

Exploring Kenya's Inequality

Pulling Apart or Pooling Together?

Isiolo County



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Foreword

Kenya, like all African countries, focused on poverty alleviation at independence, perhaps due to the level of vulnerability of its populations but also as a result of the 'trickle down' economic discourses of the time, which assumed that poverty rather than distribution mattered – in other words, that it was only necessary to concentrate on economic growth because, as the country grew richer, this wealth would trickle down to benefit the poorest sections of society. Inequality therefore had a very low profile in political, policy and scholarly discourses. In recent years though, social dimensions such as levels of access to education, clean water and sanitation are important in assessing people's quality of life. Being deprived of these essential services deepens poverty and reduces people's well-being. Stark differences in accessing these essential services among different groups make it difficult to reduce poverty even when economies are growing. According to the *Economist* (June 1, 2013), a 1% increase in incomes in the most unequal countries produces a mere 0.6 percent reduction in poverty. In the most equal countries, the same 1% growth yields a 4.3% reduction in poverty. Poverty and inequality are thus part of the same problem, and there is a strong case to be made for both economic growth and redistributive policies. From this perspective, Kenya's quest in vision 2030 to grow by 10% per annum must also ensure that inequality is reduced along the way and all people benefit equitably from development initiatives and resources allocated.

Since 2004, the Society for International Development (SID) and Kenya National Bureau of Statistics (KNBS) have collaborated to spearhead inequality research in Kenya. Through their initial publications such as *'Pulling Apart: Facts and Figures on Inequality in Kenya'*, which sought to present simple facts about various manifestations of inequality in Kenya, the understanding of Kenyans of the subject was deepened and a national debate on the dynamics, causes and possible responses started. The report *'Geographic Dimensions of Well-Being in Kenya: Who and Where are the Poor?'* elevated the poverty and inequality discourse further while the publication *'Readings on Inequality in Kenya: Sectoral Dynamics and Perspectives'* presented the causality, dynamics and other technical aspects of inequality.

KNBS and SID in this publication go further to present monetary measures of inequality such as expenditure patterns of groups and non-money metric measures of inequality in important livelihood parameters like employment, education, energy, housing, water and sanitation to show the levels of vulnerability and patterns of unequal access to essential social services at the national, county, constituency and ward levels.

We envisage that this work will be particularly helpful to county leaders who are tasked with the responsibility of ensuring equitable social and economic development while addressing the needs of marginalized groups and regions. We also hope that it will help in informing public engagement with the devolution process and be instrumental in formulating strategies and actions to overcome exclusion of groups or individuals from the benefits of growth and development in Kenya.

It is therefore our great pleasure to present 'Exploring Kenya's inequality: Pulling apart or pooling together?'

Ali Hersi

Society for International Development (SID)
Regional Director

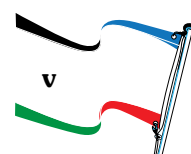


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Stefano Prato
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SID



Striking Features on Intra-County Inequality in Kenya

Inequalities within counties in all the variables are extreme. In many cases, Kenyans living within a single county have completely different lifestyles and access to services.

Income/expenditure inequalities

1. The five counties with the worst income inequality (measured as a ratio of the top to the bottom decile) are in Coast. The ratio of expenditure by the wealthiest to the poorest is 20 to one and above in Lamu, Tana River, Kwale, and Kilifi. This means that those in the top decile have 20 times as much expenditure as those in the bottom decile. This is compared to an average for the whole country of nine to one.
2. Another way to look at income inequality is to compare the mean expenditure per adult across wards within a county. In 44 of the 47 counties, the mean expenditure in the poorest wards is less than 40 percent the mean expenditure in the wealthiest wards within the county. In both Kilifi and Kwale, the mean expenditure in the poorest wards (Garashi and Ndavaya, respectively) is less than 13 percent of expenditure in the wealthiest ward in the county.
3. Of the five poorest counties in terms of mean expenditure, four are in the North (Mandera, Wajir, Turkana and Marsabit) and the last is in Coast (Tana River). However, of the five most unequal counties, only one (Marsabit County) is in the North (looking at ratio of mean expenditure in richest to poorest ward). The other four most unequal counties by this measure are: Kilifi, Kwale, Kajiado and Kitui.
4. If we look at Gini coefficients for the whole county, the most unequal counties are also in Coast: Tana River (.631), Kwale (.604), and Kilifi (.570).
5. The most equal counties by income measure (ratio of top decile to bottom) are: Narok, West Pokot, Bomet, Nandi and Nairobi. Using the ratio of average income in top to bottom ward, the five most equal counties are: Kirinyaga, Samburu, Siaya, Nyandarua, Narok.

Access to Education

6. Major urban areas in Kenya have high education levels but very large disparities. Mombasa, Nairobi and Kisumu all have gaps between highest and lowest wards of nearly 50 percentage points in share of residents with secondary school education or higher levels.
7. In the 5 most rural counties (Baringo, Siaya, Pokot, Narok and Tharaka Nithi), education levels are lower but the gap, while still large, is somewhat lower than that espoused in urban areas. On average, the gap in these 5 counties between wards with highest share of residents with secondary school or higher and those with the lowest share is about 26 percentage points.
8. The most extreme difference in secondary school education and above is in Kajiado County where the top ward (Ongata Rongai) has nearly 59 percent of the population with secondary education plus, while the bottom ward (Mosiro) has only 2 percent.
9. One way to think about inequality in education is to compare the number of people with no education



to those with some education. A more unequal county is one that has large numbers of both. Isiolo is the most unequal county in Kenya by this measure, with 51 percent of the population having no education, and 49 percent with some. This is followed by West Pokot at 55 percent with no education and 45 percent with some, and Tana River at 56 percent with no education and 44 with some.

Access to Improved Sanitation

10. Kajiado County has the highest gap between wards with access to improved sanitation. The best performing ward (Ongata Rongai) has 89 percent of residents with access to improved sanitation while the worst performing ward (Mosiro) has 2 percent of residents with access to improved sanitation, a gap of nearly 87 percentage points.
11. There are 9 counties where the gap in access to improved sanitation between the best and worst performing wards is over 80 percentage points. These are Baringo, Garissa, Kajiado, Kericho, Kilifi, Machakos, Marsabit, Nyandarua and West Pokot.

Access to Improved Sources of Water

12. In all of the 47 counties, the highest gap in access to improved water sources between the county with the best access to improved water sources and the least is over 45 percentage points. The most severe gaps are in Mandera, Garissa, Marsabit, (over 99 percentage points), Kilifi (over 98 percentage points) and Wajir (over 97 percentage points).

Access to Improved Sources of Lighting

13. The gaps within counties in access to electricity for lighting are also enormous. In most counties (29 out of 47), the gap between the ward with the most access to electricity and the least access is more than 40 percentage points. The most severe disparities between wards are in Mombasa (95 percentage point gap between highest and lowest ward), Garissa (92 percentage points), and Nakuru (89 percentage points).

Access to Improved Housing

14. The highest extreme in this variable is found in Baringo County where all residents in Silale ward live in grass huts while no one in Ravine ward in the same county lives in grass huts.

Overall ranking of the variables

15. Overall, the counties with the most income inequalities as measured by the gini coefficient are Tana River, Kwale, Kilifi, Lamu, Migori and Busia. However, the counties that are consistently mentioned among the most deprived hence have the lowest access to essential services compared to others across the following nine variables i.e. poverty, mean household expenditure, education, work for pay, water, sanitation, cooking fuel, access to electricity and improved housing are Mandera (8 variables), Wajir (8 variables), Turkana (7 variables) and Marsabit (7 variables).

Abbreviations

AMADPOC	African Migration and Development Policy Centre
CRA	Commission on Revenue Allocation
DANIDA	Danish International Development Agency
DAP	Drivers of Accountability Programme
EAs	Enumeration Areas
HDI	Human Development Index
IBP	International Budget Partnership
IEA	Institute of Economic Affairs
IPAR	Institute of Policy Analysis and Research
KIHBS	Kenya Intergraded Household Budget Survey
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
LPG	Liquefied Petroleum Gas
NCIC	National Cohesion and Integration Commission
NTA	National Taxpayers Association
PCA	Principal Component Analysis
SAEs	Small Area Estimation
SID	Society for International Development
TISA	The Institute for Social Accountability
VIP latrine	Ventilated-Improved Pit latrine
VOCs	Volatile Organic Carbons
WDR	World Development Report

Introduction

Background

For more than half a century many people in the development sector in Kenya have worked at alleviating extreme poverty so that the poorest people can access basic goods and services for survival like food, safe drinking water, sanitation, shelter and education. However when the current national averages are disaggregated there are individuals and groups that still lag too behind. As a result, the gap between the rich and the poor, urban and rural areas, among ethnic groups or between genders reveal huge disparities between those who are well endowed and those who are deprived.

According to the world inequality statistics, Kenya was ranked 103 out of 169 countries making it the 66th most unequal country in the world. Kenya's Inequality is rooted in its history, politics, economics and social organization and manifests itself in the lack of access to services, resources, power, voice and agency. Inequality continues to be driven by various factors such as: social norms, behaviours and practices that fuel discrimination and obstruct access at the local level and/ or at the larger societal level; the fact that services are not reaching those who are most in need of them due to intentional or unintentional barriers; the governance, accountability, policy or legislative issues that do not favor equal opportunities for the disadvantaged; and economic forces i.e. the unequal control of productive assets by the different socio-economic groups.

According to the 2005 report on the World Social Situation, sustained poverty reduction cannot be achieved unless equality of opportunity and access to basic services is ensured. Reducing inequality must therefore be explicitly incorporated in policies and programmes aimed at poverty reduction. In addition, specific interventions may be required, such as: affirmative action; targeted public investments in underserved areas and sectors; access to resources that are not conditional; and a conscious effort to ensure that policies and programmes implemented have to provide equitable opportunities for all.

This chapter presents the basic concepts on inequality and poverty, methods used for analysis, justification and choice of variables on inequality. The analysis is based on the 2009 Kenya housing and population census while the 2006 Kenya integrated household budget survey is combined with census to estimate poverty and inequality measures from the national to the ward level. Tabulation of both money metric measures of inequality such as mean expenditure and non-money metric measures of inequality in important livelihood parameters like, employment, education, energy, housing, water and sanitation are presented. These variables were selected from the census data and analyzed in detail and form the core of the inequality reports. Other variables such as migration or health indicators like mortality, fertility etc. are analyzed and presented in several monographs by Kenya National Bureau of Statistics and were therefore left out of this report.

Methodology

Gini-coefficient of inequality

This is the most commonly used measure of inequality. The coefficient varies between '0', which reflects complete equality and '1' which indicates complete inequality. Graphically, the Gini coefficient can be



easily represented by the area between the Lorenz curve and the line of equality. On the figure below, the Lorenz curve maps the cumulative income share on the vertical axis against the distribution of the population on the horizontal axis. The Gini coefficient is calculated as the area (A) divided by the sum of areas (A and B) i.e. $A/(A+B)$. If $A=0$ the Gini coefficient becomes 0 which means perfect equality, whereas if $B=0$ the Gini coefficient becomes 1 which means complete inequality. Let x_i be a point on the X-axis, and y_i a point on the Y-axis, the Gini coefficient formula is:

$$Gini = 1 - \sum_{i=1}^N (x_i - x_{i-1})(y_i + y_{i-1}).$$

An Illustration of the Lorenz Curve



Small Area Estimation (SAE)

The small area problem essentially concerns obtaining reliable estimates of quantities of interest — totals or means of study variables, for example — for geographical regions, when the regional sample sizes are small in the survey data set. In the context of small area estimation, an area or domain becomes small when its sample size is too small for direct estimation of adequate precision. If the regional estimates are to be obtained by the traditional direct survey estimators, based only on the sample data from the area of interest itself, small sample sizes lead to undesirably large standard errors for them. For instance, due to their low precision the estimates might not satisfy the generally accepted publishing criteria in official statistics. It may even happen that there are no sample members at all from some areas, making the direct estimation impossible. All this gives rise to the need of special small area estimation methodology.

Most of KNBS surveys were designed to provide statistically reliable, design-based estimates only at the national, provincial and district levels such as the Kenya Intergraded Household Budget Survey of 2005/06 (KIHBS). The sheer practical difficulties and cost of implementing and conducting sample surveys that would provide reliable estimates at levels finer than the district were generally prohibitive, both in terms of the increased sample size required and in terms of the added burden on providers of survey data (respondents). However through SAE and using the census and other survey datasets, accurate small area poverty estimates for 2009 for all the counties are obtainable.

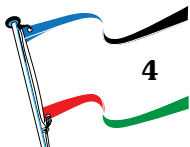
The sample in the 2005/06 KIHBS, which was a representative subset of the population, collected detailed information regarding consumption expenditures. The survey gives poverty estimate of urban and rural poverty at the national level, the provincial level and, albeit with less precision, at the district level. However, the sample sizes of such household surveys preclude estimation of meaningful poverty measures for smaller areas such as divisions, locations or wards. Data collected through censuses are sufficiently large to provide representative measurements below the district level such as divisions, locations and sub-locations. However, this data does not contain the detailed information on consumption expenditures required to estimate poverty indicators. In small area estimation methodology, the first step of the analysis involves exploring the relationship between a set of characteristics of households and the welfare level of the same households, which has detailed information about household expenditure and consumption. A regression equation is then estimated to explain daily per capita consumption and expenditure of a household using a number of socio-economic variables such as household size, education levels, housing characteristics and access to basic services.

While the census does not contain household expenditure data, it does contain these socio-economic variables. Therefore, it will be possible to statistically impute household expenditures for the census households by applying the socio-economic variables from the census data on the estimated relationship based on the survey data. This will give estimates of the welfare level of all households in the census, which in turn allows for estimation of the proportion of households that are poor and other poverty measures for relatively small geographic areas. To determine how many people are poor in each area, the study would then utilize the 2005/06 monetary poverty lines for rural and urban households respectively. In terms of actual process, the following steps were undertaken:

Cluster Matching: Matching of the KIHBS clusters, which were created using the 1999 Population and Housing Census Enumeration Areas (EA) to 2009 Population and Housing Census EAs. The purpose was to trace the KIBHS 2005/06 clusters to the 2009 Enumeration Areas.

Zero Stage: The first step of the analysis involved finding out comparable variables from the survey (Kenya Integrated Household Budget 2005/06) and the census (Kenya 2009 Population and Housing Census). This required the use of the survey and census questionnaires as well as their manuals.

First Stage (Consumption Model): This stage involved the use of regression analysis to explore the relationship between an agreed set of characteristics in the household and the consumption levels of the same households from the survey data. The regression equation was then used to estimate and explain daily per capita consumption and expenditure of households using socio-economic variables



such as household size, education levels, housing characteristics and access to basic services, and other auxiliary variables. While the census did not contain household expenditure data, it did contain these socio-economic variables.

Second Stage (Simulation): Analysis at this stage involved statistical imputation of household expenditures for the census households, by applying the socio-economic variables from the census data on the estimated relationship based on the survey data.

Identification of poor households Principal Component Analysis (PCA)

In order to attain the objective of the poverty targeting in this study, the household needed to be established. There are three principal indicators of welfare; household income; household consumption expenditures; and household wealth. Household income is the theoretical indicator of choice of welfare/economic status. However, it is extremely difficult to measure accurately due to the fact that many people do not remember all the sources of their income or better still would not want to divulge this information. Measuring consumption expenditures has many drawbacks such as the fact that household consumption expenditures typically are obtained from recall method usually for a period of not more than four weeks. In all cases a well planned and large scale survey is needed, which is time consuming and costly to collect. The estimation of wealth is a difficult concept due to both the quantitative as well as the qualitative aspects of it. It can also be difficult to compute especially when wealth is looked at as both tangible and intangible.

Given that the three main indicators of welfare cannot be determined in a shorter time, an alternative method that is quick is needed. The alternative approach then in measuring welfare is generally through the asset index. In measuring the asset index, multivariate statistical procedures such the factor analysis, discriminate analysis, cluster analysis or the principal component analysis methods are used. Principal components analysis transforms the original set of variables into a smaller set of linear combinations that account for most of the variance in the original set. The purpose of PCA is to determine factors (i.e., principal components) in order to explain as much of the total variation in the data as possible.

In this project the principal component analysis was utilized in order to generate the asset (wealth) index for each household in the study area. The PCA can be used as an exploratory tool to investigate patterns in the data; in identify natural groupings of the population for further analysis and; to reduce several dimensionalities in the number of known dimensions. In generating this index information from the datasets such as the tenure status of main dwelling units; roof, wall, and floor materials of main dwelling; main source of water; means of human waste disposal; cooking and lighting fuels; household items such radio TV, fridge etc was required. The recent available dataset that contains this information for the project area is the Kenya Population and Housing Census 2009.

There are four main approaches to handling multivariate data for the construction of the asset index in surveys and censuses. The first three may be regarded as exploratory techniques leading to index construction. These are graphical procedures and summary measures. The two popular multivariate procedures - cluster analysis and principal component analysis (PCA) - are two of the key procedures that have a useful preliminary role to play in index construction and lastly regression modeling approach.

In the recent past there has been an increasing routine application of PCA to asset data in creating welfare indices (Gwatkin et al. 2000, Filmer and Pritchett 2001 and McKenzie 2003).

Concepts and definitions

Inequality

Inequality is characterized by the existence of unequal opportunities or life chances and unequal conditions such as incomes, goods and services. Inequality, usually structured and recurrent, results into an unfair or unjust gap between individuals, groups or households relative to others within a population. There are several methods of measuring inequality. In this study, we consider among other methods, the Gini-coefficient, the difference in expenditure shares and access to important basic services.

Equality and Equity

Although the two terms are sometimes used interchangeably, they are different concepts. Equality requires all to have same/ equal resources, while equity requires all to have the same opportunity to access same resources, survive, develop, and reach their full potential, without discrimination, bias, or favoritism. Equity also accepts differences that are earned fairly.

Poverty

The poverty line is a threshold below which people are deemed poor. Statistics summarizing the bottom of the consumption distribution (i.e. those that fall below the poverty line) are therefore provided. In 2005/06, the poverty line was estimated at Ksh1,562 and Ksh2,913 per adult equivalent¹ per month for rural and urban households respectively. Nationally, 45.2 percent of the population lives below the poverty line (2009 estimates) down from 46 percent in 2005/06.

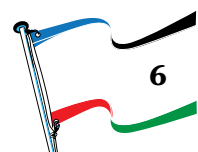
Spatial Dimensions

The reason poverty can be considered a spatial issue is two-fold. People of a similar socio-economic background tend to live in the same areas because the amount of money a person makes usually, but not always, influences their decision as to where to purchase or rent a home. At the same time, the area in which a person is born or lives can determine the level of access to opportunities like education and employment because income and education can influence settlement patterns and also be influenced by settlement patterns. They can therefore be considered causes and effects of spatial inequality and poverty.

Employment

Access to jobs is essential for overcoming inequality and reducing poverty. People who cannot access productive work are unable to generate an income sufficient to cover their basic needs and those of their families, or to accumulate savings to protect their households from the vicissitudes of the economy.

¹This is basically the idea that every person needs different levels of consumption because of their age, gender, height, weight, etc. and therefore we take this into account to create an adult equivalent based on the average needs of the different populations



The unemployed are therefore among the most vulnerable in society and are prone to poverty. Levels and patterns of employment and wages are also significant in determining degrees of poverty and inequality. Macroeconomic policy needs to emphasize the need for increasing regular good quality 'work for pay' that is covered by basic labour protection. The population and housing census 2009 included questions on labour and employment for the population aged 15-64.

The census, not being a labour survey, only had few categories of occupation which included work for pay, family business, family agricultural holdings, intern/volunteer, retired/home maker, full time student, incapacitated and no work. The tabulation was nested with education- for none, primary and secondary level.

Education

Education is typically seen as a means of improving people's welfare. Studies indicate that inequality declines as the average level of educational attainment increases, with secondary education producing the greatest payoff, especially for women (Cornia and Court, 2001). There is considerable evidence that even in settings where people are deprived of other essential services like sanitation or clean water, children of educated mothers have much better prospects of survival than do the children of uneducated mothers. Education is therefore typically viewed as a powerful factor in leveling the field of opportunity as it provides individuals with the capacity to obtain a higher income and standard of living. By learning to read and write and acquiring technical or professional skills, people increase their chances of obtaining decent, better-paying jobs. Education however can also represent a medium through which the worst forms of social stratification and segmentation are created. Inequalities in quality and access to education often translate into differentials in employment, occupation, income, residence and social class. These disparities are prevalent and tend to be determined by socio-economic and family background. Because such disparities are typically transmitted from generation to generation, access to educational and employment opportunities are to a certain degree inherited, with segments of the population systematically suffering exclusion. The importance of equal access to a well-functioning education system, particularly in relation to reducing inequalities, cannot be overemphasized.

Water

According to UNICEF (2008), over 1.1 billion people lack access to an improved water source and over three million people, mostly children, die annually from water-related diseases. Water quality refers to the basic and physical characteristics of water that determines its suitability for life or for human uses. The quality of water has tremendous effects on human health both in the short term and in the long term. As indicated in this report, slightly over half of Kenya's population has access to improved sources of water.

Sanitation

Sanitation refers to the principles and practices relating to the collection, removal or disposal of human excreta, household waste, water and refuse as they impact upon people and the environment. Decent sanitation includes appropriate hygiene awareness and behavior as well as acceptable, affordable and

sustainable sanitation services which is crucial for the health and wellbeing of people. Lack of access to safe human waste disposal facilities leads to higher costs to the community through pollution of rivers, ground water and higher incidence of air and water borne diseases. Other costs include reduced incomes as a result of disease and lower educational outcomes.

Nationally, 61 percent of the population has access to improved methods of waste disposal. A sizeable population i.e. 39 percent of the population is disadvantaged. Investments made in the provision of safe water supplies need to be commensurate with investments in safe waste disposal and hygiene promotion to have significant impact.

Housing Conditions (Roof, Wall and Floor)

Housing conditions are an indicator of the degree to which people live in humane conditions. Materials used in the construction of the floor, roof and wall materials of a dwelling unit are also indicative of the extent to which they protect occupants from the elements and other environmental hazards. Housing conditions have implications for provision of other services such as connections to water supply, electricity, and waste disposal. They also determine the safety, health and well being of the occupants. Low provision of these essential services leads to higher incidence of diseases, fewer opportunities for business services and lack of a conducive environment for learning. It is important to note that availability of materials, costs, weather and cultural conditions have a major influence on the type of materials used.

Energy fuel for cooking and lighting

Lack of access to clean sources of energy is a major impediment to development through health related complications such as increased respiratory infections and air pollution. The type of cooking fuel or lighting fuel used by households is related to the socio-economic status of households. High level energy sources are cleaner but cost more and are used by households with higher levels of income compared with primitive sources of fuel like firewood which are mainly used by households with a lower socio-economic profile. Globally about 2.5 billion people rely on biomass such as fuel-wood, charcoal, agricultural waste and animal dung to meet their energy needs for cooking.

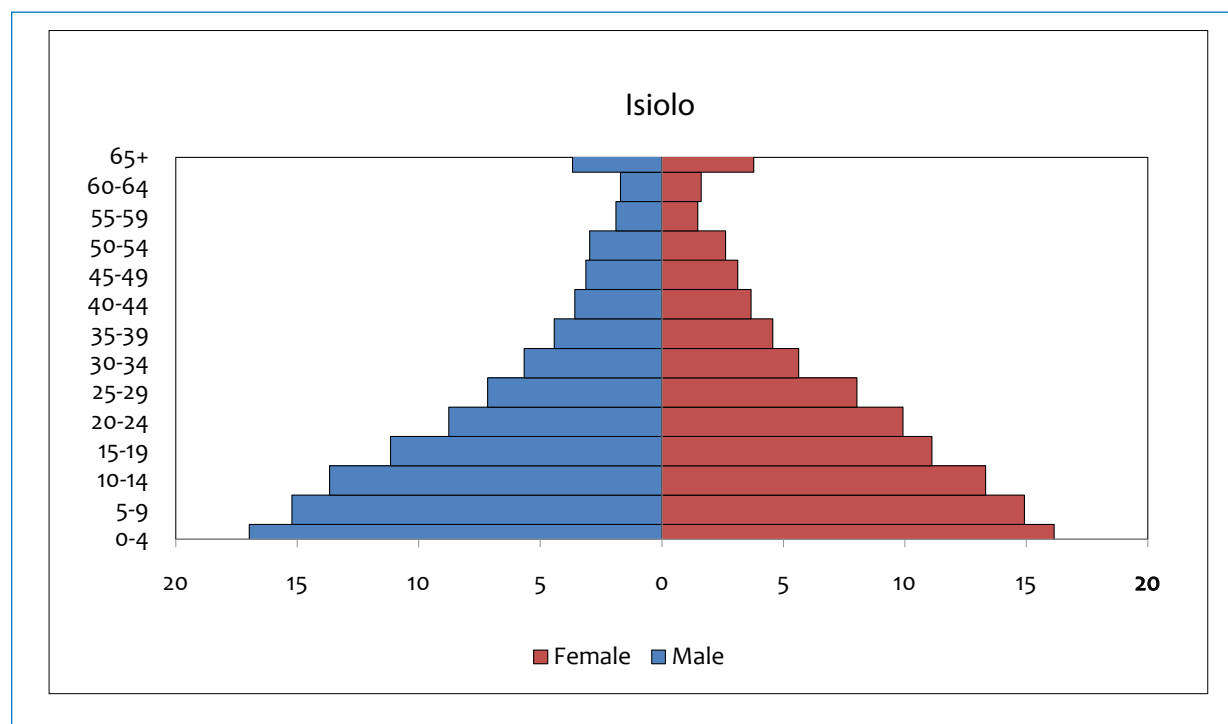


Isiolo County



ISIOLO COUNTY

Figure 9.1: Isiolo Population Pyramid



Population

Isiolo County has a child rich population, where 0-14 year olds constitute 45% of the total population. This is due to high fertility rates among women as shown by the highest percentage size of 4-6 members at 40%.

Employment

The 2009 population and housing census covered in brief the labour status as tabulated below. The main variable of interest for inequality discussed in the text is work for pay by level of education. The other variables, notably family business, family agricultural holdings, intern/volunteer, retired/homemaker, fulltime student, incapacitated and no work are tabulated and presented in the annex table 9.3 up to ward level.

Table 9: Overall Employment by Education Levels in Isiolo County

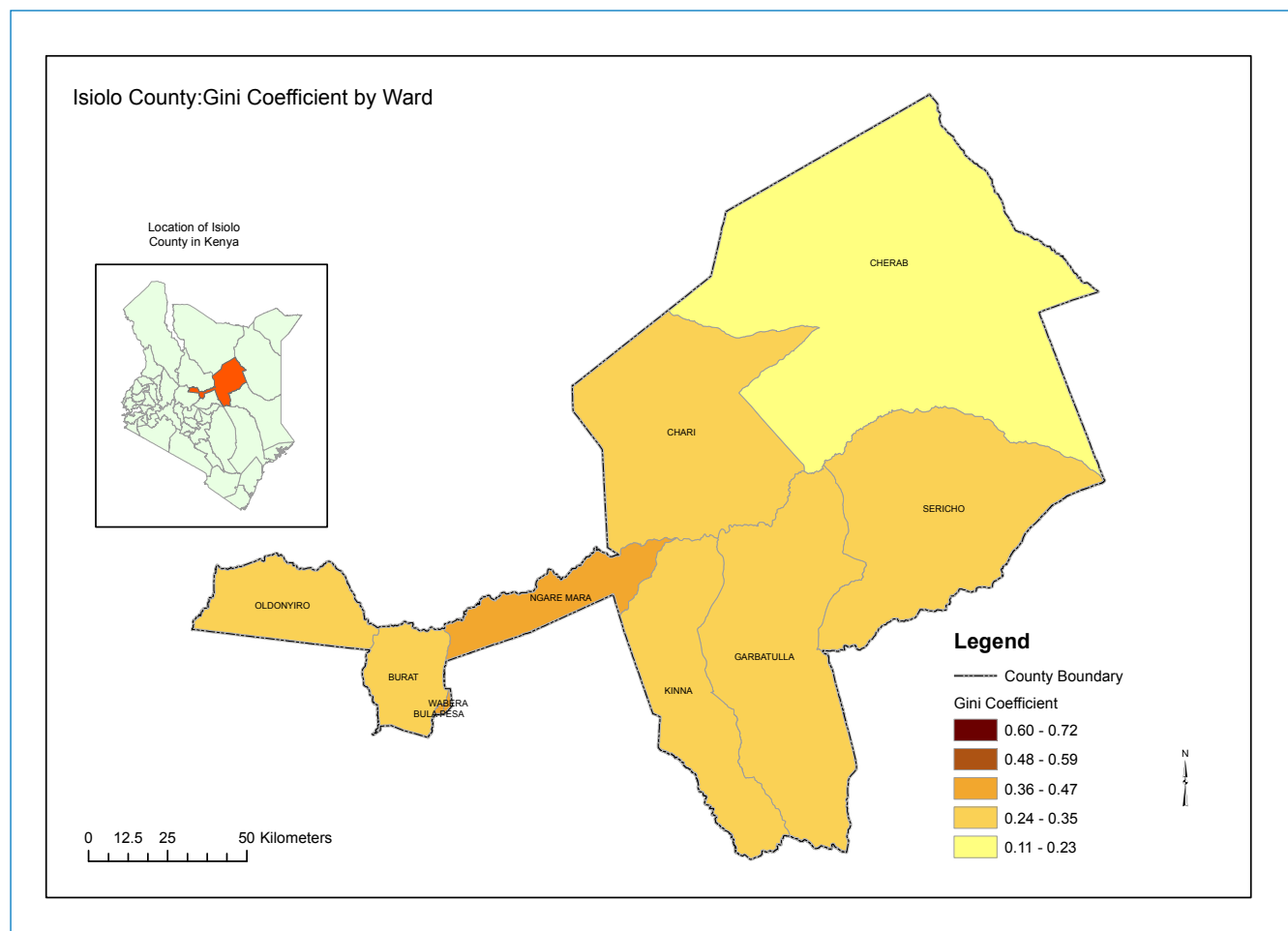
Education Level	Work for pay	Family Business	Family Agricultural Holding	Intern/Volunteer	Retired/ Home-maker	Fulltime Student	Incapacitated	No work	Number of Individuals
Total	16.6	16.3	33.0	1.0	12.0	10.7	0.5	10.0	71,260
None	7.3	17.2	50.4	0.8	15.8	0.2	0.7	7.5	34,723
Primary	16.8	16.9	22.4	1.1	10.7	19.0	0.3	12.8	20,740
Secondary+	36.5	13.8	8.7	1.3	5.1	22.9	0.1	11.7	15,797

In Isiolo County, 7% of the residents with no formal education, 17% of those with a primary level of education and 37% of those with a secondary level of education or above are working for pay. Work for pay is highest in Nairobi at 49%; this is 12 percentage points above the level in Isiolo for those with a secondary level of education or above.

Gini Coefficient

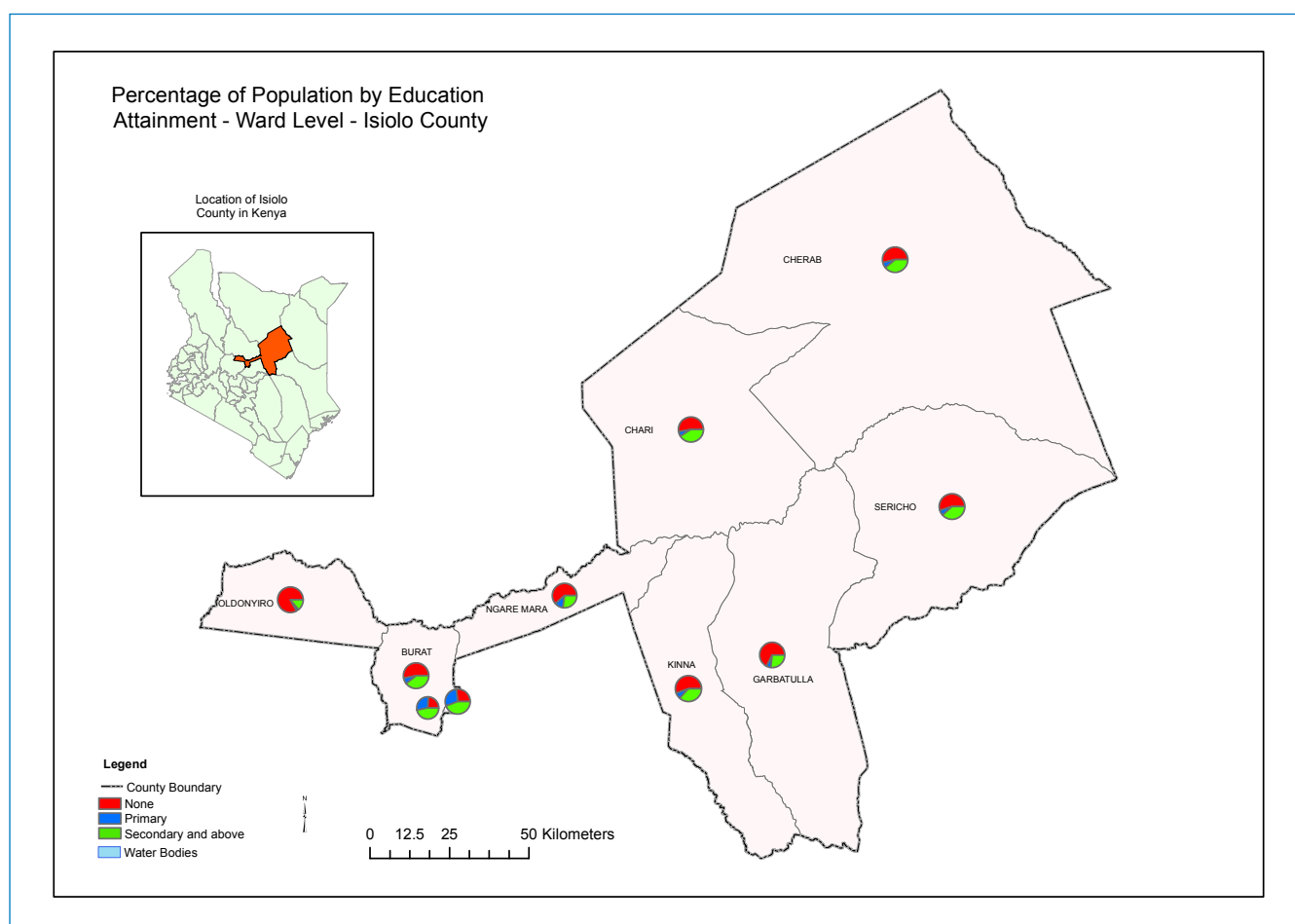
In this report, the Gini index measures the extent to which the distribution of consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of '0' represents perfect equality, while an index of '1' implies perfect inequality. Isiolo County's Gini index is 0.431 compared with Turkana County, which has the least inequality nationally (0.283).

Figure 9.2: Isiolo County-Gini Coefficient by Ward



Education

Figure 9.3: Isiolo County-Percentage of Population by Education attainment by Ward



Only 13% of Isiolo County residents have a secondary level of education or above. Isiolo North constituency has the highest share of residents with a secondary level of education or above at 16%. This is twice Isiolo South constituency, which has the lowest share of residents with a secondary level of education or above. Isiolo North constituency is 3 percentage points above the county average. Two wards, Wabera and Bula Pesa, have the highest share of residents with a secondary level of education or above at 29% each. This is almost 10 times Oldonyiro ward, which has the lowest share of residents with a secondary level of education or above. Wabera and Bula Pesa are 16 percentage points above the county average.

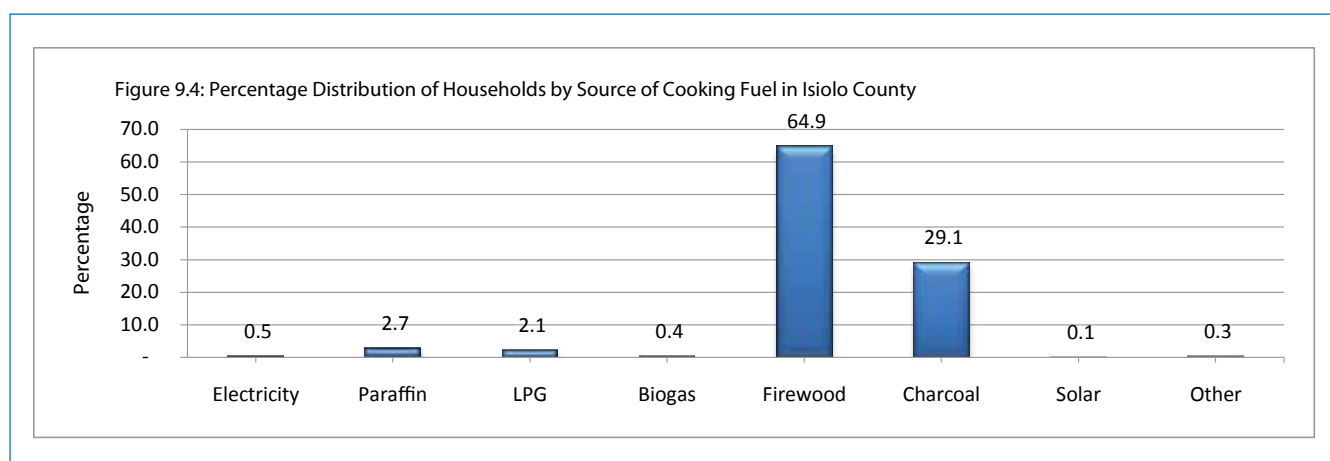
A total of 36% of Isiolo County residents have a primary level of education only. Isiolo North constituency has the highest share of residents with a primary level of education only at 37%. This is 4 percentage points above Isiolo South constituency, which has the lowest share of residents with a primary level of education only. Isiolo North constituency is 1 percentage point above the county average. Bula Pesa ward has the highest share of residents with a primary level of education at 47%. This is three times Oldonyiro ward, which has the lowest share of residents with primary only. Bula Pesa ward is 11 percentage points above the county average.

A total of 51% of Isiolo county residents have no formal education. Isiolo South constituency has the highest share of residents with no formal education at 60%. This is 13 percentage points above Isiolo North constituency, which has the lowest share of residents with no formal education. Isiolo South constituency is 9 percentage points above the county average. Oldonyiro ward has the highest percentage of residents with no formal education at 83%. This is almost four times Bula Pesa ward, which has the lowest percentage of residents with no formal education. Oldonyiro ward is 32 percentage points above the county average.

Energy

Cooking Fuel

Figure 9.4: Percentage Distribution of Households by Source of Cooking Fuel in Isiolo County



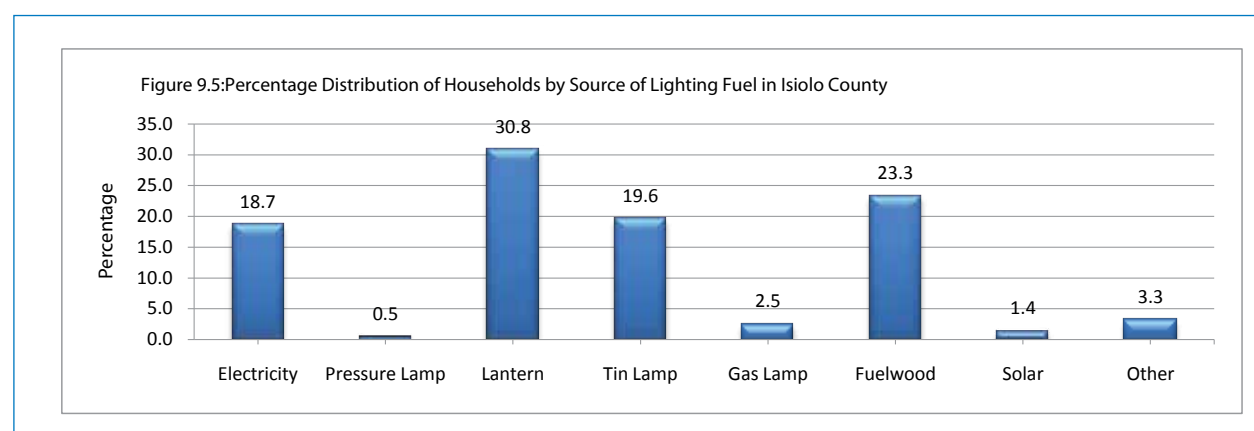
Only 2% of residents in Isiolo County use liquefied petroleum gas (LPG), while 3% use paraffin, 65% use firewood and 29% use charcoal. Firewood is the most common cooking fuel by gender with 63% of male headed households and 67% of female headed households using it.

Isiolo South constituency has the highest level of firewood use in Isiolo County at 94%. This is 40 percentage points above Isiolo North constituency, which has the lowest share at 54%. Isiolo South constituency is about 29 percentage points above the county average. Chari ward has the highest level of firewood use in Isiolo County at 98%. This is eight times Bula Pesa ward, which has the lowest share at 12%. Chari ward is 33 percentage points above the county average.

Isiolo North constituency has the highest level of charcoal use in Isiolo County at 39%. This is almost eight times Isiolo South constituency, which has the lowest share at 5%. Isiolo North constituency is about 10 percentage points above the county average. Bula Pesa ward has the highest level of charcoal use in Isiolo County at 74%. This is 72 percentage points more than Chari ward, which has the lowest share at 2%. Bula Pesa ward is 45 percentage points above the county average.

Lighting

Figure 9.5: Percentage Distribution of Households by Source of Lighting Fuel in Isiolo County



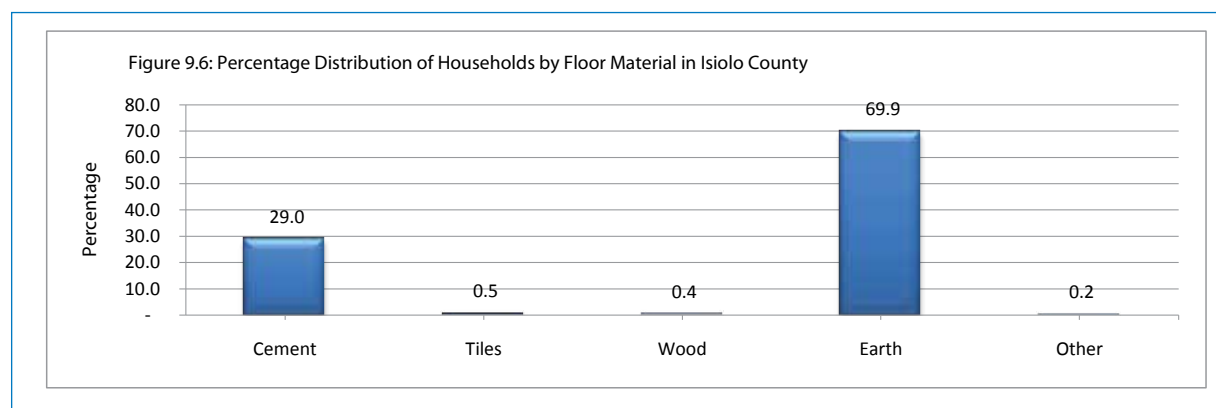
A total of 19% of residents in Isiolo County use electricity as their main source of lighting. A further 31% use lanterns, 20% use tin lamps, and 23% use fuel wood. Electricity use is more common in male headed households at 20% as compared with female headed households at 16%.

Isiolo North constituency has the highest level of electricity use at 26%. This is 25 percentage points above Isiolo South constituency, which has the lowest level of electricity use. Isiolo North is 7 percentage points above the county average. Wabera ward has the highest level of electricity use at 54%. That is 54 percentage points above Chari ward, which has the lowest level of electricity use. Wabera ward is 35 percentage points above the county average.

Housing

Flooring

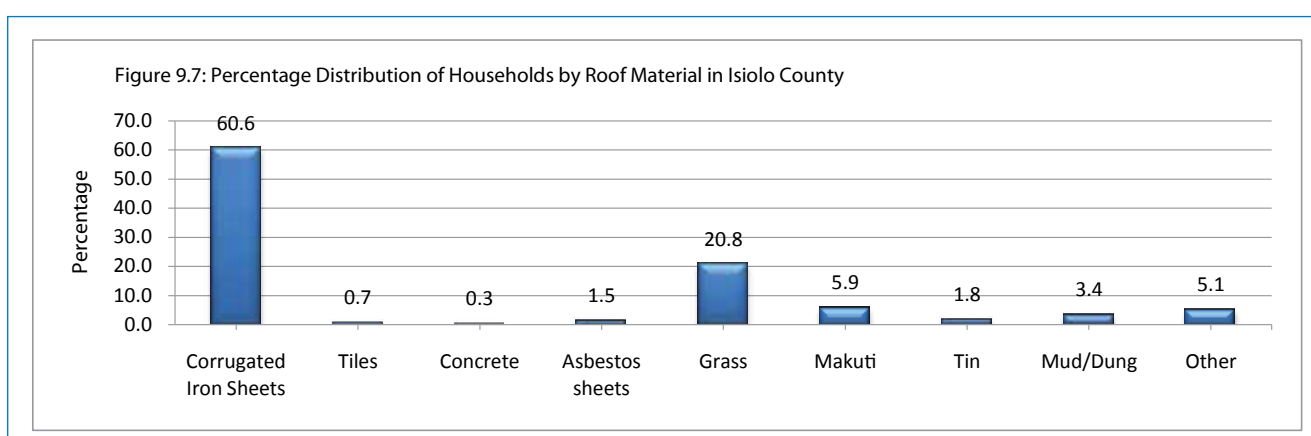
Figure 9.6: Percentage Distribution of Households by Floor Material in Isiolo County



In Isiolo County, 29% of residents have homes with cement floors, while 70% have earth floors. Less than 1% has wood and just 1% has tile floors. Isiolo North constituency has the highest share of cement floors at 38%. This is six times Isiolo South constituency, which has the lowest share of cement floors. Isiolo North constituency is 9 percentage points above the county average. Bula Pesa ward has the highest share of cement floors at 74%. This is 73 percentage points above Chari ward, which has the lowest share of cement floors. Bula Pesa ward is 45 percentage points above the county average.

Roofing

Figure 9.7: Percentage Distribution of Households by Roof Material in Isiolo County



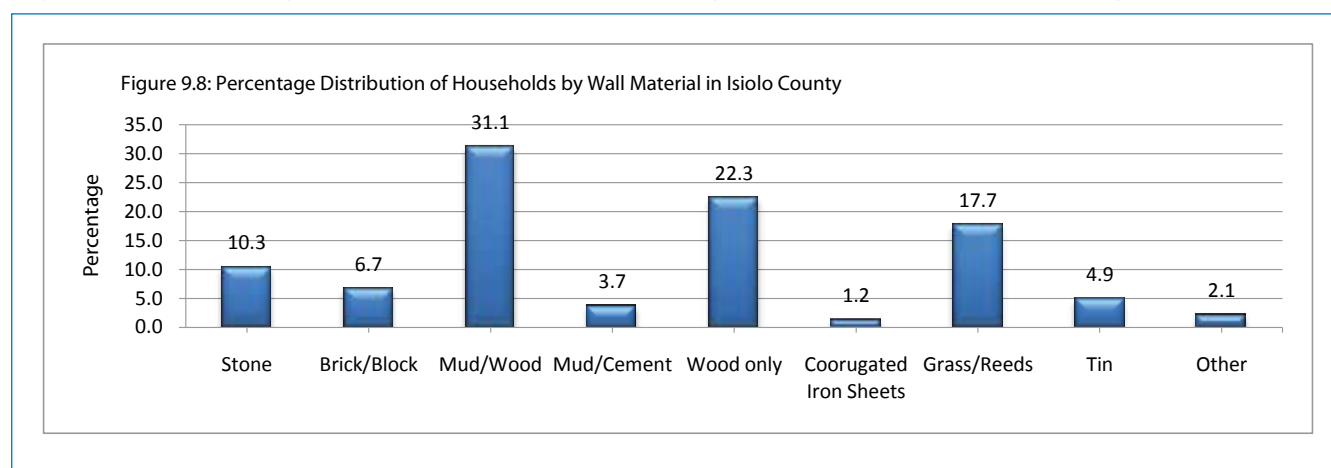
In Isiolo County, less than 1% of residents have homes with concrete roofs, while 61% has corrugated iron roofs. Grass and makuti roofs cover 27% of homes, and 3% have mud/dung roofs.

Isiolo North constituency has the highest share of corrugated iron sheet roofs at 66%. This is 20 percentage points above Isiolo South constituency, which has the lowest share of corrugated iron sheet roofs. Isiolo North is 5 percentage points above the county average. Bula Pesa ward has the highest share of corrugated iron sheet roofs at 96%. This is almost 11 times Oldonyiro ward, which has the lowest share of corrugated iron sheet roofs. Bula Pesa ward is 35 percentage points above the county average.

Isiolo South constituency has the highest share of grass/makuti roofs at 52%. That is three times Isiolo North constituency, which has the lowest share of grass/makuti roofs. Isiolo South constituency is 25 percentage points above the county average. Garbatula ward has the highest share of grass/makuti roofs at 63%. This is 63 percentage points above Bula Pesa ward, which has the lowest share. Garbatula ward is 36 percentage points above the county average.

Walls

Figure 9.8: Percentage Distribution of Households by Wall Material in Isiolo County



In Isiolo County, 17% of homes have either brick or stone walls, 35% have mud/wood or mud/cement walls, 22% have wood walls and 1% has corrugated iron walls. Another 18% have grass/thatched walls, while 7% have tin or other walls.

Isiolo North constituency has the highest share of brick/stone walls at 23%. That is seven times Isiolo South constituency, which has the lowest share of brick/stone walls. Isiolo North constituency is 6 percentage points above the county average. Bula Pesa ward has the highest share of brick/stone walls at 44%. This is 43 percentage points above Chari ward, which has the lowest share of brick/stone walls. Bula Pesa ward is 27 percentage points above the county average.

Isiolo South constituency has the highest share of mud with wood/cement walls at 47%. This is 17 percentage points above Isiolo North constituency, which has the lowest share of mud with wood/cement. Isiolo South constituency is 12 percentage points above the county average. Sericho ward has the highest share of mud with wood/cement walls at 66%. That is almost 17 times Wabera ward, which has the lowest share of mud with wood/cement walls. Sericho ward is 31 percentage points above the county average.

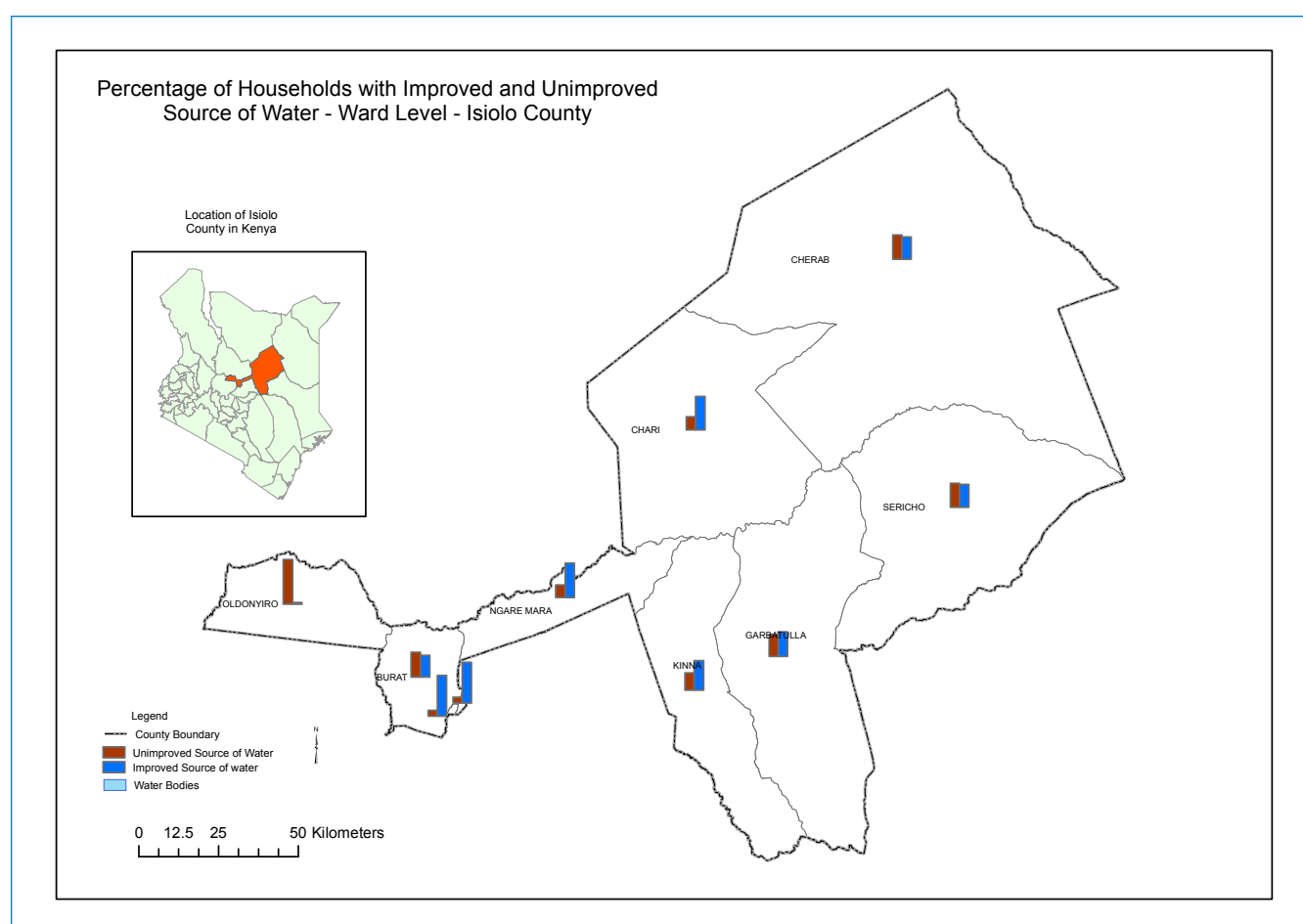
Water

Improved sources of water comprise protected spring, protected well, borehole, piped into dwelling, piped and rain water collection while unimproved sources include pond, dam, lake, stream/river, unprotected spring, unprotected well, jabia, water vendor and others.

In Isiolo County, 59% of residents use improved sources of water, with the rest relying on unimproved sources. There is no significant gender differential in use of improved sources with male headed households at 59% in comparison with 60% in female headed households.

Isiolo North constituency has the highest share of residents using improved sources of water at 60%. This is 2 percentage points above Isiolo South constituency, which has the lowest share of residents using improved sources of water. Isiolo North constituency is 1 percentage point above the county average. Wabera ward has the highest share of residents using improved sources of water at 88% each. This is 18 times Oldonyiro ward, which has the lowest share using improved sources of water. Wabera ward is 29 percentage points above the county average.

Figure 9.9: Isiolo County-Percentage of Households with Improved and Unimproved Sources of Water by Ward

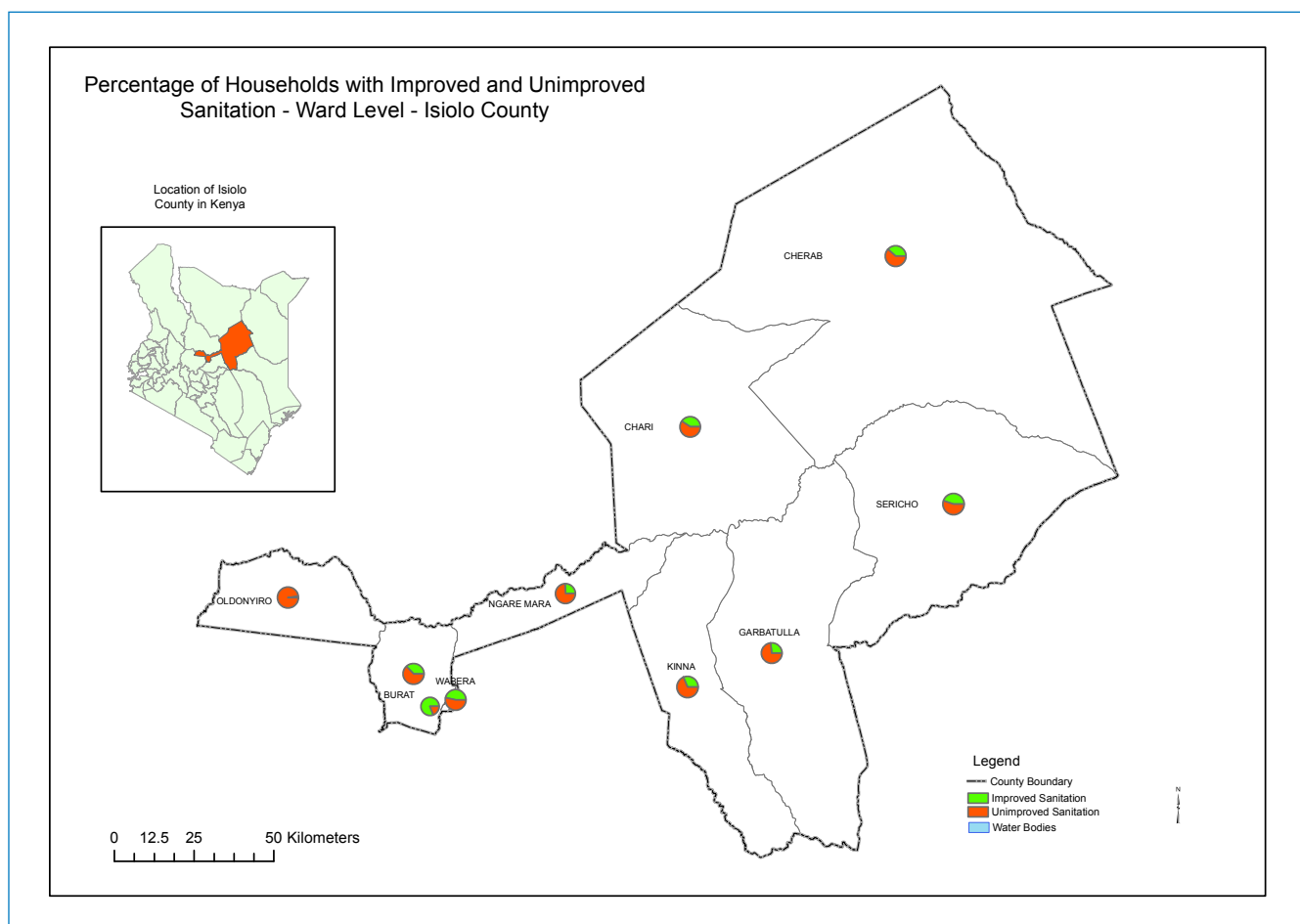


Sanitation

While 40% of residents in Isiolo county use improved sanitation, the rest use unimproved sanitation. There is no significant gender differential as 40% of male headed households and 41% of female headed households use improved sanitation.

Isiolo North constituency has the highest share of residents using improved sanitation at 43%. This is 9 percentage points above Isiolo South constituency, which has the lowest share of residents using improved sanitation. Isiolo North constituency is 3 percentage points above the county average. Bula Pesa ward has the highest share of residents using improved sanitation at 81%. This is almost 41 times Oldonyiro ward, which has the lowest share of using improved sanitation. Bula Pesa ward is 41 percentage points above the county average.

Figure 9.10: Isiolo County –Percentage of Households with Improved and Unimproved Sanitation by Ward



Isiolo County Annex Tables

Table 9.1: Gender, Age group, Demographic Indicators and Households Size by County Constituency and Wards

County Constituency /Wards	Gender			Age group						Demographic indicators					Portion of HH Members:		
	Total Pop	Male	Female	0-5 yrs	0-14 yrs	10-18 yrs	15-34 yrs	15-64 yrs	65+ yrs	sex Ratio	Total depen- dency Ratio	Child de- pendency Ratio	aged depen- dency ratio	0-3	4-6	7+	total
Kenya	37,919,647	18,787,698	19,131,949	7,035,670	16,346,414	8,293,207	13,329,717	20,249,800	1,323,433	0.982	0.873	0.807	0.065	41.5	38.4	20.1	8,493,380
Rural	26,075,195	12,869,034	13,206,161	5,059,515	12,024,773	6,134,730	8,303,007	12,984,788	1,065,634	0.974	1.008	0.926	0.082	33.2	41.3	25.4	5,239,879
Urban	11,844,452	5,918,664	5,925,788	1,976,155	4,321,641	2,158,477	5,026,710	7,265,012	257,799	0.999	0.630	0.595	0.035	54.8	33.7	11.5	3,253,501
Isiolo County	139,396	70,414	68,982	27,743	62,943	32,106	47,020	71,260	5,193	1.021	0.956	0.883	0.073	39.5	40.3	20.2	30,877
Isiolo North Constituency	96,699	47,467	49,232	19,740	44,110	21,930	32,687	49,154	3,435	0.964	0.967	0.897	0.070	42.1	39.2	18.6	22,149
Wabera	16,264	7,908	8,356	2,957	6,891	3,870	6,009	8,875	498	0.946	0.833	0.776	0.056	43.5	35.2	21.3	3,647
BulalPesa	22,203	10,759	11,444	3,841	8,569	4,469	8,777	12,981	653	0.940	0.710	0.660	0.050	55.5	33.1	11.3	6,145
Chari	4,773	2,410	2,363	1,090	2,353	1,081	1,331	2,162	258	1.020	1.208	1.088	0.119	34.7	44.9	20.4	1,024
Cherab	15,475	7,707	7,768	3,183	7,423	3,906	4,765	7,405	647	0.992	1.090	1.002	0.087	33.1	44.4	22.5	3,256
Ngare Mara	4,862	2,493	2,369	1,099	2,363	1,021	1,487	2,333	166	1.052	1.084	1.013	0.071	48.5	34.4	17.1	1,133
Burat	17,916	8,774	9,142	4,045	8,746	4,197	5,642	8,450	720	0.960	1.120	1.035	0.085	35.7	42.9	21.5	3,822
Oldonyiro	15,206	7,416	7,790	3,525	7,765	3,386	4,676	6,948	493	0.952	1.189	1.118	0.071	31.6	46.0	22.4	3,122
Isiolo South Constituency	42,697	22,947	19,750	8,003	18,833	10,176	14,333	22,106	1,758	1.162	0.931	0.852	0.080	32.9	43.1	24.0	8,728
Garbatulla	16,120	8,421	7,699	3,154	7,459	3,817	5,222	8,051	610	1.094	1.002	0.926	0.076	35.6	44.1	20.3	3,473
Kinna	14,551	8,078	6,473	2,612	5,987	3,254	4,989	7,883	681	1.248	0.846	0.759	0.086	31.3	43.0	25.7	2,908
Sericho	12,026	6,448	5,578	2,237	5,387	3,105	4,122	6,172	467	1.156	0.948	0.873	0.076	30.7	41.8	27.5	2,347

Table 9.2: Employment by County, Constituency and Wards

County/Constituency /Wards	Work for pay	Family Business	Family Agricultural Holding	Intern/Volunteer	Retired/Homemaker	Fulltime Student	Incapacitated	No work	No. of Individuals
Kenya	23.7	13.1	32.0	1.1	9.2	12.8	0.5	7.7	20,249,800
Rural	15.6	11.2	43.5	1.0	8.8	13.0	0.5	6.3	12,984,788
Urban	38.1	16.4	11.4	1.3	9.9	12.2	0.3	10.2	7,265,012
Isiolo County	16.6	16.3	33.0	1.0	12.0	10.7	0.5	10.0	71,260
Isiolo North Constituency	19.9	13.7	29.9	1.1	13.2	11.7	0.4	10.0	49,154
Wabera	30.9	12.2	11.4	1.9	11.0	18.1	0.5	14.1	8,875
BulaPesa	30.3	21.5	10.3	0.9	8.3	12.9	0.4	15.4	12,981
Chari	6.2	17.3	24.2	1.5	31.5	14.2	0.8	4.4	2,162
Cherab	9.0	15.5	35.4	0.7	16.3	13.4	0.6	9.1	7,405
Ngare Mara	23.9	7.1	50.9	1.2	9.1	4.8	0.2	2.9	2,333
Burat	16.4	12.0	38.2	1.6	11.9	10.9	0.4	8.7	8,450
Oldonyiro	5.1	2.0	69.3	0.3	19.4	2.3	0.1	1.5	6,948
Isiolo South Constituency	9.2	22.3	39.8	0.8	9.1	8.4	0.5	9.8	22,106
Garbatulla	7.4	20.6	37.4	1.2	16.0	6.5	0.3	10.5	8,051
Kinna	13.8	29.7	33.6	0.4	6.7	7.6	0.7	7.5	7,883
Sericho	5.8	15.2	50.8	0.8	3.3	11.9	0.7	11.6	6,172

Table 9.3: Employment and Education Levels by County, Constituency and Wards

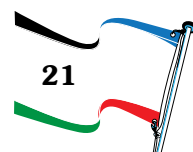
County / constituency/ Wards	Education Total level	Work for pay	Family Business	Family Agricultural Holding	Intern/Volunteer	Retired/Homemaker	Fulltime Student	Incapacitated	No work	No. of Individuals
Kenya	Total	23.7	13.1	32.0	1.1	9.2	12.8	0.5	7.7	20,249,800
Kenya	None	11.1	14.0	44.4	1.7	14.7	0.8	1.2	12.1	3,154,356
Kenya	Primary	20.7	12.6	37.3	0.8	9.6	12.1	0.4	6.5	9,528,270
Kenya	Secondary+	32.7	13.3	20.2	1.2	6.6	18.6	0.2	7.3	7,567,174
Rural	Total	15.6	11.2	43.5	1.0	8.8	13.0	0.5	6.3	12,984,788
Rural	None	8.5	13.6	50.0	1.4	13.9	0.7	1.2	10.7	2,614,951
Rural	Primary	15.5	10.8	45.9	0.8	8.4	13.2	0.5	5.0	6,785,745
Rural	Secondary+	21.0	10.1	34.3	1.0	5.9	21.9	0.3	5.5	3,584,092
Urban	Total	38.1	16.4	11.4	1.3	9.9	12.2	0.3	10.2	7,265,012
Urban	None	23.5	15.8	17.1	3.1	18.7	1.5	1.6	18.8	539,405

Urban	Primary	33.6	16.9	16.0	1.0	12.3	9.5	0.4	10.2	2,742,525
Urban	Secondary+	43.2	16.1	7.5	1.3	7.1	15.6	0.2	9.0	3,983,082
Isiolo	Total	16.6	16.3	33.0	1.0	12.0	10.7	0.5	10.0	71,260
Isiolo	None	7.3	17.2	50.4	0.8	15.8	0.2	0.7	7.5	34,723
Isiolo	Primary	16.8	16.9	22.4	1.1	10.7	19.0	0.3	12.8	20,740
Isiolo	Secondary+	36.5	13.8	8.7	1.3	5.1	22.9	0.1	11.7	15,797
Isiolo North Constituency	Total	19.9	13.7	29.9	1.1	13.2	11.7	0.4	10.0	49,154
Isiolo North Constituency	None	8.0	11.7	51.3	1.1	19.5	0.3	0.7	7.4	20,955
Isiolo North Constituency	Primary	19.9	16.2	19.8	1.1	11.4	18.8	0.3	12.5	14,891
Isiolo North Constituency	Secondary+	38.5	13.9	7.7	1.2	5.4	21.9	0.1	11.4	13,308
Wabera Wards	Total	30.9	12.2	11.4	1.9	11.0	18.1	0.5	14.1	8,875
Wabera Wards	None	17.6	11.2	19.4	2.9	22.3	0.9	1.6	24.1	1,740
Wabera Wards	Primary	26.0	13.9	13.7	1.8	11.5	19.0	0.4	13.7	2,966
Wabera Wards	Secondary+	39.9	11.3	6.4	1.4	5.9	24.7	0.1	10.2	4,169
BulaPesa Wards	Total	30.3	21.5	10.3	0.9	8.3	12.9	0.4	15.4	12,981
BulaPesa Wards	None	18.6	21.0	19.1	0.8	19.4	0.9	1.5	18.6	2,164
BulaPesa Wards	Primary	25.9	23.6	11.8	0.9	7.8	12.6	0.4	17.0	5,091
BulaPesa Wards	Secondary+	38.6	19.8	5.5	0.9	4.5	17.7	0.1	12.9	5,726
Chari Wards	Total	6.2	17.3	24.2	1.5	31.5	14.2	0.8	4.4	2,162
Chari Wards	None	3.4	18.5	32.0	1.2	40.7	0.2	1.3	2.7	1,246
Chari Wards	Primary	5.6	17.8	15.8	1.7	22.5	31.1	0.2	5.5	659
Chari Wards	Secondary+	21.0	10.1	7.8	2.7	10.5	38.5	-	9.3	257
Cherab Wards	Total	9.0	15.5	35.4	0.7	16.3	13.4	0.6	9.1	7,405
Cherab Wards	None	5.1	17.3	48.7	0.8	20.0	0.1	0.9	7.2	4,259
Cherab Wards	Primary	8.4	15.1	22.6	0.7	13.9	29.4	0.4	9.7	2,173
Cherab Wards	Secondary+	27.5	8.7	6.2	0.4	5.2	35.9	0.1	15.9	973
Ngare Mara Wards	Total	23.9	7.1	50.9	1.2	9.1	4.8	0.2	2.9	2,333
Ngare Mara Wards	None	5.3	8.2	71.2	0.9	12.8	-	0.2	1.4	1,338
Ngare Mara Wards	Primary	27.1	7.4	35.7	0.8	6.6	16.5	0.2	5.8	502
Ngare Mara Wards	Secondary+	71.2	3.7	11.2	2.2	1.6	5.9	-	4.3	493
Burat Wards	Total	16.4	12.0	38.2	1.6	11.9	10.9	0.4	8.7	8,450

Burat Wards	None	12.0	14.9	50.6	1.7	12.9	0.4	0.6	7.0	4,369
Burat Wards	Primary	16.4	10.1	29.4	1.1	12.6	19.7	0.3	10.5	2,827
Burat Wards	Secondary+	31.4	6.5	14.8	2.0	6.9	27.8	-	10.6	1,254
Oldonyiro Wards	Total	5.1	2.0	69.3	0.3	19.4	2.3	0.1	1.5	6,948
Oldonyiro Wards	None	1.9	1.3	74.8	0.3	20.3	0.0	0.1	1.2	5,839
Oldonyiro Wards	Primary	9.2	3.7	49.0	0.5	18.0	16.3	-	3.3	673
Oldonyiro Wards	Secondary+	40.6	8.0	27.1	0.5	9.4	11.0	-	3.4	436
Isiolo South Constituency	Total	9.2	22.3	39.8	0.8	9.1	8.4	0.5	9.8	22,106
Isiolo South Constituency	None	6.3	25.6	49.0	0.5	10.3	0.2	0.6	7.5	13,768
Isiolo South Constituency	Primary	8.9	18.6	29.2	1.2	8.9	19.5	0.4	13.4	5,849
Isiolo South Constituency	Secondary+	26.2	13.1	13.9	1.5	3.5	27.8	0.5	13.5	2,489
Garbatulla Wards	Total	7.4	20.6	37.4	1.2	16.0	6.5	0.3	10.5	8,051
Garbatulla Wards	None	3.6	22.6	47.1	0.7	17.7	0.2	0.4	7.7	5,473
Garbatulla Wards	Primary	8.9	18.6	20.1	2.1	15.2	17.3	0.3	17.5	1,800
Garbatulla Wards	Secondary+	30.7	11.4	9.3	2.7	5.8	25.5	0.1	14.5	778
Kinna Wards	Total	13.8	29.7	33.6	0.4	6.7	7.6	0.7	7.5	7,883
Kinna Wards	None	12.1	36.7	38.1	0.3	6.6	0.2	0.9	5.1	4,612
Kinna Wards	Primary	11.5	21.5	32.6	0.6	8.3	14.7	0.5	10.2	2,299
Kinna Wards	Secondary+	26.9	15.5	14.8	0.5	3.4	26.1	0.3	12.5	972
Sericho Wards	Total	5.8	15.2	50.8	0.8	3.3	11.9	0.7	11.6	6,172
Sericho Wards	None	2.9	16.1	65.5	0.5	3.8	0.1	0.8	10.4	3,683
Sericho Wards	Primary	5.5	14.9	33.9	1.1	3.1	28.0	0.2	13.2	1,750
Sericho Wards	Secondary+	20.7	11.5	17.6	1.4	1.4	32.5	1.1	13.9	739

Table 9.4: Employment and Education Levels in Male Headed Household by County, Constituency and Wards

County /constituency	Education Level reached	Work for Pay	Family Business	Family Agricultural holding	Internal/ Volunteer	Retired/ Homemaker	Fulltime Student	Incapacitated	No work	Population (15-64)
Kenya National	Total	25.5	13.5	31.6	1.1	9.0	11.4	0.4	7.5	14,757,992
Kenya National	None	11.4	14.3	44.2	1.6	13.9	0.9	1.0	12.6	2,183,284
Kenya National	Primary	22.2	12.9	37.3	0.8	9.4	10.6	0.4	6.4	6,939,667
Kenya National	Secondary+	35.0	13.8	19.8	1.1	6.5	16.5	0.2	7.0	5,635,041
Rural Rural	Total	16.8	11.6	43.9	1.0	8.3	11.7	0.5	6.3	9,262,744
Rural Rural	None	8.6	14.1	49.8	1.4	13.0	0.8	1.0	11.4	1,823,487
Rural Rural	Primary	16.5	11.2	46.7	0.8	8.0	11.6	0.4	4.9	4,862,291



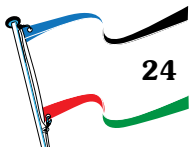
Rural Rural	Secondary+	23.1	10.6	34.7	1.0	5.5	19.6	0.2	5.3	2,576,966
Urban Urban	Total	40.2	16.6	10.9	1.3	10.1	10.9	0.3	9.7	5,495,248
Urban Urban	None	25.8	15.5	16.1	3.0	18.2	1.4	1.3	18.7	359,797
Urban Urban	Primary	35.6	16.9	15.4	1.0	12.8	8.1	0.3	9.9	2,077,376
Urban Urban	Secondary+	45.1	16.6	7.3	1.2	7.4	13.8	0.1	8.5	3,058,075
Isiolo	Total	19.1	18.3	32.5	1.0	10.5	8.8	0.4	9.5	48,072
Isiolo	None	8.2	19.8	49.9	0.8	13.2	0.2	0.5	7.4	23,335
Isiolo	Primary	19.5	18.5	22.2	1.1	10.2	15.9	0.3	12.2	13,933
Isiolo	Secondary+	42.0	14.7	8.1	1.1	5.1	18.3	0.1	10.6	10,804
Isiolo North Constituency	Total	23.7	15.1	28.2	1.1	11.8	9.9	0.3	9.8	31,662
Isiolo North Constituency	None	9.4	13.2	50.5	1.1	17.2	0.2	0.6	7.8	12,723
Isiolo North Constituency	Primary	23.2	17.9	19.2	1.1	10.9	15.4	0.3	12.0	9,842
Isiolo North Constituency	Secondary+	44.2	14.7	7.0	1.0	5.3	17.4	0.0	10.3	9,097
Wabera Ward	Total	36.3	12.6	10.7	1.9	9.9	15.1	0.4	13.0	6,023
Wabera Ward	None	21.7	9.4	17.7	3.5	20.7	0.7	1.7	24.7	1,075
Wabera Ward	Primary	29.8	15.1	14.2	1.7	10.4	16.0	0.2	12.5	2,019
Wabera Ward	Secondary+	46.2	12.1	5.8	1.4	5.6	19.8	0.0	9.1	2,929
BulaPesa Ward	Total	33.7	22.5	9.9	0.8	7.8	10.5	0.4	14.3	8,711
BulaPesa Ward	None	22.4	22.3	18.0	0.8	16.2	0.8	1.4	18.2	1,283
BulaPesa Ward	Primary	28.3	24.8	11.9	0.8	8.0	9.9	0.4	15.9	3,489
BulaPesa Ward	Secondary+	42.3	20.6	5.5	0.8	4.9	14.3	0.1	11.6	3,939
Chari Ward	Total	6.1	19.6	27.4	1.4	28.9	11.2	0.6	4.8	1,451
Chari Ward	None	2.6	20.9	35.3	1.2	36.0	0.1	0.9	3.0	861
Chari Ward	Primary	5.9	20.5	18.6	1.4	21.7	25.0	0.2	6.6	424
Chari Ward	Secondary+	25.3	10.8	9.0	2.4	10.2	33.1	-	9.0	166
Cherab Ward	Total	10.6	18.5	36.4	0.8	13.7	10.7	0.5	8.8	5,026
Cherab Ward	None	5.9	20.3	49.4	0.8	15.9	0.1	0.6	7.1	2,990
Cherab Ward	Primary	10.0	18.4	23.0	0.9	12.8	25.5	0.4	9.1	1,416
Cherab Ward	Secondary+	34.8	10.0	4.5	0.3	5.8	28.2	0.2	16.1	620
Ngare Mara Ward	Total	34.2	6.7	45.6	1.0	6.2	4.0	-	2.3	1,443
Ngare Mara Ward	None	7.1	7.9	73.3	1.3	9.0	-	-	1.3	745
Ngare Mara Ward	Primary	40.9	8.6	26.5	0.3	4.8	13.7	-	5.1	313

Ngare Mara Ward	Secondary+	81.3	2.9	7.5	0.8	1.8	3.9	-	1.8	385
Burat Ward	Total	19.1	12.1	38.1	1.5	11.0	8.9	0.2	9.0	5,299
Burat Ward	None	13.0	14.2	51.5	1.6	11.5	0.3	0.4	7.5	2,738
Burat Ward	Primary	20.0	11.1	28.6	1.4	12.3	16.0	0.1	10.5	1,788
Burat Ward	Secondary+	38.6	7.2	12.7	1.4	6.0	23.2	-	11.0	773
Oldonyiro Ward	Total	6.8	2.6	68.2	0.2	18.5	1.9	0.1	1.7	3,709
Oldonyiro Ward	None	2.4	1.7	74.7	0.2	19.5	-	0.1	1.3	3,031
Oldonyiro Ward	Primary	11.7	4.6	47.8	0.5	18.6	13.2	-	3.6	393
Oldonyiro Ward	Secondary+	46.7	8.4	26.7	0.4	8.1	6.7	-	3.2	285
Isiolo South Constituency	Total	10.2	24.5	40.6	0.8	7.9	6.7	0.4	8.9	16,410
Isiolo South Constituency	None	6.8	27.7	49.2	0.5	8.4	0.1	0.5	6.9	10,612
Isiolo South Constituency	Primary	10.7	20.1	29.5	1.2	8.6	16.9	0.3	12.6	4,091
Isiolo South Constituency	Secondary+	30.6	14.9	14.1	1.6	3.7	23.0	0.3	11.9	1,707
Garbatulla Ward	Total	7.5	22.9	40.2	1.1	13.5	4.8	0.2	9.9	6,035
Garbatulla Ward	None	3.5	24.8	49.7	0.6	14.0	0.1	0.2	7.1	4,240
Garbatulla Ward	Primary	9.6	20.4	20.8	2.1	15.1	14.1	0.2	17.7	1,268
Garbatulla Ward	Secondary+	34.5	13.7	10.1	2.7	5.1	20.3	-	13.7	527
Kinna Ward	Total	15.8	33.3	31.7	0.4	6.0	6.0	0.6	6.2	5,879
Kinna Ward	None	13.5	40.9	34.4	0.3	5.6	0.1	0.7	4.5	3,581
Kinna Ward	Primary	14.0	23.0	32.7	0.5	7.7	12.9	0.5	8.7	1,640
Kinna Ward	Secondary+	32.5	17.8	14.6	0.6	4.1	21.1	-	9.3	658
Sericho Ward	Total	6.6	15.1	52.9	0.8	3.0	10.0	0.5	11.0	4,496
Sericho Ward	None	3.0	15.3	67.4	0.5	3.3	0.1	0.6	9.8	2,791
Sericho Ward	Primary	7.2	15.9	34.4	1.2	2.9	25.5	0.3	12.7	1,183
Sericho Ward	Secondary+	24.1	12.5	17.4	1.7	1.7	28.2	1.0	13.4	522

Table 9.5: Employment and Education Levels in Female Headed Households by County, Constituency and Wards

	Education Level reached	Work for Pay	Family Business	Family Agricultural holding	Internal/ Volunteer	Retired/ Home-maker	Fulltime Student	Incapacitated	No work	Population (15-64)
Kenya National	Total	18.87	11.91	32.74	1.20	9.85	16.66	0.69	8.08	5,518,645
Kenya National	None	10.34	13.04	44.55	1.90	16.45	0.80	1.76	11.17	974,824
Kenya National	Primary	16.74	11.75	37.10	0.89	9.82	16.23	0.59	6.89	2,589,877

Kenya National	Secondary+	25.95	11.57	21.07	1.27	6.59	25.16	0.28	8.11	1,953,944
Rural Rural	Total	31.53	15.66	12.80	1.54	9.33	16.99	0.54	11.60	1,781,078
Rural Rural	None	8.36	12.26	50.31	1.60	15.77	0.59	1.67	9.44	794,993
Rural Rural	Primary	13.02	9.90	43.79	0.81	9.49	17.03	0.60	5.36	1,924,111
Rural Rural	Secondary+	15.97	8.87	33.03	1.06	6.80	27.95	0.34	5.98	1,018,463
Urban Urban	Total	12.83	10.12	42.24	1.04	10.09	16.51	0.76	6.40	3,737,567
Urban Urban	None	19.09	16.50	19.04	3.22	19.45	1.70	2.18	18.83	179,831
Urban Urban	Primary	27.49	17.07	17.79	1.13	10.76	13.93	0.55	11.29	665,766
Urban Urban	Secondary+	36.81	14.50	8.06	1.51	6.36	22.11	0.22	10.43	935,481
Isiolo	Total	11.9%	12.2%	33.9%	1.1%	14.9%	14.5%	.6%	10.8%	23335
Isiolo	None	5.4%	11.9%	51.5%	.9%	21.3%	.4%	1.0%	7.6%	11386
Isiolo	Primary	11.5%	13.3%	22.8%	1.1%	11.7%	25.2%	.4%	13.9%	6817
Isiolo	Secondary+	26.7%	11.5%	9.6%	1.5%	5.1%	31.7%	.2%	13.7%	5132
Isiolo North Constituency	Total	13.7%	11.0%	32.7%	1.1%	15.7%	14.9%	.6%	10.3%	17640
Isiolo North Constituency	None	5.8%	9.4%	52.6%	1.0%	23.1%	.4%	.9%	6.8%	8230
Isiolo North Constituency	Primary	13.9%	12.8%	20.8%	1.0%	12.5%	25.2%	.4%	13.5%	5060
Isiolo North Constituency	Secondary+	28.4%	11.9%	8.9%	1.5%	5.4%	30.6%	.1%	13.1%	4350
Wabera Ward	Total	23.9%	10.6%	12.1%	1.7%	12.6%	23.0%	.6%	15.5%	3021
Wabera Ward	None	11.1%	14.0%	22.2%	2.0%	24.9%	1.2%	1.4%	23.3%	666
Wabera Ward	Primary	20.2%	11.2%	12.3%	1.9%	13.4%	24.4%	.7%	15.8%	975
Wabera Ward	Secondary+	32.7%	8.6%	7.1%	1.4%	6.0%	32.6%	.1%	11.5%	1380
BulaPesa Ward	Total	23.1%	19.5%	11.0%	1.0%	9.5%	17.7%	.5%	17.8%	4247
BulaPesa Ward	None	13.0%	19.1%	20.8%	.9%	24.3%	1.0%	1.7%	19.1%	878
BulaPesa Ward	Primary	20.4%	21.1%	11.7%	.9%	7.6%	18.4%	.4%	19.4%	1585
BulaPesa Ward	Secondary+	30.4%	18.2%	5.5%	1.1%	3.8%	25.2%	.1%	15.6%	1784
Chari Ward	Total	6.2%	12.5%	17.6%	1.8%	37.0%	20.3%	1.1%	3.5%	711
Chari Ward	None	5.2%	13.2%	24.7%	1.3%	51.2%	.3%	2.1%	2.1%	385
Chari Ward	Primary	5.1%	12.8%	10.6%	2.1%	23.8%	42.1%	0.0%	3.4%	235
Chari Ward	Secondary+	13.2%	8.8%	5.5%	3.3%	11.0%	48.4%	0.0%	9.9%	91
Cherab Ward	Total	5.5%	9.2%	33.4%	.6%	21.5%	19.0%	1.0%	9.7%	2379
Cherab Ward	None	3.2%	10.2%	47.0%	.8%	29.7%	.2%	1.6%	7.5%	1269
Cherab Ward	Primary	5.3%	9.0%	21.9%	.3%	15.9%	36.6%	.4%	10.7%	757
Cherab Ward	Secondary+	14.7%	6.5%	9.1%	.6%	4.2%	49.3%	0.0%	15.6%	353
Ngare Mara Ward	Total	7.3%	7.6%	59.3%	1.5%	13.8%	6.1%	.4%	4.0%	892
Ngare Mara Ward	None	3.0%	8.6%	68.6%	.3%	17.5%	0.0%	.5%	1.3%	593
Ngare Mara Ward	Primary	4.2%	5.3%	50.8%	1.6%	9.5%	21.2%	.5%	6.9%	189
Ngare Mara Ward	Secondary+	35.5%	6.4%	23.6%	7.3%	.9%	12.7%	0.0%	13.6%	110
Burat Ward	Total	11.7%	11.9%	38.2%	1.7%	13.5%	14.2%	.6%	8.2%	3151
Burat Ward	None	10.4%	15.9%	49.0%	2.0%	15.1%	.6%	.9%	6.1%	1631
Burat Ward	Primary	10.1%	8.5%	30.6%	.6%	13.2%	26.0%	.5%	10.6%	1039
Burat Ward	Secondary+	20.0%	5.4%	18.1%	2.9%	8.5%	35.1%	0.0%	10.0%	481
Oldonyiro Ward	Total	3.1%	1.3%	70.6%	.4%	20.4%	2.7%	.1%	1.4%	3239
Oldonyiro Ward	None	1.4%	.9%	74.9%	.4%	21.2%	.0%	.1%	1.1%	2808
Oldonyiro Ward	Primary	5.7%	2.5%	50.7%	.4%	17.1%	20.7%	0.0%	2.9%	280
Oldonyiro Ward	Secondary+	29.1%	7.3%	27.8%	.7%	11.9%	19.2%	0.0%	4.0%	151
Isiolo South Constituency	Total	6.3%	16.1%	37.5%	.9%	12.6%	13.3%	.9%	12.3%	5695
Isiolo South Constituency	None	4.5%	18.4%	48.5%	.7%	16.6%	.4%	1.1%	9.6%	3156
Isiolo South Constituency	Primary	4.8%	15.0%	28.3%	1.3%	9.6%	25.4%	.4%	15.1%	1757



Isiolo South Constituency	Secondary+	16.8%	9.1%	13.6%	1.2%	3.2%	38.2%	.9%	17.1%	782
Garbatulla Ward	Total	7.0%	13.9%	29.3%	1.6%	23.7%	11.4%	.6%	12.5%	2015
Garbatulla Ward	None	3.8%	15.2%	38.4%	1.2%	30.5%	.5%	.7%	9.7%	1233
Garbatulla Ward	Primary	7.0%	14.1%	18.5%	2.1%	15.6%	25.0%	.6%	17.1%	531
Garbatulla Ward	Secondary+	22.7%	6.8%	7.6%	2.8%	7.2%	36.3%	.4%	16.3%	251
Kinna Ward	Total	7.9%	19.1%	39.3%	.5%	8.5%	12.3%	1.0%	11.3%	2004
Kinna Ward	None	7.3%	22.4%	51.1%	.3%	9.7%	.6%	1.5%	7.2%	1031
Kinna Ward	Primary	5.5%	17.8%	32.3%	.9%	9.9%	19.1%	.5%	14.1%	659
Kinna Ward	Secondary+	15.0%	10.8%	15.3%	.3%	1.9%	36.6%	1.0%	19.1%	314
Sericho Ward	Total	3.6%	15.2%	45.2%	.6%	4.2%	16.9%	1.0%	13.3%	1676
Sericho Ward	None	2.4%	18.3%	59.6%	.4%	5.5%	.2%	1.3%	12.2%	892
Sericho Ward	Primary	2.1%	12.7%	33.0%	.9%	3.7%	33.2%	.2%	14.3%	567
Sericho Ward	Secondary+	12.4%	9.2%	18.0%	.5%	.5%	42.9%	1.4%	15.2%	217

Table 9.6: Gini Coefficient by county Constituency and Ward

County/Constituency/Wards	Pop. Share	Mean	Consump. Share	Gini
Kenya	1	3,440	1	0.445
Rural	0.688	2,270	0.454	0.361
Urban	0.312	6,010	0.546	0.368
Isiolo County	0.005	3,030	0.004	0.431
Isiolo North Constituency	0.004	3,440	0.0039	0.421
Wabera	0.001	4,100	0.0010	0.371
BulaPesa	0.001	5,150	0.0018	0.385
Chari	0.000	1,420	0.0001	0.247
Cherab	0.001	1,980	0.0003	0.279
Ngare Mara	0.000	2,910	0.0001	0.423
Burat	0.001	2,480	0.0005	0.316
Oldonyiro	0.000	1,620	0.0002	0.299
Isiolo South Constituency	0.001	1,620	0.0005	0.311
Garbatulla	0.000	1,610	0.0002	0.340
Kinna	0.000	1,880	0.0002	0.286
Sericho	0.000	1,320	0.0001	0.254

Table 9.7: Education by County, Constituency and Wards

County/Constituency /Wards	None	Primary	Secondary+	Total Pop
Kenya	25.2	52.0	22.8	34,024,396
Rural	29.5	54.7	15.9	23,314,262
Urban	15.8	46.2	38.0	10,710,134
Isiolo County	51.1	36.1	12.9	125,192
Isiolo North Constituency	47.1	37.3	15.7	86,578
Wabera	26.8	44.1	29.1	14,694
BulaPesa	24.3	46.8	29.0	20,127
Chari	52.9	40.9	6.2	4,244
Cherab	53.9	39.0	7.1	13,885
Ngare Mara	61.4	27.0	11.6	4,286

Burat	53.0	38.9	8.1	15,884
Oldonyiro	82.8	13.9	3.3	13,458
Isiolo South Constituency	60.0	33.4	6.6	38,614
Garbatulla	67.7	26.9	5.4	14,575
Kinna	55.7	36.8	7.5	13,187
Sericho	54.7	38.2	7.0	10,852

Table 9.8: Education for Male and Female Headed Households by County, Constituency and Ward

County/Constituency/Wards	None	Primary	Second-ary+	Total Pop		None	Primary	Secondary+	Total Pop
	Male					Female			
Kenya	23.5	51.8	24.7	16,819,031		26.8	52.2	21.0	17,205,365
Rural	27.7	54.9	17.4	11,472,394		31.2	54.4	14.4	11,841,868
Urban	14.4	45.2	40.4	5,346,637		17.2	47.2	35.6	5,363,497
Isiolo County	48.2	36.7	15.1	62,968		53.9	35.5	10.6	62,224
Isiolo North Constituency	43.1	38.5	18.4	42,147		50.8	36.0	13.1	44,431
Wabera	23.4	43.8	32.8	7,108		30.0	44.4	25.6	7,586
BulaPesa	21.3	46.7	32.0	9,654		27.0	46.8	26.2	10,473
Chari	49.6	42.3	8.2	2,111		56.2	39.6	4.3	2,133
Cherab	49.9	40.6	9.5	6,849		57.8	37.5	4.7	7,036
Ngare Mara	53.4	28.4	18.2	2,192		69.9	25.5	4.6	2,094
Burat	48.9	40.9	10.2	7,727		56.9	37.1	6.1	8,157
Oldonyiro	77.5	17.9	4.6	6,506		87.8	10.2	2.0	6,952
Isiolo South Constituency	58.5	33.0	8.5	20,821		61.7	34.0	4.4	17,793
Garbatulla	65.9	26.8	7.3	7,617		69.8	26.9	3.4	6,958
Kinna	55.2	35.4	9.4	7,379		56.4	38.5	5.1	5,808
Sericho	53.2	38.0	8.9	5,825		56.6	38.5	4.9	5,027

Table 9.9: Cooking Fuel by County, Constituency and Wards

County/Constituency/Wards	Electricity	Paraffin	LPG	Biogas	Firewood	Charcoal	Solar	Other	Households
Kenya	0.8	11.7	5.1	0.7	64.4	17.0	0.1	0.3	8,493,380
Rural	0.2	1.4	0.6	0.3	90.3	7.1	0.1	0.1	5,239,879
Urban	1.8	28.3	12.3	1.4	22.7	32.8	0.0	0.6	3,253,501
Isiolo County	0.5	2.7	2.1	0.4	64.9	29.1	0.1	0.3	30,877
Isiolo North Constituency	0.6	3.5	2.8	0.5	53.5	38.6	0.1	0.3	22,149
Wabera	1.5	6.1	5.8	0.7	14.9	70.6	-	0.4	3,647
BulaPesa	0.6	7.8	3.3	0.9	12.4	74.4	0.0	0.5	6,145
Chari	-	-	0.1	0.1	97.8	1.6	-	0.5	1,024
Cherab	0.0	0.2	0.2	0.2	96.3	2.9	0.0	0.2	3,256
Ngare Mara	2.4	1.5	8.7	0.4	72.6	14.2	0.1	0.1	1,133

Burat	0.4	1.3	2.4	0.2	70.2	25.1	0.2	0.3	3,822
Oldonyiro	-	0.4	0.3	0.2	93.2	5.8	0.2	0.1	3,122
Isiolo South Constituency	0.0	0.5	0.3	0.1	93.9	4.9	0.1	0.2	8,728
Garbatulla	0.1	0.6	0.4	0.1	92.2	6.2	0.1	0.3	3,473
Kinna	0.1	0.5	0.1	0.1	95.5	3.5	0.2	0.1	2,908
Sericho	-	0.2	0.3	0.1	94.5	4.7	0.0	0.2	2,347

Table 9.10: Cooking Fuel for Male Headed Households by County, Constituency and Wards

County/Constituency/Wards	Electricity	Paraffin	LPG	Biogas	Firewood	Charcoal	Solar	Other	Households
Kenya	0.9	13.5	5.3	0.8	61.4	17.7	0.1	0.4	5,762,320
Rural	0.2	1.6	0.6	0.3	89.6	7.5	0.1	0.1	3,413,616
Urban	1.9	30.9	12.0	1.4	20.4	32.5	0.0	0.7	2,348,704
Isiolo County	0.6	3.4	2.5	0.4	63.4	29.3	0.1	0.3	19,020
Isiolo North Constituency	0.8	4.7	3.5	0.6	49.7	40.2	0.1	0.4	13,062
Wabera	1.8	8.4	6.4	0.8	14.3	67.8	0.0	0.5	2,333
BulaPesa	0.7	9.3	3.5	0.8	12.0	73.1	0.0	0.7	3,841
Chari	0.0	0.0	0.2	0.2	97.4	1.9	0.0	0.3	621
Cherab	0.1	0.3	0.3	0.4	95.3	3.6	0.0	0.2	1,951
Ngare Mara	3.6	2.1	12.3	0.7	60.6	20.4	0.1	0.1	673
Burat	0.4	1.7	3.4	0.3	68.9	24.7	0.2	0.3	2,206
Oldonyiro	0.0	0.7	0.4	0.3	91.1	7.3	0.1	0.1	1,437
Isiolo South Constituency	0.0	0.6	0.3	0.2	93.5	5.2	0.1	0.2	5,958
Garbatulla	0.0	0.9	0.4	0.2	91.8	6.2	0.2	0.4	2,397
Kinna	0.1	0.5	0.1	0.2	94.5	4.3	0.2	0.1	1,952
Sericho	0.0	0.2	0.2	0.1	94.6	4.7	0.0	0.1	1,609

Table 9.11: Cooking Fuel for Female Headed Households by County, Constituency and Wards

County/Constituency/Wards	Electricity	Paraffin	LPG	Biogas	Firewood	Charcoal	Solar	Other	Households
Kenya	0.6	7.9	4.6	0.7	70.6	15.5	0.0	0.1	2,731,060
Rural	0.1	1.0	0.5	0.3	91.5	6.5	0.0	0.1	1,826,263
Urban	1.6	21.7	13.0	1.5	28.5	33.6	0.0	0.3	904,797
Isiolo County	0.3	1.5	1.5	0.3	67.4	28.8	0.1	0.2	11,857
Isiolo North Constituency	0.4	1.8	1.8	0.4	59.0	36.3	0.1	0.2	9,087
Wabera	0.8	2.1	4.6	0.7	16.1	75.6	-	0.2	1,314
BulaPesa	0.6	5.3	3.0	1.1	13.0	76.7	0.0	0.2	2,304
Chari	-	-	-	-	98.3	1.0	-	0.7	403
Cherab	-	-	0.2	-	97.7	1.8	0.1	0.2	1,305
Ngare Mara	0.7	0.7	3.5	-	90.0	5.2	-	-	460
Burat	0.4	0.8	1.1	0.1	71.8	25.6	0.1	0.2	1,616
Oldonyiro	-	0.1	0.1	0.1	95.1	4.5	0.2	0.1	1,685
Isiolo South Constituency	0.1	0.2	0.3	0.0	94.8	4.3	0.1	0.1	2,770
Garbatulla	0.2	0.1	0.5	0.1	92.9	6.0	-	0.2	1,076

Kinna	-	0.4	-	-	97.4	2.0	0.2	-	956
Sericho	-	0.1	0.5	-	94.2	4.7	0.1	0.3	738

Table 9.12: Lighting Fuel by County, Constituency and Wards

County/Constituency/Wards	Electricity	Pressure Lamp	Lantern	Tin Lamp	Gas Lamp	Fuelwood	Solar	Other	Households
Kenya	22.9	0.6	30.6	38.5	0.9	4.3	1.6	0.6	5,762,320
Rural	5.2	0.4	34.7	49.0	1.0	6.7	2.2	0.7	3,413,616
Urban	51.4	0.8	23.9	21.6	0.6	0.4	0.7	0.6	2,348,704
Isiolo County	18.7	0.5	30.8	19.6	2.5	23.3	1.4	3.3	19,020
Isiolo North Constituency	25.7	0.5	24.8	22.0	2.7	21.2	1.3	1.8	13,062
Wabera	53.8	0.7	24.0	18.9	0.3	0.5	1.8	0.1	2,333
BulaPesa	49.5	0.3	26.3	22.5	0.2	0.0	0.9	0.2	3,841
Chari	0.1	0.2	32.4	39.4	4.4	12.7	1.3	9.6	621
Cherab	4.6	0.0	42.4	19.4	8.3	15.4	2.0	7.9	1,951
Ngare Mara	24.0	0.1	10.2	23.8	0.1	41.0	0.8	0.0	673
Burat	7.1	1.4	26.1	35.0	6.4	22.4	1.3	0.4	2,206
Oldonyiro	0.2	0.0	5.5	5.0	0.6	87.5	0.9	0.3	1,437
Isiolo South Constituency	0.7	0.6	46.2	13.4	2.0	28.5	1.5	7.0	5,958
Garbatulla	0.8	1.1	33.3	13.7	0.5	37.6	2.1	10.8	2,397
Kinna	1.0	0.3	43.9	21.4	4.3	25.4	1.1	2.5	1,952
Sericho	0.1	0.2	68.3	3.1	1.5	18.9	1.2	6.8	1,609

Table 9.13: Lighting Fuel for Male Headed Households by County, Constituency and Wards

County/Constituency/Wards	Electricity	Pressure Lamp	Lantern	Tin Lamp	Gas Lamp	Fuelwood	Solar	Other	Households
Kenya	24.6	0.6	30.4	36.8	0.9	4.2	1.7	0.7	5,762,320
Rural	5.6	0.5	35.3	47.5	1.1	6.8	2.4	0.7	3,413,616
Urban	52.4	0.9	23.3	21.2	0.6	0.4	0.7	0.7	2,348,704
Isiolo County	20.1	0.5	30.1	18.8	2.2	23.1	1.4	3.7	19,020
Isiolo North Constituency	29.0	0.5	24.6	22.0	2.4	18.0	1.3	2.2	13,062
Wabera	55.9	0.6	22.4	18.8	0.2	0.4	1.7	0.1	2,333
BulaPesa	51.0	0.4	24.9	22.2	0.2	0.0	0.9	0.3	3,841

Chari	0.2	0.2	27.7	39.1	4.8	16.4	1.1	10.5	621
Cherab	4.8	0.0	40.7	17.9	7.0	17.5	2.2	9.8	1,951
Ngare Mara	36.3	0.1	12.3	20.4	0.0	30.2	0.7	0.0	673
Burat	8.1	1.5	25.9	34.7	5.9	22.1	1.3	0.6	2,206
Oldonyiro	0.2	0.0	7.4	5.8	0.8	84.1	1.3	0.5	1,437
Isiolo South Constituency	0.8	0.6	42.2	11.8	1.7	34.4	1.5	7.0	5,958
Garbatulla	1.0	1.2	28.6	12.5	0.5	43.6	2.0	10.7	2,397
Kinna	1.0	0.3	40.8	18.5	3.6	32.4	1.0	2.4	1,952
Sericho	0.1	0.2	64.2	2.7	1.4	23.1	1.2	7.2	1,609

Table 9.14: Lighting Fuel for Female Headed Households by County, Constituency and Wards

County/Constituency/Wards	Electricity	Pressure Lamp	Lantern	Tin Lamp	Gas Lamp	Fuelwood	Solar	Other	Households
Kenya	19.2	0.5	31.0	42.1	0.8	4.5	1.4	0.5	2,731,060
Rural	4.5	0.4	33.7	51.8	0.8	6.5	1.8	0.5	1,826,263
Urban	48.8	0.8	25.4	22.6	0.7	0.6	0.6	0.5	904,797
Isiolo County	16.3	0.4	32.1	20.9	3.0	23.5	1.3	2.5	11,857
Isiolo North Constituency	21.1	0.4	25.1	22.1	3.1	25.8	1.2	1.2	9,087
Wabera	50.2	0.8	26.8	19.1	0.5	0.5	2.0	0.1	1,314
BulaPesa	46.9	0.2	28.6	23.1	0.2	-	0.9	0.1	2,304
Chari	-	0.2	39.7	39.7	3.7	6.9	1.5	8.2	403
Cherab	4.3	0.1	44.9	21.6	10.1	12.3	1.7	5.1	1,305
Ngare Mara	6.1	-	7.2	28.9	0.2	56.7	0.9	-	460
Burat	5.8	1.2	26.4	35.5	7.1	22.8	1.2	0.1	1,616
Oldonyiro	0.1	-	3.9	4.3	0.4	90.4	0.7	0.2	1,685
Isiolo South Constituency	0.6	0.5	54.9	16.9	2.7	16.0	1.6	6.8	2,770
Garbatulla	0.4	1.0	43.8	16.5	0.6	24.4	2.2	11.1	1,076
Kinna	1.2	0.2	50.2	27.2	5.9	11.3	1.4	2.7	956
Sericho	0.1	0.3	77.1	4.1	1.8	9.8	1.1	5.8	738

Table 9.15: Main material of the Floor by County, Constituency and Wards

County/Constituency/ wards	Cement	Tiles	Wood	Earth	Other	Households
Kenya	41.2	1.6	0.7	56.0	0.5	8,493,380
Rural	22.1	0.3	0.7	76.5	0.4	5,239,879
Urban	71.8	3.5	0.9	23.0	0.8	3,253,501
Isiolo County	29.0	0.5	0.4	69.9	0.2	30,877
Isiolo North Constituency	37.9	0.7	0.4	60.7	0.2	22,149
Wabera	67.6	2.6	0.5	29.2	0.1	3,647
BulaPesa	73.8	0.7	0.7	24.8	0.1	6,145
Chari	1.3	-	0.6	97.8	0.4	1,024
Cherab	3.9	0.0	0.2	95.2	0.6	3,256
Ngare Mara	29.7	0.4	0.1	69.5	0.4	1,133
Burat	20.4	0.3	0.6	78.6	0.1	3,822
Oldonyiro	4.5	0.3	0.1	95.1	0.1	3,122
Isiolo South Constituency	6.3	0.1	0.3	93.0	0.3	8,728
Garbatulla	7.2	0.2	0.3	92.1	0.2	3,473
Kinna	7.1	0.0	0.2	92.1	0.6	2,908
Sericho	3.8	0.1	0.3	95.5	0.2	2,347

Table 9.16: Main Material of the Floor in Male and Female Headed Households by County, Constituency and Ward

County/Constituency/ wards	Cement	Tiles	Wood	Earth	Other	Households	Cement	Tiles	Wood	Earth	Other	Households
	Male						Female					
Kenya	42.8	1.6	0.8	54.2	0.6	5,762,320	37.7	1.4	0.7	59.8	0.5	2,731,060
Rural	22.1	0.3	0.7	76.4	0.4	3,413,616	22.2	0.3	0.6	76.6	0.3	1,826,263
Urban	72.9	3.5	0.9	21.9	0.8	2,348,704	69.0	3.6	0.9	25.8	0.8	904,797
Isiolo County	30.6	0.6	0.4	68.1	0.3	19,020	26.3	0.5	0.4	72.7	0.1	11,857
Isiolo North Constituency	41.8	0.8	0.5	56.7	0.3	13,062	32.3	0.6	0.4	66.6	0.1	9,087
Wabera	68.8	2.6	0.5	28.1	0.1	2,333	65.5	2.7	0.5	31.1	0.2	1,314
BulaPesa	75.4	0.8	0.7	23.1	0.1	3,841	71.1	0.5	0.7	27.7	0.1	2,304
Chari	1.3	-	0.8	97.3	0.6	621	1.2	-	0.2	98.5	-	403
Cherab	4.2	0.1	0.3	94.5	1.0	1,951	3.4	-	0.1	96.4	0.1	1,305
Ngare Mara	44.0	0.4	-	54.8	0.7	673	8.7	0.2	0.2	90.9	-	460
Burat	21.5	0.3	0.5	77.6	0.0	2,206	18.9	0.2	0.7	80.1	0.1	1,616
Oldonyiro	6.6	0.3	0.1	92.8	0.1	1,437	2.7	0.2	0.2	97.0	-	1,685
Isiolo South Constituency	6.2	0.1	0.3	93.1	0.3	5,958	6.5	0.2	0.2	92.8	0.3	2,770
Garbatulla	7.0	0.1	0.3	92.4	0.2	2,397	7.8	0.4	0.4	91.4	0.1	1,076
Kinna	6.8	-	0.3	92.4	0.5	1,952	7.6	0.1	0.1	91.4	0.7	956
Sericho	4.2	0.1	0.4	95.0	0.3	1,609	3.0	0.1	0.1	96.7	-	738

Table 9.17: Main Roofing Material by County Constituency and Wards

County/Constituency/Wards	Corrugated Iron Sheets	Tiles	Concrete	Asbestos sheets	Grass	Makuti	Tin	Mud/Dung	Other	Households
Kenya	73.5	2.2	3.6	2.2	13.3	3.2	0.3	0.8	1.0	8,493,380
Rural	70.3	0.7	0.2	1.8	20.2	4.2	0.2	1.2	1.1	5,239,879
Urban	78.5	4.6	9.1	2.9	2.1	1.5	0.3	0.1	0.9	3,253,501
Isiolo County	60.6	0.7	0.3	1.5	20.8	5.9	1.8	3.4	5.1	30,877
Isiolo North Constituency	66.3	0.6	0.4	2.0	12.4	4.3	2.5	4.7	6.8	22,149
Wabera	92.4	2.5	1.6	2.6	0.7	0.0	0.1	0.0	0.1	3,647
BulaPesa	96.4	0.2	0.6	2.5	0.1	0.1	0.0	0.0	0.0	6,145
Chari	60.5	0.2	0.0	0.1	22.1	14.9	0.0	0.0	2.1	1,024
Cherab	55.3	0.2	0.0	0.3	25.4	12.3	0.0	0.0	6.4	3,256
Ngare Mara	28.0	0.4	0.1	8.6	41.0	1.5	0.2	8.6	11.6	1,133
Burat	62.3	0.5	0.0	1.8	25.0	1.5	1.3	3.4	4.2	3,822
Oldonyiro	8.6	0.0	0.1	0.6	7.5	10.3	15.7	25.9	31.3	3,122
Isiolo South Constituency	46.2	0.8	0.0	0.1	42.0	9.8	0.1	0.1	1.0	8,728
Garbatulla	33.9	1.4	0.0	0.0	51.4	11.9	0.1	0.1	1.2	3,473
Kinna	48.0	0.1	0.0	0.1	43.9	7.4	0.1	0.1	0.3	2,908
Sericho	61.9	0.8	0.0	0.3	25.9	9.6	0.0	0.0	1.4	2,347

Table 9.18: Main Roofing Material in Male Headed Households by County, Constituency and Wards

County/Constituency/ Wards	Corrugated Iron Sheets	Tiles	Concrete	Asbestos sheets	Grass	Makuti	Tin	Mud/ Dung	Other	Households
Kenya	73.0	2.3	3.9	2.3	13.5	3.2	0.3	0.5	1.0	5,762,320
Rural	69.2	0.8	0.2	1.8	21.5	4.4	0.2	0.9	1.1	3,413,616
Urban	78.5	4.6	9.3	2.9	2.0	1.4	0.3	0.1	0.9	2,348,704
Isiolo County	60.4	0.8	0.3	1.7	22.2	5.9	1.4	2.5	4.7	19,020
Isiolo North Constituency	69.0	0.7	0.5	2.4	11.5	4.0	2.0	3.6	6.2	13,062
Wabera	92.8	2.6	1.7	2.3	0.4	0.0	0.0	-	0.1	2,333
BulaPesa	96.1	0.2	0.7	2.8	0.1	0.1	0.0	-	0.0	3,841
Chari	56.7	0.2	-	0.2	24.5	15.1	-	-	3.4	621

Cherab	50.7	0.2	-	0.5	26.7	13.4	0.1	-	8.5	1,951
Ngare Mara	36.6	0.7	0.1	12.3	31.9	1.3	0.3	6.7	10.0	673
Burat	63.6	0.8	-	1.7	23.4	1.6	1.3	2.8	4.9	2,206
Oldonyiro	12.0	-	-	1.2	6.0	8.0	16.2	25.6	31.0	1,437
Isiolo South Constituency	41.5	0.8	-	0.2	45.7	10.3	0.1	0.0	1.3	5,958
Garbatulla	29.3	1.4	-	0.0	55.4	12.1	0.1	0.0	1.7	2,397
Kinna	43.3	0.2	-	0.2	48.7	7.2	0.2	-	0.4	1,952
Sericho	57.7	0.7	-	0.4	27.8	11.3	0.1	-	2.1	1,609

Table 9.19: Main Roofing Material in Female Headed Households by County, Constituency and Wards

County/Constituency/ Wards	Corrugated Iron Sheets	Tiles	Concrete	Asbestos sheets	Grass	Makuti	Tin	Mud/ Dung	Other	Households
Kenya	74.5	2.0	3.0	2.2	12.7	3.2	0.3	1.2	1.0	2,731,060
Rural	72.5	0.7	0.1	1.8	17.8	3.9	0.3	1.8	1.1	1,826,263
Urban	78.6	4.5	8.7	2.9	2.3	1.6	0.3	0.1	0.9	904,797
Isiolo County	60.9	0.5	0.3	1.2	18.4	5.8	2.4	4.8	5.9	11,857
Isiolo North Constituency	62.3	0.5	0.4	1.5	13.6	4.9	3.1	6.2	7.6	9,087
Wabera	91.6	2.3	1.5	3.2	1.2	-	0.1	-	0.1	1,314
BulaPesa	97.0	0.2	0.5	2.1	0.1	0.1	0.0	-	-	2,304
Chari	66.5	0.2	-	-	18.4	14.6	-	-	0.2	403
Cherab	62.1	0.2	-	0.2	23.4	10.7	-	0.1	3.3	1,305
Ngare Mara	15.4	-	-	3.0	54.3	1.7	-	11.5	13.9	460
Burat	60.6	0.2	-	1.9	27.1	1.5	1.2	4.2	3.2	1,616
Oldonyiro	5.6	-	0.1	0.1	8.8	12.3	15.3	26.2	31.5	1,685
Isiolo South Constituency	56.1	0.7	-	0.0	34.1	8.7	-	0.3	0.1	2,770
Garbatulla	44.3	1.3	-	-	42.6	11.3	-	0.4	0.1	1,076
Kinna	57.7	-	-	-	34.1	7.8	-	0.2	0.1	956
Sericho	71.1	0.8	-	0.1	21.7	6.0	-	0.1	0.1	738

Table 9.20: Main material of the wall by County, Constituency and Wards

County/Constituency/ Wards	Stone	Brick/Block	Mud/ Wood	Mud/ Cement	Wood only	Corrugated Iron Sheets	Grass/ Reeds	Tin	Other	Households
Kenya	16.7	16.9	36.5	7.7	11.1	6.7	3.0	0.3	1.2	8,493,380
Rural	5.7	13.8	50.0	7.6	14.4	2.5	4.4	0.3	1.4	5,239,879
Urban	34.5	21.9	14.8	7.8	5.8	13.3	0.8	0.3	0.9	3,253,501
Isiolo County	10.3	6.7	31.1	3.7	22.3	1.2	17.7	4.9	2.1	30,877
Isiolo North Constituency	14.2	8.3	28.1	2.1	29.6	1.5	6.8	6.8	2.7	22,149
Wabera	18.1	21.9	3.0	0.7	53.0	2.4	0.7	0.1	0.1	3,647
BulaPesa	35.3	8.4	6.4	0.6	47.6	1.5	0.1	0.1	0.1	6,145
Chari	0.3	0.6	61.1	1.9	3.8	0.3	26.7	0.1	5.3	1,024
Cherab	0.4	1.3	53.5	1.2	13.1	0.2	26.9	0.0	3.5	3,256
Ngare Mara	10.4	9.4	58.1	4.0	3.3	10.1	3.0	0.2	1.6	1,133
Burat	4.4	7.2	45.8	4.8	30.4	0.4	2.3	2.3	2.4	3,822
Oldonyiro	0.2	2.8	30.2	3.9	1.1	0.3	6.6	45.0	10.0	3,122
Isiolo South Constituency	0.5	2.6	38.8	7.7	3.8	0.6	45.2	0.1	0.7	8,728
Garbatulla	0.4	3.8	25.0	7.5	2.4	0.5	59.6	0.0	0.8	3,473
Kinna	0.4	2.1	42.7	5.1	3.7	0.8	44.8	0.1	0.3	2,908
Sericho	1.0	1.4	54.5	11.0	6.1	0.5	24.1	0.1	1.2	2,347

Table 9.21: Main Material of the Wall in Male Headed Households by County, Constituency and Ward

County/ Constitu- ency/ Wards	Stone	Brick/ Block	Mud/ Wood	Mud/ Cement	Wood only	Corrugated Iron Sheets	Grass /Reeds	Tin	Other	Households
Kenya	17.5	16.6	34.7	7.6	11.4	7.4	3.4	0.3	1.2	5,762,320
Rural	5.8	13.1	48.9	7.3	15.4	2.6	5.2	0.3	1.4	3,413,616
Urban	34.6	21.6	14.0	7.9	5.6	14.4	0.7	0.3	0.9	2,348,704
Isiolo County	11.0	7.3	28.2	3.6	22.5	1.5	20.2	3.7	2.1	19,020
Isiolo North Constituency	15.7	9.5	25.4	1.9	30.6	1.9	7.1	5.3	2.5	13,062
Wabera	18.6	23.4	3.3	0.6	50.8	2.7	0.5	0.0	0.0	2,333
BulaPesa	36.9	8.3	6.1	0.5	46.6	1.4	0.1	0.1	0.1	3,841
Chari	0.3	0.6	58.3	1.3	3.2	0.2	30.0	0.2	6.0	621
Cherab	0.4	1.6	48.4	1.2	15.1	0.2	29.1	-	4.2	1,951
Ngare Mara	14.6	14.0	44.6	3.0	3.6	15.6	2.2	0.3	2.2	673
Burat	4.1	8.3	44.2	4.8	30.4	0.5	2.6	2.2	2.8	2,206

Oldonyiro	0.2	4.5	29.8	4.2	1.3	0.6	5.7	44.3	9.3	1,437
Isiolo South Constituency	0.7	2.4	34.4	7.2	4.5	0.8	49.0	0.1	1.0	5,958
Garbatulla	0.5	3.3	21.1	6.4	3.0	0.7	63.9	0.0	1.0	2,397
Kinna	0.3	2.2	37.9	4.8	4.1	1.1	49.1	0.1	0.4	1,952
Sericho	1.4	1.4	49.9	11.1	7.2	0.6	26.7	0.1	1.7	1,609

Table 9.22: Main Material of the Wall in Female Headed Households by County, Constituency and Ward

County/ Constituency	Stone	Brick/Block	Mud/Wood	Mud/Cement	Wood only	Corrugated Iron Sheets	Grass/ Reeds	Tin	Other	Households
Kenya	15.0	17.5	40.4	7.9	10.5	5.1	2.1	0.3	1.2	2,731,060
Rural	5.4	14.9	52.1	8.0	12.6	2.4	2.8	0.4	1.4	1,826,263
Urban	34.2	22.6	16.9	7.6	6.2	10.5	0.8	0.3	0.9	904,797
Isiolo County	9.2	5.6	35.8	3.9	22.1	0.7	13.6	6.8	2.3	11,857
Isiolo North Constituency	12.0	6.5	32.0	2.4	28.1	0.9	6.4	8.9	2.9	9,087
Wabera	17.2	19.3	2.5	0.9	56.8	1.9	1.1	0.1	0.1	1,314
BulaPesa	32.6	8.5	7.0	0.8	49.2	1.6	0.1	0.1	0.1	2,304
Chari	0.2	0.5	65.5	2.7	4.7	0.5	21.6	-	4.2	403
Cherab	0.5	0.8	61.1	1.1	10.1	0.2	23.8	-	2.5	1,305
Ngare Mara	4.3	2.8	77.8	5.4	2.8	2.0	4.1	-	0.7	460
Burat	4.9	5.7	47.9	4.7	30.4	0.3	1.9	2.4	1.9	1,616
Oldonyiro	0.2	1.3	30.6	3.6	1.0	0.1	7.3	45.5	10.5	1,685
Isiolo South Constituency	0.3	2.9	48.4	8.7	2.3	0.1	36.9	0.1	0.2	2,770
Garbatulla	0.2	4.8	33.6	9.9	0.9	0.2	50.1	-	0.3	1,076
Kinna	0.5	1.9	52.7	5.8	2.8	0.1	36.1	-	0.1	956
Sericho	0.3	1.4	64.6	10.8	3.8	0.1	18.6	0.3	0.1	738

Table 9.23: Main Material of the Wall in Female Headed Households by County, Constituency and Ward

County/Constituency/Wards	Pond	Dam	Lake	Stream/River	Unprotected Spring	Unprotected well	Jabia	Water vendor	Other	Unimproved Sources	Protected Spring	Protected Well	Bore-hole	Piped into Dwelling	Piped	Rain Water Collection	Improved Sources	No of Individuals
Kenya	2.7	2.4	1.2	23.2	5.0	6.9	0.3	5.2	0.4	47.4	7.6	7.7	11.6	5.9	19.2	0.7	52.6	37,919,647
Rural	3.6	3.2	1.5	29.6	6.4	8.7	0.4	2.2	0.5	56.0	9.2	8.1	12.0	1.8	12.1	0.8	44.0	26,075,195
Urban	0.9	0.7	0.5	9.2	1.9	2.9	0.2	11.8	0.1	28.3	4.0	6.8	10.7	14.7	34.9	0.5	71.7	11,844,452
Isiolo County	0.1	0.5	0.0	11.7	2.0	22.7	0.2	3.0	0.5	40.8	0.4	1.3	9.8	6.2	41.5	0.0	59.2	139,396
Isiolo North Constituency	0.1	0.0	0.0	10.3	1.7	23.3	0.1	4.2	0.3	40.2	0.6	1.1	6.7	8.3	43.1	0.0	59.8	96,699
Wabera	0.1	0.0	0.0	0.0	0.1	0.6	0.1	10.0	1.1	12.0	0.0	0.0	0.8	25.9	61.2	0.1	88.0	16,264
BulaPesa	0.1	0.0	0.1	5.9	0.1	0.0	0.1	5.9	0.6	12.8	0.2	0.0	0.5	10.5	75.9	0.0	87.2	22,203
Chari	0.0	0.0	0.0	14.6	0.0	3.9	0.0	5.2	0.0	23.7	0.2	0.0	0.0	0.1	76.0	0.0	76.3	4,773
Cherab	0.0	0.0	0.0	0.1	0.3	47.4	0.0	1.2	0.0	49.0	0.1	0.4	8.9	3.5	38.1	0.1	51.0	15,475
Ngare Mara	0.4	0.0	0.0	3.2	6.9	16.1	0.0	0.0	0.0	26.7	7.3	17.5	46.6	0.1	1.7	0.0	73.3	4,862
Burat	0.1	0.0	0.0	33.5	5.8	9.9	0.1	3.9	0.0	53.4	0.7	0.2	14.4	5.3	25.9	0.1	46.6	17,916
Oldonyiro	0.3	0.0	0.0	11.8	1.4	81.5	0.0	0.0	0.0	95.2	0.0	0.7	0.3	0.0	3.8	0.0	4.8	15,206
Isiolo South Constituency	0.1	1.7	0.0	14.8	2.7	21.1	0.5	0.4	0.9	42.2	0.1	1.6	16.8	1.5	37.8	0.0	57.8	42,697
Garbatulla	0.2	0.4	0.0	13.1	3.6	23.8	0.0	0.1	2.4	43.5	0.1	3.8	13.4	2.0	37.2	0.0	56.5	16,120
Kinna	0.1	0.2	0.0	26.7	3.3	1.9	0.0	0.3	0.0	32.5	0.1	0.0	29.9	1.1	36.3	0.0	67.5	14,551
Sericho	0.0	5.4	0.0	2.6	0.8	40.8	1.6	0.8	0.0	52.0	0.1	0.7	5.5	1.2	40.5	0.0	48.0	12,026

Table 9.24: Source of Water of Male headed Household by County Constituency and Ward

County/Constituency/ Wards	Pond	Dam	Lake	Stream/ River	Unprotected Spring	Unprotected Well	Jabia	Water vendor	Other	Unimproved Sources	Protected Spring	Protected Well	Borehole	Piped into Dwelling	Piped	Rain Water Collection	Improved Sources	No. of Individuals
Kenya	2.7	2.3	1.1	22.4	4.8	6.7	0.4	5.6	0.4	46.4	7.4	7.7	11.7	6.2	19.9	0.7	53.6	26,755,066
Rural	3.7	3.1	1.4	29.1	6.3	8.6	0.4	2.4	0.5	55.6	9.2	8.2	12.1	1.9	12.2	0.8	44.4	18,016,471
Urban	0.8	0.6	0.5	8.5	1.8	2.8	0.2	12.1	0.1	27.5	3.8	6.7	10.8	14.9	35.8	0.5	72.5	8,738,595
Isiolo County	0.1	0.5	0.0	12.5	2.1	22.2	0.2	2.9	0.5	41.0	0.4	1.3	10.1	6.5	40.6	0.0	59.0	89,044
Isiolo North Constituency	0.1	0.0	0.0	10.3	1.6	22.4	0.1	4.2	0.3	39.1	0.6	1.0	7.0	9.2	43.1	0.0	60.9	58,689
Wabera	0.1	-	-	0.0	0.1	0.9	0.0	10.3	1.0	12.4	-	0.0	0.8	27.1	59.7	-	87.6	10,330
BulalPesa	0.1	0.1	-	5.9	0.1	0.0	0.1	5.4	0.6	12.4	0.2	0.0	0.5	11.6	75.1	0.1	87.6	14,314
Chari	-	-	-	16.0	-	5.1	-	7.1	-	28.1	0.1	-	-	-	71.8	-	71.9	3,018
Cherab	-	0.1	-	0.1	0.3	51.1	-	0.8	-	52.4	0.2	0.4	11.7	3.4	31.8	0.1	47.6	9,911
Ngare Mara	0.3	-	-	3.5	6.7	16.0	-	0.1	-	26.5	9.8	16.0	44.5	0.3	3.0	-	73.5	2,695
Burat	0.2	-	0.0	34.6	5.8	9.6	0.2	3.2	-	53.5	0.4	0.3	14.7	5.6	25.4	0.1	46.5	10,741
Oldonyiro	0.4	-	-	11.4	1.1	83.0	-	0.0	-	96.0	-	0.6	0.2	-	3.2	-	4.0	7,680
Isiolo South Constituency	0.1	1.5	-	16.9	3.1	21.7	0.4	0.3	0.8	44.8	0.1	1.9	16.2	1.2	35.7	0.0	55.2	30,355
Garbatulla	0.0	0.4	-	15.4	4.1	25.2	-	0.1	2.2	47.3	0.1	4.5	14.1	1.6	32.3	-	52.7	11,633
Kinna	0.1	0.1	-	30.5	3.6	2.1	-	0.2	-	36.6	0.2	0.1	27.9	0.8	34.5	-	63.4	10,164
Sericho	0.0	4.8	-	3.0	1.1	40.1	1.3	0.8	-	51.2	0.1	0.7	5.2	1.1	41.6	0.0	48.8	8,558

Table 9.25: Source of Water of Female headed Household by County, Constituency, and Ward

County/Constituency/ Wards	Pond	Dam	Lake	Stream River	Unprotected Spring	Unprotect- ed Well	Jabia	Water vendor	Other	Unim- proved Sources	Pro- tected Spring	Protect- ed Well	Bore- hole	Piped into Dwelling	Piped	Rain Water Collec- tion	Im- proved Sourc- es	No. of Individuals
Kenya	2.8	2.7	1.3	25.2	5.3	7.4	0.3	4.4	0.3	49.7	8.1	7.7	11.3	5.1	17.5	0.7	50.3	11,164,581
Rural	3.4	3.5	1.6	30.6	6.5	8.9	0.3	1.8	0.4	57.0	9.5	8.0	11.5	1.6	11.7	0.8	43.0	8,058,724
Urban	1.0	0.8	0.6	11.1	2.3	3.4	0.2	11.1	0.1	30.5	4.7	7.0	10.5	14.2	32.5	0.6	69.5	3,105,857
Isiolo County	0.2	0.5	0.0	10.2	1.9	23.5	0.2	3.2	0.5	40.3	0.4	1.2	9.2	5.8	43.0	0.0	59.7	50,352
Isiolo North Constituency	0.1	-	0.0	10.4	1.9	24.8	0.0	4.2	0.4	41.8	0.5	1.4	6.3	6.9	43.0	0.0	58.2	38,010
Wabera	0.2	-	-	0.0	0.0	0.1	0.2	9.5	1.3	11.2	-	-	0.8	23.9	63.9	0.2	88.8	5,934
BulaPesa	0.1	-	0.2	5.8	0.1	-	-	6.7	0.7	13.6	0.2	0.1	0.4	8.4	77.3	-	86.4	7,889
Chari	-	-	-	12.1	-	1.9	-	2.1	-	16.1	0.3	-	-	0.2	83.3	-	83.9	1,755
Cherab	0.1	-	-	-	0.2	40.8	-	1.8	-	42.9	-	0.4	3.8	3.7	49.2	-	57.1	5,564
Ngare Mara	0.5	-	-	2.9	7.2	16.2	-	-	-	26.9	4.2	19.5	49.3	-	0.2	-	73.1	2,167
Burat	-	-	-	31.8	5.8	10.3	0.1	5.0	-	53.1	1.0	0.1	14.1	4.8	26.8	0.1	46.9	7,175
Oldonyiro	0.2	-	-	12.3	1.8	79.9	-	0.1	-	94.3	0.1	0.8	0.4	-	4.5	-	5.7	7,526
Isiolo South Constituency	0.2	2.2	-	9.5	1.8	19.8	0.7	0.4	1.1	35.6	-	0.9	18.3	2.1	43.1	0.0	64.4	12,342
Garbatulla	0.5	0.5	-	7.2	2.3	20.1	0.1	-	3.0	33.7	-	2.0	11.4	3.2	49.7	0.1	66.3	4,487
Kinna	-	0.3	-	18.1	2.6	1.5	-	0.6	-	23.0	-	-	34.7	1.7	40.5	-	77.0	4,387
Sericho	0.1	6.8	-	1.5	0.1	42.5	2.4	0.7	-	54.1	-	0.5	6.3	1.3	37.7	-	45.9	3,468

Table 9.26: Human Waste Disposal by County, Constituency and Ward

County/ Constituency	Main Sewer	Septic Tank	Cess Pool	VIP Latrine	Pit Latrine	Improved Sanitation	Pit Latrine Uncovered	Bucket	Bush	Other	Unimproved Sanitation	Number of HH Memmbers
Kenya	5.91	2.76	0.27	4.57	47.62	61.14	20.87	0.27	17.58	0.14	38.86	37,919,647
Rural	0.14	0.37	0.08	3.97	48.91	53.47	22.32	0.07	24.01	0.13	46.53	26,075,195
Urban	18.61	8.01	0.70	5.90	44.80	78.02	17.67	0.71	3.42	0.18	21.98	11,844,452
Isiolo County	4.14	1.26	0.05	2.63	32.02	40.11	12.91	0.11	46.52	0.36	59.89	139,396
Isiolo North Constituency	5.90	1.79	0.05	2.24	33.06	43.04	15.62	0.11	41.01	0.22	56.96	96,699
Wabera	22.28	3.90	0.10	2.53	17.79	46.61	47.07	0.20	5.20	0.92	53.39	16,264
BulaPesa	8.73	2.51	0.08	2.77	66.60	80.69	17.06	0.20	1.98	0.07	19.31	22,203
Chari	0.04	0.04	0.10	1.47	38.93	40.58	11.86	0.08	47.22	0.25	59.42	4,773
Cherab	0.10	0.02	0.00	1.89	36.22	38.23	6.66	0.00	55.11	0.00	61.77	15,475
Ngare Mara	1.21	6.48	0.00	1.71	16.15	25.55	0.35	0.08	73.88	0.14	74.45	4,862
Burat	0.36	1.11	0.02	2.43	33.30	37.21	8.82	0.08	53.80	0.09	62.79	17,916
Oldonyiro	0.00	0.15	0.05	1.68	0.49	2.37	3.08	0.07	94.44	0.05	97.63	15,206
Isiolo South Constituency	0.17	0.06	0.06	3.52	29.67	33.48	6.77	0.09	58.99	0.68	66.52	42,697
Garbatulla	0.00	0.15	0.11	5.33	21.25	26.84	2.35	0.02	70.79	0.00	73.16	16,120
Kinna	0.05	0.02	0.03	3.36	27.88	31.34	7.59	0.18	59.89	1.00	68.66	14,551
Sericho	0.53	0.00	0.04	1.27	43.11	44.95	11.69	0.07	42.08	1.20	55.05	12,026

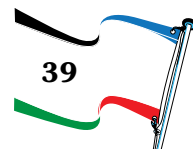
Table 9.27: Human Waste Disposal in Male Headed household by County, Constituency and Ward

County/ Constituency/ wards	Main Sewer	Septic Tank	Cess Pool	VIP Latrine	Pit Latrine	Improved Sanitation	Pit Latrine Uncovered	Bucket	Bush	Other	Unimproved Sanitation	Number of HH Memmbers
Kenya	6.30	2.98	0.29	4.60	47.65	61.81	20.65	0.28	17.12	0.14	38.19	26,755,066
Rural	0.15	0.40	0.08	3.97	49.08	53.68	22.22	0.07	23.91	0.12	46.32	18,016,471
Urban	18.98	8.29	0.73	5.89	44.69	78.58	17.41	0.70	3.13	0.18	21.42	8,738,595
Isiolo County	4.22	1.40	0.07	2.61	31.44	39.74	12.53	0.10	47.24	0.38	60.26	89,044
Isiolo North Constituency	6.31	2.09	0.06	2.34	33.67	44.48	16.00	0.12	39.18	0.21	55.52	58,689
Wabera	22.18	4.09	0.10	2.83	18.03	47.22	46.65	0.27	5.13	0.73	52.78	10,330
BulaPesa	9.12	2.61	0.08	2.49	66.27	80.56	17.38	0.18	1.77	0.10	19.44	14,314
Chari	0.00	0.07	0.17	2.15	36.35	38.73	9.05	0.00	51.82	0.40	61.27	3,018
Cherab	0.09	0.01	0.00	1.77	32.78	34.65	5.96	0.00	59.39	0.00	65.35	9,911
Ngare Mara	1.93	9.80	0.00	1.52	17.92	31.17	0.30	0.00	68.27	0.26	68.83	2,695

Burat	0.43	1.40	0.04	2.60	33.05	37.51	8.73	0.12	53.49	0.15	62.49	10,741
Oldonyiro	0.00	0.21	0.09	2.17	0.42	2.89	3.59	0.05	93.46	0.00	97.11	7,680
Isiolo South Constituency	0.17	0.07	0.07	3.13	27.14	30.59	5.82	0.07	62.82	0.71	69.41	30,355
Garbatulla	0.00	0.15	0.15	4.70	18.29	23.30	2.14	0.02	74.55	0.00	76.70	11,633
Kinna	0.00	0.03	0.00	2.82	26.55	29.41	6.16	0.18	63.13	1.12	70.59	10,164
Sericho	0.62	0.00	0.06	1.37	39.86	41.90	10.41	0.00	46.51	1.18	58.10	8,558

Table 9.28: Human Waste Disposal in Female Headed Household by County, Constituency and Ward

County/ Constituency	Main Sewer	Septic Tank	Cess Pool	VIP Latrine	Pit Latrine	Improved Sanitation	Pit Latrine Uncovered	Bucket	Bush	Other	Unimproved Sanitation	Number of HH Memmbers
Kenya	5.0	2.2	0.2	4.5	47.6	59.5	21.4	0.3	18.7	0.2	40.5	11,164,581.0
Rural	0.1	0.3	0.1	4.0	48.5	53.0	22.6	0.1	24.2	0.1	47.0	8,058,724.0
Urban	17.6	7.2	0.6	5.9	45.1	76.4	18.4	0.7	4.3	0.2	23.6	3,105,857.0
Isiolo	4.0	1.0	0.0	2.7	33.0	40.8	13.6	0.1	45.2	0.3	59.2	50,352.0
Isiolo North	5.3	1.3	0.0	2.1	32.1	40.8	15.0	0.1	43.8	0.2	59.2	38,010.0
Wabera	22.5	3.6	0.1	2.0	17.4	45.6	47.8	0.1	5.3	1.3	54.4	5,934.0
BulaPesa	8.0	2.3	0.1	3.3	67.2	80.9	16.5	0.2	2.3	0.0	19.1	7,889.0
Chari	0.1	0.0	0.0	0.3	43.4	43.8	16.7	0.2	39.3	0.0	56.2	1,755.0
Cherab	0.1	0.0	0.0	2.1	42.3	44.6	7.9	0.0	47.5	0.0	55.4	5,564.0
Ngare Mara	0.3	2.4	0.0	1.9	13.9	18.6	0.4	0.2	80.8	0.0	81.4	2,167.0
Burat	0.3	0.7	0.0	2.2	33.7	36.8	8.9	0.0	54.3	0.0	63.2	7,175.0
Oldonyiro	0.0	0.1	0.0	1.2	0.6	1.8	2.6	0.1	95.4	0.1	98.2	7,526.0
Isiolo South	0.2	0.0	0.0	4.5	35.9	40.6	9.1	0.1	49.6	0.6	59.4	12,342.0
Garbatulla	0.0	0.1	0.0	7.0	28.9	36.0	2.9	0.0	61.0	0.0	64.0	4,487.0
Kinna	0.2	0.0	0.1	4.6	31.0	35.8	10.9	0.2	52.4	0.7	64.2	4,387.0
Sericho	0.3	0.0	0.0	1.0	51.1	52.5	14.9	0.3	31.2	1.2	47.5	3,468.0





About KNBS

The Kenya National Bureau of Statistics (KNBS) is a semi-autonomous organization established under Statistics Act 2006 as the principal agency for collecting, compiling, analyzing, publishing and disseminating statistical information needed for planning and policy formulation and is the custodian of official statistical information. More specifically the Bureau is charged with responsibility of: planning, authorizing, co-coordinating and supervising all official statistical programmes undertaken within the National Statistical System (NSS); establishing standards and promoting the use of best practices and methods in the production and dissemination of statistical information across the NSS; collecting, compiling, analyzing, abstracting and disseminating statistical information on matters specified in the First Schedule of the Statistics Act; conducting population and housing census every ten years, and such other censuses and surveys as the board may determine; and maintaining a comprehensive and reliable national socio-economic database.

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