



Republic of Rwanda



The Fifth Integrated Household Living Conditions Survey

EICV5

2016/17



Thematic Report
Environment and Natural Resources



EICV5

**Integrated Household Living Conditions Survey
(Enquête Intégrale sur les Conditions de Vie des Ménages)**

**-2016/2017 -
EICV5_Thematic Report**

Environment and Natural Resources

December 2018



The EICV5_Environment and Natural Resources Thematic Report is produced by the National Institute of Statistics of Rwanda (NISR).

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Acknowledgement

The Fifth Integrated Household Living Conditions Survey (EICV5) was conducted from October 2016 to October 2017, and is designed to provide accurate and up-to-date information that are useful to government, analysts, and the public as they seek to monitor and evaluate efforts to reduce poverty.

The NISR now conducts EICV surveys every three years, and this has been made possible by strong collaboration and support from our stakeholders, who are as interested as we are in supporting evidence-based decision making, and planning processes that are grounded on reliable and valid statistics.

We sincerely appreciate the support given by the Government of Rwanda for the development of statistics in the country, and are grateful for the help that we continue to receive from all government institutions.

We are most grateful to our development partners for the support that they have given for the collection and development of statistics in Rwanda, and especially for EICV5. They include UK Aid, the European Union, the World Bank, and the UN partners in the country.

The measurement and analysis of poverty and living standards is an exercise that requires considerable technical skills. We would like to thank NISR technical and management team for their work - from the planning and implementation of EICV5 through the analysis and publication of the results. We further appreciate the valuable technical support provided by the international experts. The generation and use of complex survey data can only be achieved through teamwork.




Yusuf Murangwa
Director General, NISR

Acknowledgements

Important technical notes for data users

The EICV5 has three main components: cross-sectional sample of households, VUP Panel Survey receiving VUP benefits and EICV5 Panel Survey.

The EICV5 cross-sectional survey is designed to represent the current household-based population of Rwanda. The NISR national master sampling frame was used for selecting the sample villages in each district. This master sample was based on the 2012 Rwanda Census frame. The villages were selected for the Master Sample, stratified by district. Within each district the sample villages were selected systematically with probability proportional to size (PPS), where the measure of size was based on the number of households in each village from the 2012 Census frame. Within each district the villages in the master sampling frame were not explicitly stratified by urban and rural areas. However, the frame of villages within each district was ordered by urban and rural codes, and the systematic selection of the sample villages (with PPS) provides an implicit stratification of the Master Sample by urban and rural areas within each district, with a proportional allocation of the sample villages to each stratum.

Similar to the EICV4 cross-sectional survey methodology, a nationally-representative sample of clusters was assigned for the EICV5 data collection each cycle out 10 cycles, so that the sample is geographically representative over time. This process ensured that the final distribution of the sample clusters to cycles and sub-cycles was geographically representative within each district.

The objectives of the EICV5 Panel Survey are to measure the trends in key socioeconomic indicators over time for a nationally representative panel of households. The baseline survey was EICV3, and in EICV4 the panel households which moved or split were tracked and interviewed at their new location. The Panel Survey includes the panel households that remained in the original sample villages, and the split households that were tracked in EICV4. Any panel households that moved or split from this initial sample of panel households in EICV5 were also tracked. However, the additional tracking will be limited to following the original eligible members (13 years or older in EICV3, with relationship being: Household Head, Spouse of household head, son/daughter of household head, or step child/ adopted child of household head) of the EICV3 panel households.

The main objective of the VUP Panel Survey is to provide longitudinal data for a nationally-representative panel of households that received VUP benefits at the time of the EICV4, in order to obtain reliable estimates of trends in the socioeconomic indicators for these households. The VUP Survey conducted with EICV4 was based on a sample of 2,460 households selected from the VUP administrative frame using a stratified two-stage sample design. However, only the sample households indicated that they were receiving VUP benefits at the time of the EICV4 survey were considered to be the sample for the VUP Panel Survey.

If the entire household moved or an eligible member moved, it was necessary to identify their new address so that they can be tracked there. The eligibility criteria for household members to be tracked and the tracking procedures are similar to those used for the EICV5 Panel Survey.

Regarding data collection, the NISR collected the data for the EICV5 cross-sectional, VUP panel and EICV5 panel surveys using computer-assisted personal interviewing (CAPI) with computer tablets for the first time using the same questionnaire, including the listing operation.

Rounding of estimates

Estimates presented in the tables are shown rounded to one decimal place. To improve readability, estimates referred to in the interpretation of results have been rounded to the nearest integer, except for the discussion of relatively small percentages. Moreover, estimates of total population or total number of households are shown in tables expressed in '000's. Due to the rounding, the sum of subpopulation totals (e.g. Provinces or age groups) can be minimally different from the total population estimated at national level.

Consumption quintiles

The results are presented by quintile. Quintiles are developed by sorting the sample of households by annual consumption expenditure values, and then dividing the population into five equal shares. The 20% of individuals with the highest annual consumption are allocated to quintile 5, and the 20% of individuals with the lowest levels of annual consumption are allocated to quintile 1. The poorest households and their members are found in quintile 1 and the richest are found in quintile 5.

Consumption expenditure is used as a proxy for income, as is usual when estimating poverty. Quintiles are a relative measure of individuals' consumption in comparison to the rest of the population during a specific period.

Executive summary

Background to the study (EICV5)

This report presents and discusses results of EICV5 and compares them with the results that were generated in EICV4. It focuses on the areas of human settlement and the environment, energy and water resources, land management and environment related problems.

This survey was conducted over a period of 12 months between October 2016 and October 2017. A total number of 14580 households were drawn using the 2012 Rwanda Population and Housing Census as sampling frame for enumeration areas as primary sampling units.

This study (EICV5) took place three years after a similar study (EICV4) that was conducted (October 2013 to October 2014) and aims to provide even more timely evidence to support policy-making and continuous evaluation of the NST1. A strong feature of the EICV series is that its methodology has remained relatively unchanged since 2000/01. This allows calculating indicators in a consistent way for more than one survey round in order to investigate trends and to inform the planning framework of the National Strategy for Transformation (NST1) as well as other target indicators of Sustainable Development Goals (SDGs).

In this report, most of tables provide results both for EICV4 and EICV5 and highlight developments over time. They also discuss different patterns across the provinces in Rwanda and in urban and rural areas. Emphasis has been placed on including disaggregated results for men and women and male- and female-headed households to explore gender-related aspects in key social and economic characteristics of persons and households in Rwanda, and other disaggregation such as age group, type of habitat, etc., where necessary. Districts tables have been provided in annex.

Population growth and the environment

According to 2012 Population Census, the population of Rwanda is projected to reach almost 16.3 million people by 2032. The overall population growth goes with increasing densities expected to be 645 persons/sq km in 2034. The high population density implies more pressure on environment resources. This is especially true in the case of Rwanda, which is one of the most densely populated countries in Africa.

Human settlement and waste management

The EICV5 data show a clear move from the traditional isolated habitat towards Imidugudu or other clustered forms of habitat, which is in line with the settlement policy. However, isolated rural dwellings are still the most predominant form of housing for the poorest quintile (21%) especially in the Southern Province (29%).

The study also shows that households that live in modern or planned settlement tend to be provided with better facilities for waste management and sewage treatment. In urban areas provision of refuse collection services has increased from 36% to 42% and the use of compost heaps has decreased from 56% to 48% in rural areas.

In addition to solid waste management discussed above, the disposal of liquid wastes through improved sanitation facilities is also an important factor in preventing environmental damage. The percentage of households with access to improved sanitation has increased over the past three years in Rwanda, from 83% to 86%.

Looking at the new indicator introduced in EICV4, as percentage of households that are not sharing their own improved sanitation, 66% of households in EICV5 do not share their improved sanitation with others.

Considerable improvements can also be observed in construction materials used for dwellings, e.g. the increase in households with cement floors (21% in 2013/14 to 26% in 2016/17), the growing trend of using bricks for walls rather than wood (households using bricks increased from 63% in 2013/14 to 69% in 2016/17), or the switching from thatched roofs to metal sheets (metal sheet usage increased from 61% to 67%) in 2010/11 and 2013/14 respectively.

Energy resources use

Although fuels are an essential day-to-day environmental resource allowing Rwandan households to maintain and improve their standards of living, the human use of fuels has been identified as a major source of strain on the environment. On the other hand, there is a need to keep a balance between an energy supply that ensures economic development and a sustainable use of natural resources in the long run.

Firewood is still the source of fuel used for cooking by the vast majority of the rural population (93%) in 2016/17. In the urban areas, charcoal is used by 65% of households, followed by firewood (26%). While rural households have not changed the source of fuels they used for cooking in the last three years, a slow trend can be observed in the urban areas shifting from firewood (29% to 26%) and charcoal (68% to 65%) towards gas use (1% to 5%) in 2013/14 and 2016/17 respectively.

The percentage of households using electricity as the main source for lighting has increased substantially over the last three years, especially in the urban areas (72% to 76%). At national level, the use of electricity for lighting changed from 20% to 27% between 2013/14 and 2016/17.

Water resources

In addition to energy, another essential natural resource for human survival and development is water. In general, access to safe drinking water has a direct impact on the population's quality of life, health, and productivity.

Access to improved drinking water sources has increased in Rwanda, from 85% to 87% between 2013/14 and 2016/17. About 96% of households in Kigali City use improved drinking water source, with 46% of households using a public standpipe and 34% having water piped into their dwellings/yards. Kigali City has the largest percentage of households using improved drinking water source (96%) and Eastern Province has the lowest percentage of households using improved drinking water source (83%). Rural households can now reach an improved drinking water source more quickly than they could three years ago.

Land management and agricultural practices

Land in Rwanda is used for farming and/or livestock development. The growing population combined with strong reliance on agriculture make land one of the scarce resources in Rwanda.

The majority of Rwandan households cultivate at least one parcel of land, and most of them are directly reliant on agriculture as their main or only source of income, especially in rural areas (94%) in 2016/17. The average area cultivated per rural household is only 0.6 ha.

About 80% of crop growers have ownership rights over their land and can use it as a guarantee for a loan. It was realized that among households that accessed a loan from a formal source of credit, 47% used land as collateral to obtain the loan.

The comparison between the last three years shows that the proportion of households that can sell their land or use it as a guarantee has been the same.

The use of chemical fertilizers has increased from 37% to 38% between 2013/14 and 2016/17. The land area under irrigation is at 6% and 69% of land is protected against soil erosion.

Health problems related to environment

The study revealed that health problems are more pronounced among people that use non-improved sanitation, and also slightly higher among those using non-improved drinking water sources (36%). Similarly, people lighting their homes with firewood have a higher incidence of health problems (42%) compared to others. It was also realized that health problems are higher among people living in rural areas (34%) compared to people living in urban areas (26%).

The study also revealed that the environment itself might generate human problems. It was found out that 13% of households in Rwanda have experienced cases of environmental problems, most of them (57%) pertaining to heavy and destructive rains. In this regard, it was found out that rural households are more susceptible to consequences from natural hazards compared to urban households.

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List of Abbreviations

- EDPRS** : Economic Development and Poverty Reduction Strategy
- EICV** : Integrated Household Living Conditions Survey (Enquête Intégrale sur les Conditions de Vie des Ménages)
- HHs** : Households
- ICT** : Information and Communications Technology
- NISR** : National Institute of Statistics of Rwanda
- RDHS** : Rwandan Demographic and Health Survey
- RPHC** : Rwanda population and household census
- RWF** : Rwandan Franc
- VUP** : Vision 2020 Umurenge Programme
- NST** : National Strategy for Transformation
- SDGs** : Sustainable Development Goals

Chapter 1: Introduction

The first National Strategy for Transformation (2017-2024) mainstreams a system of monitoring and evaluation at national, provincial, district and sectoral levels of the government's socio-economic performance vis-a-vis the country's long term development aspirations as embodied in Rwanda Vision 2020 and Vision 2050. National Strategy for Transformation (NST) and vision 2050 aims at increasing the economic growth with the main objective of speeding up Rwanda's progress towards an upper middle income country by 2035.

The evidence collected through the EICV5 fieldwork which was carried out by the NISR between October 2016 and October 2017 provided a key input into the evaluation of the development programs such as: Vision 2020, First National Strategy for Transformation, Sustainable Development Goals, Vision 2050, AU Agenda and EAC Vision 2050.

This report doesn't however cover the whole spectrum of the environment. The main focus is on mostly used natural resources by Rwandans for socio-economic development and livelihoods. These include mainly land, water, different sources of energy and building material, etc. The availability of the natural resources in question and their accessibility for use by a growing number of Rwandans has been central in the analysis of environment and natural resources theme. In addition, health and waste generation from natural resources use have been covered by this report. Another important limitation was the nature of findings consisting in the perceptions of respondents solely. The perceptions have been gathered at household level and reflect the understanding of the households as far as the themes covered are concerned.

This report is one of six different thematic reports namely: Youth, Economic Activity, Utilities and amenities, Education, Environment and Natural Resources and Gender, which will play key role in the final evaluation of EDPRS2 and evaluation of the National Strategy for Transformation.

Following this introductory chapter, this reports present different chapters. Chapters 2 and 3 discuss the interactions between a growing population in Rwanda, human settlements with the environment. Chapters 4, 5, 6 and 7 present information on the natural resources that allow Rwandan households to maintain and develop their livelihoods. Finally, chapters 8 and 9 discuss potential threats resulting from the environment and its deterioration. The annexes provide district-level estimates for selected indicators as well as confidence intervals.

Chapter 2: Population growth and the environment

With a fast-growing population of close to 10.5 million people (Rwanda Population and Housing Census, 2012), Rwanda presents cases of environmental degradation resulting from the pressure that the population exerts on the environment. There is, therefore, a need to use all means possible to mitigate the increasing effects of population growth on the environment. For a better understanding of the linkage between population growth and the environment, it becomes imperative to first and foremost analyze the population growth in Rwanda as the need for environmental resources increases with increasing number of people.

According to Rwanda Population and Housing Census of 2012 projection, the population of Rwanda estimated to be 12,089,720 in 2018; 16.3 million people by 2032. This is highlighted in the medium- level projections in Table 2.1.

Table 2.1 : Evolution of the population size 2013-2032 by projection scenario

Year	Medium projection			Lower projection			High projection		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
2013	10,736,772	5,178,353	5,558,419	10,730,761	5,175,336	5,555,425	10,738,653	5,179,372	5,559,281
2014	10,996,895	5,310,426	5,686,469	10,978,626	5,301,274	5,677,352	11,002,631	5,313,524	5,689,107
2015	11,262,565	5,445,205	5,817,360	11,225,544	5,426,645	5,798,899	11,274,218	5,451,494	5,822,724
2016	11,533,446	5,582,524	5,950,922	11,470,865	5,551,145	5,919,720	11,553,188	5,593,172	5,960,016
2017	11,809,295	5,722,258	6,087,037	11,713,994	5,674,491	6,039,503	11,839,420	5,738,490	6,100,930
2018	12,089,720	5,864,284	6,225,436	11,954,132	5,796,265	6,157,867	12,132,541	5,887,402	6,245,139
2019	12,374,398	6,008,388	6,366,010	12,190,637	5,916,114	6,274,523	12,432,365	6,039,753	6,392,612
2020	12,663,117	6,154,447	6,508,670	12,422,805	6,033,716	6,389,089	12,738,764	6,195,477	6,543,287
2021	12,955,768	6,302,428	6,653,340	12,658,536	6,153,127	6,505,409	13,051,778	6,354,595	6,697,183
2022	13,252,274	6,452,338	6,799,936	12,897,778	6,274,286	6,623,492	13,371,542	6,517,179	6,854,363
2023	13,552,034	6,603,858	6,948,176	13,140,148	6,397,013	6,743,135	13,697,803	6,682,963	7,014,840
2024	13,854,856	6,756,902	7,097,954	13,385,470	6,521,197	6,864,273	14,030,371	6,851,920	7,178,451
2025	14,160,550	6,911,352	7,249,198	13,633,585	6,646,779	6,986,806	14,369,180	7,024,008	7,345,172
2026	14,468,759	7,067,049	7,401,710	13,884,233	6,773,614	7,110,619	14,714,043	7,199,133	7,514,910
2027	14,779,043	7,223,769	7,555,274	14,137,063	6,901,529	7,235,534	15,064,600	7,377,135	7,687,465
2028	15,090,251	7,380,862	7,709,389	14,390,838	7,029,902	7,360,936	15,419,678	7,557,359	7,862,319
2029	15,401,596	7,537,916	7,863,680	14,644,828	7,158,364	7,486,464	15,778,593	7,739,445	8,039,148
2030	15,712,647	7,694,732	8,017,915	14,898,528	7,286,658	7,611,870	16,141,036	7,923,267	8,217,769
2031	16,022,992	7,851,095	8,171,897	15,151,387	7,414,476	7,736,911	16,506,665	8,108,643	8,398,022
2032	16,332,186	8,006,778	8,325,408	15,402,934	7,541,570	7,861,364	16,875,138	8,295,402	8,579,736

Source: Rwanda 4th population and housing census (Population Projection, 2013-2032)

The population growth combined with a limited surface of 26,338 km² make Rwanda, one of the most densely populated countries in Africa. This explains excessive pressure on the environment since the majority of Rwanda is still relying on natural resources exploitation for livelihoods. Table 2.2 portrays that as the population of Rwanda grows, the population density will increase from 456 persons per square kilometer to a projected 645 persons on average in 2032.

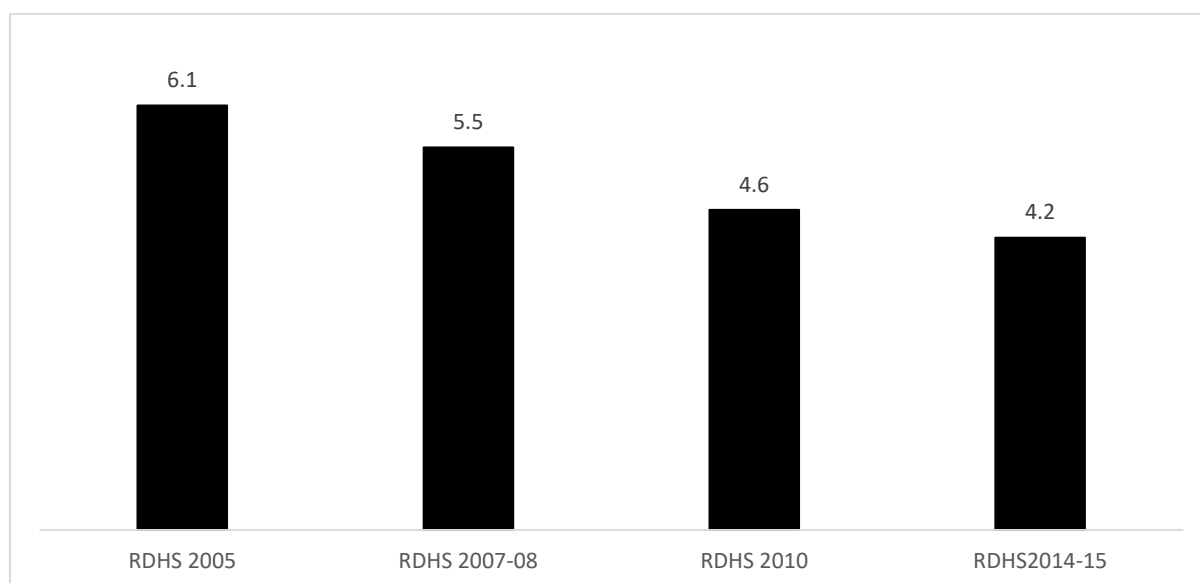
Table 2. 2: Population Density

Year	Total population (medium projection scenario)	Density (persons per km ²)
2012	10,482,641	414
2013	10,736,772	424
2014	10,996,895	434
2015	11,262,565	445
2016	11,533,446	456
2017	11,809,295	467
2018	12,089,720	477
2019	12,374,398	489
2020	12,663,117	500
2021	12,955,768	512
2022	13,252,274	524
2023	13,552,034	535
2024	13,854,856	547
2025	14,160,550	559
2026	14,468,759	571
2027	14,779,043	584
2028	15,090,251	596
2029	15,401,596	608
2030	15,712,647	621
2031	16,022,992	633
2032	16,332,186	645

Source: Rwanda 4th population and housing census (Population Projection, 2013-2032)

Population growth in Rwanda is mostly influenced by the relatively high fertility level. According to Rwanda Demographic and Health Survey (RDHS) reports (2005-2014/2015), the total fertility rate (TFR) in Rwanda declined from 6.1% (2005) to 4.2% (2014/2015). However, the increment of decline is slower between 2010 and 2014/15 than in the previous period.

Figure 2. 1: Trends in total fertility rate, 2005 to 2014-15 (Births per women)



Source: RDHS 2014-2015.

Existing literature shows that population growth and population density can contribute to environmental degradation. It has also been established that the effects of the population on the environment can be mitigated through education program aiming at improving environmental

awareness among the population as well as the use of modern technologies friendly with the environment.

It is in this perspective that EICV5 asked respondents whether they received any information on environmental issues and the sources from which they received that information as presented in Table 2.3.

As Table 2.3 shows, the findings revealed that 81% of households in Rwanda receive information on environmental issues. Eastern Province has the highest percentage (89%) of households that reported to have received information on environmental issues whereas Western Province shows the lowest percentage (75%). The main sources of information were meetings and trainings (64%) and radio or TV (35%). As one would expect, radio and TV were more frequently stated as the main source of information in urban areas compared to rural areas.

Fewer female-headed households had received information on environmental issues (76% of female-headed households compared to 83% for male-headed households). Whereas the proportion of female-headed households that received environmental information through meetings is higher than the proportion of male-headed households. Female-headed households that received environmental information from radio/TV are less than male-headed households.

Table 2. 3: Percentage of households that received information about environment issues, and main sources of information, by province, urban/rural, quintile and sex of head of Household

EICV5	% of HHs received information about environmental issues, and main source s of information							Total	Total number of HHs that received information (000s)
	% of HHs receiving any info on environmental issues	Total number of HHs (000s)	Meeting/ Trainings	School	Radio / TV	Other type of media	Others		
All Rwanda	81.4	2,708	64.4	0.2	34.9	0.3	0.1	100	2,204
Urban/rural									
Urban	75.4	524	33.3	0.6	64.7	1.1	0.3	100	395
Rural	82.8	2,184	71.2	0.2	28.4	0.1	0.1	100	1,809
Province									
Kigali City	75.7	410	30.2	0.4	68.2	1.0	0.2	100	310
Southern	86.0	626	68.8	0.3	30.6	0.2	0.1	100	539
Western	74.8	574	72.1	0.4	27.3	0.1	0.2	100	429
Northern	76.4	422	70.7	0.1	29.1	0.1	0.0	100	323
Eastern	89.2	677	69.3	0.1	30.2	0.2	0.2	100	604
Sex of head of household									
Male	83.2	2,031	61.5	0.1	37.9	0.3	0.1	100	1,690
Female	75.9	677	74.0	0.6	25.0	0.1	0.2	100	514
Quintile									
Q1	78.0	433	83.3	0.1	16.2	0.2	0.2	100	337
Q2	79.9	481	77.4	0.3	22.1	0.0	0.1	100	384
Q3	82.4	528	71.9	0.2	27.8	0.0	0.1	100	435
Q4	82.8	573	64.2	0.1	35.3	0.2	0.1	100	475
Q5	82.5	694	39.1	0.4	59.5	0.8	0.2	100	573

Source: EICV5. Base population: all households; households receiving information on environmental issues

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EICV4	% of HHs that received information about environmental issues, and main sources of information							Total	Total number of HHs that received information (000s)
	% of HHs receiving any info on environmental issues	Total number of HHs (000s)	Meetings/ Trainings	School	Radio/ TV	Other type of media	Others		
All Rwanda	84.9	2,493	56.2	0.6	42.9	0.1	0.2	100	2,115
Province									
Kigali City	87.3	295	34.9	1.0	63.3	0.6	0.2	100	258
Southern	82.9	597	58.0	0.6	41.3	0.1	0.0	100	495
Western	77.5	559	68.3	0.5	30.5	0.1	0.7	100	433
Northern	89.5	394	65.5	0.9	33.5	0.1	0.1	100	353
Eastern	89.0	647	49.3	0.5	50.1	0.1	0.0	100	576
Urban/Rural									
Urban	85.7	426	36.1	1.1	62.2	0.4	0.1	100	365
Rural	84.7	2067	60.4	0.6	38.8	0.1	0.2	100	1,750
Quintile									
Q1	79.0	421	72.1	0.4	27.1	0.0	0.4	100	332
Q2	84.4	458	65.5	0.6	33.7	0.1	0.2	100	386
Q3	85.3	489	60.7	0.7	38.3	0.1	0.2	100	417
Q4	85.8	532	55.3	0.5	44.0	0.1	0.1	100	456
Q5	88.2	593	36.3	1.0	62.3	0.3	0.1	100	523
Sex of head of household									
Male	87	1,857	53.6	0.6	45.5	0.2	0.2	100	1,615
Female	78.7	636	64.3	0.9	34.5	0.1	0.2	100	500

Source: EICV4. Base population: all households; households receiving information on environmental issues

Table 2.4 presents the percentage of households that own ICT devices. About 67% of the households own mobile phones, 74% of households own Radio sets (Including ones in mobile phones) and 10% of households own television sets.

The percentage of households owning radio has increased significantly from 60% (EICV4) to 74% (EICV5), and this might be explained by the fact that in this EICV5, radio in mobile phones was included, and again the percentage of households owning mobile phones increased and most mobile phones have an application which can allow users to receive radio signals. A lower percentage of households owning radios were observed in Southern Province (67%). An estimate of 91% of households living in urban areas own radio devices and a lower percentage of households in the poorest quintile own radio devices (52%).

Table 2. 4: Ownership of ICT devices by province, urban/Rural, quintile and sex of head household

EICV5	Ownership of ICT devices				Total no. of HHs (000s)
	Mobile phone (%)	Computer (%)	Radio (%)	TV set (%)	
All Rwanda	67.0	3.3	73.8	10.4	2,708
Urban/rural					
Urban	88.7	13.1	91.3	35.0	524
Rural	61.8	0.9	69.6	4.5	2,184
Province					
Kigali City	88.0	12.8	91.5	36.0	410
Southern Province	58.4	1.7	67.2	5.2	626
Western Province	64.1	1.2	69.5	6.5	574
Northern Province	64.5	1.9	73.2	5.7	422
Eastern Province	66.1	1.6	73.1	5.8	677
Sex of head of household					
Male	71.2	3.6	78.6	11.9	2,031
Female	54.4	2.3	59.3	5.7	677

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EICV5	Ownership of ICT devices				Total no. of HHs (000s)
	Mobile phone (%)	Computer (%)	Radio (%)	TV set (%)	
Quintile					
Q1	44.0	0.0	52.0	0.4	434
Q2	54.9	0.1	64.0	1.4	484
Q3	64.0	0.2	72.0	2.2	528
Q4	73.1	0.8	79.6	7.2	571
Q5	86.9	12.0	90.7	31.8	691

Source EICV5. Base population, all households

EICV4	Mobile phone (%)	Computer (%)	Radio (%)	TV set (%)	Total no. of HHs (000s)
All Rwanda	63.6	2.5	59.8	9.9	2,493
Province					
Kigali City	90.0	12.8	66.9	44.1	295
Southern	54.0	1.3	57.9	4.9	597
Western	58.2	1.1	52.0	5.9	559
Northern	60.8	1.2	61.9	4.1	394
Eastern	67.0	1.0	63.9	6.1	647
Urban/rural					
Urban	87.9	12.2	67.5	41.4	426
Rural	58.6	0.5	58.2	3.4	2,067
Quintile					
Q1	36.4	0.0	36.6	0.1	422
Q2	50.8	0.0	53.7	0.6	460
Q3	61.9	0.0	59.5	1.2	489
Q4	71.3	0.5	66.5	5.3	526
Q5	87.5	10.2	75.2	35.3	596
Sex of head of household					
Male	68.0	2.8	66.1	11.2	1,857
Female	50.8	1.7	41.5	6.1	636

Source EICV4. Base population, all households

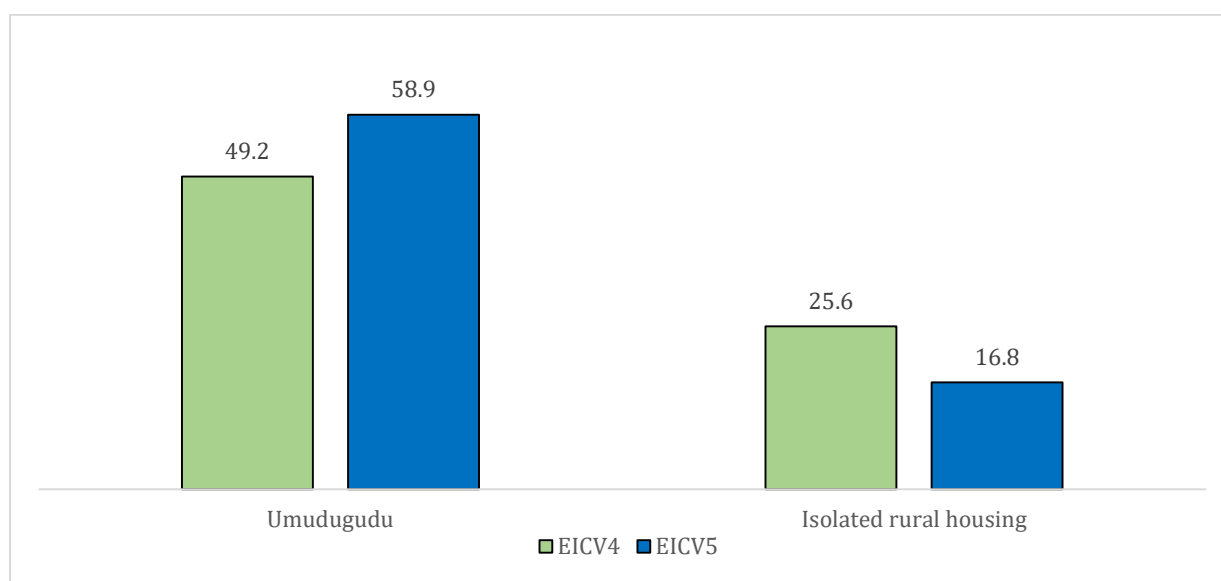
Chapter 3: Human settlement and waste management

Researchers agree on the fact that the impact of human beings on the environment can be mitigated by the use of modern technologies (among other means). They also point out that simple behavioral changes towards the improvement of in waste management or use of sustainable fuels can be crucial in preventing environmental degradation by humans. This chapter discusses the behavioral patterns that pertain to settlement, construction, waste management, use of fuels and water access in Rwanda.

Accessible rural infrastructures, basic services for sustainable use of natural resources as well as environmental management practices are sometimes hindered by rural habitat in Rwanda, which is characterized by scattered and isolated dwellings. In urban areas, there have been proliferation of inadequate planning for infrastructures development. It is also worth mentioning that the recent conflicts in neighboring countries are at the origin of the creation of refugee camps in Rwanda characterized by absence of ad hoc construction of camps or temporary housing schemes. All these factors hinder the development of adequate human settlement, friendly with environment.

As portrayed in Figure 3.1 and Table 3.1, findings show that the households living in scattered settlements have decreased significantly from 26% (EICV4) to 17% (EICV5). On the other hand, the percentage of households living in Umudugudu increased from 49% (EICV4) to 59% (EICV5).

Figure 3. 1: Change in habitat types



Source: EICV5 and EICV4.

The results from EICV5 indicate that isolated rural dwellings persist in some areas. This is the case in the Southern Province where up to 29% of households are still in scattered settlements.

Table 3. 1: Distribution of HHs by types of habitat, according to province, urban/ rural, quintile and sex of head of household

EICV5	Type of habitat						Total	Total no. of HHs (000s)
	Umudugudu	Unplanned clustered rural housing	Isolated rural housing	Unplanned urban housing	Small settlement	Modern planned area		
All Rwanda	58.9	6.5	16.8	14.2	0.7	2.8	100	2,708
Urban/rural								
Urban	24.8	5.5	2.9	52.5	0.4	13.9	100	524
Rural	67.0	6.8	20.1	5.0	0.8	0.2	100	2,184
Province								
Kigali City	4.1	0.1	0.8	77.3	0.3	17.4	100	410
Southern	56.7	8.5	28.9	4.8	0.7	0.3	100	626
Western	59.5	13.0	22.1	3.1	2.3	0.0	100	574
Northern	68.8	7.1	21.7	1.5	0.1	0.7	100	422
Eastern	87.4	2.8	7.6	2.1	0.1	0.1	100	677
Sex of head of household								
Male	58.5	6.5	16.4	14.8	0.7	3.1	100	2,031
Female	60.1	6.7	17.9	12.5	0.8	2.1	100	677
Quintile								
Q1	66.8	6.8	21.4	4.2	0.6	0.1	100	433
Q2	64.1	6.4	21.3	7.2	0.7	0.3	100	481
Q3	64.1	7.0	18.6	8.6	0.7	1.0	100	528
Q4	61.8	7.0	17.1	12.0	0.7	1.3	100	573
Q5	43.9	5.7	9.2	31.4	0.9	9.0	100	694

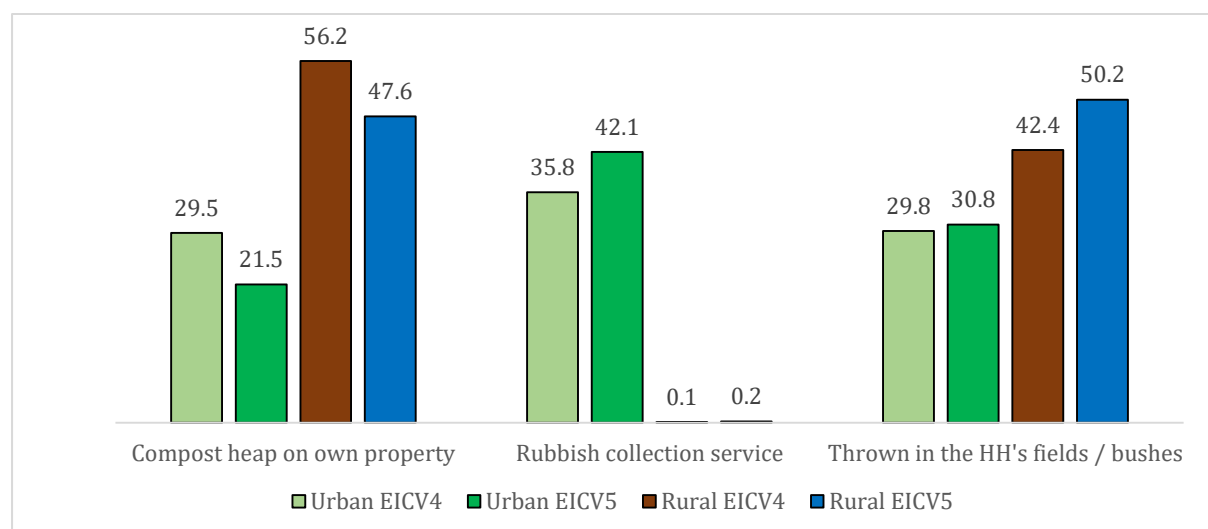
Source: EICV5. Base population, all households

EICV4	Umudugudu	Unplanned clustered rural housing	Isolated rural housing	Unplanned urban housing	Small settlement	Modern planned area	Total	Total no. of HHs (000s)
All Rwanda	49.2	8.7	25.6	12.8	2.2	1.6	100	2,493
Province								
Kigali City	2.7	2.2	13.4	79.0	0.1	2.6	100	295
Southern	50.5	10.2	31.4	5.0	0.8	2.0	100	597
Western	42.6	8.4	35.3	4.8	7.6	1.3	100	559
Northern	43.8	8.3	42.7	2.0	1.3	2.0	100	394
Eastern	78.3	10.7	6.8	3.2	0.3	0.8	100	647
Urban/rural								
Urban	17.1	6.4	3.2	62.6	2.1	8.6	100	426
Rural	55.8	9.2	30.2	2.5	2.2	0.1	100	2,067
Quintile								
Q1	52.6	7.8	33.1	4.6	1.6	0.3	100	421
Q2	53.1	8.9	30.6	5.3	1.8	0.4	100	458
Q3	52.9	8.4	28.4	6.9	3.0	0.3	100	489
Q4	49.6	9.6	26.1	11.5	2.3	0.9	100	532
Q5	40.4	8.6	13.5	30.2	2.1	5.1	100	593
Sex of head of household								
Male	49.2	8.8	24.9	13.2	2.3	1.6	100	1,857
Female	49.2	8.3	27.4	11.7	2.0	1.5	100	636

Source: EICV4. Base population, all households

With regard to the use of waste management utilities, findings showed that households that live in modern or planned settlements - either in urban or in rural areas - tend to be endowed with better facilities for waste management and sewage treatment. This is associated with improvement in waste management, as can be seen in Figure 3.2 and Table 3.2. In urban areas, the provision of refuse collection services has increased from 36% to 42% and the use of compost heaps has decreased from 56% to 48% in rural area between 2013/14 and 2017/18. In non-urbanized areas of urban and rural settlements, there are households still throwing garbage directly to the field mainly for fertilization purposes.

Figure 3. 2: Change in use of waste management facilities



Source: EICV4 and EICV5

Table 3. 2: Waste management facilities by province, urban/Rural and sex of head of household

EICV5	Main mode of rubbish disposal (waste management)							Total	Total no. of HHs (000s)
	Publicly managed refuse area	Rubbish collection service	Thrown in the HH's fields or bushes	Dumped in river/lakes/ditches	Burnt	Compost heap on own property	Other ways of rubbish disposal used		
All Rwanda	2.0	8.3	46.5	0.2	0.1	42.5	0.4	100	2,708
Urban/rural									
Urban	4.2	42.1	30.8	0.4	0.3	21.5	0.7	100	524
Rural	1.5	0.2	50.2	0.1	0.1	47.6	0.3	100	2,184
Province									
Kigali City	2.6	48.9	33.5	0.7	0.3	13.6	0.3	100	410
Southern	2.5	0.7	58.8	0.1	0.1	37.6	0.3	100	626
Western	2.2	1.6	48.5	0.1	0.0	47.1	0.5	100	574
Northern	1.6	1.1	50.5	0.0	0.0	46.2	0.5	100	422
Eastern	1.3	1.0	38.7	0.1	0.1	58.5	0.2	100	677
Sex of head of household									
Male	2.1	8.7	44.6	0.2	0.1	44.0	0.3	100	2,031
Female	1.7	7.3	52.0	0.1	0.0	38.3	0.5	100	677

Source: EICV5. Base population, all households

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EICV4	Main mode of rubbish disposal (waste management)							Total	Total number of HHs (000s)
	Publicly managed refuse area	Rubbish collection service	Thrown in bushes or fields	Dumped in river or lake	Burnt	Compost heap	Other ways of rubbish disposal used		
All Rwanda	1.5	6.2	40.2	0.1	0.1	51.6	0.2	100	2,493
Province									
Kigali City	1.1	46.5	30.7	0.5	0.1	20.6	0.5	100	295
Southern	1.4	0.5	43.6	0.0	0.0	54.3	0.2	100	597
Western	1.5	1.5	43.6	0.2	0.0	52.9	0.2	100	559
Northern	0.8	0.7	46.7	0.0	0.0	51.7	0.1	100	394
Eastern	2.3	0.7	34.6	0.0	0.1	62.1	0.1	100	647
Urban/rural									
Urban	3.5	35.8	29.8	0.4	0.2	29.5	0.8	100	426
Rural	1.1	0.1	42.4	0.1	0.0	56.2	0.1	100	2,067
Sex of head of household									
Male	1.5	6.5	38.4	0.1	0.1	53.2	0.2	100	1,857
Female	1.5	5.4	45.6	0.2	0.0	47.1	0.1	100	636

Source: EICV4. Base population, all households

Besides solid waste management, the disposal of liquid wastes through improved sanitation facilities is also paramount in safeguarding the environment. It has been realized particularly that in urban contexts deep pit latrines can negatively affect ground water. Table 3.3. Illustrates that 86 % of households use improved sanitation in Rwanda (from 83 % in EICV4). The proportion of urban dwellers using improved sanitation as shown by EICV5 is 94% while it is 84% in rural area.

Table 3. 3: Percentage of HHs with access to improved sanitation facilities by province, urban/ rural, quintile and sex of head of household

EICV5	% of HHs that use improved sanitation	Improved sanitation		Unimproved sanitation			Total	Total no. of HHs (000s)
		Flush toilet	Pit latrine with solid slab	Pit latrine without slab	Others	No toilet whatsoever		
All Rwanda	86.2	1.9	84.3	9.8	0.2	3.8	100	2,708
Urban/rural								
Urban	93.6	9.2	84.4	4.3	0.1	2.1	100	524
Rural	84.4	0.1	84.3	11.2	0.2	4.2	100	2,184
Province								
Kigali City	94.5	9.3	85.2	3.6	0.0	1.9	100	410
Southern	74.6	0.6	74.0	19.9	0.0	5.4	100	626
Western	88.1	0.8	87.3	7.1	0.7	4.1	100	574
Northern	86.5	0.7	85.7	10.0	0.2	3.4	100	422
Eastern	90.0	0.2	89.8	6.5	0.0	3.5	100	677
Sex of head of household								
Male	88.0	2.0	86.0	9.0	0.1	2.8	100	2,031
Female	80.6	1.5	79.1	12.4	0.3	6.8	100	677
Quintile								
Q1	76.3	0.0	76.3	16.8	0.2	6.7	100	433
Q2	81.0	0.0	81.0	14.4	0.3	4.3	100	481
Q3	85.9	0.0	85.9	9.8	0.2	4.0	100	528
Q4	88.5	0.0	88.5	7.9	0.1	3.5	100	573
Q5	94.2	7.3	86.9	3.9	0.2	1.7	100	694

Source: EICV5. Base population, all households

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EICV4	% of HHs that use improved sanitation	Improved sanitation		Unimproved sanitation			Total	Total no. of HHs (000s)
		Flush toilet	Protected latrines	Unprotected latrines	Others	No toilet facilities		
All Rwanda	83.4	1.8	81.6	13.5	0.0	3.2	100	2,493
Province								
Kigali City	93.2	8.5	84.7	5.8	0.0	1.0	100	295
Southern	69.5	1.1	68.4	26.0	0.0	4.5	100	597
Western	85.4	1.1	84.3	9.6	0.1	4.9	100	559
Northern	85.9	0.8	85.1	11.1	0.0	3.0	100	394
Eastern	88.4	0.6	87.8	10.3	0.0	1.4	100	647
Urban/rural								
Urban	93.5	8.6	84.9	5.3	0.0	1.2	100	426
Rural	81.3	0.4	80.9	15.1	0.0	3.6	100	2,067
Quintile								
Q1	73.6	0.0	73.5	20.5	0.0	5.9	100	421
Q2	77.1	0.3	76.8	19.0	0.1	3.8	100	458
Q3	83.0	0.1	82.9	13.6	0.0	3.4	100	489
Q4	85.5	0.5	85.1	12.5	0.0	2.0	100	532
Q5	93.5	6.7	86.8	5.0	0.0	1.5	100	593
Sex of head of household								
Male	85.7	1.9	83.8	12.1	0.0	2.2	100	1,857
Female	76.5	1.5	75.0	17.4	0.0	6.0	100	636

Source: EICV4. Base population, all households

As portrayed in Table 3.4, in Rwanda, most of households do not share their own improved sanitation with others (66%). However, in urban areas including Kigali City, the proportion of households not sharing their sanitation facilities is less (45%) compared to households based in rural areas (71 %).

Table 3. 4: Percentage of households that are not sharing their own improved sanitation by province, urban/Rural, quintile and sex of head household

EICV5	% of HHs that are not sharing their own improved sanitation	Total no. of HHs (000s)
All Rwanda	66.2	2,708
Urban/rural		
Urban	45.0	524
Rural	71.3	2,184
Province		
Kigali City	41.7	410
Southern Province	61.3	626
Western Province	70.6	574
Northern Province	76.9	422
Eastern Province	75.2	677
Sex of head of household		
Male	68.6	2,031
Female	59.1	677
Quintile		
Q1	64.1	433
Q2	66.6	481
Q3	69.5	528
Q4	70.3	573
Q5	61.4	694

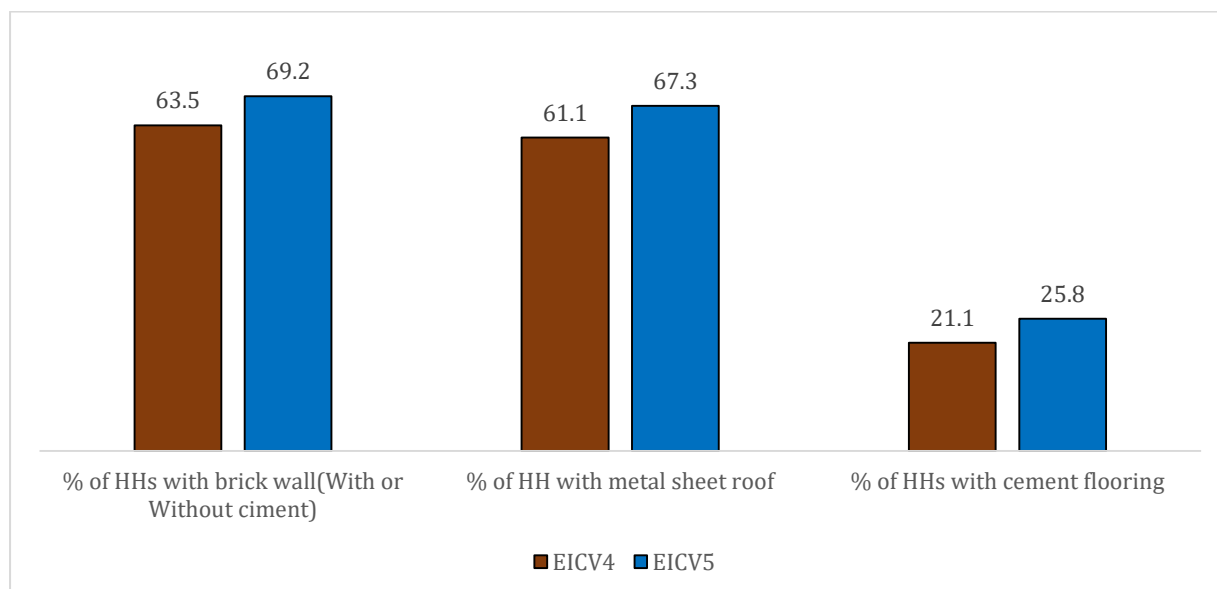
Source: EICV5. Base population, all households

EICV4	% of HHs that are not sharing their own improved sanitation	Total no. of HHs (000s)
All Rwanda	63.5	2,493
Province		
Kigali City	42.2	295
Southern Province	56.0	597
Western Province	68.1	559
Northern Province	74.7	394
Eastern Province	69.4	647
Urban/rural		
Urban	47.2	426
Rural	66.9	2,067
Quintile		
Q1	59.3	421
Q2	62.4	458
Q3	66.5	489
Q4	66.8	532
Q5	61.9	593
Sex of head of household		
Male	66.3	1,857
Female	55.3	636

Source: EICV4. Base population, all households

Figure 3.3 show materials used to construct houses in Rwanda and how these have changed over time. These include materials used for roofing, making walls, as well as flooring. Aforementioned figure illustrates considerable improvements, for example the increase in households with cement floors (from 21% to 26 %), the growing number of houses with brick walls (from 64% to 69 %), as well as the number of houses with metal sheets (from 61% to 67%). For more details on other materials see Table 3.5, 3.6 and 3.7.

Figure 3. 3: Changes in use of various construction materials for roofing, walls and flooring



Source: EICV5

Table 3. 5: Roofing materials of the dwelling by province, urban/Rural, quintile and sex of head household

EICV5	Roofing Material						Total	Total no. of HHs (000)
	Thatch or leaves	Metal sheets	Clay tiles	Concrete	Plastic or plywood	Others		
All Rwanda	0.0	67.3	32.6	0.0	0.0	0.0	100	2,708
Urban/rural								
Urban	0.0	91.6	8.3	0.0	0.0	0.0	100	524
Rural	0.0	61.5	38.4	0.0	0.0	0.1	100	2,184
Province								
Kigali City	0.0	99.1	0.8	0.0	0.0	0.0	100	410
Southern Province	0.0	27.6	72.2	0.0	0.1	0.1	100	626
Western Province	0.0	51.4	48.5	0.0	0.1	0.1	100	574
Northern Province	0.0	67.8	32.2	0.0	0.0	0.0	100	422
Eastern Province	0.0	98.0	2.0	0.0	0.0	0.0	100	677
Sex of head of household								
Male	0.0	67.6	32.3	0.0	0.0	0.0	100	2,031
Female	0.0	66.4	33.4	0.0	0.0	0.1	100	677
Quintile								
Q1	0.0	56.5	43.3	0.0	0.1	0.1	100	433
Q2	0.0	57.4	42.5	0.0	0.0	0.1	100	481
Q3	0.0	61.1	38.8	0.0	0.1	0.0	100	528
Q4	0.0	69.1	30.9	0.0	0.0	0.0	100	573
Q5	0.0	84.1	15.8	0.0	0.0	0.0	100	694

Source: EICV5. Base population, all households

EICV4	Roofing Material							Total no. of HHs (000)
	Thatch or leaves	Metal sheets	Clay tiles	Concrete	Plastic or plywood	Other	Total	
All Rwanda	0.3	61.1	38.4	0.0	0.1	0.0	100	2,493
Province								
Kigali City	0.2	99.1	0.6	0.1	0.1	0.0	100	295
Southern	0.1	19.5	80.3	0.0	0.2	0.1	100	597
Western	0.4	47.3	52.1	0.1	0.1	0.0	100	559
Northern	0.3	58.3	41.4	0.0	0.0	0.0	100	394
Eastern	0.6	95.9	3.4	0.0	0.1	0.0	100	647
Urban/rural								
Urban	0.2	88.8	10.9	0.0	0.0	0.0	100	426
Rural	0.4	55.4	44.1	0.0	0.1	0.0	100	2,067
Quintile								
Q1	0.2	55.6	43.9	0.0	0.2	0.0	100	421
Q2	0.4	53.5	46.0	0.0	0.1	0.0	100	458
Q3	0.4	56.1	43.4	0.0	0.0	0.1	100	489
Q4	0.3	60.2	39.3	0.0	0.1	0.0	100	532
Q5	0.3	75.8	23.8	0.0	0.0	0.0	100	593
Sex of head of household								
Male	0.4	61.2	38.2	0.0	0.1	0.0	100	1,857
Female	0.2	60.7	39.0	0.0	0.1	0.0	100	636

Source: EICV4. Base population, all households

Table 3. 6: Wall materials of the dwelling by province, urban/Rural, quintile and sex of head household

EICV5	Type of wall material								Total	Total no. of HHs (000)
	Mud bricks	Mud bricks covered with cement	Tree trunks with mud	Tree trunks with mud and cement	Oven fired bricks	Cement bricks	Wooden Planks	Others		
All Rwanda	35.4	30.3	23.1	6.7	2.7	0.8	0.4	0.7	100	2,708
Urban/Rural										
Urban	16.8	58.4	4.5	7.7	8.3	3.5	0.2	0.6	100	524
Rural	39.9	23.5	27.5	6.4	1.4	0.2	0.4	0.7	100	2,184
Province										
Kigali City	10.9	59.7	6.9	12.1	5.4	4.3	0.1	0.6	100	410
Southern	29.0	27.2	34.2	7.4	1.9	0.2	0.0	0.1	100	626
Western	53.6	20.2	18.4	1.8	2.7	0.1	1.8	1.5	100	574
Northern	45.9	23.2	21.8	4.8	2.9	0.1	0.0	1.4	100	422
Eastern	34.2	28.2	27.3	8.1	1.8	0.2	0.0	0.1	100	677
Sex of head of household										
Male	35.2	31.9	21.5	6.5	3.0	0.9	0.4	0.6	100	2,031
Female	36.0	25.3	27.7	7.2	2.0	0.5	0.4	0.9	100	677
Quintile										
Q1	49.8	11.1	34.4	3.2	0.3	0.0	0.8	0.4	100	433
Q2	46.7	17.1	30.1	4.6	0.4	0.0	0.2	0.7	100	481
Q3	41.7	23.5	26.7	6.6	0.7	0.0	0.3	0.6	100	528
Q4	33.5	33.9	21.1	8.7	1.5	0.1	0.4	0.8	100	573
Q5	15.3	53.5	9.9	8.7	8.4	3.0	0.3	0.8	100	694

Source: EICV5. Base population, all households

EICV4	Type of wall material								Total	Total no. of HHs (000)
	Mud bricks	Mud bricks covered with cement	Tree trunks with mud	Tree trunks with mud and cement	Oven fired bricks	Cement bricks	Wooden Planks	Others		
All Rwanda	36.0	24.2	29.1	6.3	2.8	0.5	0.6	0.5	100	2,493
Province										
Kigali City	8.2	54.2	12.8	15.9	5.0	3.5	0.1	0.3	100	295
Southern	29.4	21.4	39.7	6.2	3.1	0.1	0.0	0.0	100	597
Western	58.3	13.8	20.8	1.0	2.7	0.1	2.6	0.8	100	559
Northern	44.9	15.8	30.3	4.4	2.6	0.2	0.0	1.8	100	394
Eastern	30.3	27.0	33.1	7.7	1.7	0.2	0.0	0.1	100	647
Urban/Rural										
Urban	15.1	51.9	8.8	11.2	9.5	2.7	0.3	0.6	100	426
Rural	40.4	18.4	33.2	5.3	1.4	0.1	0.7	0.5	100	2,067
Quintile										
Q1	47.5	7.0	41.3	2.3	0.6	0.0	0.8	0.4	100	421
Q2	45.9	12.0	37.2	3.3	0.4	0.0	0.4	0.8	100	458
Q3	42.3	17.4	32.9	5.4	0.8	0.0	0.7	0.5	100	489
Q4	34.2	28.0	27.6	7.8	1.7	0.1	0.4	0.3	100	532
Q5	16.8	47.9	12.3	10.9	8.9	2.1	0.7	0.6	100	593
Sex of head of household										
Male	35.9	25.7	27.7	6.0	3.0	0.6	0.6	0.5	100	1,857
Female	36.4	19.7	33.1	7.1	2.1	0.5	0.4	0.6	100	636

Source: EICV4. Base population, all households

Table 3. 7: Floor materials of the dwelling by province, urban/Rural, quintile and sex of head household

EICV5	Type of floor material						Total no. of HHs (000)
	Beaten earth	Hardened dung	Cement	Bricks	Others	Total	
All Rwanda	68.2	2.9	25.8	1.2	1.9	100	2,708
Urban/rural							
Urban	26.8	0.2	64.5	0.6	7.9	100	524
Rural	78.1	3.5	16.6	1.4	0.5	100	2184
Province							
Kigali City	26.1	0.1	64.3	0.2	9.2	100	410
Southern Province	73.3	3.2	20.1	2.8	0.6	100	626
Western Province	81.6	0.0	15.9	1.8	0.6	100	574
Northern Province	81.2	0.0	17.0	0.7	1.0	100	422
Eastern Province	69.3	8.4	21.7	0.3	0.3	100	677
Sex of head of household							
Male	66.9	2.7	27.0	1.3	2.1	100	2031
Female	72.0	3.2	22.4	0.9	1.5	100	677
Quintile							
Q1	91.9	2.4	4.7	0.7	0.2	100	433
Q2	85.5	3.3	9.3	1.5	0.4	100	481
Q3	79.7	3.4	14.6	1.6	0.6	100	528
Q4	68.0	3.9	26.0	1.3	0.8	100	573
Q5	32.7	1.5	58.8	1.0	6.0	100	694

Source: EICV5. Base population, all households

EICV4	Type of floor material						Total no. of HHs (000)
	Beaten earth	Hardened dung	Cement	Bricks	Others	Total	
All Rwanda	74.0	2.7	21.1	1.2	1.0	100	2,493
Province							
Kigali City	31.4	0.2	63.8	0.3	4.2	100	295
Southern Province	79.9	0.7	16.1	2.7	0.6	100	597
Western Province	85.2	0.2	12.3	1.5	0.9	100	559
Northern Province	85.9	0.2	12.4	0.6	0.9	100	394
Eastern Province	71.0	9.4	19.2	0.2	0.2	100	647
Urban/rural							
Urban	31.0	1.0	63.3	1.0	3.8	100	426
Rural	82.8	3.1	12.4	1.2	0.5	100	2,067
Quintile							
Q1	93.6	2.3	3.6	0.3	0.2	100	421
Q2	90.2	2.9	5.5	1.0	0.5	100	458
Q3	84.6	3.3	10.5	1.3	0.4	100	489
Q4	74.1	3.4	20.7	1.4	0.5	100	532
Q5	38.7	1.8	54.8	1.6	3.1	100	593
Sex of head of household							
Male	73.0	2.6	22.1	1.2	1.2	100	1,857
Female	76.8	3.1	18.5	1.0	0.7	100	636

Source: EICV4. Base population, all households

Chapter 4: Energy resources

In many African countries in general and in Rwanda in particular the use of tree resources as source of energy have proved to be the biggest stressor for the environment. Although firewood is an essential day-to-day environmental resource used for cooking, large-scale use of firewood results in massive deforestation contributing to air pollution and global warming, endangering human health.

Different energy-related sources such as biogas, methane gas exploitation (the last from Lake Kivu), etc. might be important sources of employment and generation of income for community and the country. There is a need to exploit all potential sources of energy available that ensures economic development and at the same time allows sustainable use of natural resources in the long term. The Vision 2020 energy has targeted to connect substantial numbers of the population to the electricity grid and to drastically reduce the use of wood in national energy consumption.

As Table 4.1 shows, firewood is still the source of fuel mostly used for cooking by the vast majority of the rural population (93%). In urban areas, charcoal is used by 65% of households, followed by firewood (26%). The comparison of fuel use in EICV4 and EICV5 shows that rural households have not changed much in the use of firewood for cooking (94% in EICV4 versus 93% in EICV5). However, there has been some changes in the cities where firewood use reduced from 29% to 26%; charcoal use decreased from 68% to 65% while gas use rose from 1% to 5%.

Table 4. 1: Distribution of HHs by primary fuel used for cooking according to province, urban/ rural quintile and Sex of head of household

EICV5	Primary fuel used for cooking									Total no. HHs (000)
	Firewood	Charcoal	Gas	Biogas	Electricity	Oil or Kerosene	Crop waste	Others	Total	
All Rwanda	79.9	17.4	1.1	0.0	0.0	0.0	0.6	0.9	100	2,708
Urban/rural										
Urban	26.3	65.1	5.0	0.0	0.2	0.1	0.1	3.1	100	524
Rural	92.7	6.0	0.2	0.0	0.0	0.0	0.8	0.3	100	2,184
Province										
Kigali City	22.4	68.1	6.1	0.1	0.2	0.1	0.0	3.1	100	410
Southern	92.6	6.5	0.2	0.1	0.0	0.0	0.2	0.4	100	626
Western	87.2	12.2	0.1	0.0	0.0	0.0	0.0	0.3	100	574
Northern	91.7	7.3	0.2	0.0	0.0	0.0	0.4	0.3	100	422
Eastern	89.3	7.6	0.3	0.0	0.0	0.0	2.1	0.8	100	677
Sex of head of household										
Male	78.3	18.9	1.2	0.0	0.1	0.0	0.6	1.0	100	2,031
Female	84.7	13.0	0.9	0.0	0.0	0.0	0.8	0.5	100	677
Quintile										
Q1	97.4	1.3	0.0	0.0	0.0	0.0	1.1	0.1	100	433
Q2	95.2	3.7	0.0	0.0	0.0	0.0	0.8	0.2	100	481
Q3	91.0	8.0	0.0	0.0	0.0	0.0	0.7	0.3	100	528
Q4	85.3	13.9	0.0	0.0	0.0	0.0	0.5	0.3	100	573
Q5	45.4	47.0	4.3	0.1	0.2	0.1	0.3	2.7	100	694

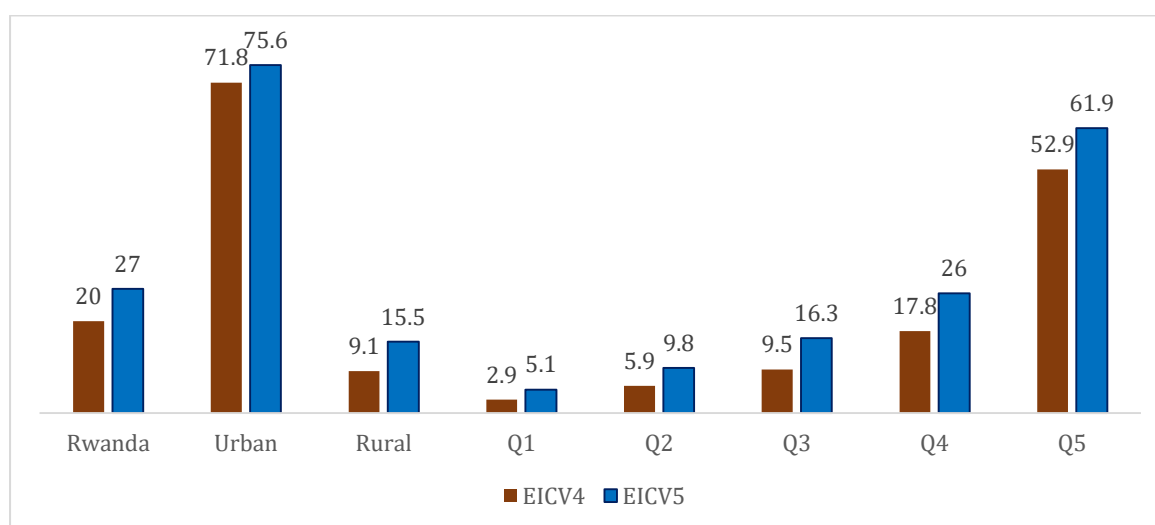
Source: EICV5. Base population, all households

EICV4	Primary fuel used for cooking								Total	Total no. HHs (000)
	Firewood	Charcoal	Gas	Biogas	Electricity	Oil or Kerosene	Crop waste	Others		
All Rwanda	83.3	15.2	0.1	0.0	0.1	0.1	0.8	0.5	100	2,493
Province										
Kigali City	25.6	70.8	1.0	0.0	0.1	0.3	0.3	2.1	100	295
Southern	92.7	5.8	0.0	0.1	0.1	0.0	1.2	0.2	100	597
Western	88.3	11.1	0.0	0.0	0.1	0.0	0.1	0.3	100	559
Northern	94.4	5.1	0.0	0.0	0.0	0.0	0.1	0.2	100	394
Eastern	89.9	8.1	0.0	0.0	0.0	0.1	1.5	0.4	100	647
Urban/rural										
Urban	29.3	67.5	0.7	0.0	0.3	0.4	0.3	1.7	100	426
Rural	94.4	4.4	0.0	0.0	0.0	0.0	0.9	0.3	100	2,067
Quintile										
Q1	96.7	1.8	0.0	0.0	0.0	0.0	1.5	0.1	100	421
Q2	95.5	3.3	0.0	0.1	0.0	0.0	0.9	0.2	100	458
Q3	93.8	5.5	0.0	0.1	0.0	0.0	0.5	0.1	100	489
Q4	87.9	11.3	0.0	0.0	0.0	0.0	0.5	0.2	100	532
Q5	57.1	40.1	0.5	0.0	0.2	0.3	0.2	1.6	100	593
Sex of head of household										
Male	82.2	16.2	0.2	0.0	0.0	0.1	0.6	0.6	100	1,857
Female	86.3	12.2	0.1	0.0	0.1	0.0	1.1	0.1	100	636

Source: EICV4. Base population, all households

As illustrated in Table 4.2 and Figure 4.1, the percentage of households using electricity as the main source of energy for lighting has increased over the last three years, especially in the urban areas where it passed from 72% to 76%. The overall percentage of households that use electricity for lighting in Rwanda rose from 20% to 27%. It can be observed that there is a big gap in the use of electricity for lightning between the categories of households in Quintile 5 and Quintile 1. While the % of users passed from 53 to 62 % in Quintile 5; it only passed from 3 to 5 % in Quintile 1 from EICV4 to EICV5. Electricity use as the main source of lighting is particularly high in Kigali city (78%) while Southern Province has the lowest percentage of electricity use (14%).

Figure 4. 1: Change in % of households with access to electricity by urban/ rural and quintile



Source: EICV5 and EICV4

Table 4. 2: Distribution of HHs by primary fuel used for lighting according to province, urban/ rural, quintile and Sex of head of household

EICV5	Main source of lighting								Total	Total no. of HHs (000s)
	Electricity distributor	Oil Lamp	Fire wood	Candle	Lantern	Batteries	Solar panel	Others		
All Rwanda	27.1	1.4	3.7	6.1	3.5	50.1	7.3	0.6	100	2,708
Urban/rural										
Urban	75.6	1.5	0.5	9.4	2.4	9.8	0.6	0.2	100	524
Rural	15.5	1.4	4.4	5.4	3.8	59.8	9.0	0.7	100	2,184
Province										
Kigali City	78.4	0.8	0.4	10.5	1.5	7.4	0.9	0.1	100	410
Southern	14.4	1.4	5.7	4.7	3.3	61.6	8.3	0.5	100	626
Western	21.6	2.0	6.9	6.1	1.7	50.8	10.1	0.8	100	574
Northern	18.0	0.7	4.0	7.0	1.4	62.9	4.8	1.2	100	422
Eastern	18.1	1.8	0.9	4.3	7.9	56.8	9.6	0.6	100	677
Sex of head of household										
Male	29.4	1.5	2.5	6.0	3.3	48.6	8.3	0.5	100	2,031
Female	20.3	1.4	7.1	6.6	4.4	54.7	4.5	1.0	100	677
Quintile										
Q1	5.1	1.6	9.8	6.9	4.2	67.5	3.9	1.0	100	433
Q2	9.8	1.6	4.7	6.8	4.0	65.9	6.6	0.6	100	481
Q3	16.3	1.7	3.1	6.4	4.5	59.3	8.2	0.5	100	528
Q4	26.0	1.7	2.0	6.3	3.8	48.9	10.5	0.9	100	573
Q5	61.9	0.8	1.0	4.9	1.9	22.3	6.7	0.4	100	694

Source: EICV5. Base population, all household

EICV4	Main source of lighting								Total	Total no. of HHs (000s)
	Electricity distributor	Oil Lamp	Fire wood	Candle	Lantern	Batteries	Solar panel	Others		
All Rwanda	19.8	5.0	5.5	7.4	13.1	44.2	1.7	3.2	100	2,493
Province										
Kigali City	73.3	2.2	0.3	10.9	2.2	9.5	0.2	1.5	100	295
Southern	9.3	5.5	8.1	4.2	16.3	52.7	2.1	1.8	100	597
Western	14.7	7.2	10.6	7.4	7.8	46.7	3.0	2.8	100	559
Northern	10.4	3.5	5.8	9.7	5.8	54.8	1.4	8.5	100	394
Eastern	15.3	5.0	1.0	7.3	24.4	43.5	1.0	2.5	100	647
Urban/rural										
Urban	71.8	3.6	0.7	9.0	6.7	6.9	0.4	0.9	100	426
Rural	9.1	5.3	6.5	7.0	14.5	51.9	2.0	3.7	100	2,067
Quintile										
Q1	2.9	2.7	13.8	7.3	12.3	56.7	0.9	3.5	100	421
Q2	5.9	4.3	7.7	6.6	15.5	54.8	1.2	3.9	100	458
Q3	9.5	5.8	4.8	7.4	15.8	51.6	1.8	3.2	100	489
Q4	17.8	6.7	3.3	7.9	15.4	43.3	2.1	3.5	100	532
Q5	52.9	5.1	0.6	7.5	7.8	21.7	2.2	2.3	100	593
Sex of head of household										
Male	21.1	5.1	4.0	7.4	12.6	44.8	1.9	3.1	100	1,857
Female	16.2	4.7	10.0	7.3	14.6	42.3	1.1	3.7	100	636

Source: EICV4. Base population, all households

Chapter 5: Water resources

Findings revealed that access to improved drinking water sources has increased in Rwanda, from 85% to 87% between 2013/14 and 2016/2017. As Table 5.1 shows, 96% of households in Kigali City use improved drinking water source. Among these households in Kigali City, 46% use a public standpipe while 34% have water piped into their dwellings/yards. It has been observed that Kigali city has the highest percentage of households using improved drinking water source (96%) while the Eastern Province has the lowest percentage (83%).

Table 5. 1: Percentage of HHs with access to improved drinking water by province, urban/ rural, quintile and Sex of head of household

EICV5	% of HHs that use improved drinking water	Improved drinking water source						Unimproved/other drinking water source				Total	Total no. of HHs (000s)
		Piped into dwelling/ yard	Public standpipe	Borehole	Protected well	Protected spring	Rain water	Unprotected well	Unprotected spring	Surface water	Others		
All Rwanda	87.4	9.4	35.4	3.0	1.2	38.3	0.1	0.5	6.5	4.4	1.2	100	2,708
Urban/rural													
Urban	95.8	39.2	41.5	2.5	2.0	10.5	0.0	0.2	1.1	1.0	1.9	100	524
Rural	85.4	2.3	33.9	3.1	1.1	45.0	0.1	0.6	7.8	5.2	1.0	100	2,184
Province													
Kigali City	95.9	34	46.3	1.0	1.9	12.6	0.0	0.1	1.5	1.2	1.3	100	410
Southern	88.0	4.4	21.5	2.0	2.1	57.9	0.0	1.0	7.8	2.2	1.1	100	626
Western	86.5	5.6	35.2	0.6	0.6	44.3	0.3	0.3	10.7	1.9	0.6	100	574
Northern	87.5	5.7	35.9	0.1	0.9	44.9	0.0	0.5	8.9	2.3	0.8	100	422
Eastern	82.6	4.7	41.4	9.0	0.9	26.6	0.1	0.6	3.2	11.7	1.9	100	677
Sex of head of household													
Male	87.7	10.1	35.6	3.1	1.4	37.4	0.1	0.6	6.4	4.1	1.2	100	2,031
Female	86.6	7.3	34.6	2.6	0.9	41.1	0.1	0.4	6.7	5.2	1.2	100	677
Quintile													
Q1	82.0	0.2	29.9	3.3	1.4	47.1	0.1	0.6	10.1	6.8	0.5	100	433
Q2	84.7	1.0	32.5	3.7	1.0	46.3	0.1	0.6	8.6	4.8	1.2	100	481
Q3	87.3	1.5	35.9	3.7	1.4	44.7	0.1	0.7	6.6	4.5	0.8	100	528
Q4	87.4	4.8	39.1	3.0	1.3	39.0	0.1	0.4	6.1	4.8	1.2	100	573
Q5	92.8	30.8	37.2	1.8	1.1	21.8	0.1	0.4	3.0	2.1	1.7	100	694

Source: EICV5. Base population, all households

EICV4	% of HHs that use improved drinking water	Improved drinking water source						Unimproved/other drinking water source				Total	Total no. of HHs (000s)
		Piped into dwelling/ yard	Public standpipe	Borehole	Protected well	Protected spring	Rain water	Unprotected well	Unprotected spring	Surface water	Others		
All Rwanda	84.8	8.1	34.0	3.2	0.9	38.3	0.2	0.9	6.7	5.3	2.4	100	2,493
Province													
Kigali City	84.5	36.8	35.6	1.3	0.7	10.1	0.0	0.2	2.8	0.9	11.6	100	295
Southern	85.8	4.3	20.5	0.8	1.4	58.8	0.0	1.2	8.7	3.5	0.8	100	597
Western	84.5	4.8	33.7	1.4	0.6	43.5	0.6	0.4	10.9	3.3	0.9	100	559
Northern	90.6	3.3	36.0	0.4	0.7	50.3	0.1	0.4	5.5	3.1	0.3	100	394
Eastern	80.6	4.4	44.8	9.6	0.9	20.6	0.3	1.5	3.8	12.0	2.1	100	647
Urban/rural													
Urban	90.0	39.4	42.6	0.6	0.5	6.7	0.2	0.1	0.9	0.2	8.8	100	426
Rural	83.7	1.7	32.3	3.7	1.0	44.8	0.2	1.0	7.9	6.3	1.0	100	2,067
Quintile													
Q1	81.2	0.4	29.3	3.2	1.2	47.0	0.2	1.5	8.8	7.3	1.1	100	421

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EICV4	% of HHs that use improved drinking water	Improved drinking water source						Unimproved/other drinking water source					Total	Total no. of HHs (000s)
		Piped into dwelling/yard	Public standpipe	Borehole	Protected well	Protected spring	Rain water	Unprotected well	Unprotected spring	Surface water	Others			
Q2	81.7	0.8	32.5	3.3	0.5	44.4	0.2	0.9	9.1	7.0	1.4	100	458	
Q3	84.0	1.5	34.4	4.0	0.8	43.1	0.2	1.2	7.9	5.3	1.7	100	489	
Q4	85.8	5.1	37.5	2.9	1.1	39.0	0.2	0.6	6.0	5.0	2.7	100	532	
Q5	89.4	27.5	35.2	2.7	0.8	22.9	0.3	0.4	3.2	2.9	4.2	100	593	
Sex of head of household														
Male	84.4	8.5	34.5	3.2	0.8	37.2	0.2	0.9	6.8	5.4	2.4	100	1,857	
Female	85.9	7.0	32.7	3.2	1.0	41.7	0.3	0.7	6.4	5.0	2.1	100	636	

Source: EICV4. Base population, all households

As Table 5.2 highlights, the increase is observed across all provinces, particularly in Kigali city where access to improved drinking water source reached 96 % from 86 %. The Eastern Province has the lowest percentage of population using improved water source (82% from 81% in 2013/2014).

Table 5. 2: Percentage of population using an improved drinking water source by province, urban/ rural, quintile and sex of head of household

EICV5	Percentage of population using improved drinking water source	Total population (000s)
All Rwanda	87.2	11,893
Urban/rural		
Urban	96.0	2,194
Rural	85.2	9,699
Province		
Kigali City	95.5	1,631
Southern Province	87.8	2,739
Western Province	86.7	2,685
Northern Province	87.7	1,841
Eastern Province	82.1	2,998
Sex of head of household		
Male	87.3	5,711
Female	87.0	6,183
Quintile		
Q1	82.2	2,345
Q2	85.1	2,345
Q3	87.5	2,349
Q4	87.5	2,365
Q5	93.2	2,490

Source: EICV5. Base population, all households

EICV4	percentage of population using improved drinking water source	Total population (000s)
All Rwanda	85.0	11,424
Province		
Kigali City	86.0	1,318
Southern	85.3	2,654
Western	85.0	2,643
Northern	90.6	1,803
Eastern	80.9	3,006
Urban/rural		
Urban	90.8	1,971
Rural	83.7	9,453
Quintile		

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E CIV4	percentage of population using improved drinking water source	Total population (000s)
Q1	81.3	2,253
Q2	82.0	2,252
Q3	84.6	2,257
Q4	85.7	2,270
Q5	90.9	2,393
Sex of head of household		
Male	85.0	9,102
Female	85.0	2,322

Source: EICV4. Base population, all households

Table 5.3 depicts the distance to improved water sources. The time used by rural households to reach improved drinking water sources has decreased between EICV4 and EICV5.

Generally, the mean time used by household to reach an improved water source decreased from 11 minutes in EICV4 to 10 minutes in EICV5. In Eastern Province, the mean time of households to reach an improved water source is now 11 minutes (EICV5) from 13 minutes (EICV4) which is the highest mean time in the country and Kigali city has the lowest mean time used by households to reach an improved water source (6 minutes from EICV 5 compared to 8 minutes from EICV4).

Table 5. 3: Time for access to improved drinking water sources by urban/ rural, province, quintile, sex of head of household, Type of habitat and Disability

EICV5	Mean time to improved drinking water source (minutes)	Time to improved drinking water source (minutes)								Total	Total no. of HHs (000s)
		Water piped into dwelling/ yard	0-4 min	5-14min	15-29min	30-59min	60+min	No improved	Frequency of use not stated		
All Rwanda	9.6	9.4	17.7	33.6	13.8	5.7	0.0	12.6	7.1	100	2,708
Urban/rural											
Urban	6.0	39.2	17.9	23.6	8.2	2.2	0.0	4.2	4.6	100	524
Rural	10.5	2.3	17.7	36.0	15.2	6.5	0.0	14.6	7.8	100	2,184
Province											
Kigali City	6.3	34.0	19.4	23.2	8.2	2.6	0.0	4.1	8.5	100	410
Southern	10.6	4.4	15.3	38.2	18.4	6.4	0.0	12.0	5.3	100	626
Western	8.8	5.6	21.1	36.7	14.0	4.0	0.0	13.5	5.0	100	574
Northern	10.1	5.7	17.5	39.4	13.1	6.4	0.0	12.4	5.5	100	422
Eastern	11.1	4.7	16.3	29.3	13.4	8.0	0.0	17.4	11.0	100	677
Sex of head of household											
Male	9.6	10.1	17.3	33.6	13.9	5.8	0.0	12.3	7.0	100	2,031
Female	9.6	7.3	18.9	33.6	13.8	5.5	0.0	13.3	7.6	100	677
Quintile											
Q1	10.7	0.2	15.6	35.7	15.9	6.0	0.0	18.0	8.6	100	433
Q2	10.7	1.0	17.2	36.7	15.3	7.1	0.0	15.3	7.3	100	481
Q3	10.2	1.5	18	39	15.5	6.3	0.0	12.7	7.1	100	528
Q4	10.0	4.8	19.3	35.3	14.9	6.4	0.0	12.6	6.7	100	573
Q5	7.4	30.8	18.0	24.6	9.4	3.5	0.0	7.2	6.5	100	694
Types of habitat											
Umudugudu	10.0	5.1	18.8	35.1	13.9	6.1	0.0	13.1	7.8	100	1,595
Unplanned clustered rural housing	10.0	3.3	19.4	35.0	16.2	6.1	0.0	12.9	6.9	100	177
Isolated rural housing	11.3	0.7	12.9	38.2	18.2	6.9	0.0	19.1	4.0	100	455

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EICV5	Mean time to improved drinking water source (minutes)	Time to improved drinking water source (minutes)								Total	Total no. of HHs (000s)
		Water piped into dwelling/yard	0-4 min	5-14min	15-29min	30-59min	60+min	No improved	Frequency of use not stated		
Unplanned urban housing	7.0	28.9	19.6	25.4	9.3	3.4	0.0	4.8	8.6	100	385
Small settlement	8.7	10.7	23.8	31.5	14.0	5.8	0.0	8.6	5.7	100	20
Modern planned area	2.9	66.5	10.6	13.9	3.0	0.0	0.0	1.0	5.0	100	77
Disability											
No disability	9.6	9.9	17.8	33.5	13.7	5.7	0.0	12.4	7.0	100	2316
With disability	10.0	6.9	17.2	34.2	14.6	5.8	0.0	13.4	7.8	100	392

Source: EICV5. Base population, all households

EICV4	Mean time to improved drinking water source (minutes)	Time to improved drinking water source (minutes)								Total	Total no. of HHs (000s)
		Water piped into dwelling/yard	0-4 min	5-14 min	15-29 min	30-59 min	60+min	No improved	Frequency of use not stated		
All Rwanda	11.2	8.1	17.0	32.9	14.8	6.6	1.3	15.2	4.2	100	2,493
Province											
Kigali City	8.1	36.9	12.6	19.6	6.6	4.0	1.2	15.5	3.7	100	295
Southern	10.8	4.3	17.8	37.0	16.9	5.9	0.8	14.2	3.1	100	597
Western	10.4	4.8	18.8	36.6	13.3	5.7	1.0	15.5	4.4	100	559
Northern	12.5	3.3	15.5	39.3	21.0	7.8	1.8	9.4	2.0	100	394
Eastern	12.7	4.4	17.7	28.2	13.9	8.3	1.6	19.4	6.5	100	647
Urban/rural											
Urban	5.3	39.4	18.2	21.2	5.4	1.4	0.0	10.0	4.4	100	410
Rural	12.2	1.7	16.8	35.3	16.7	7.6	1.5	16.3	4.1	100	2,005
Quintile											
Q1	12.3	0.4	14.3	37.6	16.4	7.7	1.4	18.8	3.5	100	421
Q2	12.1	0.8	17.5	33.8	16.1	7.9	1.4	18.3	4.2	100	458
Q3	11.9	1.5	17.2	36.3	16.1	7.5	1.4	16.0	4.0	100	489
Q4	11.2	5.1	18.4	34.1	16.0	6.2	1.2	14.2	4.8	100	532
Q5	8.9	27.5	17.2	25.0	10.3	4.2	1.0	10.6	4.2	100	593
Sex of head of household											
Male	11.2	8.5	17.1	32.5	14.5	6.5	1.2	15.6	4.0	100	1,857
Female	11.4	7.0	16.7	34.1	15.6	6.7	1.3	14.1	4.5	100	636
Types of habitat											
Umudugudu	11.6	3.2	19.8	33.7	14.6	7.7	1.3	14.8	4.9	100	1,227
Unplanned clustered rural housing	11.2	3.3	17.6	34.8	17.4	6.3	1.0	15.5	4.0	100	216
Isolated rural housing	13.0	0.7	12.0	38.0	19.4	7.0	1.8	18.7	2.5	100	637
Unplanned urban housing	6.1	39.7	14.7	19.9	5.2	2.3	0.4	13.4	4.4	100	318
Small settlement	8.9	2.9	28.3	35.5	17.2	4.3	0.2	3.5	8.0	100	55
Modern planned area	5.3	61.6	13.1	17.4	4.7	0.6	0.0	1.7	1.0	100	40
Disability											
No disability	11.2	8.7	17.0	32.7	14.6	6.5	1.1	15.1	4.3	100	2,100
With	11.9	5.1	17.1	34.1	15.4	7.0	1.9	16.1	3.4	100	394

EICV4	Mean time to improved drinking water source (minutes)	Time to improved drinking water source (minutes)								Total	Total no. of HHs (000s)
		Water piped into dwelling/yard	0-4 min	5-14 min	15-29 min	30-59 min	60+min	No improved	Frequency of use not stated		
disability											

Source: EICV4. Base population, all households

One of the EDPRS2 policy indicators put forward is the distance to an improved drinking water source. This policy recommends that households should have access to water sources within 200 meters in urban areas and within 500 meters in rural areas.

The findings of this study show that in urban areas, 61% of the households are within 200 meters of an improved drinking water source. In rural areas, 44% of the households are within 500 meters of an improved water source. In Kigali City, over half of the households live within 200 meters of an improved drinking water source. Considering the access to water at province level, the Southern Province present limited access with only 44 % of the households living within 500 meters away from an improved drinking water source. Table 5.4 shows that households' access to improved water source within 200 meters in urban areas has remained the same in past three years.

Table 5. 4: Households with access to improved water sources within 200 meters and 500 meters by province, urban/ rural, quintile, sex of head of household and type of habitat.

EICV5	HHs with access to improved water source within 200m and 500m		Total no. of HHs (000s)
	less to 200m	less to 500m	
All Rwanda	26.8	52.5	2,708
Urban/Rural			
Urban	60.6	86.5	524
Rural	18.7	44.3	2,184
Province			
Kigali City	55.7	78.3	410
Southern Province	19.2	44.3	626
Western Province	24.4	53.7	574
Northern Province	23	47.8	422
Eastern Province	20.7	46.3	677
Sex of head of household			
Male	26.8	52.5	2,031
Female	26.7	52.4	677
Quintile			
Q1	16.2	42.4	433
Q2	16.9	43.6	481
Q3	18	47.6	528
Q4	23.4	50.5	573
Q5	49.7	70.3	694
Type of habitat			
Umudugudu	22.1	48.6	1,595
Unplanned clustered rural housing	22.5	51.9	177
Isolated rural housing	14.6	39.3	455
Unplanned urban housing	50.9	75.3	385
Small settlement	39.4	60.3	20
Modern planned area	81	96.2	77

Source: EICV5. Base population, all households

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EICV4	HHs with access to improved water source within 200m and 500m		Total no. of HHs (000s)
	less to 200m	less to 500m	
All Rwanda	26.4	52.6	2,493
Province			
Kigali City	54.1	70.3	295
Southern	19.1	45.4	597
Western	26.2	55.0	559
Northern	21.3	47.8	394
Eastern	23.8	52.0	647
Urban/Rural			
Urban	60.5	78.3	426
Rural	19.4	47.3	2,067
Quintile			
Q1	17.2	45.0	421
Q2	18.7	47.2	458
Q3	19.9	48.2	489
Q4	24.2	51.6	532
Q5	46.2	66.6	593
Sex of head of household			
Male	27.0	52.9	1,857
Female	24.6	51.6	636

Source: EICV4. Base population, all households

The findings of this study show that some households do not use the nearest improved water sources. As Table 5.5 shows, 14% of households do not use the nearest improved water sources. With regard to the issue of not using the nearest improved water sources, 47% of households reported that the main reason preventing them from using the nearest drinking water sources was that the water sources do not function, 20% of households reported that the water sources are too far while 22% reported that the water sources are too expensive.

Table 5. 5: Distribution of HHs by main reason preventing them from using the nearest drinking water source according to Province, Urban/rural, quintile and sex of head of household

EICV5	% of HHs not using the nearest improved water source	Total no. of HHs (000s)	Main reason preventing households from using the nearest drinking water source						Total	Total no. of HHs (000s)
			Too Expensive	Not safe	Difficult Terrain	Too far	Does not function	Others		
All Rwanda	14.4	2,708	22.2	2.2	3.0	20.3	47.2	5.0	100	363
Urban/rural										
Urban	5.1	524	27.5	7.0	2.5	21	36.8	5.2	100	26
Rural	16.7	2184	21.8	1.8	3.1	20.2	48	5.0	100	337
Province										
Kigali City	6.2	410	20.7	7.4	2.3	26.1	42.9	0.6	100	25
Southern	11.3	626	33.6	1.9	2.5	21.9	35.3	4.8	100	65
Western	12.0	574	22.0	3.5	6.3	28.8	34.6	4.8	100	63
Northern	13.6	422	20.3	2.3	6.2	24.1	36.6	10.5	100	53
Eastern	24.7	677	18.6	0.9	1.0	14	61.4	4.1	100	157
Sex of head of household										
Male	14.0	2031	20.6	2.4	3.0	22.3	47.0	4.7	100	264
Female	15.8	677	26.7	1.7	3.1	14.8	47.9	5.8	100	100
Quintile										
Q1	21.0	433	30.2	1.2	3.6	22.8	37.7	4.4	100	83
Q2	17.3	481	25.9	1.7	2.1	22.8	43.0	4.5	100	77
Q3	15.4	528	24.2	0.6	3.2	17.5	49.9	4.7	100	76
Q4	13.8	573	14.8	2.2	4.3	21.6	51.5	5.5	100	73

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ECIV5	% of HHs not using the nearest improved water source	Total no. of HHs (000s)	Main reason preventing households from using the nearest drinking water source						Total	Total no. of HHs (000s)
			Too Expensive	Not safe	Difficult Terrain	Too far	Does not function	Others		
Q5	8.2	694	12.3	6.5	1.6	15.2	58.0	6.4	100	55

Source: EICV5. Note: Calculation of average expenditure includes those spending RWF 0. All values presented in prices at the time of the survey (undeinflated).

ECIV5	% of HHs not using the nearest improved water source	Total no. of HHs (000s)	Main reason preventing households from using the nearest drinking water source						Total	Total no. of HHs (000s)
			Too Expensive	Not safe	Difficult Terrain	Too far	Does not function	Others		
All Rwanda	18.8	2,144	16.5	2.2	3.3	37.1	38.0	2.9	100	402
Urban/rural										
Urban	15.4	227	16.6	1.8	5.9	38.5	31.2	6.1	100	35
Rural	19.2	1,917	16.5	2.2	3.1	37.0	38.6	2.6	100	367
Province										
Kigali City	15.8	146	10.8	3.3	5.3	38.1	40.1	2.4	100	23
Southern	15.8	546	19.3	2.6	4.5	58.4	11.9	3.3	100	86
Western	18.8	511	9.6	3.9	5.0	50.9	28.2	2.4	100	96
Northern	10.6	364	29.3	1.2	3.0	38.4	24.8	3.3	100	39
Eastern	27.5	577	17.0	0.9	1.5	16.7	61.0	3.0	100	1,58
Sex of head of household										
Male	1,586	18.9	14.9	2.3	3.4	38.0	38.8	2.7	100	299
Female	558	18.5	21.2	1.9	3.2	34.5	35.8	3.5	100	103
Quintile										
Q1	20.5	391	26.0	1.6	2.2	33.2	34.8	2.2	100	80
Q2	20.2	425	18.8	2.5	3.7	42.1	31.9	1.1	100	86
Q3	18.5	450	16.5	2.5	3.5	36.1	38.5	3.1	100	83
Q4	18.4	477	11.1	2.1	3.7	37.1	42.5	3.5	100	88
Q5	16.3	400	9.3	2.1	3.6	36.7	43.2	5.2	100	65

Source: EICV4. Note: Calculation of average expenditure includes those spending RWF 0. All values presented in prices at the time of the survey (undeinflated)

In 2016/17, an estimate of 15% of the households had some measures to manage rain water. There is however a decline compared to 2013/2014 where about 17% of households entertained a certain form of rainwater management. Table 5.6 shows that rain water management reduced in Kigali City from 35% (EICV4) to 30% (EICV 5). The lowest percentage of households conducting rainwater management is observed in the Southern Province and Eastern Provinces with 6% and 8 % (EICV5), from respectively 9% and 10 % (EICV4).

Table 5. 6: Percentage of HHs with type of rain water management by province, Urban/Rural, Quintile and sex of head of household

ECIV5	% of HHs managing the rain water	Total HHs (000s)	Type of rain water management					Total	Total HHs (000s)
			No measures	Rainwater tank from roof	Ditch	Piped away	Others		
All Rwanda	14.5	2,708	85.5	2.2	9.4	1.6	1.3	100	2,708
Urban/rural									
Urban	30.3	524	69.7	4.4	21.9	3.1	0.9	100	524
Rural	10.7	2,184	89.3	1.7	6.4	1.3	1.4	100	2,184
Province									

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Kigali City	30.3	410	69.7	4.3	22.5	2.8	0.8	100	410
Southern	6.3	626	93.7	1.1	4.0	1.0	0.2	100	626
Western	18.3	574	81.7	1.9	13.6	0.8	2.0	100	574
Northern	15.9	422	84.1	2.1	7.9	3.0	3.0	100	422
Eastern	8.4	677	91.6	2.2	3.9	1.3	1.0	100	677
Sex of head of household									
Male	15.7	2,031	84.3	2.3	10.4	1.7	1.4	100	2,031
Female	10.8	677	89.2	2.0	6.5	1.4	1.0	100	677
Quintile									
Q1	7.8	433	92.2	0.5	5.1	1.0	1.2	100	433
Q2	9.1	481	90.9	1.3	5.3	1.1	1.3	100	481
Q3	10.7	528	89.3	1.5	6.7	1.5	1.0	100	528
Q4	13.2	573	86.8	1.9	8.2	1.6	1.5	100	573
Q5	26.5	694	73.5	4.6	18	2.5	1.4	100	694

Source: EICV5. Base population, all households

ECIV4	% of HHs managing the rain water	Total HHs (000s)	Type of rain water management					Total	Total HHs (000s)
			No measures	Rainwater tank from roof	Ditch	Piped away	Others		
All Rwanda	17.4	2,493	82.6	2.1	13.4	1.8	0.2	100	2,493
Province									
Kigali City	35.2	295	64.8	4.5	27.8	2.9	0.0	100	295
Southern	8.6	597	91.4	0.5	6.1	1.9	0.0	100	597
Western	29.0	559	71	1.4	24.6	2.4	0.5	100	559
Northern	14.2	394	85.8	2.9	10.6	0.7	0.1	100	394
Eastern	9.6	647	90.5	2.6	5.5	1.2	0.2	100	647
Urban/rural									
Urban	32.1	426	67.9	4.3	25.3	2.3	0.2	100	426
Rural	14.4	2,067	85.6	1.6	11.0	1.7	0.2	100	2,067
Quintile									
Q1	11.4	421	88.6	0.7	9.8	0.7	0.2	100	421
Q2	13.7	458	86.3	1.2	10.9	1.5	0.1	100	458
Q3	14.3	489	85.7	1.3	11.2	1.6	0.1	100	489
Q4	15.7	532	84.3	1.8	11.8	2.1	0.1	100	532
Q5	28.8	593	71.2	4.6	21.1	2.7	0.4	100	593
Sex of head of household									
Male	18.5	1857.2	81.5	2.3	14.4	1.7	0.2	100	1,857
Female	14.3	636	85.7	1.6	10.6	2.0	0.1	100	636

Source: EICV4. Base population, all households

Chapter 6: Land management and agricultural practices

The assessment of EDPRS has revealed that land is one of the three main factors of production in Rwanda. Land in Rwanda is used for pasture or exploited as arable land. Given the growing population combined with strong reliance on agriculture, it is clear that land is one of the scarce resources in Rwanda. It goes without saying that EICV has to collect detailed data on land use and the agricultural activities of Rwandan households

6.1. Land distribution

Most Rwandan households cultivate at least a parcel of land, and most of them are directly reliant on agriculture as their main or only source of income, especially in rural areas. Table 6.1 illustrates this as it shows that 94% of rural households cultivated at least one parcel of land in 2016/17.

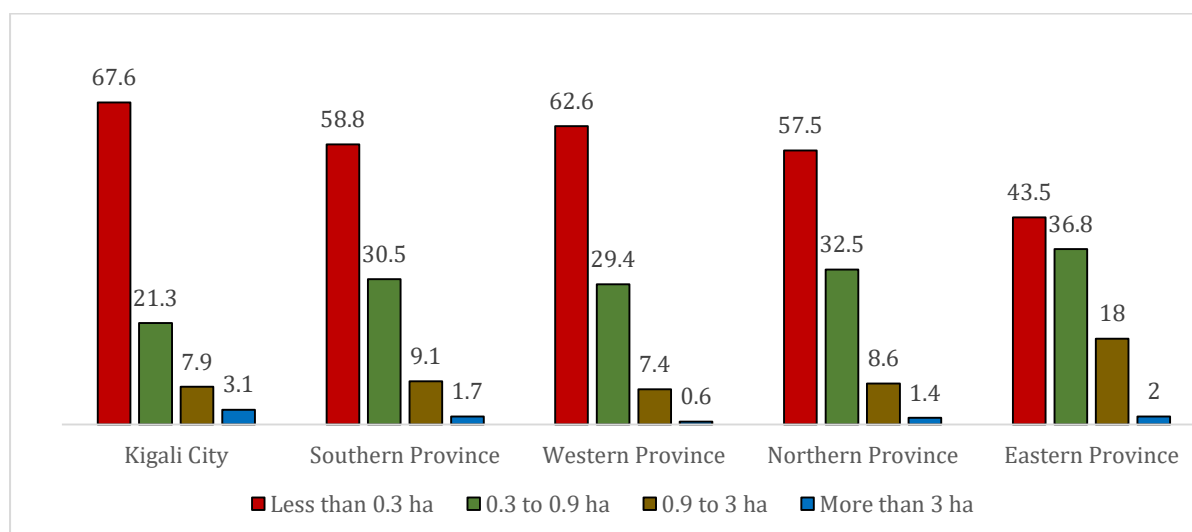
Table 6. 1: Percentage of households cultivating land by province, urban/ rural, quintile and sex of head of household.

	EICV4		EICV5	
	% of HHs cultivating at least one parcel	Total no. of HHs (000s)	% of HHs cultivating at least one parcel	Total no. of HHs (000s)
All Rwanda	87.2	2,493	83.0	2,708
Urban/rural				
Urban	43.8	426	38.6	524
Rural	96.2	2,067	93.6	2,184
Province				
Kigali City	35.8	295	30.9	410
Southern Province	95.7	597	93.0	626
Western Province	91.1	559	89.1	574
Northern Province	95.7	394	94.1	422
Eastern Province	94.3	647	93.1	677
Sex of head of household				
Male	86.6	1,857	82.4	2,031
Female	89.2	636	84.7	677
Quintile				
Q1	95.2	421	93.0	433
Q2	94.4	458	92.2	481
Q3	93.5	489	91.6	528
Q4	89.9	532	88.1	573
Q5	68.4	593	59.5	694

Source: EICV5. Base population, all households

It has been realized that most of households cultivate very small pieces of land. The average area cultivated per rural household is only 0.6ha. Findings of this study show that only 11% of rural households cultivate 0.9ha or more in Rwanda. The majority of households across all provinces cultivate less than 0.3ha (56 %). The proportion of households cultivating between 0.3 and 0.9ha is 32 % (Figure 6.1 and Table 6.2).

Figure 6. 1: Distribution of total land in rural areas by Province and Cultivated land area, EICV5

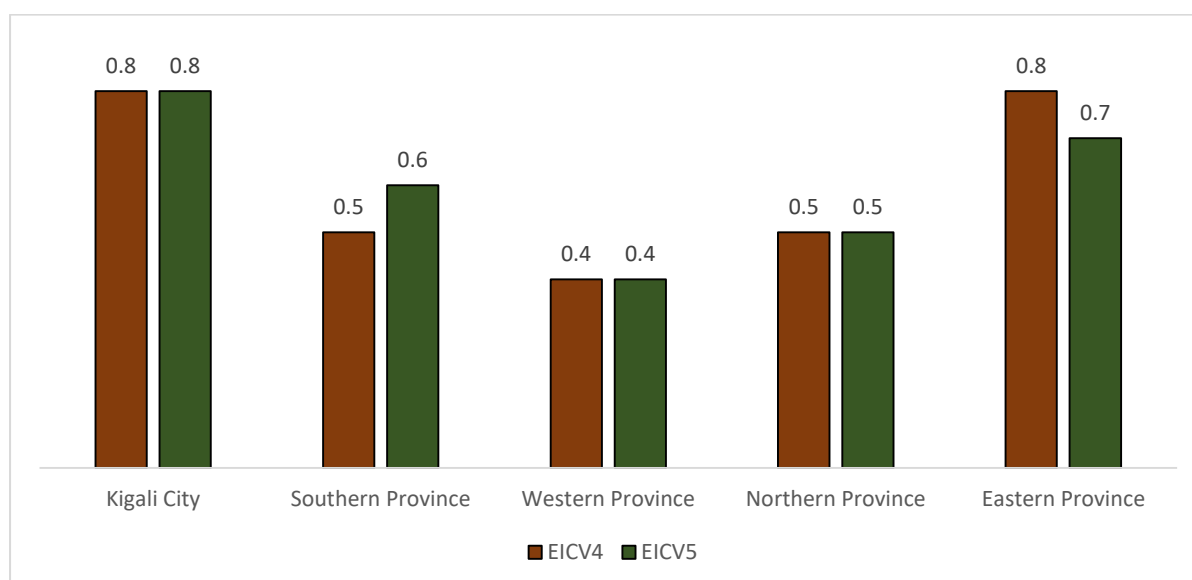


Source: EICV5

With the growing population and densities land becomes a scarce resource. Figure 6.2 illustrates that the average size of land cultivated per rural household remained almost constant between EICV4 and EICV5 in 3 provinces: Kigali City, Northern and Western Provinces.

Table 6.2 shows that the proportion of households cultivating less than 0.3ha has increased from 45% to 56% between the surveys.

Figure 6. 2: Changes in average land cultivated in rural areas (ha per HH) by province



Source: EICV5 and EICV4

Table 6. 2: Size of total land cultivated by Household according to province, urban/rural, quintile and sex of head of household

EICV5	Average total area cultivated per HHs	Size of total land cultivated				Total	Total no. of HHs cultivating land for crop production (000s)
		Less than 0.3 ha	0.3 to 0.9 ha	0.9 to 3 ha	More than 3 ha		
All Rwanda	0.6	55.6	31.9	11.1	1.4	100	2,221
Urban/rural							
Urban	1.0	66.8	20.8	8.3	4.1	100	185
Rural	0.5	54.6	32.9	11.3	1.2	100	2,036
Province							
Kigali City	0.8	67.6	21.3	7.9	3.1	100	114
Southern Province	0.6	58.8	30.5	9.1	1.7	100	578
Western Province	0.4	62.6	29.4	7.4	0.6	100	508
Northern Province	0.5	57.5	32.5	8.6	1.4	100	396
Eastern Province	0.7	43.5	36.8	18.0	2.0	100	626
Sex of head of household							
Male	0.6	53.9	32.7	11.9	1.5	100	1,652
Female	0.5	60.4	29.8	8.5	1.3	100	569
Quintile							
Q1	0.3	70.7	24.4	4.5	0.3	100	401
Q2	0.4	59.9	33.1	6.5	0.5	100	442
Q3	0.5	53.2	34.5	11.5	0.8	100	480
Q4	0.7	48.1	35.2	14.9	2.0	100	499
Q5	1.0	47.9	30.9	17.3	3.8	100	400

Source: EICV5. Note: Calculated on the basis of HHs cultivating land for crop production (i.e. those reporting both cultivating land and producing crops).

EICV4	Average total area cultivated per HHs	Size of total land cultivated				Total	Total no. of HHs cultivating land for crop production (000s)
		Less than 0.3 ha	0.3 to 0.9 ha	0.9 to 3 ha	More than 3 ha		
All Rwanda	0.6	45.0	37.4	16.1	1.6	100	2,178
Province							
Kigali City	0.8	55.9	25.9	15.3	3.0	100	107
Southern	0.5	48.2	37.2	13.2	1.4	100	572
Western	0.4	56.5	32.2	10.6	0.7	100	509
Northern	0.5	41.7	42.5	15.1	0.7	100	378
Eastern	0.8	32.5	40.6	24.3	2.6	100	611
Urban/rural							
Urban	0.6	56.4	27.2	14.2	2.2	100	189
Rural	0.6	43.9	38.3	16.3	1.5	100	1,996
Quintile							
Q1	0.4	59.7	32.4	7.4	0.5	100	401
Q2	0.5	47.6	39.7	12.1	0.7	100	433
Q3	0.6	42.3	40.3	16.5	0.8	100	458
Q4	0.7	38.1	39.1	21.2	1.7	100	479
Q5	0.9	38.8	34.5	22.5	4.2	100	407
Sex of head of household							
Male	0.6	42.1	38.8	17.3	1.8	100	1,857
Female	0.5	53.0	33.3	12.8	1.0	100	636

Source: EICV4. Note: Calculated on the basis of HHs cultivating land for crop production (i.e. those reporting both cultivating land and producing crops).

6.2. Land ownership and usability as collateral

The following table (Table 6.3) illustrates land ownership types with distinction between land which was inherited, purchased, received as a gift, appropriated, sharecropped or leased. The results of the study show that the highest proportion, 63% of households own at least one parcel that was inherited while 46% of households own a parcel that was purchased.

Table 6. 3: Percentage of HHs cultivating any parcel that was inherited, purchased, received as gift, received for free use or as loan, appropriated, sharecropped or leased by province, urban/ rural, quintile and sex of head of household

EICV5	Percentage of HHs cultivating any parcel that was.....							Total no. of HHs cultivating land for crop production (000s)
	Inherited	Purchased	Received as gift	Received for free use or as loan	Appropriated	sharecropped	Leased	
All Rwanda	62.9	46.4	13.6	24.2	0.5	14.9	21.7	2,221
Urban/Rural								
Urban	33.4	42.1	10.8	29.6	0.6	8.9	18.4	185
Rural	65.6	46.8	13.9	23.7	0.5	15.5	22.0	2,036
Province								
Kigali City	39.5	33.8	7.4	42.4	1.1	10.1	13.0	114
Southern	72.5	39.7	9.6	31.4	0.5	12.4	27.9	578
Western	70.8	46.0	11.8	20.0	0.1	17.3	21.8	508
Northern	78.5	51.4	14.5	19.7	0.3	9.4	18.8	396
Eastern	42.1	52.2	19.4	20.5	0.8	19.7	19.3	626
Sex of head of household								
Male	62.4	50.3	12.6	24.2	0.5	16.3	24.3	1,652
Female	64.6	35.2	16.7	24.1	0.6	10.8	14.2	569
Quintile								
Q1	66.9	37.2	11.3	23.0	0.4	16.5	20.1	401
Q2	67.5	43.1	12.1	24.2	0.4	17.3	22.7	442
Q3	65.8	46.8	12.9	24.1	0.7	15.6	22.6	480
Q4	61.3	51.9	16.1	25.1	0.6	14.7	23.4	499
Q5	52.3	52.1	15.5	24.5	0.5	10.2	18.9	400

Source: EICV5. Notes: Calculated on the basis of HHs cultivating land for crop production. Since households can cultivate more than one parcel, percentages do not total 100.

EICV4	Percentage of HHs cultivating any parcel that was.....							Total no. of HHs cultivating land for crop production (000s)
	Inherited	Purchased	Received as gift	Received for free use or as loan	Appropriated	sharecropped	Leased	
All Rwanda	68.4	45.6	15.0	26.2	0.6	23.7	15.1	2,175
Province								
Kigali City	50.3	41.3	12.7	28.8	2.2	12.7	9.5	106
Southern	74.8	36.2	10.7	38.5	0.6	30.4	16.2	572
Western	74.8	43.3	13.1	20.5	0.2	29.4	8.9	509
Northern	88.0	54.9	10.4	15.9	0.0	21.7	6.2	378
Eastern	47.9	51.4	23.8	25.2	0.9	15.9	25.5	610
Urban/Rural								
Urban	46.3	42.3	11.5	29.0	0.5	18.4	10.7	187
Rural	70.4	45.9	15.3	25.9	0.6	24.2	15.5	1,988
Quintile								
Q1	71.3	36.9	14.0	24.8	0.8	25.1	12.0	401

EICV4	Percentage of HHs cultivating any parcel that was.....							Total no. of HHs cultivating land for crop production (000s)
	Inherited	Purchased	Received as gift	Received for free use or as loan	Appropriated	sharecropped	Leased	
Q2	71.0	41.8	14.5	25.0	0.4	27.9	16.1	432
Q3	72.0	47.6	15.0	27.5	0.5	26.3	14.4	457
Q4	69.5	48.7	16.3	26.8	0.8	21.8	16.8	478
Q5	57.2	52.4	15.0	26.4	0.3	17.1	15.6	406
Sex of head of household								
Male	68.2	50.6	14.1	25.7	0.4	26	16.9	1,607
Female	68.9	31.7	17.6	27.5	0.9	17.3	9.8	567

Source: EICV5. Notes: Calculated on the basis of HHs cultivating land for crop production. Since households can cultivate more than one parcel, percentages do not total 100.

It is worth mentioning that land has several uses. The most common use is for crop growing ending up with the production of food stuff mainly for consumption. When the production is successful, the excess is sold for household income. Besides that, land can be used for security in times of hardship either by selling it (in extreme cases) or by using it as collateral to get a loan. Overall, Table 6.4 shows that 80% of cultivating households have the ownership right to sell their land or use it as a guarantee for a loan. Kigali city has the lowest percentage with 61% of households with the right to sell the land or use it as a guarantee. The Northern Province has the highest percentage with 89% of households having the right over the land and possibility to use it as a guarantee. There are no big differences in ownership right over land between the other 3 provinces: Southern Provinces: 77%; Eastern Province: 78%; Western Province: 81%.

Table 6. 4: Percentage of HHs that have the right to sell or use any of their parcels as a guarantee for a loan by urban/ rural, province and quintile

	EICV4		EICV5	
	% of HHs with the right to sell any land or use it as a guarantee	Total no. of HHs cultivating at least one parcel for crop production (000s)	% of HHs with the right to sell any land or use it as a guarantee	Total no. of HHs cultivating at least one parcel for crop production (000s)
All Rwanda	84.9	2,175	79.5	2,248
Urban/rural				
Urban	70.8	187	61.4	202
Rural	86.3	1,988	81.3	2,045
Province				
Kigali City	67.2	106	60.5	127
Southern Province	83.3	572	77.4	582
Western Province	85.2	509	81.2	511
Northern Province	93.6	378	88.9	397
Eastern Province	83.9	610	78	630
Sex of head of household				
Male	86.2	1,607	80.2	1,674
Female	79.2	567	77.4	573
Quintile				
Q1	84.2	106	77.5	402
Q2	85.9	572	79.9	444
Q3	86.9	509	81.1	484
Q4	85.6	378	80.9	505
Q5	81.7	610	77.5	413

Source: EICV5 and EICV4. Note: Calculated on the basis of HHs cultivating land for crop production.

Table 6.5 illustrates that the number of households accessing loan using land as collateral has increased from 41% (EICV4) to 47% (EICV5). The Northern Province has the highest proportion of households accessing loan using land a collateral with 63 % (from 58 % in EICV4) while Kigali City has the lowest with 18 % (from 15 % in EICV4).

Table 6. 5: Percentage of HHs with the loan from formal sources of credit using land as collateral by urban/ rural, province, quintile and sex of head of household

EICV4				EICV5		
	% of HHs with the loan from a formal source	% of HHs that used land as a collateral to access the loan	Total no. of HHs accessing formal sources of credit (000s)	% of HHs with the loan from a formal source	% of HHs that used land as a collateral to access the loan	Total no. of HHs accessing formal sources of credit (000s)
All Rwanda	9.9	41.3	247	16.7	47	301
Province						
Kigali City	15.1	14.5	44	27.0	17.7	65
Southern	8.8	41.3	53	14.5	54.3	62
Western	9.4	47.2	52	15.1	47.5	59
Northern	8.9	57.9	35	19.6	63.3	52
Eastern	9.7	46.1	63	13.2	56	63
Urban Rural						
Urban	17.8	16.6	76	31.7	20.3	93
Rural	8.3	52.3	172	13.8	58.9	208
Quintile						
Q1	3.6	48.6	15	5.2	54.3	15
Q2	5.3	56.3	24	8.1	62.6	28
Q3	7.5	57.7	37	11.3	56.8	41
Q4	9.2	47.9	49	17.8	53.8	68
Q5	20.6	29.9	122	35.6	37.5	149
Sex of head of household						
Male	11.4	41.6	211	19.2	47	266
Female	5.7	39.9	36	8.4	46.8	35

Source: EICV5 and EICV4. Note: Formal sources of credit are commercial bank, credit cooperative or SACCOs

6.3. Land transactions during the past 12 months

The results of the study showed that the dynamics of land transactions registered during 12 months prior to the survey decreased over the period 2013/14 to 2016/17. In this regards, it appears in Table 6.6 that the proportion of households selling and buying land over 12 months prior to the survey decreased. Also, the proportion of households that lent land to others or donated or received land as a gift, inheritance, and dowry or otherwise decreased. Despite the decline in the proportion of households that conducted land transaction, the average amounts spent in land transactions have increased substantially from an average amount of 249,498 RWF (EICV4) to 297,589 RWF (EICV5).

Table 6. 6: Land transactions made during the last 12 months by province, urban/ rural, quintile and sex of head of household

EICV5	Land transactions made during the last 12 months									Total no. of HHs (000s)
	% of HHs that bought land	For those, average amount received	% of HHs sold land	For those, average amount received	% of HHs rented out land	For those, average amount received	% of HHs that sharecropped land in the last 12 months	% of HHs that gave land from others as gift, dowry, inheritance, or otherwise	% of HHs that received land from others as gift, dowry, inheritance, or otherwise	
All Rwanda	7.7	297,589	6.4	272,749	8.3	18,698	6.4	2.8	4.0	2,708
Urban/rural										
Urban	3.3	911,572.8	2.0	1,095,586	5.0	32,137	3.4	1.5	2.0	524
Rural	8.7	241,933.5	7.5	219,082	9.1	16,919	7.1	3.2	4.5	2,184
Province										
Kigali City	3.2	752,758.3	2.0	1,171,674	3.7	21,924	2.3	1.1	0.9	410
Southern	8.3	208,074.8	6.6	155,974	10.0	10,525	3.9	2.7	4.2	626
Western	8.4	27,9681.7	6.3	217,584.2	10.8	22,036.8	9.0	2.9	4.1	574
Northern	10.8	296,236	8.8	303,711	8.7	20,297	4.0	5.0	6.5	422
Eastern	7.2	288,986	7.5	238,623	7.3	22,624	10.3	2.7	4.2	677
Sex of head of household										
Male	9.3	305,907.1	6.5	256,453	7.7	20,389	5.4	2.4	4.5	2,031
Female	3.0	219,369.9	6.1	325,257	10.3	14,899	9.1	4.1	2.6	677
Quintile										
Q1	3.4	177,706.7	6.6	127,281	8.1	12,345	3.8	2.1	2.9	433
Q2	6.8	165,963.9	6.8	209,013	8.8	16,217	4.9	2.5	3.3	481
Q3	8.5	240,805.1	8.0	201,778.1	8.6	16104	6.3	3.3	4.5	528
Q4	10.1	248,654	7.3	279,018	9.3	18,489	8.4	3.4	5.3	573
Q5	8.4	494,317	4.1	584,879	7.2	27,879	7.3	2.7	3.8	694

Source: EICV5

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EICV4	Land transactions made during the last 12 months									Total no. of HHs (000s)
	% of HHs that bought land	For those, average amount received	% of HHS sold land	For those, average amount received	% of HHs rented out land	For those, average amount received	% of HHs that sharecropped land in the last 12 months	% of HHs that gave land from others as gift, dowry, inheritance, or otherwise	% of HHs that received land from others as gift, dowry, inheritance, or otherwise	
All Rwanda	12.1	249,498	7.3	270,649	10.2	15,813	6.8	4.3	6.1	2,493
Province										
Kigali City	8.0	659,908	6.0	713,573	5.5	19,934	2.3	1.4	3.9	295
Southern	12.2	146,397	6.5	153,772	11.4	8,654	4.5	4.7	6.4	597
Western	11.3	210,793	6.6	214,964	11.1	18,226	8.9	4.5	5.9	559
Northern	16.9	231,557	8.6	207,742	10.1	17,558	4.1	5.8	7.3	394
Eastern	11.6	268,512	8.3	285,314	10.4	18,766	11.0	4.3	6.1	647
Urban/rural										
Urban	7.0	677,334	4.0	929,150	6.9	28,080	4.4	1.6	3.3	426
Rural	13.1	202,439	7.9	202,439	10.8	14,191	7.3	4.9	6.6	2,067
Quintile										
Q1	6.8	161,659	5.9	187,118	9.3	10,239	4.1	3.2	4.5	421
Q2	10.3	153,145	7.5	163,585	9.1	13,214	4.8	3.4	5.0	458
Q3	14.1	186,307	8.3	202,708	11.3	14,600	7.1	5.7	6.6	489
Q4	13.9	228,023	7.9	252,601	11.0	16,077	8.1	5.5	7.4	532
Q5	13.8	408,179	6.5	510,577	10.0	22,152	9.0	3.6	6.4	593
Sex of head of household										
Male	14.7	251,570	7.6	280,695	9.2	17,384	6.1	3.8	7.0	1,857
Female	4.5	229,551	6.3	235,246	13.1	12,593	8.8	6.0	3.3	636

Source: EICV4

6.4. Agricultural practices

The use of fertilizers in the Rwandan context has become an important issue to improve land productivity. With land becoming smaller and smaller at household level, the permanent tillage requires the use of fertilizers to maintain fertility at optimum level. Table 6.7 shows that the percentage of households using chemical fertilizers has increased from 36% (EICV4) to 38% (EICV5). The expenditure on organic fertilizers has also increased slightly from 12% (EICV4) to 13% (EICV5). It should be noted that the EICV collects information on expenditure on fertilizers, not usage. Therefore, households that did not pay for their fertilizers (which may often be the case for organic fertilizers) will not appear in this study results.

Table 6. 7: Percentage of HHs incurring expenditure on fertilizers (inorganic and organic) by province, urban/ rural, quintile and sex of head of household

EICV5			EICV4			
	Chemic fertilizer	Organic fertilizer	Total no. of HHs cultivating at least one parcel for crop production (000s)	Chemic fertilizer	Organic fertilizer	Total no. of HHs cultivating at least one parcel for crop production (000s)
All Rwanda	37.5	12.9	2,248	36.4	11.9	2,178
Urban Rural						
Urban	23.9	11.6	202	26.0	12.8	187
Rural	38.8	13.0	2,045	37.4	11.9	1,991
Province						
Kigali City	15.7	10.5	127	16.6	11.9	107
Southern	34.2	13.1	582	35.1	11.8	572
Western	54.6	16.0	511	49.4	13.1	509
Northern	42.2	16.6	397	48.9	17.7	378
Eastern	27.7	8.2	630	22.5	7.5	611
Sex of head of household						
Male	40.9	13.9	1,674	40.3	13.4	1,607
Female	27.7	10.0	573	25.7	7.9	567
Quintile						
Q1	28.6	7.2	402	26.1	7.1	401
Q2	35.8	9.6	444	35.6	9.4	432
Q3	40.9	12.6	484	38.4	10.4	457
Q4	41.0	14.7	505	41.0	14.1	478
Q5	40.0	20.2	413	40.1	18.7	406

Source: EICV5 and EICV4. Note: Calculated on the basis of HHs cultivating land for crop production.

In a country like Rwanda, where land resource is scarce while the agriculture is rained, irrigation of land can help to mitigate crop failures due to long dry periods. It is therefore another important issue for the land sector, given that irrigation schemes allow increased cultivation of farm land where water is not accessible. The study findings, revealed however that the overall proportion of irrigated land is still low (6%) compared to 5 % in 2013-2014. The proportion of households using irrigation is highest in Northern Province (10%) from 3% in 2013-2014 and lowest in Kigali City (2%) from 6 % in 2013-2014. Urban expansion and reduction of farm land in Kigali City might be the reason behind the decline of irrigation practice in Kigali City.

Among agricultural practices that can help in the protection of soil and land in general, there is soil erosion control. In this perspective, Table 6.8 shows that 69% of cultivated land is protected against erosion. With regard to land consolidation, the results of this study showed that 16% of cultivated land has been affected by land consolidation schemes.

Table 6. 8: Percentage of land area irrigated, protected against soil erosion, and affected by land consolidation by province, urban/ rural, quintile and sex of head of household

EICV5	Percentage of land irrigated, protected against soil erosion, and affected by land consolidation			Total cultivated land area (in 000 ha)
	% of land irrigated	% of land protected against soil erosion	% of land affected by land consolidation	
All Rwanda	6.2	68.5	15.9	1,290
Urban/rural				
Urban	9.6	56.9	24.4	211
Rural	5.6	70.8	14.3	1,079
Province				
Kigali City	1.7	41.5	6.9	96
Southern Province	7.2	70.3	5.1	364
Western Province	3.8	79.5	26.0	199
Northern Province	9.7	81.6	26.6	214
Eastern Province	5.7	61.1	17.2	417
Sex of head of household				
Male	7.0	70.2	17.4	999
Female	3.5	62.5	11.0	290
Quintile				
Q1	3.3	68.1	17.7	120
Q2	4.8	69.6	14.8	168
Q3	6.3	69.9	12.1	239
Q4	5.5	67.8	18.0	352
Q5	8.2	67.9	16.4	412

Source: EICV5. Note: This table is based on all land parcels reported in EICV4. EICV4 is not a specialized agricultural survey and more reliable land area estimates should be obtained from the forthcoming agriculture survey carried out by NISR.

EICV4	Percentage of land irrigated, protected against soil erosion, and affected by land consolidation			Total cultivated land area (in 000 ha)
	% of land irrigated	% of land protected against soil erosion	% of land affected by land consolidation	
All Rwanda	4.0	73.0	15.7	1,310
Province				
Kigali City	5.9	70.8	5.0	79
Southern	4.3	83.7	7.8	303
Western	3.1	78.0	21.9	222
Northern	2.7	81.8	21.5	200
Eastern	4.5	61.2	17.2	506
Urban/rural				
Urban	6.6	66.1	14.1	109
Rural	3.8	73.6	15.9	1,200
Quintile				
Q1	2.9	74.5	14.1	148
Q2	3.2	75.3	14.6	210
Q3	3.4	77.0	15.0	260
Q4	3.8	73.8	14.9	325
Q5	5.6	67.5	18.2	368
Sex of head of household				
Male	4.4	73.3	16.7	1,023
Female	2.6	71.7	12.3	287

Source: EICV4. Note: This table is based on all land parcels reported in EICV4. EICV4 is not a specialized agricultural survey and more reliable land area estimates should be obtained from the forthcoming agriculture survey carried out by NISR.

Generally, as Table 6.9 shows, 81% of crop-producing households in Rwanda have at least one of their plots protected from erosion, and 14% have at least one of their plots irrigated. The

Southern Province has the highest percentage of irrigation and erosion control where 88% of crop-cultivating households had a plot protected from erosion and 22% of households had an irrigated plot. Comparing EICV4 and EICV5, the percentage of crop-producing households with plots protected from erosion decreased in all Provinces except in Western where it increased (from 84% to 85%). The percentage of cultivating households with at least one irrigated plot during the last season increased in Southern Province (from 20% to 22%), Western Province (from 10% to 12%), and Northern Province (from 8% to 11%)

With regard to land consolidation, there has been a decrease of about four percent at national level (30% for EICV4 versus 26% for EICV5). Table 6.9 shows that the highest percentage of households affected by land consolidation in 2016-2017 in Northern Province (40%) and Western Province (32%).

The findings of this study also show that 23% of crop-cultivating households reported having added additional types of crops to at least one of their plots due to crops regionalization, and 21% of households cultivating crops have removed at least one type of crop from any of their plots due to crop regionalization. The percentage of households with land affected by crop regionalization follows the policy of land consolidation, and is highest in Northern Province (34% added crops; 28% removed crops) and Eastern Province (24% added crops; 25% removed crops), and lowest in Kigali City (6% added crops; 4% removed crops).

It was realized that land consolidation and crop regionalization programs were more prevalent among male-headed households compared to female-headed households. Among crop-producing households, male-headed households had more plots protected from erosion with 82% compared to 78% of female-headed households or a plot with irrigation during the last season (15% of male-headed HHs compared to 11% of female-headed HHs). On the other hand, the percentage of crop-cultivating households that added crops due to regionalization decreased by 8% (32% from EICV4 to 24% in EICV5) for male-headed households; the decrease was smaller for female-headed households (6%: from 24% in EICV4 to 18% in EICV5).

Table 6. 9: Percentage of crop-producing households with any plot protected from erosion, irrigated, affected by land consolidation, and crops added and removed due to regionalization, by province, urban/rural and sex of head of household

EICV5	% of households ...					Household s engaging in crop production (000s)
	With any plot protected from erosion	With any irrigated plot in the last season	With any plot affected by land consolidation	Added a crop due to regionalization	Removed a crop due to regionalization	
All Rwanda	80.7	14.2	26.2	22.6	20.8	2,227
Urban/rural						
Urban	58.8	14.1	21.6	22	19.5	187
Rural	82.7	14.2	26.6	22.6	20.9	2,040
Province						
Kigali City	51.8	8.6	7.3	6.0	4.0	115
Southern	87.7	22.4	16.3	15.9	13.9	579
Western	84.9	11.6	32.2	22.8	21.6	510
Northern	85.2	10.8	40.4	34	28.2	396
Eastern	73.3	11.9	24.8	24.3	24.8	627
Sex of head of household						
Male	81.5	15.1	27.7	24.1	21.8	1,657
Female	78.3	11.4	21.6	18.1	17.9	570

Source: EICV5. Base population: households engaging in crop production.

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EICV4	% of households ...					Household s engaging in crop production (000s)
	With any plot protected from erosion	With any irrigated plot in the last season	With any plot affected by land consolidation	Added a crop due to regionalization	Removed a crop due to regionalization	
All Rwanda	85.4	12.9	29.6	29.4	24	2,178
Province						
Kigali City	66.5	11.7	5.6	8.4	5.8	107
Southern	93.4	20.2	24.4	28.0	23.2	572
Western	83.8	10.0	38.4	38.7	28.3	509
Northern	89.6	8.2	43.3	34.3	32.0	378
Eastern	79.8	11.5	22.9	23.5	19.2	611
Urban/rural						
Urban	68.0	11.0	25.2	21.5	18.0	187
Rural	87.0	13.1	30.1	30.1	24.5	1,991
Sex of head of household						
Male	86.5	14.1	31.6	31.5	25.9	1,610
Female	82.2	9.5	24.1	23.5	18.6	568

Source: EICV4. Base population: households engaging in crop production.

Chapter 7: Health problems related to the environment

Although it appears difficult to link the environment and health using statistics, the two concepts exhibit a somewhat indirect and not easily measurable relation that makes them closely related. Table 7.1 presents a general overview of correlations between environment-related indicators and health complaints. For example, the results of the study show that health problems are more important among people that use non-improved sanitation (39%), as well as among those using non-improved drinking water sources (36%) in 2016/17. Likewise, people lighting their homes with firewood have a higher incidence of health problems (42%) compared to others. It has also been established that health problems are accentuated among people living in rural areas (34%) compared people living in urban areas (26%).

7.1. Human health and the environment

Table 7. 1: Percentage of people reporting any illness over the past four weeks, by environment-related characteristics

EICV5	% of individuals reporting any illness over past 4 weeks, by environment-related characteristics	Total population in (000s)
All Rwanda	32.5	11,893
Urban/Rural		
Urban	26.1	2,194
Rural	33.9	9,699
Province		
Kigali City	26.3	1,631
Southern Province	38.5	2,739
Western Province	30.8	2,685
Northern Province	26.5	1,841
Eastern Province	35.7	2,998
Sex of head of household		
Male	31.3	9,588
Female	37.7	2,305
Quintile		
Q1	33.5	2,345
Q2	33.2	2,345
Q3	33.4	2,349
Q4	33.7	2,365
Q5	29.0	2,490
Sanitation		
Non-improved sanitation	39.0	1,488
Improved sanitation	31.6	10,405
Water resources		
No-improved main drinking water source	35.5	1,527
Improved main drinking water source	32.1	10,366
Primary fuel used for cooking		
Main cooking fuel is Firewood	33.9	9,781
Main cooking fuel is Charcoal	25.9	1,872
Main cooking fuel is Crop waste	41.2	80
Main cooking fuel is Other	23.6	160
Primary fuel used for lighting		
Main lighting fuel is Electricity distributor	27.6	3284
Main lighting Oil Lamp	35.4	178
Main lighting is Firewood	42.3	370
Main lighting is Candle	30.6	676
Main lighting is Lantern	39.0	417
Main lighting is Batteries	34.3	5,863
Main lighting is Other	32.4	1,105

Source: EICV5.

EICV4	% of individuals reporting any illness over past 4 weeks, by environment-related characteristics	Total population in (000s)
All Rwanda	25.3	11,424
Province		
Kigali City	21.3	1,318
Southern	30.7	2,654
Western	25.7	2,643
Northern	20.2	1,803
Eastern	25.1	3,006
Urban/Rural		
Urban	21.1	1,971
Rural	26.2	9,453
Quintile		
Q1	25.4	2,253
Q2	25.6	2,252
Q3	25.0	2,257
Q4	26.5	2,270
Q5	24.2	2,393
Sex of head of household		
Male	22.7	5,461
Female	27.7	5,963
Sanitation		
Non-improved sanitation	29.2	1,695
Improved sanitation	25.0	9,738
Water resources		
No-improved main drinking water source	27.3	1,718
Improved main drinking water source	25.0	9,706
Primary fuel used for cooking		
Main cooking fuel is Firewood	26.0	9,648
Main cooking fuel is Charcoal	21.1	1,647
Main cooking fuel is Crop waste	30.0	84
Main cooking fuel is Other	29.8	20
Primary fuel used for lighting		
Main lighting fuel is Electricity distributor	20.7	2,355
Main lighting Oil Lamp	26.0	608
Main lighting is Firewood	31.4	537
Main lighting is Candle	24.6	772
Main lighting is Lantern	26.2	1,503
Main lighting is Batteries	26.7	5,067
Main lighting is Other	23.7	349

Source: EICV4.

7.2. Major Problems related to the environment

Literature reveals that the decent relationship between humans and the environment might correlate with human well-being. It also shows that population growth and human activities can put stress on the environment, if not well controlled. On the other hand, it is also worth stressing that the environment itself can have adverse effects on humans. Examples might include floods, destructive rains, etc.

As presented in Table 7.2, about 13% of households have experienced some cases of disasters and among them, 57% were caused by heavy and destructive rains. The findings of the study show that rural households experienced more cases of disasters compared to urban households.

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The figures in this section have to be interpreted with caution as they give only an indication of the perceptions by the households. Multiple problems would not be captured.

The estimates cannot be interpreted as a measure of the prevalence of different types of natural disasters due to the subjective nature of the responses varying from one area of the country to another.

Table 7. 2: Problems resulting from environmental destruction by province, urban/ rural, quintile and sex of head of household

EICV5	% with dwelling affected by environmental destruction	Floods	Mountain slides	Destructive rains	Others	Total	Total no. of HHs (000)
All Rwanda	13.1	6.0	22.0	56.8	15.1	100	2,708
Urban/Rural							
Urban	5.3	12.7	10.3	61.2	15.8	100	524
Rural	14.9	5.5	23.0	56.5	15	100	2,184
Province							
Kigali City	3.8	6.7	5.5	76.9	10.9	100	410
Southern Province	14.8	7.6	18.4	63.4	10.5	100	626
Western Province	18.6	4.1	34.3	49.1	12.5	100	574
Northern Province	12.6	7.3	35.2	45.4	12.2	100	422
Eastern Province	12.6	5.8	5.4	62.9	25.9	100	677
Sex of head of household							
Male	12.7	6.7	23.1	54.9	15.3	100	2,031
Female	14.0	4.0	19.2	62.1	14.6	100	677
Quintile							
Q1	16.8	4.4	26.2	54.9	14.5	100	433
Q2	13.9	5.2	24.3	57.5	13.0	100	481
Q3	15.3	6.5	25.0	54.3	14.2	100	528
Q4	13.5	4.8	19.5	58.2	17.4	100	573
Q5	8.1	10.0	13.2	60.3	16.5	100	694

Source: EICV5.

EICV4	% with dwelling affected by environmental destruction	Floods	Mountain slides	Destructive rains	Others	Total	Total no. of HHs (000)
All Rwanda	20.1	8.5	21.6	53.0	16.9	100	2,493
Province							
Kigali City	9.8	2.5	6.2	75.3	16.0	100	295
Southern Province	22.3	8.4	10.8	74.4	6.5	100	597
Western Province	27.4	11.6	37.1	31.8	19.5	100	559
Northern Province	23.1	9.2	34.4	37.3	19.2	100	394
Eastern Province	14.7	4.8	4.3	65.6	25.2	100	647
Urban/Rural							
Urban	11.7	9.1	13.2	61.5	16.2	100	426
Rural	21.9	8.5	22.5	52.1	16.9	100	2,067
Quintile							
Q1	21.7	7.9	27.4	48.9	15.8	100	421
Q2	23.5	9.1	22.0	51.9	17.0	100	458
Q3	21.4	8.7	21.4	53.9	16.0	100	489
Q4	20.7	7.6	20.0	56.1	16.3	100	532
Q5	14.9	9.3	17.3	54.0	19.5	100	593
Sex of head of household							
Male	19.6	9.1	23.2	49.8	17.9	100	1,857
Female	21.8	6.9	17.5	61.4	14.2	100	636

Source: EICV4.

Annex A: District disaggregation tables for selected indicators from EICV5, EICV4

Annex A. 1: % of HHS received information about environmental issues, and main source of information by district (EICV5, EICV4)

EICV5	% of HHS received information about environmental issues, and main source of information								Total n0. of HHS (000s)
	% of HHS receiving any info on environmental issues	Total number of HHS (000s)	Meetings/ Trainings	School	Radio/ TV	Other type of media	Others	Total	
All Rwanda	81.4	2,708	64.4	0.2	34.9	0.3	0.1	100	2,204
Nyarugenge	72.9	81	27.2	0.7	70.8	1.1	0.2	100	59
Gasabo	72.8	230	33.4	0.3	64.8	1.2	0.3	100	168
Kicukiro	84.6	98	26	0.4	73	0.6	0.0	100	83
Nyanza	94.1	79	58.1	0.5	41.3	0.0	0.2	100	74
Gisagara	74.8	82	68.4	0.7	30.7	0.3	0.0	100	61
Nyaruguru	70.3	64	64.9	0.0	34.8	0.0	0.3	100	45
Huye	97.7	82	78.5	0.0	21.5	0.0	0.0	100	80
Nyamagabe	83.8	77	67.1	0.9	31.9	0.0	0.0	100	65
Ruhango	83.9	71	67.3	0.3	31.3	1.0	0.0	100	60
Muhanga	89.1	78	73.8	0.2	25.2	0.7	0.0	100	70
Kamonyi	90.5	93	69.6	0.0	30.4	0.0	0.0	100	84
Karongi	71.6	78	71.1	0.0	28.9	0.0	0.0	100	56
Rutsiro	67.2	73	85.7	1.2	12.6	0.1	0.3	100	49
Rubavu	86.5	96	70.6	0.5	28.7	0.2	0.0	100	83
Nyabihu	67.0	67	67.8	0.4	31.8	0.0	0.0	100	45
Ngororero	80.6	82	67.2	0.5	31.8	0.0	0.5	100	66
Rusizi	57.5	95	61.5	0.0	37.9	0.0	0.6	100	55
Nyamasheke	91.7	83	80	0.0	19.7	0.0	0.2	100	76
Rulindo	96.8	78	73.6	0.0	26.4	0.0	0.0	100	75
Gakenke	92.0	84	72.1	0.0	27.9	0.0	0.0	100	77
Musanze	71.7	91	67.9	0.4	31.8	0.0	0.0	100	65
Burera	75.4	82	74.9	0.0	25.1	0.0	0.0	100	62
Gicumbi	49.2	88	61.4	0.0	37.4	0.8	0.4	100	43
Rwamagana	90.2	89	66.5	0.0	33.5	0.0	0.0	100	80
Nyagatare	83.4	132	66.5	0.0	33.1	0.2	0.2	100	110
Gatsibo	95.2	108	60.5	0.2	38.9	0.2	0.2	100	103
Kayanza	89.7	83	82.4	0.0	17.3	0.1	0.2	100	75
Kirehe	88.5	87	86.4	0.2	13.1	0.0	0.2	100	77
Ngoma	92.7	83	66.4	0.2	32.9	0.0	0.4	100	77
Bugesera	86.8	95	61.9	0.0	37.1	1.0	0.0	100	82

Source: EICV5.

EICV4	% of HHS received information about environmental issues, and main sources of information								Total n0. of HHS (000s)
	% of HHS receiving any info on environmental issues	Total number of HHS (000s)	Meetings/ Trainings	School	Radio/ TV	Other type of media	Others	Total	
All Rwanda	84.9	2493.0	56.2	0.6	42.9	0.1	0.2	100	2,115
Nyarugenge	80.8	73.0	22.4	0.6	76.5	0.5	0.0	100	59
Gasabo	87.4	147.0	43.1	1.6	54.9	0.2	0.2	100	128
Kicukiro	93.3	76.0	30.3	0.5	67.6	1.2	0.4	100	71
Nyanza	83.4	77.0	44.7	0.7	54.6	0.0	0.0	100	64
Gisagara	97.3	79.0	67.1	0.0	32.9	0.0	0.0	100	77
Nyaruguru	86.8	61.0	69.9	1.0	28.7	0.5	0.0	100	53
Huye	80.5	79.0	48.8	0.0	51.0	0.3	0.0	100	63
Nyamagabe	70.1	73.0	65.1	1.5	33.4	0.0	0.0	100	51
Ruhango	84.8	77.0	55.3	0.3	44.4	0.0	0.0	100	65
Muhanga	78.5	73.0	54.9	0.8	44.1	0.0	0.3	100	57

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EICV4	% of HHs received information about environmental issues, and main source s of information								Total n0. of HHs (000s)
	% of HHs receiving any info on environmental issues	Total number of HHs (000s)	Meetings/ Trainings	School	Radio/ TV	Other type of media	Others	Total	
Kamonyi	81.9	79.0	59.7	0.5	39.8	0.0	0.0	100	65
Karongi	70.2	75.0	55.3	0.6	39.2	0.0	5.0	100	52
Rutsiro	82.9	73.0	80.8	0.7	18.5	0.0	0.0	100	60
Rubavu	71.2	92.0	65.3	0.0	34.8	0.0	0.0	100	65
Nyabihu	91.1	64.0	75.6	0.6	23.8	0.0	0.0	100	58
Ngororero	88.6	81.0	63.8	0.7	35.5	0.0	0.0	100	72
Rusizi	70.2	89.0	68.0	0.6	30.9	0.3	0.2	100	63
Nyamasheke	73.1	86.0	68.9	0.5	30.3	0.0	0.3	100	63
Rulindo	90.1	69.0	64.2	0.0	35.2	0.4	0.2	100	62
Gakenke	85.6	80.0	65.8	1.1	32.9	0.0	0.3	100	68
Musanze	88.9	86.0	66.8	0.8	32.4	0.0	0.0	100	77
Burera	93.2	74.0	60.4	0.9	38.7	0.0	0.0	100	69
Gicumbi	90.1	86.0	69.6	1.6	28.9	0.0	0.0	100	77
Rwamagana	95.0	85.0	65.6	0.2	34.3	0.0	0.0	100	81
Nyagatare	83.4	113.0	38.1	0.8	61.1	0.0	0.0	100	94
Gatsibo	84.3	105.0	58.4	0.3	41.4	0.0	0.0	100	89
Kayonza	83.8	86.0	48.4	1.1	50.5	0.0	0.0	100	72
Kirehe	95.4	84.0	59.9	0.4	39.5	0.2	0.0	100	80
Ngoma	97.5	81.0	39.0	0.4	60.6	0.0	0.0	100	79
Bugesera	87.3	94.0	36.7	0.2	62.6	0.5	0.0	100	82

Source: EICV4.

Annex A. 2: Distribution of HHs by type of habitat according to District (EICV5, EICV4)

EICV5	Imidugudu	Unplanned clustered rural housing	Isolated rural housing	Unplanned Urban housing	Modern planned area	Others	Total	Total no. of HHs (000s)
All Rwanda	58.9	6.5	16.8	14.2	0.7	2.8	100	2,708
Nyarugenge	6.6	0.0	0.4	91.9	0.2	0.8	100	81
Gasabo	2.8	0.3	1.2	71.2	0.2	24.3	100	230
Kicukiro	4.8	0.0	0.2	79.7	0.4	14.9	100	98
Nyanza	21.7	8	67.3	2.8	0.0	0.3	100	79
Gisagara	87.2	4.2	7.6	0.0	0.0	1	100	82
Nyaruguru	75.9	7.5	14.7	0.8	1.2	0.0	100	64
Huye	64.4	12.4	14	9.2	0.0	0.0	100	82
Nyamagabe	71.1	3.6	21.8	3.1	0.2	0.2	100	77
Ruhango	40	19.8	38.7	0.0	1.5	0.0	100	71
Muhanga	57.3	4.9	16.1	20.6	0.5	0.6	100	78
Kamonyi	40	8.7	47.4	1.2	2.4	0.4	100	93
Karongi	74.6	2.9	18.7	3.6	0.2	0.0	100	78
Rutsiro	78.8	3.8	16.3	0.1	1	0.0	100	73
Rubavu	80.5	8.1	3.9	4.7	2.8	0.0	100	96
Nyabihu	18.2	17.5	48.5	2.8	13	0.0	100	67
Ngororero	41.7	10.3	47.6	0.1	0.3	0.0	100	82
Rusizi	46.4	35.1	9.1	8.9	0.6	0.0	100	95
Nyamasheke	70.3	9.8	19.8	0.0	0.1	0.0	100	83
Rulindo	57.6	3.7	38.4	0.0	0.1	0.0	100	78
Gakenke	85.4	0.4	14	0.0	0.2	0.0	100	84
Musanze	72.4	1.2	18.1	6.4	0.0	1.8	100	91
Burera	71.3	3.1	25.5	0.0	0.0	0.1	100	82
Gicumbi	56.8	26.4	14.7	0.7	0.0	1.4	100	88
Rwamagana	83.9	3.5	10.5	1.9	0.2	0.0	100	89
Nyagatare	81.8	2.4	11.3	4.5	0.0	0.0	100	132
Gatsibo	86.3	1.9	11.8	0.0	0.0	0.0	100	108
Kayonza	93.7	1.8	3.5	0.9	0.0	0.0	100	83
Kirehe	97.7	0.0	1.5	0.9	0.0	0.0	100	87

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EICV5	Imidugudu	Unplanned clustered rural housing	Isolated rural housing	Unplanned Urban housing	Modern planned area	Others	Total	Total no. of HHs (000s)
Ngoma	88.1	0.9	4.7	5.5	0.6	0.2	100	83
Bugesera	83.9	8.6	6.8	0.3	0.0	0.3	100	95

Source: EICV5.

EICV4	Imidugudu	Unplanned clustered rural housing	Isolated rural housing	Unplanned Urban housing	Modern planned area	Others	Total	Total no. of HHs (000s)
All Rwanda	49.2	8.7	25.6	12.8	2.2	1.6	100	2,493
Nyarugenge	0.0	0.0	0.0	100.0	0.0	0.0	100	73
Gasabo	4.1	4.4	26.8	62.0	0.2	2.5	100	147
Kicukiro	2.6	0.0	0.3	91.8	0.0	5.3	100	76
Nyanza	31.9	2.7	53.8	5.8	5.8	0.0	100	77
Gisagara	60.9	6.0	33.1	0.0	0.0	0.0	100	79
Nyaruguru	82.9	0.9	16.0	0.0	0.2	0.0	100	61
Huye	63.0	6.0	10.0	9.8	0.5	10.8	100	79
Nyamagabe	66.6	4.0	25.0	4.4	0.0	0.0	100	73
Ruhango	13.4	56.3	22.9	7.3	0.0	0.2	100	77
Muhanga	41.9	2.8	42.7	12.2	0.0	0.4	100	73
Kamonyi	50.3	0.8	44.9	0.0	0.0	3.9	100	79
Karongi	44.0	1.9	46.9	6.3	0.9	0.2	100	75
Rutsiro	76.2	3.7	20.0	0.0	0.2	0.0	100	73
Rubavu	19.4	16.0	12.8	9.9	37.5	4.5	100	92
Nyabihu	33.5	22.4	33.0	0.0	11.1	0.0	100	64
Ngororero	16.7	3.3	79.8	0.0	0.0	0.2	100	81
Rusizi	54.9	10.0	23.3	8.2	0.6	3.0	100	89
Nyamasheke	56.0	2.9	34.4	6.7	0.0	0.0	100	86
Rulindo	48.5	2.5	48.3	0.3	0.2	0.2	100	69
Gakenke	69.9	4.5	25.4	0.0	0.2	0.0	100	80
Musanze	52.3	3.4	24.7	5.6	5.0	9.0	100	86
Burera	3.6	29.5	64.3	2.1	0.5	0.0	100	74
Gicumbi	41.8	3.1	53.6	1.5	0.0	0.0	100	86
Rwamagana	80.1	2.6	11.0	6.3	0.0	0.0	100	85
Nyagatare	83.3	3.7	12.8	0.0	0.0	0.2	100	113
Gatsibo	62.7	25.4	6.3	0.0	1.4	4.2	100	105
Kayanza	58.7	26.3	4.2	10.6	0.0	0.3	100	86
Kirehe	98.5	1.1	0.4	0.0	0.0	0.0	100	84
Ngoma	89.7	1.0	3.8	5.5	0.0	0.0	100	81
Bugesera	77.9	12.9	7.0	1.8	0.4	0.0	100	94

Source: EICV4.

Annex A. 3: Roofing material of the dwelling by District, (EICV5, EICV4)

EICV5	Roofing Material						Total	Total no. Of HHs (000)
	Thatch or leaves	Metal sheets	Clay tiles	Concrete	Plastic or plywood	Others		
All Rwanda	0.0	67.3	32.6	0.0	0.0	0.0	100	2,708
Nyarugenge	0.0	99.1	0.9	0.0	0.0	0.0	100	81
Gasabo	0.0	99.1	0.9	0.0	0.0	0.0	100	230
Kicukiro	0.0	99.3	0.6	0.1	0.0	0.0	100	98
Nyanza	0.0	36.3	63.7	0.0	0.0	0.0	100	79
Gisagara	0.0	22.9	76.9	0.0	0.0	0.2	100	82
Nyaruguru	0.0	21.5	78.1	0.0	0.1	0.3	100	64
Huye	0.0	37.1	62.9	0.0	0.0	0.0	100	82
Nyamagabe	0.0	18.3	81.7	0.0	0.0	0.0	100	77
Ruhango	0.0	15.3	84.5	0.0	0.2	0.0	100	71
Muhanga	0.2	13.0	86.3	0.0	0.2	0.2	100	78
Kamonyi	0.0	49.5	50.5	0.0	0.0	0.0	100	93
Karongi	0.0	32.0	67.8	0.0	0.0	0.1	100	78

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EICV5	Roofing Material						Total	Total no. Of HHs (000)
	Thatch or leaves	Metal sheets	Clay tiles	Concrete	Plastic or plywood	Others		
Rutsiro	0.0	10.5	89.5	0.0	0.0	0.0	100	73
Rubavu	0.0	72.5	27.5	0.0	0.0	0.0	100	96
Nyabihu	0.0	38.2	61.7	0.0	0.2	0.0	100	67
Ngororero	0.0	8.9	91.1	0.0	0.0	0.0	100	82
Rusizi	0.0	99.8	0.0	0.0	0.2	0.0	100	95
Nyamasheke	0.0	78.3	21.4	0.0	0.0	0.2	100	83
Rulindo	0.0	50.7	49.3	0.0	0.0	0.0	100	78
Gakenke	0.0	44.6	55.4	0.0	0.0	0.0	100	84
Musanze	0.0	74.5	25.3	0.0	0.0	0.2	100	91
Burera	0.0	78.8	21.2	0.0	0.0	0.0	100	82
Gicumbi	0.0	88.0	12.0	0.0	0.0	0.0	100	88
Rwamagana	0.0	98.8	1.0	0.0	0.0	0.3	100	89
Nyagatare	0.0	99.6	0.4	0.0	0.0	0.0	100	132
Gatsibo	0.0	96.0	4.0	0.0	0.0	0.0	100	108
Kayonza	0.0	99.6	0.2	0.0	0.2	0.0	100	83
Kirehe	0.0	98.9	1.1	0.0	0.0	0.0	100	87
Ngoma	0.0	98.6	1.4	0.0	0.0	0.0	100	83
Bugesera	0.0	94.2	5.8	0.0	0.0	0.0	100	95

Source: EICV5.

EICV4	Roofing Material						Total	Total no. Of HHs (000)
	Thatch or leaves	Metal sheets	Clay tiles	Concrete	Plastic or plywood	Others		
All Rwanda	0.3	61.1	38.4	0.0	0.1	0.0	100	2493
Nyarugenge	0.0	99.3	0.7	0.0	0.0	0.0	100	73
Gasabo	0.4	99.2	0.5	0.0	0.0	0.0	100	147
Kicukiro	0.0	98.9	0.6	0.2	0.2	0.1	100	76
Nyanza	0.0	33.9	66.2	0.0	0.0	0.0	100	77
Gisagara	0.0	8.9	90.7	0.0	0.3	0.1	100	79
Nyaruguru	0.2	13.9	85.7	0.0	0.0	0.2	100	61
Huye	0.2	31.1	68.3	0.0	0.4	0.0	100	79
Nyamagabe	0.0	13.9	85.6	0.0	0.2	0.2	100	73
Ruhango	0.0	6.1	93.7	0.0	0.2	0.0	100	77
Muhanga	0.0	10.3	89.7	0.0	0.0	0.0	100	73
Kamonyi	0.0	35.3	64.7	0.0	0.0	0.0	100	79
Karongi	0.2	24.9	74.7	0.0	0.0	0.2	100	75
Rutsiro	0.2	5.6	93.9	0.0	0.2	0.0	100	73
Rubavu	0.4	72.3	27.4	0.0	0.0	0.0	100	92
Nyabihu	0.2	37.2	62.5	0.0	0.2	0.0	100	64
Ngororero	0.2	6.4	93.2	0.2	0.0	0.0	100	81
Rusizi	1.4	97.3	1.1	0.0	0.2	0.0	100	89
Nyamasheke	0.2	69.6	29.8	0.2	0.2	0.0	100	86
Rulindo	0.2	39.9	59.9	0.0	0.0	0.0	100	69
Gakenke	0.0	31.4	68.7	0.0	0.0	0.0	100	80
Musanze	0.2	63.4	36.4	0.0	0.0	0.0	100	86
Burera	0.2	67.5	32.3	0.0	0.0	0.0	100	74
Gicumbi	0.8	85.2	14.0	0.0	0.0	0.0	100	86
Rwamagana	0.2	98.6	1.2	0.0	0.0	0.0	100	85
Nyagatare	1.6	96.6	1.4	0.0	0.4	0.0	100	113
Gatsibo	0.6	93.8	5.6	0.0	0.0	0.0	100	105
Kayonza	0.0	99.4	0.4	0.0	0.2	0.0	100	86
Kirehe	0.8	97.1	2.0	0.0	0.0	0.0	100	84
Ngoma	0.0	97.7	2.3	0.0	0.0	0.0	100	81
Bugesera	0.7	88.8	10.5	0.0	0.0	0.0	100	94

Source: EICV4.

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Annex A. 4: Type of wall material of the dwelling by District, (EICV5, EICV4)

EICV5	Type of wall material								Total	Total no. Of HHs (000)
	Mud bricks	Mud bricks covered with cement	Tree trunks with mud	Tree trunks with mud and cement	Oven fired bricks	Cement bricks	Wooden Planks	Others		
All Rwanda	35.4	30.3	23.1	6.7	2.7	0.8	0.4	0.7	100	2,708
Nyarugenge	3.6	44.7	10.1	32.7	5.7	2.4	0.6	0.3	100	81
Gasabo	14.4	62.6	7.6	7.4	3.9	3.3	0.0	0.8	100	230
Kicukiro	8.6	65.6	2.7	5.9	8.5	8.3	0.0	0.4	100	98
Nyanza	32.8	26.1	32.7	6.1	2	0.3	0.0	0.0	100	79
Gisagara	16.7	15.1	53.9	12.9	1.4	0.0	0.0	0.0	100	82
Nyaruguru	13.7	12.6	65	8.3	0.4	0.0	0.0	0.0	100	64
Huye	12.6	30.9	39.4	15.1	1.9	0.0	0.0	0.0	100	82
Nyamagabe	11.3	5.4	70	9	4.2	0.0	0.0	0.0	100	77
Ruhango	43.2	43.8	8	3.9	0.6	0.0	0.0	0.4	100	71
Muhanga	56.3	36.6	3.7	0.0	3.2	0.2	0.0	0.0	100	78
Kamonyi	42.1	43.3	8.7	3.7	0.9	1.2	0.0	0.0	100	93
Karongi	72.9	20.7	4.4	0.8	1.2	0.0	0.0	0.0	100	78
Rutsiro	70.7	26.3	0.6	0.0	1.3	0.0	0.0	1	100	73
Rubavu	39.3	37.8	14.2	2	3.3	0.0	2.5	1	100	96
Nyabihu	66.1	18.6	11.1	1.4	0.2	0.0	0.2	2.3	100	67
Ngororero	81	15.8	2.2	0.0	0.1	0.0	0.0	0.8	100	82
Rusizi	23.9	1	58.7	2	7.6	0.1	1.8	4.8	100	95
Nyamasheke	33.6	21.9	27.6	6.1	3.3	0.4	7	0.0	100	83
Rulindo	34.1	32.4	23.6	8.5	1.4	0.0	0.0	0.0	100	78
Gakenke	69.1	21.3	5.3	0.0	4.1	0.0	0.0	0.2	100	84
Musanze	36.9	19.1	29.8	5.3	5.6	0.3	0.0	2.9	100	91
Burera	45.6	13.1	33.7	4.3	1.7	0.0	0.0	1.6	100	82
Gicumbi	43.5	30.5	16.5	5.9	1.4	0.0	0.0	2.3	100	88
Rwamagana	25.1	30.5	27.9	13.8	2.5	0.0	0.0	0.1	100	89
Nyagatare	53.5	40.6	1.7	1.4	2.4	0.4	0.0	0.2	100	132
Gatsibo	39.4	22.5	29.3	6.7	2.1	0.0	0.0	0.0	100	108
Kayonza	21.6	20.3	43.2	12.1	1.6	1	0.0	0.2	100	83
Kirehe	33.9	23.9	32.1	9.8	0.4	0.0	0.0	0.0	100	87
Ngoma	13.6	7.5	61.5	14.1	2.7	0.4	0.0	0.2	100	83
Bugesera	39.4	44.1	12	3.7	0.9	0.0	0.0	0.0	100	95

Source: EICV5.

EICV4	Type of wall material								Total	Total no. Of HHs (000)
	Mud bricks	Mud bricks covered with cement	Tree trunks with mud	Tree trunks with mud and cement	Oven fired bricks	Cement bricks	Wooden Planks	Others		
All Rwanda	36	24.2	29.1	6.3	2.8	0.5	0.6	0.5	100	2,493
Nyarugenge	6.1	44.9	15.8	26.5	4.7	1.7	0.0	0.2	100	73
Gasabo	8.7	53.4	16	13.3	4.9	3.1	0.2	0.4	100	147
Kicukiro	9.2	64.9	3.5	10.9	5.3	6	0.0	0.3	100	76
Nyanza	29.9	25	34.9	7.6	2.4	0.2	0.0	0.0	100	77
Gisagara	10.3	8.1	70.9	10.3	0.4	0.0	0.0	0.0	100	79
Nyaruguru	13	8.6	71.1	6.2	1.2	0.0	0.0	0.0	100	61
Huye	17.6	22.5	41.9	9.3	8.8	0.0	0.0	0.0	100	79
Nyamagabe	12.2	4	71.3	9.1	3.2	0.0	0.2	0.0	100	73
Ruhango	53.5	37.3	7.4	0.6	1.2	0.0	0.0	0.0	100	77
Muhanga	59.5	25.7	6.3	0.4	7.6	0.4	0.0	0.0	100	73
Kamonyi	37.2	36.8	19.7	5.9	0.0	0.4	0.0	0.0	100	79
Karongi	76.8	16.1	6	0.0	0.9	0.0	0.0	0.2	100	75
Rutsiro	88	8.1	2.2	0.0	1.8	0.0	0.0	0.0	100	73
Rubavu	53.2	24.4	15.1	0.0	3.2	0.0	2.4	1.8	100	92

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EICV4	Type of wall material								Total	Total no. Of HHs (000)
	Mud bricks	Mud bricks covered with cement	Tree trunks with mud	Tree trunks with mud and cement	Oven fired bricks	Cement bricks	Wooden Planks	Others		
Nyabihu	64.9	18.1	13.6	0.7	0.2	0.4	0.0	2.2	100	64
Ngororero	78.8	15.8	4.8	0.0	0.6	0.0	0.0	0.0	100	81
Rusizi	15.9	2	62.6	4.5	9.9	0.3	4	0.7	100	89
Nyamasheke	42.1	12.7	32.8	1.1	0.9	0.0	10	0.4	100	86
Rulindo	41.2	24.4	24.3	8.3	1.6	0.2	0.0	0.0	100	69
Gakenke	74.1	17.4	5.3	0.0	3.2	0.0	0.0	0.0	100	80
Musanze	33.6	13.8	36	4.6	5.3	0.4	0.0	6.4	100	86
Burera	40.8	10.3	40.2	4.2	2.2	0.5	0.0	2	100	74
Gicumbi	35.7	14.1	44.2	5.2	0.6	0.0	0.0	0.2	100	86
Rwamagana	17.7	36.3	29.1	14.4	2.5	0.0	0.0	0.0	100	85
Nyagatare	46.5	40.9	10	0.8	1.8	0.2	0.0	0.0	100	113
Gatsibo	28.7	23.6	39.3	5.7	2.8	0.0	0.0	0.0	100	105
Kayonza	25	22.1	37.9	12	2.7	0.3	0.0	0.0	100	86
Kirehe	37.3	17.9	32.9	10.6	0.9	0.0	0.0	0.4	100	84
Ngoma	11.5	3.5	75.4	8.9	0.7	0.0	0.0	0.0	100	81
Bugesera	38.6	38.8	16.8	4.6	0.6	0.6	0.0	0.0	100	94

Source: EICV4.

Annex A. 5: Type of floor material of the dwelling by District, (EICV5, EICV4)

EICV5	Type of floor material					Total	Total no. Of HHs(000)
	Beaten earth	Hardened dung	Cement	Bricks	Others		
All Rwanda	68.2	2.9	25.8	1.2	1.9	100	2,708
Nyarugenge	23.5	0.0	71.2	0.0	5.4	100	81
Gasabo	28.7	0.2	62.9	0.0	8.2	100	230
Kicukiro	22.3	0.0	61.9	0.8	15.0	100	98
Nyanza	78.2	0.7	19.7	1.2	0.2	100	79
Gisagara	77.7	2.6	14.4	4.7	0.7	100	82
Nyaruguru	77.4	9.0	10.7	2.8	0.1	100	64
Huye	58.5	12.2	22.6	5.9	0.8	100	82
Nyamagabe	85.6	0.0	12.1	2.1	0.2	100	77
Ruhango	72.7	2.0	22.6	2.2	0.5	100	71
Muhanga	68.1	0.2	27.2	3.6	0.8	100	78
Kamonyi	70.1	0.0	28.5	0.0	1.3	100	93
Karongi	81.0	0.0	16.6	2.4	0.0	100	78
Rutsiro	82.6	0.2	12.5	4.0	0.6	100	73
Rubavu	66.2	0.0	32.0	0.7	1.1	100	96
Nyabihu	83.9	0.0	15.0	0.0	1.1	100	67
Ngororero	87.4	0.0	11.3	1.1	0.2	100	82
Rusizi	88.7	0.0	7.7	3.2	0.4	100	95
Nyamasheke	83.5	0.0	14.7	1.0	0.9	100	83
Rulindo	78.2	0.0	20.4	1.4	0.0	100	78
Gakenke	84.6	0.0	12.7	1.4	1.3	100	84
Musanze	74.8	0.0	23.0	0.4	1.8	100	91
Burera	85.7	0.0	12.5	0.4	1.4	100	82
Gicumbi	83.1	0.2	15.9	0.2	0.6	100	88
Rwamagana	72.1	2.2	24.7	0.4	0.7	100	89
Nyagatare	71.1	2.4	26.1	0.4	0.0	100	132
Gatsibo	78.0	1.5	19.9	0.4	0.2	100	108
Kayonza	46.9	34.0	18.9	0.2	0.0	100	83
Kirehe	57.3	23.8	18.7	0.0	0.2	100	87
Ngoma	78.3	1.6	19.7	0.2	0.2	100	83
Bugesera	76.9	0.0	21.7	0.2	1.2	100	95

Source: EICV5.

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EICV4	Type of floor material					Total	Total no. Of HHs (000)
	Beaten earth	Hardened dung	Cement	Bricks	Others		
All Rwanda	74.0	2.7	21.1	1.2	1.0	100	2,493
Nyarugenge	33.2	0.0	65.0	0.4	1.4	100	73
Gasabo	35.3	0.3	59.4	0.5	4.5	100	147
Kicukiro	22.3	0.0	71.3	0.0	6.4	100	76
Nyanza	83.8	0.4	15.4	0.4	0.0	100	77
Gisagara	84.0	0.4	7.6	6.7	1.4	100	79
Nyaruguru	87.0	2.3	8.8	1.7	0.2	100	61
Huye	70.6	0.2	24.3	4.4	0.4	100	79
Nyamagabe	85.0	2.3	9.9	1.7	1.1	100	73
Ruhango	78.5	0.2	17.8	2.9	0.6	100	77
Muhanga	75.4	0.0	21.4	2.6	0.6	100	73
Kamonyi	76.7	0.0	22.1	0.8	0.4	100	79
Karongi	87.0	0.2	9.8	2.6	0.4	100	75
Rutsiro	87.9	0.2	8.2	3.5	0.2	100	73
Rubavu	74.2	0.0	24.1	0.4	1.3	100	92
Nyabihu	86.5	0.0	13.5	0.0	0.0	100	64
Ngororero	87.5	0.2	10.0	1.0	1.2	100	81
Rusizi	84.6	0.8	11.8	1.6	1.1	100	89
Nyamasheke	90.3	0.0	7.1	1.3	1.4	100	86
Rulindo	83.6	0.0	15.6	0.6	0.2	100	69
Gakenke	87.2	0.0	9.6	0.9	2.4	100	80
Musanze	81.2	0.0	17.3	0.4	1.1	100	86
Burera	88.5	0.2	10.0	0.6	0.7	100	74
Gicumbi	89.0	0.7	9.5	0.6	0.2	100	86
Rwamagana	67.8	1.7	30.0	0.4	0.2	100	85
Nyagatare	73.9	4.5	21.5	0.0	0.0	100	113
Gatsibo	73.0	9.7	17.3	0.0	0.0	100	105
Kayonza	58.6	22.4	18.0	0.5	0.5	100	86
Kirehe	80.7	3.6	15.3	0.2	0.2	100	84
Ngoma	62.9	27.3	9.4	0.4	0.0	100	81
Bugesera	77.9	0.0	21.9	0.0	0.2	100	94

Source: EICV4.

Annex A. 6: % of HHs with access to improved sanitation facilities by District, (EICV5, EICV4)

EICV5	Improved sanitation							Total no. Of HHs (000)
	Total improved Sanitation	% use improved type, not shared with other HH	Flush toilet	Protected latrines	Unprotected latrines	Others	No toilet facilities	
All Rwanda	86.2	1.9	84.3	9.8	0.2	3.8	100	2,708
Nyarugenge	99.3	6.9	92.5	0.1	0.0	0.5	100	81
Gasabo	92.8	5.9	86.9	4.6	0.0	2.6	100	230
Kicukiro	94.5	19.3	75.2	4.2	0.0	1.3	100	98
Nyanza	53.3	0.2	53.2	39.6	0.0	7.1	100	79
Gisagara	59.8	1.1	58.7	28.5	0.0	11.7	100	82
Nyaruguru	82.8	0.4	82.4	13.5	0.0	3.8	100	64
Huye	78.7	0.5	78.3	14.8	0.0	6.4	100	82
Nyamagabe	80.6	0.6	80.0	12.1	0.0	7.4	100	77
Ruhango	53.4	0.4	52.9	44.1	0.0	2.5	100	71
Muhanga	93.9	1.1	92.8	5.2	0.0	0.8	100	78
Kamonyi	91.5	0.6	91.0	5.2	0.2	3.0	100	93
Karongi	84.6	0.2	84.5	10.5	0.0	4.9	100	78
Rutsiro	91.1	0.0	91.1	5.1	0.2	3.6	100	73
Rubavu	94.1	2.7	91.3	2.0	0.0	3.9	100	96
Nyabihu	80.1	0.0	80.1	10.9	0.2	8.8	100	67
Ngororero	77.6	0.0	77.6	13.8	4.6	3.9	100	82
Rusizi	90.4	1.4	89.0	7.9	0.0	1.7	100	95
Nyamasheke	96.0	0.3	95.8	0.6	0.0	3.3	100	83

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EICV5	Improved sanitation							Total no. Of HHs (000)
	Total improved Sanitation	% use improved type, not shared with other HH	Flush toilet	Protected latrines	Unprotected latrines	Others	No toilet facilities	
Rulindo	84.6	0.1	84.5	14.7	0.0	0.7	100	78
Gakenke	94.7	0.1	94.6	3.2	0.0	2.1	100	84
Musanze	83.2	2.9	80.3	11.1	0.3	5.4	100	91
Burera	81.4	0.0	81.4	11.8	0.0	6.8	100	82
Gicumbi	88.2	0.2	88.0	9.4	0.6	1.8	100	88
Rwamagana	92.3	0.7	91.6	3.3	0.0	4.4	100	89
Nyagatare	94.7	0.2	94.5	3.3	0.0	2.0	100	132
Gatsibo	82.2	0.2	82.0	14.4	0.0	3.4	100	108
Kayonza	83.9	0.0	83.9	10.8	0.0	5.3	100	83
Kirehe	95.3	0.0	95.3	2.8	0.0	2.0	100	87
Ngoma	94.3	0.4	93.9	3	0.0	2.7	100	83
Bugesera	87	0.3	86.7	7.7	0.0	5.3	100	95

Source: EICV5.

EICV4	Improved sanitation							Total no. Of HHs (000)
	Total improved Sanitation	% use improved type, not shared with other HH	Flush toilet	Protected latrines	Unprotected latrines	Others	No toilet facilities	
All Rwanda	83.4	63.5	1.8	81.6	13.5	0.0	3.2	2,493
Nyarugenge	89.9	32.2	7.2	82.7	8.9	0.0	1.2	73
Gasabo	94.0	48.2	6.3	87.7	4.7	0.0	1.3	147
Kicukiro	94.9	40.1	14.0	80.9	4.9	0.0	0.2	76
Nyanza	80.9	65.2	1.2	79.8	16.9	0.0	2.2	77
Gisagara	61.8	49.1	0.3	61.5	27.6	0.0	10.6	79
Nyaruguru	70.7	59.3	0.3	70.4	23.9	0.0	5.4	61
Huye	71.7	53.0	3.5	68.3	28.1	0.0	0.2	79
Nyamagabe	83.7	68.5	0.4	83.3	9.4	0.0	6.9	73
Ruhango	31.5	26.2	0.2	31.3	63.8	0.0	4.7	77
Muhanga	79.7	64.2	2.2	77.5	18.8	0.0	1.5	73
Kamonyi	76.9	63.6	0.8	76.1	18.1	0.0	5.0	79
Karongi	77.4	64.9	0.8	76.6	17.8	0.0	4.8	75
Rutsiro	83.4	72.8	0.8	82.6	8.1	0.0	8.5	73
Rubavu	91.9	56.2	2.6	89.3	3.4	0.0	4.7	92
Nyabihu	72.2	54.0	0.0	72.2	16.3	0.9	10.6	64
Ngororero	84.7	71.6	0.6	84.1	14.1	0.0	1.2	81
Rusizi	90.5	73.0	1.9	88.5	6.6	0.0	3.0	89
Nyamasheke	92.5	82.0	0.2	92.3	4.0	0.0	3.5	86
Rulindo	81.3	73.4	0.2	81.1	16.0	0.0	2.7	69
Gakenke	92.1	84.1	0.2	91.9	7.9	0.0	0.0	80
Musanze	84.2	64.0	2.2	82.0	14.1	0.0	1.8	86
Burera	81.2	69.5	0.7	80.5	12.8	0.0	6.1	74
Gicumbi	89.7	82.4	0.4	89.3	5.5	0.0	4.8	86
Rwamagana	97.8	77.3	0.6	97.2	2.2	0.0	0.0	85
Nyagatare	95.1	76.2	0.7	94.4	1.7	0.0	3.2	113
Gatsibo	86.3	71.8	0.4	85.9	13.2	0.0	0.5	105
Kayonza	91.7	66.6	0.3	91.4	7.6	0.0	0.6	86
Kirehe	90.4	73.4	0.6	89.8	8.8	0.0	0.8	84
Ngoma	77.1	62.0	0.2	76.8	21.9	0.0	1.0	81
Bugesera	78.9	56.8	1	77.8	18.3	0.0	2.9	94

Source: EICV4

Annex A. 7: Waste management facilities by District- (EICV5, EICV4)

EICV5	Methods of HHs rubbish disposal							Total	Total no. of HHs (000s)
	Publicly managed refuse area	Rubbish collection service	Thrown in bushes or fields	Dumped in river or lake	Burnt	Compost heap	Others		
All Rwanda	2.0	8.3	46.5	0.2	0.1	42.5	0.4	100	2,708
Nyarugenge	1.5	55.7	29.2	0.9	0.0	12.7	0.0	100	81
Gasabo	2.8	43.4	37.3	0.8	0.1	14.9	0.6	100	230
Kicukiro	3.0	56.2	28.2	0.4	0.9	11.4	0.0	100	98
Nyanza	1.3	0.5	58.0	0.2	0.4	38.6	1.0	100	79
Gisagara	3.1	0.3	47.8	0.0	0.0	48.8	0.0	100	82
Nyaruguru	1.1	0.0	55.3	0.1	0.0	43.5	0.0	100	64
Huye	0.8	0.1	55.8	0.0	0.0	43.1	0.2	100	82
Nyamagabe	1.0	0.0	59.6	0.2	0.0	39.0	0.2	100	77
Ruhango	2.3	0.2	59.8	0.0	0.2	37.0	0.5	100	71
Muhanga	2.7	1.8	63.5	0.0	0.5	31.4	0.2	100	78
Kamonyi	6.7	2.3	68.5	0.0	0.0	22.4	0.0	100	93
Karongi	1.5	0.8	38.2	0.0	0.0	59.4	0.1	100	78
Rutsiro	2.3	0.0	52.3	0.0	0.0	45.4	0.0	100	73
Rubavu	1.7	8.0	63.2	0.0	0.0	26.4	0.7	100	96
Nyabihu	3.3	0.2	51.4	0.6	0.0	44.0	0.4	100	67
Ngororero	1.9	0.0	50.2	0.0	0.0	46.0	1.9	100	82
Rusizi	3.3	0.9	48.7	0.0	0.0	47.0	0.2	100	95
Nyamasheke	1.7	0.0	33.4	0.1	0.0	64.5	0.2	100	83
Rulindo	0.4	0.0	45.7	0.0	0.0	53.7	0.2	100	78
Gakenke	0.8	0.0	41.6	0.0	0.0	57.1	0.5	100	84
Musanze	2.7	4.1	53.6	0.0	0.2	38.9	0.4	100	91
Burera	1.4	0.5	63.0	0.0	0.0	34.8	0.2	100	82
Gicumbi	2.7	0.7	48.4	0.0	0.0	47.2	1.0	100	88
Rwamagana	1.2	1.2	34.1	0.3	0.0	61.5	1.7	100	89
Nyagatare	1.9	3.6	52.1	0.0	0.2	42.2	0.0	100	132
Gatsibo	1.0	0.2	33.6	0.2	0.0	65.0	0.0	100	108
Kayonza	0.6	0.7	32.8	0.0	0.1	65.8	0.0	100	83
Kirehe	0.9	0.2	15.2	0.0	0.2	83.5	0.0	100	87
Ngoma	1.2	0.0	24.6	0.0	0.0	74.0	0.2	100	83
Bugesera	1.6	0.3	69.6	0.0	0.3	28.2	0.0	100	95

Source: EICV5.

EICV4	Methods of HHs rubbish disposal							Total	Total no. of HHs (000s)
	Publicly managed refuse area	Rubbish collection service	Thrown in bushes or fields	Dumped in river or lake	Burnt	Compost heap	Others		
All Rwanda	1.5	6.2	40.2	0.1	0.1	51.6	0.2	100	2,493
Nyarugenge	0.3	59.9	24.0	1.4	0.0	14.4	0.0	100	73
Gasabo	1.8	39.9	34.6	0.2	0.3	23.1	0.0	100	147
Kicukiro	0.7	46.5	29.4	0.0	0.0	21.7	1.8	100	76
Nyanza	4.4	0.0	44.3	0.0	0.0	51.3	0.0	100	77
Gisagara	0.2	0.0	27.4	0.0	0.0	72.4	0.0	100	79
Nyaruguru	0.8	0.0	44.0	0.0	0.0	55.2	0.0	100	61
Huye	1.6	0.2	33.9	0.0	0.0	63.7	0.6	100	79
Nyamagabe	0.2	0.0	47.4	0.0	0.0	51.9	0.6	100	73
Ruhango	1.6	0.0	59.1	0.0	0.0	39.3	0.0	100	77
Muhanga	1.9	3.4	49.9	0.0	0.0	44.4	0.4	100	73
Kamonyi	0.6	0.2	44.0	0.2	0.0	55.0	0.0	100	79
Karongi	1.1	0.2	38.8	0.0	0.2	59.6	0.0	100	75
Rutsiro	0.8	0.0	47.3	0.0	0.0	51.7	0.2	100	73
Rubavu	2.5	6.9	62.4	0.2	0.0	28.0	0.0	100	92
Nyabihu	0.6	0.0	46.7	0.0	0.0	52.5	0.2	100	64
Ngororero	0.8	0.2	46.2	0.0	0.0	52.7	0.0	100	81

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EICV4	Methods of HHs rubbish disposal							Total	Total no. of HHs (000s)
	Publicly managed refuse area	Rubbish collection service	Thrown in bushes or fields	Dumped in river or lake	Burnt	Compost heap	Others		
Rusizi	3.3	1.8	28.3	0.5	0.0	65.0	1.2	100	89
Nyamasheke	0.6	0.0	35.9	0.9	0.0	62.6	0.0	100	86
Rulindo	0.8	0.2	37.4	0.0	0.0	61.3	0.2	100	69
Gakenke	0.4	0.0	50.2	0.0	0.0	49.2	0.2	100	80
Musanze	1.2	3.0	52.4	0.0	0.0	43.3	0.1	100	86
Burera	0.9	0.0	54.4	0.0	0.0	44.7	0.0	100	74
Gicumbi	0.4	0.0	38.5	0.0	0.0	61.1	0.0	100	86
Rwamagana	1.7	1.6	40.1	0.0	0.0	56.4	0.2	100	85
Nyagatare	4.6	1.5	31.0	0.2	0.1	62.7	0.0	100	113
Gatsibo	2.0	0.4	27.4	0.0	0.2	70.0	0.0	100	105
Kayonza	3.5	0.6	27.7	0.0	0.0	68.2	0.0	100	86
Kirehe	2.1	0.0	16.8	0.0	0.0	80.9	0.2	100	84
Ngoma	1.2	0.0	34.9	0.0	0.0	63.9	0.0	100	81
Bugesera	0.7	0.4	64.1	0.0	0.4	34.0	0.4	100	94

Source: EICV4.

Annex A. 8: Distribution of HHs by Primary fuel used for lighting according to District, (EICV5, EICV4)

EICV5	Main source of lighting								Total	Total no. of HHs (000s)
	Electricity distributor	Oil Lamp	Firewood	Candle	Lantern	Solar panel	Batteries	Others		
All Rwanda	27.1	1.4	3.7	6.1	3.5	50.1	7.3	0.6	100	2,708
Nyarugenge	81.3	0.5	0.0	7.7	1.1	7.6	1.3	0.5	100	81
Gasabo	74.7	1	0.7	11.8	1.9	8.9	1	0.1	100	230
Kicukiro	84.4	0.5	0.0	9.9	1.1	3.9	0.3	0.0	100	98
Nyanza	14.3	0.3	1.6	2.1	4.9	62.5	14.3	0.0	100	79
Gisagara	10.3	0.2	11.7	3.3	2	64.6	7	1	100	82
Nyaruguru	9.4	0.2	12.9	5.3	1.2	63.4	7.2	0.5	100	64
Huye	14	1.6	6.2	7.2	4.7	54.1	11.6	0.5	100	82
Nyamagabe	8.8	1	9.7	4.6	0.2	65.8	9.5	0.4	100	77
Ruhango	19.8	2.2	2.2	2.5	4.6	65	3.4	0.4	100	71
Muhanga	19.6	2	2.5	3.7	3.5	61.3	7.1	0.2	100	78
Kamonyi	18.2	3.5	0.6	8.3	5.1	57.7	6	0.7	100	93
Karongi	13.9	0.7	4.8	2.2	0.6	56.4	21	0.4	100	78
Rutsiro	11.3	1.9	7.9	5.2	0.2	58.6	13.9	1	100	73
Rubavu	40.8	2	7.2	14.4	2.9	31.6	0.4	0.7	100	96
Nyabihu	17	0.6	7.3	8.5	2.5	60.1	2	1.8	100	67
Ngororero	7	1.2	12.6	2	1.7	67.1	7.6	0.8	100	82
Rusizi	32.2	3	3.5	4.8	1.4	43.3	11.2	0.6	100	95
Nyamasheke	22.1	4	5.6	4.5	2.1	45.9	15.3	0.5	100	83
Rulindo	15.1	0.8	2.3	7.2	0.4	60.9	9.6	3.7	100	78
Gakenke	11.9	0.5	3.2	1.3	1.6	74.9	5.4	1.2	100	84
Musanze	32.3	0.6	8.1	12.8	1.3	42.9	1.6	0.4	100	91
Burera	18	1	3.7	2.6	2.7	66.4	5.6	0.0	100	82
Gicumbi	11.9	0.6	2.2	10.3	1	70.6	2.3	1	100	88
Rwamagana	28.1	3.3	0.4	7.8	4.1	46.1	9.1	1.1	100	89
Nyagatare	15.3	0.4	0.2	4.5	1.1	67	11	0.4	100	132
Gatsibo	13.7	1.4	0.8	4.3	1.1	61.7	16.6	0.4	100	108
Kayonza	18.9	4.3	1.1	4.7	11.6	48	10.6	0.9	100	83
Kirehe	15.6	1.4	0.7	1.4	17.3	57.2	6.4	0.0	100	87
Ngoma	18.1	2.7	2.1	2.2	27	38.9	7.5	1.5	100	83
Bugesera	18.8	0.2	1.4	5.1	0.0	70.1	4.4	0.0	100	95

Source: EICV5.

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EICV4	Main source of lighting								Total	Total no. of HHs (000s)
	Electricity distributor	Oil Lamp	Firewood	Candle	Lantern	Solar panel	Batteries	Others		
All Rwanda	19.8	5	5.5	7.4	13.2	1.7	44.2	3.2	100	2,493
Nyarugenge	75.7	3	0	11.5	3.8	0.3	2.7	3.1	100	73
Gasabo	68.3	2	0.5	11.2	1.6	0.2	15.9	0.4	100	147
Kicukiro	80.6	1.8	0	9.7	2	0.0	3.8	2.1	100	76
Nyanza	10.9	13.1	2.2	1.7	10.8	2.5	58.1	0.8	100	77
Gisagara	0.9	3.5	13.2	3.4	11.1	1.4	66.5	0.0	100	79
Nyaruguru	2.9	1.9	25.8	5.1	4.5	2.5	55.3	2	100	61
Huye	17.2	1.7	5.5	10	22.3	3.1	39.6	0.6	100	79
Nyamagabe	5.9	2.5	16	5.8	3	4.4	61.7	0.6	100	73
Ruhango	8.9	6.2	2.8	1.2	26.2	0.4	53.2	1.1	100	77
Muhanga	17.5	3.6	3.2	2.3	23.1	0.9	49.3	0.4	100	73
Kamonyi	8.9	10.1	0.5	4.4	26.1	2.1	39.1	8.9	100	79
Karongi	9.3	3.9	9.4	4.8	4.2	7.3	58.7	2.4	100	75
Rutsiro	7.3	4.3	13.9	5.1	2.2	3.8	62.6	0.8	100	73
Rubavu	27.7	4	5.5	17	12.3	0	31.6	1.9	100	92
Nyabihu	10.4	6.2	13	9.7	9.6	0.4	44.5	6.1	100	64
Ngororero	5.3	3.5	14.9	4.9	10.7	0.2	59.2	1.2	100	81
Rusizi	28.6	16.9	5.2	3.9	6.1	2.8	34.8	1.7	100	89
Nyamasheke	9.4	10.1	13.9	5.3	8.4	6.4	40.8	5.8	100	86
Rulindo	9	2.9	2.2	18	3.4	2	23.7	38.7	100	69
Gakenke	4.6	1.9	4.2	3.4	7.7	1.8	73.9	2.5	100	80
Musanze	23.6	3.9	7.7	12.5	6.7	0.2	41.7	3.7	100	86
Burera	10	5.3	10.4	5.6	7.5	0.6	59.4	1.3	100	74
Gicumbi	4	3.5	4.2	9.5	3.6	2.6	71.5	1.1	100	86
Rwamagana	26.7	7.6	0.4	6.5	21.7	1.7	31.1	4.3	100	85
Nyagatare	19.9	5.9	0.5	7.7	5	0.9	59.3	1	100	113
Gatsibo	13.4	6.3	2.5	9.2	6.5	0.5	59.5	2.2	100	105
Kayanza	17.1	4	0.2	5.7	36.5	1.6	31.7	3.3	100	86
Kirehe	8.5	4.3	0.2	5.5	44.4	0.6	36.2	0.4	100	84
Ngoma	6.8	3.2	1.5	2.4	61.2	0.6	22.1	2.1	100	81
Bugesera	13.7	3.4	1.7	12.8	9.4	1.1	53.4	4.4	100	94

Source: EICV4.

Annex A. 9: Distribution of HHs by primary fuel used for cooking according to District, (EICV5, EICV4)

EICV5	Primary fuel used for cooking				Total	Total no. Of HHs(000)
	Firewood	Charcoal	Crop waste	Others		
All Rwanda	79.9	17.4	0.6	0.9	100	2,708
Nyarugenge	20.6	67.8	0.0	3.0	100	81
Gasabo	26.2	66.8	0.0	3.2	100	230
Kicukiro	15.2	71.3	0.0	2.8	100	98
Nyanza	93.5	5.5	0.0	1.0	100	79
Gisagara	95.9	3.2	0.0	0.5	100	82
Nyaruguru	95.6	3.6	0.0	0.6	100	64
Huye	88.2	11.4	0.0	0.0	100	82
Nyamagabe	96.1	3.2	0.0	0.4	100	77
Ruhango	94.8	3.1	0.8	1.3	100	71
Muhanga	89.1	10.2	0.2	0.0	100	78
Kamonyi	88.8	10.4	0.7	0.0	100	93
Karongi	92.0	7.4	0.0	0.4	100	78
Rutsiro	97.1	2.8	0.0	0.1	100	73
Rubavu	58.9	40.1	0.0	0.5	100	96
Nyabihu	88.1	11.9	0.0	0.0	100	67
Ngororero	96.7	3.0	0.0	0.3	100	82

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EICV5	Primary fuel used for cooking				Total	Total no. Of HHs(000)
	Firewood	Charcoal	Crop waste	Others		
Rusizi	86.2	12.4	0.0	0.7	100	95
Nyamasheke	98.0	1.8	0.0	0.2	100	83
Rulindo	93.5	5.6	0.0	0.6	100	78
Gakenke	97.2	2.3	0.0	0.5	100	84
Musanze	80.7	18.7	0.0	0.2	100	91
Burera	91.6	5.9	1.8	0.0	100	82
Gicumbi	96.2	3.2	0.2	0.2	100	88
Rwamagana	76.8	17.7	4.0	0.9	100	89
Nyagatare	90.1	5.5	2.3	1.6	100	132
Gatsibo	92.3	4.5	3.0	0.0	100	108
Kayonza	91.7	7.9	0.0	0.4	100	83
Kirehe	95.4	3.9	0.2	0.5	100	87
Ngoma	85.9	7.6	4.9	1.0	100	83
Bugesera	91.4	7.5	0.0	0.8	100	95

Source: EICV5.

EICV4	Primary fuel used for cooking				Total	Total no. Of HHs(000)
	Firewood	Charcoal	Crop waste	Others		
All Rwanda	83.3	15.2	0.8	0.8	100	2,493
Nyarugenge	18.3	76.8	0.0	0.4	100	73
Gasabo	33.4	64.1	0.5	0.5	100	147
Kicukiro	17.2	77.9	0.0	0.9	100	76
Nyanza	93.2	6.7	0.0	0.0	100	77
Gisagara	99.2	0.5	0.2	0.2	100	79
Nyaruguru	98.5	0.8	0.0	0.0	100	61
Huye	85.8	14.0	0.0	0.0	100	79
Nyamagabe	93.8	3.2	2.6	2.6	100	73
Ruhango	89.9	3.4	6.3	6.5	100	77
Muhanga	87.5	11.5	0.2	0.2	100	73
Kamonyi	94.2	5.4	0.2	0.2	100	79
Karongi	91.2	7.6	0.2	0.2	100	75
Rutsiro	97.1	2.2	0.0	0.0	100	73
Rubavu	65.3	34.5	0.0	0.0	100	92
Nyabihu	88.5	10.9	0.2	0.2	100	64
Ngororero	97.2	2.6	0.0	0.0	100	81
Rusizi	84.3	14.9	0.0	0.0	100	89
Nyamasheke	98.8	0.8	0.4	0.4	100	86
Rulindo	94.6	4.7	0.0	0.0	100	69
Gakenke	99.2	0.9	0.0	0.0	100	80
Musanze	86.0	14.0	0.0	0.0	100	86
Burera	95.6	4.0	0.0	0.0	100	74
Gicumbi	97.3	1.5	0.6	0.6	100	86
Rwamagana	85.0	14.3	0.0	0.0	100	85
Nyagatare	83.5	7.4	8.7	8.7	100	113
Gatsibo	93.2	6.0	0.0	0.2	100	105
Kayonza	84.5	14.8	0.0	0.2	100	86
Kirehe	95.8	4.2	0.0	0.0	100	84
Ngoma	96.4	3.2	0.0	0.0	100	81
Bugesera	92.3	7.6	0.0	0.0	100	94

Source: EICV4.

Annex A. 10: % of HHs with access to improved drinking water by District, (EICV5, EICV4)

EICV5	% HHs using improved	Improved drinking water source						Unimproved/other drinking water source				Total	Total no. of HHs (000s)
		Piped into dwelling/yard	Public standpipe	Borehole	Protected well	Protected spring	Rain water	Unprotected well	Unprotected spring	Surface water	Others		
All Rwanda	87.4	9.4	35.4	3.0	1.2	38.3	0.1	0.5	6.5	4.4	1.2	100	2,708
Nyarugenge	96.9	41.2	48.9	1.1	2.2	3.5	0.0	0.7	0.8	1.3	0.3	100	81
Gasabo	95.8	26.6	50.2	0.7	2.2	16.0	0.0	0.0	2.0	1.3	0.9	100	230
Kicukiro	95.2	45.2	35.2	1.5	0.9	12.4	0.0	0.0	0.8	1.1	2.9	100	98
Nyanza	86.6	5.3	15.5	2.7	0.4	62.6	0.0	0.6	6.4	4.8	1.5	100	79
Gisagara	95.5	2.8	28.5	0.0	0.0	64.2	0.0	0.2	2.6	0.5	1.2	100	82
Nyaruguru	82.6	2.0	38.2	0.0	0.5	42.0	0.0	0.1	13.5	2.7	1.1	100	64
Huye	89.7	4.7	32.7	0.5	1.7	50.0	0.0	1.2	5.7	2.2	1.1	100	82
Nyamagabe	84.5	4.1	12.1	0.0	0.8	67.5	0.0	0.6	13.6	1.1	0.2	100	77
Ruhango	87.9	2.6	11.0	14.4	3.1	56.8	0.0	0.2	7.7	3.8	0.4	100	71
Muhanga	83.2	9.5	14.3	0.0	9.0	50.3	0.0	3.1	9.0	2.4	2.2	100	78
Kamonyi	91.9	3.9	21.1	0.0	1.3	65.5	0.0	1.2	5.7	0.5	0.7	100	93
Karongi	90.2	7.9	27.0	0.6	0.0	54.7	0.0	0.2	5.7	2.4	1.5	100	78
Rutsiro	65.5	0.9	27.9	0.0	0.2	36.5	0.0	0.0	30.9	3.1	0.5	100	73
Rubavu	98.6	16.3	67.3	0.4	1.1	12.1	1.3	0.2	0.0	0.3	1.0	100	96
Nyabihu	86.0	0.7	30.7	0.0	0.7	53.5	0.4	0.6	10.5	2.7	0.2	100	67
Ngororero	84.0	0.6	11.7	0.0	0.4	71.4	0.0	0.6	13.4	1.2	0.8	100	82
Rusizi	87.6	5.0	45.7	2.7	0.0	34.3	0.0	0.0	8.9	3.4	0.0	100	95
Nyamasheke	89.0	5.1	26.8	0.0	1.5	55.5	0.0	0.4	9.9	0.7	0.0	100	83
Rulindo	92.3	2.8	42.2	0.0	0.0	47.2	0.0	0.5	5.2	2.0	0.0	100	78
Gakenke	71.0	1.3	18.0	0.0	0.1	51.5	0.0	1.0	26.3	0.7	1.0	100	84
Musanze	92.5	16.2	59.4	0.0	0.9	16.0	0.0	0.2	0.2	5.0	2.1	100	91
Burera	94.0	2.7	47.7	0.2	0.6	42.7	0.2	0.0	4.9	1.1	0.0	100	82
Gicumbi	88.0	4.5	12.4	0.2	2.6	68.2	0.0	0.6	8.0	2.6	0.8	100	88
Rwamagana	88.3	10.7	28.8	0.0	0.0	48.8	0.0	0.0	0.4	7.6	3.7	100	89
Nyagatare	80.4	4.0	42.6	26.7	1.2	5.9	0.2	0.4	2.9	14.3	1.9	100	132
Gatsibo	79.1	2.1	27.5	6.9	0.4	42.2	0.0	1.3	4.8	14.4	0.4	100	108
Kayanza	88.1	2.6	45.8	4.3	2.3	32.7	0.3	0.4	0.7	9.3	1.5	100	83
Kirehe	84.3	2.0	53.6	2.3	0.0	26.4	0.0	0.0	6.5	8.1	1.1	100	87
Ngoma	82.6	6.6	44.9	0.8	1.3	29.1	0.0	2.0	7.1	5.4	2.9	100	83
Bugesera	77.5	5.7	49.0	12.4	0.9	9.4	0.0	0.4	0.2	19.6	2.3	100	95

Source: EICV5.

EICV4	% HHs using improved	Improved drinking water source						Unimproved/other drinking water source				Total	Total no. of HHs (000s)
		Piped into dwelling/yard	Public standpipe	Borehole	Protected well	Protected spring	Rain water	Unprotected well	Unprotected spring	Surface water	Others		
All Rwanda	84.8	8.1	34.0	3.2	0.9	38.3	0.2	0.9	6.7	5.3	2.4	100	2,493
Nyarugenge	92.5	40.6	38.2	3.2	0.5	10.0	0.0	0.0	0.9	1.6	5.0	100	73
Gasabo	85.6	30.0	40.8	0.9	0.0	13.8	0.0	0.4	4.7	0.8	8.5	100	147
Kicukiro	74.7	46.5	22.9	0.2	2.1	3.0	0.0	0.2	0.9	0.2	24.1	100	76
Nyanza	89.6	5.1	14.5	1.7	3.9	64.3	0.0	1.8	6.5	2.1	0.0	100	77
Gisagara	92.9	0.7	26.4	0.0	0.4	65.4	0.0	0.6	3.3	1.3	2.0	100	79
Nyaruguru	73.8	0.0	38.0	0.0	0.6	35.0	0.2	0.6	23.9	1.5	0.2	100	61
Huye	96.0	9.8	27.8	0.0	1.0	57.3	0.0	0.2	3.8	0.0	0.0	100	79
Nyamagabe	79.9	2.6	13.3	0.0	0.0	64.1	0.0	2.2	11.6	4.6	1.7	100	73
Ruhango	80.0	3.2	5.6	4.3	3.2	63.7	0.0	2.5	5.2	10.9	1.4	100	77
Muhanga	89.0	10.8	14.6	0.0	1.5	62.2	0.0	0.5	9.1	1.4	0.0	100	73
Kamonyi	82.2	1.5	26.7	0.0	0.4	53.7	0.0	1.4	9.5	5.8	1.1	100	79
Karongi	82.8	5.6	26.9	2.6	0.0	47.5	0.2	0.2	11.1	5.1	0.8	100	75

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EICV4	% HHs using improved	Improved drinking water source						Unimproved/other drinking water source				Total	Total no. of HHs (000s)
		Piped into dwelling/yard	Public standpipe	Borehole	Protected well	Protected spring	Rain water	Unprotected well	Unprotected spring	Surface water	Others		
Rutsiro	77.5	1.5	21.1	0.6	0.8	53.4	0.0	0.7	13.9	6.8	1.2	100	73
Rubavu	98.4	10.1	75.2	0.0	1.8	8.9	2.2	0.2	0.8	0.2	0.4	100	92
Nyabihu	86.2	0.9	30.1	0.0	0.0	53.5	1.7	1.2	11.0	1.6	0.0	100	64
Ngororero	81.2	1.9	9.7	0.0	0.2	69.4	0.0	0.4	16.8	1.7	0.0	100	81
Rusizi	83.9	8.5	45.0	6.3	0.6	23.5	0.0	0.0	9.3	4.7	2.1	100	89
Nyamasheke	79.9	2.9	19.5	0.0	0.2	57.2	0.0	0.2	15.1	3.3	1.4	100	86
Rulindo	94.7	2.5	29.1	0.0	0.8	62.2	0.0	0.7	3.2	1.5	0.0	100	69
Gakenke	84.5	0.8	20.9	0.0	0.0	62.9	0.0	0.6	11.0	3.9	0.0	100	80
Musanze	95.3	10.0	60.6	1.5	0.0	23.3	0.0	0.2	0.8	2.5	1.2	100	86
Burera	88.0	1.4	41.8	0.2	2.7	41.7	0.2	0.8	6.3	4.9	0.0	100	74
Gicumbi	90.6	1.1	25.7	0.0	0.0	63.6	0.2	0.0	6.4	3.0	0.0	100	86
Rwamagana	93.7	12.6	42.8	1.1	0.2	36.7	0.4	0.7	0.5	4.2	0.9	100	85
Nyagatare	72.5	3.8	44.6	17.9	1.3	4.6	0.4	3.3	5.1	16.5	2.5	100	113
Gatsibo	74.3	2.6	29.0	10.6	1.2	30.6	0.4	3.8	5.7	16.3	0.0	100	105
Kayonza	88.2	4.1	55.5	9.9	0.2	18.3	0.3	0.0	0.4	9.4	2.0	100	86
Kirehe	87.1	1.1	62.0	2.9	1.5	19.6	0.0	0.8	8.7	3.0	0.4	100	84
Ngoma	84.4	1.6	48.5	5.1	0.0	29.2	0.0	0.2	3.9	11.5	0.0	100	81
Bugesera	69.5	5.6	36.3	16.0	1.7	9.7	0.2	0.5	1.6	20.1	8.4	100	94

Source: EICV4.

Annex A. 11: Time to improved water source by District, (EICV5, EICV4)

EICV5	Mean time to improved water source (minutes)	Time to improved water source (minutes)						No improved water source	Frequency of use not stated	Total	Total Number of households (000s)
		Water piped into dwelling/yard	0-4 min	5-14min	15-29min	30-59min	60+min				
All Rwanda	9.6	9.4	17.7	33.6	13.8	5.7	0,0	12.6	7.1	100	2,708
Nyarugenge	7.5	41.2	22.1	19.1	6	5.6	0,0	3.1	2.9	100	81
Gasabo	6.5	26.6	20.2	25.9	10.3	2	0,0	4.2	10.7	100	230
Kicukiro	4.9	45.2	15.3	20.4	5	1.4	0,0	4.8	7.9	100	98
Nyanza	13.1	5.3	11.9	35.6	19	11.8	0,0	13.4	2.8	100	79
Gisagara	10.6	2.8	14.7	40.3	23.3	5.2	0,0	4.5	9.2	100	82
Nyaruguru	7.6	2	25.7	30	10.9	2.3	0,0	17.4	11.7	100	64
Huye	9.4	4.7	16.4	39.6	18.5	2.3	0,0	10.3	8.2	100	82
Nyamagabe	10.8	4.1	9.8	40.9	24.4	3.6	0,0	15.5	1.7	100	77
Ruhango	10	2.6	19	41.7	13.7	7	0,0	12.1	3.8	100	71
Muhanga	9.7	9.5	15	36	15.2	4.6	0,0	16.8	2.9	100	78
Kamonyi	12.4	3.9	12.7	40.1	19.7	12.4	0,0	8.1	3.2	100	93
Karongi	8	7.9	24.8	40.1	12.4	2.9	0,0	9.8	2.2	100	78
Rutsiro	9.7	0.9	14.5	29	12.6	3.6	0,0	34.5	5	100	73
Rubavu	7.8	16.3	21.5	44.2	12.5	3.3	0,0	1.4	0.9	100	96
Nyabihu	8.4	0.7	24.2	42.6	12.8	4.2	0,0	14	1.5	100	67
Ngororero	11.8	0.6	11.4	39.2	23.4	7.4	0,0	16	2	100	82
Rusizi	8.4	5	24.9	28.6	13	2.9	0,0	12.4	13.2	100	95
Nyamasheke	8.2	5.1	25.8	34.1	11.3	4.1	0,0	11	8.5	100	83
Rulindo	8.1	2.8	25.5	43.2	11.1	4.3	0,0	7.5	5.6	100	77
Gakenke	10.6	1.3	11.5	33.4	14.9	4.8	0,0	29	5	100	84
Musanze	8.7	16.2	17.6	39.4	9.3	4.4	0,0	7.5	5.5	100	91
Burera	7.5	2.7	24.6	50.5	11.6	0.4	0,0	6	4.2	100	82
Gicumbi	15.6	4.5	9.3	31.4	18.5	17.5	0,0	12	6.8	100	88
Rwamagana	12.2	10.7	9.4	26.4	18.2	6.3	0,0	11.7	17.4	100	89
Nyagatare	11.8	4	18	30.6	15.2	9.6	0,0	19.6	3.2	100	132
Gatsibo	11.7	2.1	7.5	29.1	12	5.7	0,0	20.9	22.7	100	108
Kayonza	13.1	2.6	13.9	35.2	18.1	16.1	0,0	11.9	2.2	100	83

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EICV5	Mean time to improved water source (minutes)	Time to improved water source (minutes)						No improved water source	Frequency of use not stated	Total	Total Number of households (000s)
		Water piped into dwelling/yard	0-4 min	5-14min	15-29min	30-59min	60+min				
Kirehe	8.2	2	26.7	28.1	8.6	4.6	0,0	15.7	14.3	100	87
Ngoma	11.6	6.6	14.9	33.8	11	9.9	0,0	17.4	6.4	100	83
Bugesera	8.2	5.7	24.2	22.4	10.1	4	0,0	22.5	11.1	100	95

Source: EICV5.

EICV4	Mean time to improved water source(minutes)	Time to improved water source (minutes)						No improved water source	Frequency of use not stated	Total	Total Number of households (000s)
		Water piped into dwelling/yard	0-4 min	5-14min	15-29min	30-59min	60+min				
All Rwanda	11.2	8.1	17	32.9	14.8	6.6	1.3	15.2	4.2	100	2493
Nyarugenge	7.2	40.6	13.3	25.4	6.6	2.7	1.4	7.5	2.5	100	73
Gasabo	9.5	30	13.7	21.1	8.5	5.3	1.5	14.4	5.5	100	147
Kicukiro	5.8	46.5	9.7	11.3	2.8	2.8	0.3	25.3	1.4	100	76
Nyanza	11.4	5.1	12.3	39.7	20.8	5.4	1.5	10.4	4.8	100	77
Gisagara	15.2	0.7	17.5	27.7	26.1	16.6	2.4	7.1	2	100	79
Nyaruguru	8.9	0.0	24.5	26.8	9.7	4.1	0.2	26.2	8.5	100	61
Huye	8.6	9.8	25.4	38.9	15.3	2.8	0.0	4	3.8	100	79
Nyamagabe	9.5	2.6	18.7	39.1	15.5	3.5	0.2	20.1	0.4	100	73
Ruhango	11.4	3.2	7.1	41.9	20.2	4.4	0.2	20	2.9	100	77
Muhanga	9.4	10.8	16.4	41.9	15.1	3.4	0.6	11	0.8	100	73
Kamonyi	10.4	1.5	21.6	38.3	11	6.3	1.2	17.8	2.4	100	79
Karongi	10.2	5.6	22	32.2	14.7	6.6	1	17.2	0.8	100	75
Rutsiro	11.6	1.5	13.6	37.5	12.8	6.6	1.2	22.5	4.3	100	73
Rubavu	8.5	10.1	31.2	36.4	12.6	5.8	0.0	1.6	2.2	100	92
Nyabihu	10.6	0.9	24.8	33.6	14.7	5	1.7	13.8	5.6	100	64
Ngororero	10.5	1.9	11.7	45.4	15.4	5.2	0.4	18.8	1.2	100	81
Rusizi	9.9	8.5	17.6	31	7.7	2.9	1.9	16.1	14.4	100	89
Nyamasheke	12.2	2.9	10.6	39.5	16.3	7.7	0.9	20.1	1.8	100	86
Rulindo	15.8	2.5	14.3	35.6	22.8	12.4	5.3	5.3	1.7	100	69
Gakenke	12	0.8	15.3	39	21	7.4	0.9	15.5	0.2	100	80
Musanze	7.5	10	24	43.9	11.8	1.8	0.0	4.7	3.9	100	86
Burera	12.8	1.4	13.1	39.7	25.1	7.6	1.1	12	0.0	100	74
Gicumbi	14.8	1.1	10.4	37.5	25.4	10.8	2.1	9.4	3.5	100	86
Rwamagana	13.9	12.6	9.8	25.9	18.8	8.3	0.4	6.3	17.8	100	85
Nyagatare	14.4	3.8	10.1	30.8	14	6.9	2.5	27.5	4.5	100	113
Gatsibo	15.7	2.6	6.8	31.3	18.2	10.2	2.4	25.7	2.8	100	105
Kayonza	12.3	4.1	28.2	24.5	8.2	10.1	2.8	11.8	10.4	100	86
Kirehe	10.1	1.1	33.5	28	10.4	9.3	1.4	12.9	3.4	100	84
Ngoma	8.8	1.6	32.4	29.1	11.9	3.9	0.2	15.6	5.3	100	81
Bugesera	13.6	5.6	10.1	26.4	14.5	8.9	1.1	30.5	2.9	100	94

Source: EICV4.

Annex A. 12: % of HHs that has the right to sell or use any of their parcels as guarantee for a loan by District, (EICV5, EICV4)

EICV5	% of HHs with the right to sell any land or use it as a guarantee	Total no. of HHs cultivating land for crop production (000s)
All Rwanda	79.5	2,248
Nyarugenge	65.2	24
Gasabo	60.3	80
Kicukiro	56.2	23
Nyanza	77.0	73
Gisagara	86.5	76
Nyaruguru	80.0	61
Huye	76.2	75
Nyamagabe	73.7	75
Ruhango	67.5	68
Muhanga	87.3	69
Kamonyi	72.1	85
Karongi	78.6	73
Rutsiro	86.4	70
Rubavu	73.9	61
Nyabihu	85.7	60
Ngororero	90.2	80
Rusizi	68.4	87
Nyamasheke	85.9	80
Rulindo	96.2	72
Gakenke	92.3	83
Musanze	78.4	78
Burera	94.3	78
Gicumbi	84.0	86
Rwamagana	80.1	80
Nyagatare	75.7	123
Gatsibo	82.3	101
Kayanza	76.8	79
Kirehe	77.5	83
Ngoma	83.7	77
Bugesera	71.0	87

Source: EICV5.

EICV4	% of HHs with the right to sell any land or use it as a guarantee	Total no. of HHs cultivating land for crop production (000s)
All Rwanda	84.9	2,175
Nyarugenge	84.8	16
Gasabo	65.4	69
Kicukiro	59.9	21
Nyanza	73.8	74
Gisagara	80.1	79
Nyaruguru	89.8	59
Huye	82.9	71
Nyamagabe	92.3	72
Ruhango	79.6	73
Muhanga	81.0	68
Kamonyi	88.4	76
Karongi	73.0	72
Rutsiro	92.0	72
Rubavu	82.2	62
Nyabihu	86.3	60
Ngororero	94.8	79
Rusizi	82.8	80
Nyamasheke	84.3	84
Rulindo	90.9	66
Gakenke	96.9	78
Musanze	91.4	78
Burera	96.7	71
Gicumbi	92.3	84

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EICV4	% of HHs with the right to sell any land or use it as a guarantee	Total no. of HHs cultivating land for crop production (000s)
Rwamagana	85.5	77
Nyagatare	81.9	105
Gatsibo	86.4	99
Kayonza	81.7	80
Kirehe	89.7	82
Ngoma	87.6	79
Bugesera	75.7	88.9

Source: EICV4.

Annex A. 13: % of HHs cultivating any parcel by District that was (EICV5, EICV4)

EICV5	% of HHs cultivating any parcel by District that was.....							Total no. of HHs cultivating land for crop production (000s)
	Inherited	Purchased	Received as gift	Received for free use or as loan	Appropriated	sharecropped	Leased	
All Rwanda	62.9	46.4	13.6	24.2	0.5	14.9	21.7	2,221
Nyarugenge	43.7	40.1	3.3	32.4	0.0	8.7	13.4	22
Gasabo	41.1	31.1	8.5	45.6	0.4	8.9	15.3	72
Kicukiro	29.3	36.3	7.8	41.6	4.6	15.9	4.3	21
Nyanza	64.1	34.2	13.0	39.5	0.5	10.4	30.8	72
Gisagara	72.9	39.8	7.3	33.8	1.0	11.2	34.2	76
Nyaruguru	76.3	41.4	9.5	41.4	1.0	12.9	32.9	60
Huye	71.8	35.7	14.5	37.3	0.2	5.9	37.4	74
Nyamagabe	85.8	48.1	7.8	30.2	0.2	14.5	31.1	75
Ruhango	68.2	35.4	10.5	23.9	0.0	8.2	30.3	68
Muhanga	79.7	47.8	8.9	26.1	0.2	21.1	12.8	68
Kamonyi	63.1	36.3	6.1	21.5	0.6	15.1	15.1	84
Karongi	75.3	53.4	14.2	27.1	0.0	22.9	27.9	72
Rutsiro	77.7	52.2	9.1	14.0	0.0	16.0	10.7	70
Rubavu	53.7	39.8	16.7	19.8	0.0	2.0	25.6	60
Nyabihu	70.7	46.8	11.4	13.2	0.0	11.3	14.9	59
Ngororero	81.6	46.3	15.7	25.7	0.4	17.5	19.9	80
Rusizi	60.2	39.9	8.3	18.3	0.2	24.6	35.0	87
Nyamasheke	74.1	44.2	8.6	20.3	0.0	21.3	16.1	80
Rulindo	85.4	42.6	7.4	16.3	0.2	2.9	27.9	72
Gakenke	83.5	66.4	12.5	29.8	0.0	14.5	17.8	83
Musanze	60.2	47.7	19.1	18.4	1.0	11.1	22.1	77
Burera	83.1	50.2	12.5	12.0	0.2	10.1	14.5	78
Gicumbi	80.4	48.7	20.1	20.9	0.2	7.6	13.1	86
Rwamagana	53.9	54.5	7.5	30.8	0.5	6.3	26.5	79
Nyagatare	18.3	55.4	18.3	14.0	0.0	5.0	25.2	122
Gatsibo	41.7	56.1	23.5	15.7	1.4	17.7	21.5	101
Kayonza	41.3	47.6	24.2	14.1	0.0	33.0	12.5	78
Kirehe	34.3	50.2	34.1	20.1	0.0	27.5	15.7	83
Ngoma	69.3	51.8	18.1	18.1	0.2	24.7	16.3	77
Bugesera	49.3	47.0	9.6	33.8	3.8	30.9	14.2	86

Source: EICV5

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EICV4	% of HHs cultivating any parcel by District that was							Total no. of HHs cultivating land for crop production (000s)
	Inherited	Purchased	Received as gift	Received for free use or as loan	Appropriated	sharecropped	Leased	
All Rwanda	68.4	45.6	15.0	26.1	0.6	23.7	15.0	2,178
Nyarugenge	56.9	38.4	11.7	15.4	1.1	12.8	11.0	16
Gasabo	55.2	44.3	13.6	27.3	2.1	10.8	7.2	70
Kicukiro	30.4	33.7	10.8	42.5	3.3	18.0	15.5	21
Nyanza	66.3	26.4	11.1	33.3	0.6	24.9	16.1	74
Gisagara	73.1	37.9	11.1	43.6	2.1	39.3	26.6	79
Nyaruguru	78.9	35.9	11.0	46.9	0.6	3.5	43.7	59
Huye	68.9	36.5	7.3	42.3	0.4	37.1	17.9	71
Nyamagabe	84.6	45.1	15.5	38.1	0.4	44.1	0.6	71
Ruhango	71.6	32.5	6.0	42.4	0.0	34.5	8.5	73
Muhanga	82.1	38.8	10.7	24.9	0.2	28.6	4.2	69
Kamonyi	74.7	37.2	12.9	37.0	0.2	26.1	15.3	76
Karongi	77.7	36.1	17.8	25.0	0.0	16.1	30.8	72
Rutsiro	77.8	47.1	12.5	20.7	0.2	23.8	3.1	71
Rubavu	64.5	37.0	8.3	11.4	0.0	22.7	1.9	62
Nyabihu	64.0	48.4	24.3	21.3	0.7	30.3	10.6	60
Ngororero	89.3	50.6	12.1	21.0	0.0	42.8	3.4	79
Rusizi	71.0	40.7	8.1	22.6	0.2	36.0	10.1	80
Nyamasheke	75.1	43.1	11.1	20.1	0.2	30.7	3.3	84
Rulindo	85.9	44.6	12.3	19.2	0.0	16.3	10.7	66
Gakenke	91.2	67.4	10.9	23.9	0.2	26.3	3.2	78
Musanze	81.6	52.0	10.3	11.2	0.0	31.4	3.5	77
Burera	93.9	59.2	9.6	11.9	0.0	27.1	5.6	72
Gicumbi	87.7	50.2	9.2	13.5	0.0	8.0	8.5	84
Rwamagana	57.6	49.8	10.3	35.9	0.0	7.1	31.8	77
Nyagatare	22.0	55.2	25.9	17.5	0.2	18.7	24.7	105
Gatsibo	48.0	59.4	19.2	23.1	0.2	15.3	25.8	99
Kayanza	45.3	51.6	24.1	29.3	1.5	13.5	33.3	80
Kirehe	40.6	50.5	41.3	13.1	0.2	6.7	23.3	82
Ngoma	70.4	42.0	29.4	23.2	0.4	24.8	18.7	79
Bugesera	59.1	48.2	16.2	36.2	3.5	23.2	21.8	89

Source: EICV4.

Annex A. 14: Land transactions made during last 12 months by District, (EICV5, EICV4)

EICV5	Land transactions made during last 12 months									Total no. of HHs (000s)
	% of HHs that bought land	For those, average amount received	% of HHS sold land	For those, average amount received	% of HHs rented out land	For those, average amount received	% of HHs that sharecropped land	% of HHs that gave land from others as gift, dowry, inheritance, or otherwise	% of HHs that received land from others as gift, dowry, inheritance, or otherwise	
All Rwanda	7.7	297,589	6.4	272,749	8.3	18,698	6.4	2.8	4.0	2,708
Nyarugenge	2.5	769,919	2.4	524,141	3.6	23,694	1.8	0.5	1.6	81
Gasabo	3.8	594,399	1.6	1,123,361	4.0	19,835	2.6	1.8	0.7	230
Kicukiro	2.3	1,350,991	2.7	1,719,440	2.9	26,857	1.9	0.2	0.9	98
Nyanza	7.5	276,947	5.1	88,894	11.1	10,200	0.7	1.8	5.2	79
Gisagara	5.8	165,717	5.6	102,876	11.5	8,385	3.5	2.7	3.4	82
Nyaruguru	11.3	153,125	9.5	103,962	12.3	6,001	2.1	3.0	4.8	64
Huye	5.7	335,551	7.8	81,128	12.8	7,458	1.0	2.7	5.0	82
Nyamagabe	13.2	131,222	7.4	113,451	10.4	5,431	1.1	2.8	3.4	77
Ruhango	7.2	128,077	5.7	184,508	9.7	20,895	5.8	2.5	3.6	71
Muhanga	12.9	248,104	10.1	265,313	9.5	16,118	9.1	4.3	5.7	78
Kamonyi	4.4	303,647	3.0	360,315	3.9	15,618	7.3	1.7	3.2	93

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EICV5	Land transactions made during last 12 months									Total no. of HHs (000s)
	% of HHs that bought land	For those, average amount received	% of HHS sold land	For those, average amount received	% of HHs rented out land	For those, average amount received	% of HHs that sharecropped land	% of HHs that gave land from others as gift, dowry, inheritance, or otherwise	% of HHs that received land from others as gift, dowry, inheritance, or otherwise	
Karongi	10.4	207,653	7.5	150,955	15.6	8,106	7.3	5.4	7.5	78
Rutsiro	11.4	178,200	8.6	151,212	4.7	10,957	7.4	2.5	3.2	73
Rubavu	5.5	680,556	4.5	366,778	11.9	49,176	3.0	2.0	2.6	96
Nyabihu	7.1	241,240	8.0	261,897	12.7	27,199	6.0	2.8	5.1	67
Ngororero	13.4	194,833	8.0	196,936	12.5	10,827	14.5	3.5	4.5	82
Rusizi	5.7	343,249	3.6	295,748	10.9	22,057	14.5	2.4	2.9	95
Nyamasheke	6.6	296,838	5.3	168,896	7.1	16,723	9.6	1.8	3.4	83
Rulindo	7.0	297,271	7.4	215,398	7.4	14,130	3.9	4.3	4.7	77
Gakenke	15.9	263,208	10.9	244,373	5.7	7,933	7.5	8.1	9.1	84
Musanze	7.9	410,122	7.1	608,232	9.1	32,171	2.4	4.1	6.1	91
Burera	12.0	319,121	8.6	368,892	12.8	26,536	4.3	4.6	8.6	82
Gicumbi	11.2	234,757	9.8	143,719	8.5	11,179	2.1	3.9	4.1	88
Rwamagana	7.0	289,692	8.0	276,678	8.9	17,268	5.3	2.4	4.0	89
Nyagatare	5.9	446,239	5.0	286,878	7.3	45,850	10.0	2.4	2.8	132
Gatsibo	10.5	297,198	8.8	269,267	6.9	20,351	9.3	3.6	4.6	108
Kayanza	6.4	204,280	8.3	231,543	5.8	21,504	15.2	1.0	3.3	83
Kirehe	5.8	255,256	5.8	150,463	8.7	16,868	14.3	3.7	5.9	87
Ngoma	8.2	208,371	9.4	142,597	5.5	14,823	16.4	3.1	3.5	83
Bugesera	6.6	263,465	8.0	285,956	8.0	11,857	3.4	2.4	5.4	95

Source: EICV5.

EICV4	Land transactions made during last 12 months									Total no. of HHs (000s)
	% of HHs that bought land	For those, average amount received	% of HHS sold land	For those, average amount received	% of HHs rented out land	For those, average amount received	% of HHs that sharecropped land	% of HHs that gave land from others as gift, dowry, inheritance, or otherwise	% of HHs that received land from others as gift, dowry, inheritance, or otherwise	
All Rwanda	12.1	249,498	7.3	270,649	10.2	15,813	6.8	4.3	6.1	2,493
Nyarugenge	5.3	631,096	4.2	469,712	6.7	24,624	2.3	0.9	2.9	73
Gasabo	9.5	507,083	8.8	710,921	6.8	16,216	2.9	1.9	5.5	147
Kicukiro	7.7	1,042,826	2.5	1,119,146	1.8	30,317	1.2	1.1	1.7	76
Nyanza	10.1	141,507	4.8	163,715	9.5	10,518	0.8	3.4	6.7	77
Gisagara	14.2	100,406	6.6	68,477	14.3	6,937	4.9	4.2	7.9	79
Nyaruguru	11.6	113,433	8.1	83,670	13.0	7,434	1.5	4.4	5.1	61
Huye	10.6	205,221	3.8	112,340	10.9	8,137	0.5	5.3	6.3	79
Nyamagabe	18.2	122,572	10.0	133,692	12.1	9,866	2.3	6.6	6.0	73
Ruhango	7.8	127,026	4.4	151,281	13.9	7,227	2.6	4.2	6.6	77
Muhanga	13.7	167,970	6.6	153,251	7.4	8,675	8.7	3.5	6.1	73
Kamonyi	11.2	204,032	8.1	314,332	9.9	11,736	13.6	5.9	6.5	79
Karongi	11.2	140,893	6.9	142,930	12.2	8,809	9.7	5.4	7.3	75
Rutsiro	16.2	165,166	10.6	254,929	8.2	13,396	14.1	4.7	7.3	73
Rubavu	5.9	400,277	4.2	418,273	12.0	30,805	2.5	2.1	3.4	92
Nyabihu	17.5	277,679	6.0	174,680	16.3	26,363	9.7	3.9	9.7	64
Ngororero	18.5	169,706	9.4	162,589	9.4	7,559	11.5	8.4	9.0	81
Rusizi	7.1	226,975	4.5	225,855	10.4	23,413	8.1	4.0	3.6	89
Nyamasheke	5.6	182,631	5.3	169,421	10.2	9,766	8.2	3.2	3.0	86
Rulindo	13.7	175,197	7.5	220,795	9.2	8,516	4.3	3.9	7.0	69
Gakenke	25.3	206,161	10.1	162,501	5.5	8,767	7.7	5.1	10.1	80

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EICV4	Land transactions made during last 12 months									Total no. of HHs (000s)
	% of HHs that bought land	For those, average amount received	% of HHS sold land	For those, average amount received	% of HHs rented out land	For those, average amount received	% of HHs that sharecropped land	% of HHs that gave land from others as gift, dowry, inheritance, or otherwise	% of HHs that received land from others as gift, dowry, inheritance, or otherwise	
Musanze	12.6	342,606	8.7	255,006	14.3	26,506	3.0	6.8	6.7	86
Burera	16.6	260,554	8.8	260,940	11.5	25,691	3.8	5.0	6.2	74
Gicumbi	16.0	192,805	7.6	145,218	9.7	7,398	1.8	7.6	6.6	86
Rwamagana	9.8	300,260	9.7	376,452	5.5	12,941	3.7	3.7	3.2	85
Nyagatare	12.3	317,564	9.7	356,251	12.5	24,675	12.2	4.4	4.8	113
Gatsibo	12.6	234,395	8.4	226,802	9.8	13,482	6.2	5.4	6.0	105
Kayonza	14.8	333,076	7.8	309,718	12.7	15,701	16.1	3.6	6.4	86
Kirehe	12.1	249,433	7.7	207,642	13.5	22,589	16.3	4.2	5.0	84
Ngoma	9.5	151,257	5.7	177,087	9.4	12,088	19.9	4.1	8.2	81
Bugesera	9.7	245,173	8.5	263,315	9.3	23,100	4.4	4.7	9.2	94

Source: EICV4.

Annex A. 15: % of HHs incurring expenditure on fertilizers (inorganic and organic) by District, (EICV5, EICV4)

EICV5	% of HHs incurring expenditure on fertilizers (inorganic and organic)		Total no. of HHs cultivating land for crop production (000s)
	Chemic fertilizer	Organic fertilizer	
All Rwanda	37.5	12.9	2,247
Nyarugenge	9.0	10.9	24
Gasabo	17.5	10.1	80
Kicukiro	16.7	11.5	23
Nyanza	21.1	11.1	73
Gisagara	37.6	9.7	76
Nyaruguru	70.9	16.6	61
Huye	35.5	16.8	75
Nyamagabe	48.8	14.4	75
Ruhango	18.4	13.3	68
Muhanga	34.6	14.1	69
Kamonyi	14.7	9.9	85
Karongi	52.3	13.6	73
Rutsiro	44.4	14.4	70
Rubavu	38.1	6.7	61
Nyabihu	62.4	17.5	60
Ngororero	58.8	20.4	80
Rusizi	58.0	17.9	87
Nyamasheke	64.3	19.0	80
Rulindo	34.8	17.9	72
Gakenke	69.8	21.0	83
Musanze	44.1	16.3	78
Burera	43.9	15.7	78
Gicumbi	18.2	12.6	86
Rwamagana	37.8	13.1	80
Nyagatare	16.6	3.0	123
Gatsibo	33.2	11.4	101
Kayonza	22.5	7.0	79
Kirehe	24.9	11.3	83
Ngoma	35.8	8.2	77
Bugesera	28.0	5.8	87

Source: EICV5.

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EICV4	% of HHs incurring expenditure on fertilizers (inorganic and organic)		Total no. of HHs cultivating land for crop production (000s)
	Chemic fertilizer	Organic fertilizer	
All Rwanda	36.4	11.9	2,178
Nyarugenge	10.7	6.1	16
Gasabo	19.1	14.8	70
Kicukiro	12.8	6.8	21
Nyanza	19.2	8.7	74
Gisagara	39.8	12.4	79
Nyaruguru	56.1	15.6	59
Huye	37.4	17.7	71
Nyamagabe	51.9	14.0	71
Ruhango	19.2	10.0	73
Muhanga	31.9	8.0	69
Kamonyi	29.5	9.1	76
Karongi	50.7	11.4	72
Rutsiro	41.0	14.1	71
Rubavu	46.5	4.5	62
Nyabihu	66.8	16.4	60
Ngororero	46.7	16.5	79
Rusizi	46.5	11.5	80
Nyamasheke	50.2	16.2	84
Rulindo	38.4	19.3	66
Gakenke	71.8	20.6	78
Musanze	58.0	22.2	77
Burera	55.1	14.5	72
Gicumbi	22.2	12.2	84
Rwamagana	36.0	10.1	77
Nyagatare	14.2	2.6	105
Gatsibo	22.2	13.3	99
Kayonza	18.0	6.5	80
Kirehe	28.1	9.9	82
Ngoma	30.2	6.6	79
Bugesera	13.2	4.0	89

Source: EICV4.

Annex A. 16: Problem resulting from environmental destruction by District, (EICV5, EICV4)

EICV5	Problem resulting from environment issues					Total no. of HHs (000)
	% with dwelling affected by environmental destruction	Floods	Mountain slides	Destructive rains	Others	
All Rwanda	13.1	6.0	22.0	56.8	15.1	2,708
Nyarugenge	5.2	3.0	6.0	91.0	0.0	81
Gasabo	3.5	5.7	7.6	68.0	18.8	230
Kicukiro	3.6	13.7	0.0	79.8	6.5	98
Nyanza	15.5	1.4	2.8	80.9	14.9	79
Gisagara	6.2	21.7	0.0	77.3	1.0	82
Nyaruguru	11.5	15.1	33.1	42.0	9.9	64
Huye	6.7	0.0	0.0	85.4	14.6	82
Nyamagabe	24.7	7.7	27.1	51.6	13.7	77
Ruhango	23.8	12.5	2.5	69.9	15.1	71
Muhanga	15.1	5.2	47.6	41.4	5.8	78
Kamonyi	16.0	3.5	20.7	72.2	3.7	93
Karongi	12.2	2.2	10.5	71.6	15.6	78
Rutsiro	18.3	4.8	36.8	46.4	12.0	73
Rubavu	4.0	11.5	39.6	30.6	18.3	96
Nyabihu	16.6	11.6	28.6	57.2	2.6	67
Ngororero	42.3	0.5	58.4	36.5	4.6	82
Rusizi	20.6	6.2	11.1	50.0	32.7	95
Nyamasheke	17.5	2.8	24.1	64.2	8.9	83

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EICV5	Problem resulting from environment issues					Total no. of HHs (000)
	% with dwelling affected by environmental destruction	Floods	Mountain slides	Destructive rains	Others	
Rulindo	9.7	2.1	15.4	82.5	0.0	77
Gakenke	28.6	5.4	40.6	43.6	10.4	84
Musanze	8.4	10.2	56.1	16.2	17.5	91
Burera	7.6	5.1	39.9	23.8	31.2	82
Gicumbi	9.0	16.8	13.8	60.4	9.0	88
Rwamagana	12.6	0.0	1.9	92.5	5.6	89
Nyagatare	8.7	0.0	4.4	83.3	12.3	132
Gatsibo	14.8	13.4	19.3	39.8	27.5	108
Kayonza	14.9	7.0	1.8	55.1	36.1	83
Kirehe	12.4	0.0	1.8	57.1	41.2	87
Ngoma	16.7	2.7	2.8	52.2	42.3	83
Bugesera	9.7	16.6	0.0	75.2	8.2	95

Source: EICV5.

EICV4	Problem resulting from environment issues					Total no. of HHs (000)
	% with dwelling affected by environmental destruction	Floods	Mountain slides	Destructive rains	Others	
All Rwanda	20.1	8.5	21.6	53.0	16.9	2,493
Nyarugenge	9.6	5.1	10.9	81.9	2.1	73
Gasabo	10.6	0.0	5.6	83.8	10.5	147
Kicukiro	8.6	5.7	2.3	47.9	44.1	76
Nyanza	17.9	6.6	3.2	86.8	3.4	77
Gisagara	14.1	8.3	1.5	74.7	15.5	79
Nyaruguru	25.4	25.4	21.4	42.0	11.2	61
Huye	16.0	1.1	5.4	84.6	8.9	79
Nyamagabe	21.7	6.9	30.4	60.9	1.8	73
Ruhango	33.4	5.7	1.9	90.0	2.4	77
Muhanga	21.7	17.4	23.0	53.8	5.8	73
Kamonyi	29.0	0.0	3.4	89.0	7.6	79
Karongi	23.1	6.5	36.2	47.3	10.0	75
Rutsiro	26.2	2.6	36.5	45.2	15.7	73
Rubavu	21.2	45.6	23.9	25.3	5.2	92
Nyabihu	35.3	6.9	43.5	39.0	10.7	64
Ngororero	31.1	5.3	62.6	25.1	7.0	81
Rusizi	35.3	8.1	19.7	14.9	57.3	89
Nyamasheke	21.5	10.5	39.4	39.6	10.5	86
Rulindo	21.7	0.9	32.0	64.3	2.9	69
Gakenke	29.1	8.7	36.1	28.5	26.7	80
Musanze	27.3	20.5	52.2	14.8	12.6	86
Burera	8.1	8.0	52.7	36.7	2.7	74
Gicumbi	27.4	3.8	11.5	51.7	32.9	86
Rwamagana	4.1	0.0	0.0	95.2	4.8	85
Nyagatare	27.9	0.8	2.1	35.6	61.5	113
Gatsibo	15.8	7.5	12.9	77.1	2.4	105
Kayonza	9.5	1.7	8.8	85.0	4.4	86
Kirehe	15.2	11.9	2.8	68.1	17.2	84
Ngoma	14.8	4.3	0.0	90.1	5.6	81
Bugesera	11.4	8.8	1.7	81.7	7.9	94

Source: EICV4.

Annex A. 17: % of HHs accessing formal sources of credit using land as collateral by District, (EICV5, EICV4)

EICV5	% of HHs with the loan from a formal source	% of HHs that used land as a collateral to access the loan	Total no. of HHs accessing formal sources of credit (000s)
All Rwanda	16.7	46.9	301

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EICV5	% of HHs with the loan from a formal source	% of HHs that used land as a collateral to access the loan	Total no. of HHs accessing formal sources of credit (000s)
Nyarugenge	24.7	5.2	8
Gasabo	21.9	19.9	35
Kicukiro	46.2	18.6	22
Nyanza	16.2	50.7	7
Gisagara	9.7	58.6	5
Nyaruguru	13.2	54.4	7
Huye	9.9	17.0	7
Nyamagabe	12.1	60.6	7
Ruhango	18.2	57.1	8
Muhanga	20.1	54.1	10
Kamonyi	19.1	73.3	11
Karongi	14.5	36.5	7
Rutsiro	12.9	54.6	5
Rubavu	23.3	41.2	11
Nyabihu	22.0	55.5	9
Ngororero	7.9	52.9	6
Rusizi	15.5	35.9	13
Nyamasheke	13.9	65.7	8
Rulindo	20.5	74.3	11
Gakenke	15.8	73.0	10
Musanze	22.5	52.5	10
Burera	14.8	71.3	9
Gicumbi	27.3	46.9	11
Rwamagana	13.6	57.1	9
Nyagatare	12.6	63.0	14
Gatsibo	14.0	53.1	9
Kayonza	12.6	49.8	7
Kirehe	7.9	60.4	6
Ngoma	17.9	48.3	9
Bugesera	16.4	56.8	10

Source: EICV5.

EICV4	% of HHs with the loan from a formal source	% of HHs that used land as a collateral to access the loan	Total no. of HHs accessing formal sources of credit (000s)
All Rwanda	9.9	41.3	247
Nyarugenge	11.7	9.6	9
Gasabo	15.7	20.4	23
Kicukiro	17.1	7.3	13
Nyanza	12.7	40.7	10
Gisagara	6.5	39.6	5
Nyaruguru	7.6	43.9	5
Huye	9.9	34.3	8
Nyamagabe	7.8	34.9	6
Ruhango	6.2	33.1	5
Muhanga	10.6	42.2	8
Kamonyi	9.2	58.9	7
Karongi	10.2	44.5	8
Rutsiro	6.8	59.7	5
Rubavu	15.1	35.7	14
Nyabihu	9.7	52.1	6
Ngororero	7.7	49.5	6
Rusizi	9.9	48.5	9
Nyamasheke	5.5	60.7	5
Rulindo	12.0	59.1	8
Gakenke	7.0	70.1	6
Musanze	9.8	39.2	8
Burera	8.7	48.5	6
Gicumbi	7.5	80.2	6
Rwamagana	10.7	43.4	9
Nyagatare	7.2	39.7	8

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EICV4	% of HHs with the loan from a formal source	% of HHs that used land as a collateral to access the loan	Total no. of HHs accessing formal sources of credit (000s)
Gatsibo	10.3	50.9	11
Kayonza	7.9	53.3	7
Kirehe	9.7	37.5	8
Ngoma	7.6	61.1	6
Bugesera	14.5	42.9	14

Source: EICV4.

Annex A. 18: % of land irrigated, protected against erosion, affected by land consolidation and Total Cultivated land area by District, (EICV5, EICV4)

EICV5	% of land irrigated	% of land protected against soil erosion	% of land affected by land consolidation	Total cultivated land area(000S)
All Rwanda	6.2	68.5	15.9	1,290
Nyarugenge	2.5	38.7	5.4	33
Gasabo	1.2	50.4	2.2	36
Kicukiro	1.2	33.0	15.0	27
Nyanza	3.6	82.5	5.2	28
Gisagara	5.9	66.0	11.1	31
Nyaruguru	5.7	73.6	8.0	36
Huye	7.8	81.6	8.7	25
Nyamagabe	3.4	79.8	4.0	32
Ruhango	9.5	74.1	6.0	37
Muhanga	10.8	76.6	5.1	30
Kamonyi	8.1	61.8	2.4	145
Karongi	2.6	78.2	18.9	35
Rutsiro	1.5	90.9	31.6	32
Rubavu	0.3	88.7	59.6	27
Nyabihu	1.7	82.7	27.0	15
Ngororero	4.6	87.9	10.5	36
Rusizi	14.4	54.6	24.2	25
Nyamasheke	2.1	70.3	17.3	29
Rulindo	3.1	87.8	11.1	30
Gakenke	6.1	87.6	21.4	45
Musanze	1.7	47.4	37.5	28
Burera	0.8	79.9	17.6	25
Gicumbi	19.3	88.2	33.8	85
Rwamagana	10.3	83.6	14.3	39
Nyagatare	4.1	41.6	7.9	88
Gatsibo	3.7	72.7	16.8	52
Kayonza	14.9	57.8	10.1	53
Kirehe	5.8	73.9	33.0	61
Ngoma	1.7	54.2	32.0	68
Bugesera	3.1	63.1	5.7	55

Source: EICV5

EICV4	% of land irrigated	% of land protected against soil erosion	% of land affected by land consolidation	Total cultivated land area(000S)
All Rwanda	4.0	73.0	15.7	1,310
Nyarugenge	1.6	74.1	8.6	11
Gasabo	8.1	82.1	5.8	50
Kicukiro	2.9	38.3	0.6	18
Nyanza	6.4	81.0	8.4	35
Gisagara	5.7	68.8	15.7	41
Nyaruguru	3.2	90.3	17.0	30
Huye	5.5	79.1	9.0	27
Nyamagabe	0.9	83.8	1.9	45
Ruhango	3.9	85.1	4.7	38
Muhanga	2.3	90.2	3.9	36
Kamonyi	6.3	90.6	4.7	49
Karongi	2.9	84.0	19.4	38
Rutsiro	0.8	92.2	29.7	40
Rubavu	2.8	53.1	46.4	12
Nyabihu	1.4	82.0	55.9	23
Ngororero	3.1	84.3	9.4	46
Rusizi	5.9	57.5	11.9	32
Nyamasheke	4.8	70.6	9.2	31
Rulindo	5.7	78.8	13.3	38
Gakenke	3.8	94.5	21.3	49
Musanze	1.0	61.6	40.2	29

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EICV4	% of land irrigated	% of land protected against soil erosion	% of land affected by land consolidation	Total cultivated land area(000S)
Burera	0.3	81.7	27.2	36
Gicumbi	2.1	83.8	12.5	48
Rwamagana	5.7	82.4	14.0	44
Nyagatare	3.0	42.8	11.3	118
Gatsibo	1.8	79.8	18.6	65
Kayonza	4.1	51.7	10.5	67
Kirehe	11.4	64.6	29.6	78
Ngoma	2.6	68.5	16.4	53
Bugesera	3.0	61.7	20.3	81

Source: EICV4.

Annex B: Confidence intervals of some selected indicators, EICV5

Annex B. 1: % of HHs living in Imidugudu

EICV5	% of HHs living in Imidugudu				Unweighted count
	Estimate	Standard error	Low	Upper	
All Rwanda	58.9	0.8	57.2	60.5	14,580
Province					
Kigali City	4.1	0.9	2.4	5.8	1,620
Southern Province	56.7	1.5	53.8	59.6	3,840
Western Province	59.5	1.8	56.0	62.9	3,360
Northern Province	68.8	2.0	65.0	72.7	2,400
Eastern Province	87.4	1.3	84.9	89.8	3,360
Province by Urban/Rural					
Kigali City Urban	4.3	1.0	2.3	6.3	1,242
Kigali City Rural	3.4	1.6	0.3	6.6	378
Southern Province Urban	26.6	4.8	17.3	36.0	360
Southern Province Rural	59.7	1.5	56.9	62.6	3,480
Western Province Urban	56.6	7.0	42.9	70.4	420
Western Province Rural	59.9	1.9	56.3	63.6	2,940
Northern Province Urban	65.1	5.1	55.1	75.2	240
Northern Province Rural	69.2	2.1	65.1	73.3	2,160
Eastern Province Urban	68.4	7.9	53.0	83.9	264
Eastern Province Rural	88.9	1.2	86.6	91.2	3,096
Urban/Rural					
Urban	24.8	2.3	20.3	29.3	2,526
Rural	67.0	0.9	65.2	68.9	12,054
Quintile					
Q1	66.8	1.3	64.3	69.3	2,429
Q2	64.1	1.3	61.6	66.5	2,656
Q3	64.1	1.2	61.7	66.5	2,868
Q4	61.8	1.3	59.4	64.3	3,078
Q5	43.9	1.4	41.2	46.6	3,549
District					
Nyarugenge	6.6	2.1	2.6	10.7	540
Gasabo	2.8	1.1	0.8	4.9	540
Kicukiro	4.8	1.9	1.0	8.5	540
Nyanza	21.7	3.8	14.3	29.0	480
Gisagara	87.2	2.6	82.1	92.2	480
Nyaruguru	75.9	3.1	69.8	82.0	480
Huye	64.4	6.4	52.0	76.9	480
Nyamagabe	71.1	3.6	64.2	78.1	480
Ruhango	40.0	3.9	32.4	47.7	480
Muhanga	57.3	5.3	47.0	67.6	480
Kamonyi	40.0	2.9	34.3	45.6	480
Karongi	74.6	3.3	68.1	81.1	480
Rutsiro	78.8	3.7	71.6	86.0	480
Rubavu	80.5	4.4	71.8	89.2	480
Nyabihu	18.2	4.4	9.7	26.7	480

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EICV5	% of HHs living in Imidugudu				Unweighted count
	Estimate	Standard error	Low	Upper	
Ngororero	41.7	3.7	34.4	48.9	480
Rusizi	46.4	6.6	33.5	59.3	480
Nyamasheke	70.3	4.3	61.9	78.6	480
Rulindo	57.6	3.4	50.9	64.3	480
Gakenke	85.4	2.5	80.5	90.3	480
Musanze	72.4	4.1	64.3	80.5	480
Burera	71.3	6.7	58.3	84.3	480
Gicumbi	56.8	4.1	48.8	64.9	480
Rwamagana	83.9	3.2	77.7	90.1	480
Nyagatare	81.8	3.9	74.1	89.5	480
Gatsibo	86.3	3.3	79.8	92.8	480
Kayanza	93.7	2.8	88.2	99.2	480
Kirehe	97.7	1.0	95.7	99.6	480
Ngoma	88.1	3.6	81.0	95.3	480
Bugesera	83.9	3.1	77.8	90.1	480

Source: EICV5.

Annex B. 2: % of HHs whose main water source is improved, EICV5

EICV5	% of HHs whose main water source is improved				Unweighted count
	Estimate	Standard error	Low	Upper	
All Rwanda	87.4	0.6	86.3	88.5	14,580
Province					
Kigali City	95.9	0.9	94.2	97.5	1,620
Southern Province	88.0	0.9	86.2	89.8	3,840
Western Province	86.5	1.0	84.4	88.5	3,360
Northern Province	87.5	1.2	85.1	89.9	2,400
Eastern Province	82.6	1.6	79.3	85.8	3,360
Province by Urban/Rural					
Kigali City Urban	96.9	0.8	95.3	98.5	1,242
Kigali City Rural	93.0	2.0	89.0	97.0	378
Southern Province Urban	94.5	1.4	91.9	97.2	360
Southern Province Rural	87.3	1.0	85.4	89.3	3,480
Western Province Urban	94.4	1.3	91.9	96.8	420
Western Province Rural	85.3	1.2	82.9	87.7	2,940
Northern Province Urban	94.0	1.9	90.2	97.8	240
Northern Province Rural	86.9	1.3	84.3	89.5	2,160
Eastern Province Urban	93.9	1.8	90.3	97.5	264
Eastern Province Rural	81.6	1.8	78.2	85.1	3,096
Urban/Rural					
Urban	95.8	0.6	94.6	96.9	2,526
Rural	85.4	0.7	84.1	86.8	12,054
Quintile					
Q1	82.0	1.1	79.8	84.2	2,429
Q2	84.7	0.9	82.9	86.5	2,656
Q3	87.3	0.8	85.8	88.9	2,868
Q4	87.4	0.8	85.8	89.1	3,078
Q5	92.8	0.6	91.5	94.1	3,549
District					
Nyarugenge	96.9	1.5	94.0	99.7	540
Gasabo	95.8	1.2	93.4	98.2	540
Kicukiro	95.2	1.7	91.9	98.5	540
Nyanza	86.6	2.3	82.1	91.0	480
Gisagara	95.5	1.4	92.8	98.2	480
Nyaruguru	82.6	3.5	75.8	89.5	480
Huye	89.7	3.3	83.2	96.2	480
Nyamagabe	84.5	3.0	78.6	90.4	480
Ruhango	87.9	2.3	83.4	92.3	480
Muhanga	83.2	3.0	77.3	89.2	480
Kamonyi	91.9	1.4	89.1	94.6	480
Karongi	90.2	1.9	86.4	94.0	480
Rutsiro	65.5	4.6	56.5	74.6	480

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EICV5	% of HHs whose main water source is improved				Unweighted count
	Estimate	Standard error	Low	Upper	
Rubavu	98.6	0.5	97.5	99.6	480
Nyabihu	86.0	2.6	80.8	91.2	480
Ngororero	84.0	2.7	78.7	89.4	480
Rusizi	87.6	3.1	81.6	93.7	480
Nyamasheke	89.0	2.6	83.9	94.1	480
Rulindo	92.3	1.7	89.0	95.5	480
Gakenke	71.0	3.7	63.8	78.2	480
Musanze	92.5	2.3	88.0	97.1	480
Burera	94.0	2.2	89.7	98.4	480
Gicumbi	88.0	3.0	82.1	94.0	480
Rwamagana	88.3	2.8	82.8	93.9	480
Nyagatare	80.4	4.3	72.0	88.9	480
Gatsibo	79.1	4.9	69.5	88.6	480
Kayonza	88.1	3.6	81.0	95.2	480
Kirehe	84.3	4.1	76.3	92.3	480
Ngoma	82.6	2.9	77.0	88.3	480
Bugesera	77.5	5.7	66.4	88.6	480

Source: EICV5.

Annex B. 3: % of HHs with improved sanitation, EICV5

EICV5	% of HHs with improved sanitation				Unweighted count
	Estimate	Standard error	Lower	Upper	
All Rwanda	86.2	0.4	85.5	86.9	14,580
Province					
Kigali City	94.5	0.9	92.6	96.3	1,620
Southern Province	74.6	0.9	72.9	76.4	3,840
Western Province	88.1	0.7	86.8	89.4	3,360
Northern Province	86.5	0.9	84.6	88.3	2,400
Eastern Province	90.0	0.6	88.8	91.2	3,360
Urban/Rural					
Urban	93.6	0.8	92.0	95.2	2,526
Rural	84.4	0.4	83.6	85.2	12,054
Quintile					
Q1	76.3	0.93	74.5	78.1	2434
Q2	80.6	0.83	79	82.3	2652
Q3	86.1	0.7	84.8	87.5	2882
Q4	88.4	0.63	87.2	89.6	3068
Q5	94.4	0.46	93.5	95.3	3544
District					
Nyarugenge	99.3	0.4	98.6	100.1	540
Gasabo	92.8	1.5	89.8	95.7	540
Kicukiro	94.5	1.4	91.8	97.2	540
Nyanza	53.3	3.4	46.6	60.1	480
Gisagara	59.8	3.4	53.2	66.4	480
Nyaruguru	82.8	2.3	78.3	87.2	480
Huye	78.7	2.6	73.6	83.8	480
Nyamagabe	80.6	1.8	77.0	84.1	480
Ruhango	53.4	2.5	48.5	58.2	480
Muhanga	93.9	1.1	91.8	96.0	480
Kamonyi	91.5	1.4	88.8	94.3	480
Karongi	84.6	1.8	81.0	88.2	480
Rutsiro	91.1	1.7	87.8	94.4	480
Rubavu	94.1	1.4	91.3	96.8	480
Nyabihu	80.1	2.3	75.5	84.6	480
Ngororero	77.6	2.0	73.8	81.5	480
Rusizi	90.4	1.8	86.8	94.0	480
Nyamasheke	96.0	1.2	93.6	98.5	480
Rulindo	84.6	1.8	81.2	88.1	480
Gakenke	94.7	1.3	92.3	97.2	480
Musanze	83.2	2.4	78.5	87.9	480

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EICV5	% of HHs with improved sanitation				Unweighted count
	Estimate	Standard error	Lower	Upper	
Burera	81.4	2.9	75.8	87.1	480
Gicumbi	88.2	1.6	85.1	91.2	480
Rwamagana	92.3	1.6	89.2	95.3	480
Nyagatare	94.7	1.3	92.2	97.2	480
Gatsibo	82.2	2.0	78.4	86.1	480
Kayonza	83.9	1.8	80.3	87.4	480
Kirehe	95.3	1.0	93.4	97.2	480
Ngoma	94.3	1.6	91.1	97.5	480
Bugesera	87.0	1.7	83.7	90.3	480

Source: EICV5.

Annex B. 4: % of HHs using firewood as primary source of cooking fuel, EICV5

EICV5	% of HHs using firewood's as primary source of cooking fuel				Unweighted count
	Estimate	Standard error	Lower	Upper	
All Rwanda	79.9	0.8	78.3	81.4	14,580
Province					
Kigali City	22.4	2.7	17.2	27.6	1,620
Southern Province	92.6	1.0	90.7	94.4	3,840
Western Province	87.2	1.4	84.6	89.9	3,360
Northern Province	91.7	1.3	89.2	94.3	2,400
Eastern Province	89.3	1.1	87.2	91.3	3,360
Urban/Rural					
Urban	26.3	2.1	22.2	30.4	2,526
Rural	92.7	0.6	91.6	93.8	12,054
Quintile					
Q1	97.4	0.4	96.6	98.1	2,429
Q2	95.2	0.6	94.0	96.4	2,656
Q3	91.0	0.8	89.4	92.6	2,868
Q4	85.3	1.0	83.2	87.3	3,078
Q5	45.4	1.4	42.7	48.1	3,549
District					
Nyarugenge	20.6	4.5	11.7	29.5	540
Gasabo	26.2	4.3	17.8	34.5	540
Kicukiro	15.2	3.4	8.5	22.0	540
Nyanza	93.5	2.1	89.4	97.7	480
Gisagara	95.9	1.8	92.4	99.4	480
Nyaruguru	95.6	1.1	93.5	97.6	480
Huye	88.2	3.2	81.9	94.5	480
Nyamagabe	96.1	1.6	93.0	99.2	480
Ruhango	94.8	1.8	91.4	98.3	480
Muhanga	89.1	3.6	81.9	96.2	480
Kamonyi	88.8	3.6	81.8	95.8	480
Karongi	92.0	2.5	87.2	96.8	480
Rutsiro	97.1	1.0	95.2	99.0	480
Rubavu	58.9	6.3	46.6	71.2	480
Nyabihu	88.1	3.3	81.6	94.6	480
Ngororero	96.7	1.5	93.7	99.8	480
Rusizi	86.2	3.4	79.5	92.8	480
Nyamasheke	98.0	0.7	96.8	99.3	480
Rulindo	93.5	2.1	89.5	97.6	480
Gakenke	97.2	0.8	95.6	98.7	480
Musanze	80.7	5.1	70.8	90.6	480
Burera	91.6	2.1	87.5	95.7	480
Gicumbi	96.2	1.8	92.7	99.8	480
Rwamagana	76.8	4.1	68.9	84.7	480
Nyagatare	90.1	3.1	84.0	96.3	480
Gatsibo	92.3	1.8	88.9	95.8	480
Kayonza	91.7	2.2	87.4	96.1	480
Kirehe	95.4	1.4	92.6	98.2	480
Ngoma	85.9	2.7	80.6	91.3	480

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EICV5	% of HHs using firewood's as primary source of cooking fuel				Unweighted count
	Estimate	Standard error	Lower	Upper	
Bugesera	91.4	2.8	86.0	96.9	480

Source: EICV5.

Annex B. 5: % of HHs using charcoal as primary source of cooking fuel, EICV5

EICV5	% of HHs with using charcoal as primary source of cooking fuel				Unweighted count
	Estimate	Standard error	Low	Upper	
All Rwanda	17.4	0.8	16.0	18.9	14,580
Province					
Kigali City	68.1	2.4	63.4	72.7	1,620
Southern Province	6.5	0.9	4.7	8.3	3,840
Western Province	12.2	1.3	9.6	14.8	3,360
Northern Province	7.3	1.2	4.9	9.7	2,400
Eastern Province	7.6	0.9	5.8	9.4	3,360
Province by Urban/Rural					
Kigali City Urban	78.2	1.9	74.6	81.9	1,242
Kigali City Rural	39.3	5.4	28.8	49.8	378
Southern Province Urban	38.3	5.6	27.3	49.3	360
Southern Province Rural	3.3	0.5	2.3	4.3	3,480
Western Province Urban	60.3	5.2	50.1	70.5	420
Western Province Rural	4.9	0.7	3.5	6.2	2,940
Northern Province Urban	48.8	6.2	36.6	61.0	240
Northern Province Rural	3.2	0.6	2.0	4.4	2,160
Eastern Province Urban	36.1	5.5	25.4	46.8	264
Eastern Province Rural	5.3	0.8	3.8	6.7	3,096
Urban/Rural					
Urban	65.1	1.9	61.4	68.9	2,526
Rural	6.0	0.5	4.9	7.0	12,054
Quintile					
Q1	1.3	0.3	0.8	1.9	2,429
Q2	3.7	0.6	2.6	4.8	2,656
Q3	8.0	0.8	6.5	9.6	2,868
Q4	13.9	1.0	11.9	15.9	3,078
Q5	47.0	1.4	44.3	49.7	3,549
District					
Nyarugenge	67.8	4.2	59.6	75.9	540
Gasabo	66.8	3.8	59.3	74.2	540
Kicukiro	71.3	3.2	65.1	77.6	540
Nyanza	5.5	2.0	1.6	9.3	480
Gisagara	3.2	1.5	0.3	6.1	480
Nyaruguru	3.6	1.0	1.6	5.5	480
Huye	11.4	3.2	5.1	17.6	480
Nyamagabe	3.2	1.4	0.4	6.0	480
Ruhango	3.1	1.6	0.0	6.1	480
Muhanga	10.2	3.6	3.3	17.2	480
Kamonyi	10.4	3.7	3.2	17.5	480
Karongi	7.4	2.3	2.9	12.0	480
Rutsiro	2.8	1.0	0.9	4.7	480
Rubavu	40.1	6.1	28.2	52.1	480
Nyabihu	11.9	3.3	5.4	18.4	480
Ngororero	3.0	1.3	0.3	5.6	480
Rusizi	12.4	3.2	6.1	18.7	480
Nyamasheke	1.8	0.6	0.5	3.0	480
Rulindo	5.6	2.1	1.5	9.6	480
Gakenke	2.3	0.7	1.0	3.7	480
Musanze	18.7	4.8	9.2	28.2	480
Burera	5.9	1.7	2.7	9.2	480
Gicumbi	3.2	1.5	0.2	6.2	480
Rwamagana	17.7	4.0	9.9	25.5	480
Nyagatare	5.5	2.1	1.3	9.7	480
Gatsibo	4.5	1.7	1.1	7.9	480
Kayanza	7.9	2.2	3.6	12.1	480
Kirehe	3.9	1.3	1.4	6.3	480
Ngoma	7.6	2.4	3.0	12.2	480
Bugesera	7.5	2.4	2.8	12.3	480

Source: EICV5.

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Annex B. 6: % of HHs using electricity distributors as primary source of lighting, EICV5

EICV5	% of HHs with using electricity distributors as primary source of lighting				Unweighted count
	Estimate	Standard error	Low	Upper	
All Rwanda	27.1	0.8	25.6	28.6	14,580
Province					
Kigali City	78.4	2.2	74.1	82.6	1,620
Southern Province	14.4	1.2	12.0	16.8	3,840
Western Province	21.6	1.5	18.7	24.6	3,360
Northern Province	18.0	1.6	14.9	21.2	2,400
Eastern Province	18.1	1.4	15.3	20.8	3,360
Province by Urban/Rural					
Kigali City Urban	88.2	2.2	84.0	92.4	1,242
Kigali City Rural	50.4	3.7	43.1	57.7	378
Southern Province Urban	52.3	4.2	44.1	60.4	360
Southern Province Rural	10.6	1.0	8.7	12.6	3,480
Western Province Urban	63.9	4.7	54.7	73.0	420
Western Province Rural	15.2	1.2	12.9	17.5	2,940
Northern Province Urban	60.7	6.6	47.8	73.7	240
Northern Province Rural	13.8	1.3	11.2	16.4	2,160
Eastern Province Urban	54.5	7.3	40.3	68.8	264
Eastern Province Rural	15.1	1.3	12.6	17.6	3,096
Urban/Rural					
Urban	75.6	1.8	72.1	79.0	2,526
Rural	15.5	0.7	14.1	16.8	12,054
Quintile					
Q1	5.1	0.5	4.1	6.1	2,429
Q2	9.8	0.7	8.4	11.3	2,656
Q3	16.3	0.9	14.5	18.1	2,868
Q4	26.0	1.1	23.9	28.1	3,078
Q5	61.9	1.2	59.6	64.3	3,549
District					
Nyarugenge	81.3	3.2	75.1	87.5	540
Gasabo	74.7	3.4	68.0	81.4	540
Kicukiro	84.4	3.1	78.3	90.5	540
Nyanza	14.3	3.6	7.2	21.3	480
Gisagara	10.3	2.5	5.4	15.2	480
Nyaruguru	9.4	2.0	5.4	13.3	480
Huye	14.0	3.2	7.7	20.3	480
Nyamagabe	8.8	2.8	3.3	14.2	480
Ruhango	19.8	3.4	13.1	26.5	480
Muhanga	19.6	4.4	11.0	28.3	480
Kamonyi	18.2	4.0	10.3	26.0	480
Karongi	13.9	4.0	6.1	21.6	480
Rutsiro	11.3	2.0	7.4	15.2	480
Rubavu	40.8	5.4	30.1	51.4	480
Nyabihu	17.0	3.5	10.1	23.9	480
Ngororero	7.0	2.1	2.9	11.1	480
Rusizi	32.2	4.4	23.6	40.9	480
Nyamasheke	22.1	3.1	15.9	28.2	480
Rulindo	15.1	2.8	9.6	20.7	480
Gakenke	11.9	2.4	7.1	16.6	480
Musanze	32.3	5.1	22.4	42.2	480
Burera	18.0	3.4	11.2	24.7	480
Gicumbi	11.9	2.8	6.4	17.4	480
Rwamagana	28.1	4.0	20.2	36.0	480
Nyagatare	15.3	3.8	7.9	22.8	480
Gatsibo	13.7	3.1	7.7	19.8	480
Kayonza	18.9	3.8	11.5	26.3	480
Kirehe	15.6	3.1	9.4	21.7	480
Ngoma	18.1	3.4	11.4	24.8	480
Bugesera	18.8	4.4	10.2	27.5	480

Source: EICV5.

Annex B. 7: % of HHs that incurred expenditure on chemical fertilizers, EICV5

EICV5	% of HHs that incurred expenditure on chemical fertilizers				Unweighted count
	Estimate	Standard error	Low	Upper	
All Rwanda	37.5	0.7	36.1	38.8	12,362
Province					
Kigali City	15.6	2.2	11.3	20.0	429
Southern Province	34.1	1.2	31.8	36.4	3,568
Western Province	54.6	1.5	51.5	57.6	3,002
Northern Province	42.1	1.5	39.1	45.1	2,255
Eastern Province	27.7	1.3	25.0	30.3	3,108
Urban/Rural					
Urban	23.6	1.9	19.9	27.3	993
Rural	38.7	0.7	37.3	40.2	11,369
Quintile					
Q1	28.5	1.1	26.3	30.8	2,274
Q2	35.8	1.1	33.6	38.0	2,496
Q3	40.8	1.1	38.7	43.0	2,661
Q4	41.0	1.2	38.7	43.2	2,754
Q5	39.8	1.3	37.4	42.3	2,177
Disrtict					
Nyarugenge	9.0	2.0	5.0	12.9	130
Gasabo	17.4	3.3	10.9	24.0	192
Kicukiro	16.4	2.9	10.6	22.1	107
Nyanza	21.1	2.2	16.7	25.4	443
Gisagara	37.5	3.0	31.6	43.3	450
Nyaruguru	70.9	2.8	65.5	76.3	451
Huye	35.3	3.2	29.0	41.6	433
Nyamagabe	48.8	4.3	40.3	57.2	463
Ruhango	18.4	3.4	11.6	25.1	461
Muhanga	34.4	4.5	25.5	43.3	422
Kamonyi	14.6	2.1	10.6	18.7	445
Karongi	52.3	4.4	43.7	60.9	445
Rutsiro	44.3	3.2	38.0	50.6	459
Rubavu	37.8	5.5	27.0	48.7	312
Nyabihu	62.6	3.5	55.8	69.4	426
Ngororero	58.8	3.4	52.1	65.6	465
Rusizi	58.0	3.8	50.5	65.5	437
Nyamasheke	64.3	4.2	56.2	72.4	458
Rulindo	34.9	3.4	28.2	41.6	449
Gakenke	69.6	3.2	63.4	75.9	473
Musanze	43.8	3.7	36.5	51.1	413
Burera	43.9	4.2	35.7	52.1	454
Gicumbi	18.2	2.6	13.1	23.3	466
Rwamagana	37.7	4.6	28.7	46.8	426
Nyagatare	16.6	3.0	10.7	22.5	440
Gatsibo	33.1	2.9	27.4	38.8	452
Kayonza	22.5	3.4	15.8	29.2	447
Kirehe	24.9	3.3	18.5	31.4	455
Ngoma	35.8	3.2	29.5	42.1	444
Bugesera	27.8	3.8	20.3	35.3	444

Source: EICV5.

Annex C: Persons who contributed to the implementation of the EICV5

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