3.73 | 103 | 119 | 8.18 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 20 | 3 | 14.37 | 14 | 25 | 5.42 | 1,140 |
| Rural | 123 | 5 | 3.80 | 114 | 132 | 9.05 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 20 | 5 | 22.02 | 12 | 29 | 5.98 | 720 |
| Autre Urbain | 18 | 2 | 10.73 | 14 | 22 | 2.59 | 420 |
| Rural | 123 | 5 | 3.80 | 114 | 132 | 9.05 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 126 | 15 | 11.94 | 96 | 155 | 8.39 | 492 |
| BYUMBA | 119 | 13 | 10.65 | 94 | 144 | 7.61 | 444 |
| CYANGUGU | 165 | 21 | 12.60 | 124 | 205 | 8.91 | 444 |
| GIKONGORO | 163 | 11 | 6.71 | 141 | 184 | 4.77 | 444 |
| GISENYI | 133 | 16 | 12.33 | 101 | 166 | 11.22 | 468 |
| GITARAMA | 94 | 12 | 12.44 | 71 | 117 | 10.73 | 480 |
| KIBUNGO | 96 | 15 | 16.08 | 66 | 126 | 10.78 | 468 |
| KIBUYE | 134 | 16 | 11.66 | 103 | 165 | 6.69 | 444 |
| KIGALI NGALI | 89 | 10 | 11.55 | 69 | 109 | 8.30 | 444 |
| KIGALI-VILLE | 20 | 5 | 22.02 | 12 | 29 | 5.98 | 720 |
| RUHENGERI | 112 | 14 | 12.85 | 84 | 141 | 10.48 | 468 |
| UMUTARA | 89 | 15 | 17.01 | 59 | 119 | 7.18 | 444 |

6. Temps moyen ( en minutes) pour les ménages d'atteindre à pied la plus proche route fonctionnelle en toute saison

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 34 | 2 | 5.88 | 30 | 38 | 5.24 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 7 | 1 | 12.83 | 5 | 9 | 2.15 | 1,140 |
| Rural | 38 | 2 | 6.02 | 33 | 42 | 5.38 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 7 | 1 | 19.19 | 4 | 10 | 2.51 | 720 |
| Autre Urbain | 7 | 1 | 13.69 | 5 | 9 | 1.30 | 420 |
| Rural | 38 | 2 | 6.02 | 33 | 42 | 5.38 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 44 | 7 | 14.93 | 31 | 57 | 5.30 | 492 |
| BYUMBA | 16 | 3 | 18.33 | 10 | 21 | 5.22 | 444 |
| CYANGUGU | 109 | 16 | 14.55 | 78 | 140 | 8.00 | 444 |
| GIKONGORO | 20 | 4 | 18.96 | 12 | 27 | 2.45 | 444 |
| GISENYI | 80 | 10 | 13.11 | 59 | 100 | 6.74 | 468 |
| GITARAMA | 23 | 4 | 17.54 | 15 | 31 | 5.20 | 480 |
| KIBUNGO | 3 | 1 | 20.33 | 2 | 4 | 2.00 | 468 |
| KIBUYE | 38 | 10 | 26.67 | 18 | 58 | 7.38 | 444 |
| KIGALI NGALI | 14 | 2 | 15.60 | 10 | 19 | 5.92 | 444 |
| KIGALI-VILLE | 7 | 1 | 19.19 | 4 | 10 | 2.51 | 720 |
| RUHENGERI | 35 | 5 | 14.65 | 25 | 45 | 4.97 | 468 |
| UMUTARA | 21 | 10 | 48.92 | 1 | 42 | 7.52 | 444 |

7. Temps moyen ( en minutes) pour les ménages d'atteindre à pied le plus proche école primaire

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 31 | 1 | 2.95 | 30 | 33 | 4.58 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 19 | 1 | 7.37 | 16 | 22 | 2.66 | 1,140 |
| Rural | 33 | 1 | 3.12 | 31 | 35 | 4.78 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 19 | 2 | 11.28 | 15 | 23 | 2.92 | 720 |
| Autre Urbain | 19 | 1 | 7.30 | 16 | 22 | 1.81 | 420 |
| Rural | 33 | 1 | 3.12 | 31 | 35 | 4.78 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 29 | 3 | 9.38 | 24 | 34 | 4.65 | 492 |
| BYUMBA | 35 | 4 | 11.69 | 27 | 43 | 7.58 | 444 |
| CYANGUGU | 32 | 4 | 12.48 | 25 | 40 | 5.14 | 444 |
| GIKONGORO | 36 | 3 | 8.81 | 30 | 42 | 3.47 | 444 |
| GISENYI | 26 | 2 | 8.19 | 22 | 30 | 2.99 | 468 |
| GITARAMA | 27 | 2 | 8.20 | 22 | 31 | 5.04 | 480 |
| KIBUNGO | 37 | 3 | 8.95 | 31 | 44 | 5.64 | 468 |
| KIBUYE | 25 | 3 | 10.18 | 20 | 30 | 4.28 | 444 |
| KIGALI NGALI | 39 | 3 | 8.69 | 32 | 45 | 5.15 | 444 |
| KIGALI-VILLE | 19 | 2 | 11.28 | 15 | 23 | 2.92 | 720 |
| RUHENGERI | 32 | 3 | 9.17 | 26 | 37 | 4.34 | 468 |
| UMUTARA | 45 | 6 | 13.98 | 33 | 57 | 4.49 | 444 |

8. Temps moyen ( en minutes) pour les ménages d'atteindre à pied le plus proche école secondaire

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 132 | 4 | 2.98 | 125 | 140 | 8.09 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 41 | 5 | 12.69 | 31 | 51 | 5.38 | 1,140 |
| Rural | 144 | 4 | 3.05 | 136 | 153 | 9.15 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 50 | 8 | 16.75 | 34 | 67 | 5.72 | 720 |
| Autre Urbain | 27 | 3 | 11.24 | 21 | 33 | 4.08 | 420 |
| Rural | 144 | 4 | 3.05 | 136 | 153 | 9.15 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 140 | 14 | 9.73 | 113 | 166 | 7.96 | 492 |
| BYUMBA | 140 | 12 | 8.46 | 117 | 163 | 9.14 | 444 |
| CYANGUGU | 135 | 22 | 16.59 | 91 | 179 | 9.23 | 444 |
| GIKONGORO | 146 | 11 | 7.45 | 125 | 167 | 5.66 | 444 |
| GISENYI | 126 | 11 | 8.84 | 104 | 148 | 9.82 | 468 |
| GITARAMA | 125 | 11 | 8.99 | 103 | 146 | 9.65 | 480 |
| KIBUNGO | 147 | 15 | 10.46 | 117 | 177 | 9.58 | 468 |
| KIBUYE | 129 | 14 | 10.62 | 102 | 156 | 5.87 | 444 |
| KIGALI NGALI | 164 | 13 | 7.87 | 138 | 189 | 9.35 | 444 |
| KIGALI-VILLE | 50 | 8 | 16.75 | 34 | 67 | 5.72 | 720 |
| RUHENGERI | 133 | 13 | 9.94 | 107 | 158 | 10.48 | 468 |
| UMUTARA | 143 | 17 | 11.68 | 110 | 175 | 5.57 | 444 |

9. Temps moyen ( en minutes) pour les ménages d'atteindre à pied le plus proche hopital de district

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 106 | 3 | 2.91 | 100 | 112 | 7.93 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 42 | 4 | 9.08 | 35 | 50 | 3.73 | 1,140 |
| Rural | 115 | 3 | 3.02 | 108 | 122 | 8.86 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 46 | 6 | 12.84 | 35 | 58 | 5.31 | 720 |
| Autre Urbain | 36 | 4 | 9.82 | 29 | 43 | 1.34 | 420 |
| Rural | 115 | 3 | 3.02 | 108 | 122 | 8.86 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 94 | 8 | 8.73 | 78 | 110 | 7.52 | 492 |
| BYUMBA | 113 | 12 | 10.96 | 89 | 137 | 9.95 | 444 |
| CYANGUGU | 120 | 11 | 8.90 | 99 | 141 | 6.88 | 444 |
| GIKONGORO | 131 | 9 | 7.07 | 113 | 149 | 5.15 | 444 |
| GISENYI | 101 | 11 | 10.96 | 79 | 122 | 10.45 | 468 |
| GITARAMA | 103 | 10 | 9.25 | 84 | 121 | 10.24 | 480 |
| KIBUNGO | 127 | 11 | 8.68 | 106 | 149 | 8.37 | 468 |
| KIBUYE | 116 | 11 | 9.29 | 95 | 137 | 5.67 | 444 |
| KIGALI NGALI | 111 | 10 | 9.01 | 91 | 130 | 9.60 | 444 |
| KIGALI-VILLE | 46 | 6 | 12.84 | 35 | 58 | 5.31 | 720 |
| RUHENGERI | 105 | 11 | 10.29 | 84 | 126 | 10.34 | 468 |
| UMUTARA | 118 | 16 | 13.63 | 86 | 149 | 5.73 | 444 |

10. Temps moyen ( en minutes) pour les ménages d'atteindre à pied le plus proche bureau du district

| Catégorie | Valeur | Erreur Type | C.V. (%) | Intervalle de confiance 95% Lim. Infer. | Lim. Super. | Effet de Sondage | Nombre de Ménages |
|---|---|---|---|---|---|---|---|
| RWANDA | 204 | 5 | 2.60 | 194 | 214 | 8.84 | 5,760 |
| MILIEU DE RÉSIDENCE | | | | | | | |
| Urbain | 76 | 7 | 9.80 | 61 | 90 | 5.52 | 1,140 |
| Rural | 221 | 6 | 2.68 | 210 | 233 | 10.29 | 4,620 |
| STRATE | | | | | | | |
| Kigali-Ville | 87 | 11 | 12.73 | 65 | 109 | 6.72 | 720 |
| Autre Urbain | 58 | 8 | 14.03 | 42 | 74 | 3.50 | 420 |
| Rural | 221 | 6 | 2.68 | 210 | 233 | 10.29 | 4,620 |
| PROVINCE | | | | | | | |
| BUTARE | 190 | 18 | 9.23 | 156 | 225 | 9.69 | 492 |
| BYUMBA | 211 | 16 | 7.79 | 178 | 243 | 9.62 | 444 |
| CYANGUGU | 230 | 26 | 11.08 | 180 | 280 | 9.08 | 444 |
| GIKONGORO | 211 | 14 | 6.40 | 185 | 237 | 6.38 | 444 |
| GISENYI | 196 | 17 | 8.45 | 164 | 229 | 12.27 | 468 |
| GITARAMA | 195 | 19 | 9.56 | 158 | 231 | 11.92 | 480 |
| KIBUNGO | 227 | 18 | 7.93 | 192 | 262 | 9.30 | 468 |
| KIBUYE | 260 | 19 | 7.24 | 223 | 296 | 6.86 | 444 |
| KIGALI NGALI | 236 | 13 | 5.41 | 211 | 261 | 8.44 | 444 |
| KIGALI-VILLE | 87 | 11 | 12.73 | 65 | 109 | 6.72 | 720 |
| RUHENGERI | 176 | 20 | 11.47 | 136 | 216 | 13.89 | 468 |
| UMUTARA | 263 | 26 | 10.01 | 211 | 314 | 6.30 | 444 |