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2009 Kenya Population and Housing Census

Analytical Report on Mortality

Volume VI

March 2012

Kenya National Bureau of Statistics

Ministry of State for Planning, National Development and Vision 2030

KENYA CENSUS2009
Nipo! Natambulika!

2009 Kenya Population and Housing Census

"Counting Our People for Implementation of Vision 2030"

Volume VI

Mortality

March 2012

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List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ARVs	Antiretroviral Drugs
ASDR	Age Specific Death Rate
ASDRs	Age Specific Death Rates
ASDRSF	Age Specific Death Rates Female
ASDRSM	Age Specific Death Rates Male
CBS	Central Bureau of Statistics
CD	Children Dead
CDR	Crude Death Rate
CEB	Children Ever Born
DfID	Department for International Development
EA	Enumeration Area
FDSE	Free Day Secondary Education
FPE	Free Primary Education
GFR	General Fertility Rate
GIS	Geographic Information System
HIV	Human Immunodeficiency Virus
ICADE	Integrated Computer Assisted Data Entry system
ICPD	International Conference on Population and Development
ICT	Information and Communication Technology
IMR	Infant Mortality Rate
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
KFI	Keying From Image
KPHC	Kenya Population and Housing Census
MDGs	Millennium Development Goals
MMR	Maternal Mortality Ratio
MMRate	Maternal Mortality Rate
NCAPD	National Coordinating Agency for Population and Development
NCSC	National Census Steering Committee
NGOs	Non – Governmental Organizations
NPPSD	National Population Policy for Sustainable Development
PMTCT	Prevention from Mother to Child Transmission
OCR	Optical Character Recognition
PoA	Plan of Action
PRD	Pregnancy Related Deaths
SIDA	Swedish International Development Agency
SSA	Sub –Saharan Africa
TFR	Total Fertility Rate
TWC	Technical Working Committee
U5M	Under-5 Mortality
U5MR	Under Five Mortality Rate

UN	United Nations
UNAIDs	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children Fund
UNSD	United Nations Statistical Division
US	United States
USAID	United States Agency for International Development
WHO	World Health Organization

Foreword

The 2009 Kenya Population and Housing Census (KPHC) was conducted from the night of 24th/25th to 31st August 2009. The Census was the fifth to be undertaken in Kenya since independence and the seventh in the country's history. Previous censuses were conducted in 1948, 1962, 1969, 1979, 1989 and 1999. Planning and execution of the 2009 Census was spearheaded by the Kenya National Bureau of Statistics (KNBS) on behalf of the Government – in accordance with the Statistics Act, 2006. The theme of the Census was *"Counting our People for Implementation of Vision 2030",* which was deemed necessary in order to respond to the greater demand for statistical information, for monitoring the implementation of Kenya's development plans and other global initiatives, such as the Millennium Development Goals (MDGs).

The main objective of the 2009 Census was to provide the Government and other stakeholders with essential information on the population, as regards demographic, social and economic characteristics, housing conditions and household amenities. By generating information at all administrative levels, it was also intended to provide a sound basis to evaluate the impact of population-related policies and programmes in the country.

The first series of the 2009 Census preliminary results were released on August, 2010, in a set of four volumes. The volumes presented census information in the following categories; Population Distribution by Administrative Units; Population Distribution by Political Units; Population Distribution by Age and Sex; and, Distribution of Households by Socio-economic Characteristics. This second set comprising thirteen analytical reports, addresses issues on Fertility and Nuptiality, Mortality , Housing Conditions, Amenities and Household Assets, Education and Training, Household and Family Dynamics, Disability, Migration, Urbanization, Labour Force Dynamics, Gender Dimensions, Population Dynamics, Population Projections and Census Atlas.

Preparation of the analytical reports involved collaborative efforts of both local and international experts as well as various Government Ministries and Departments. The authors were recruited on competitive basis, ensuring they possessed the necessary experience and skills. The authorship was done under the supervision of two experienced lead consultants.

Data capture was done using scanning technology. The processes were highly integrated, with tight controls to guarantee accuracy of results. To achieve internal consistency and minimize errors, rigorous data editing, cleaning and validation were carried out to facilitate further analysis of the results. The information presented in these reports is therefore based on more cleaned data sets, and is preferred in case there are differences in the results published in the first set of volumes.

This monograph presents status of mortality from the 2009 Census. The analysis shows that Kenya has recorded dramatic declines in childhood mortality in the five years preceding the census. This could be attributed to immunization campaigns mounted by the Ministry of Health. The declines are however not evenly distributed throughout the country. The traditionally high mortality counties such as Siaya, Mandera, Wajir, Lamu, among others still exhibit high levels of mortality both at childhood and adulthood. Life expectancy at birth has also increased significantly both for males and females at national level, however there are

wide disparities between the counties. Maternal mortality has continued to remain high and as such there is need for concerted efforts to encourage women to seek skilled deliveries. There are some counties especially in Eastern and Rift Valley provinces that have low childhood mortality as well as high life expectancy yet other development indicators in these counties do not support such scenarios. Therefore, there is need for specialized mortality surveys in such counties to validate findings from the Census.

On behalf of the Government of Kenya, I wish to thank the management and staff of Kenya National Bureau of Statistics, KNBS Board of Directors and authors for their contribution towards preparation of this monograph. I also thank the US Census Bureau for the technical support. I would also like to thank our development partners, especially UNFPA, for the financial support in writing and publication of this monograph.

Hon. Wycliffe Ambetsa Oparanya, E.G.H, MP

Minister of State for Planning, National Development and Vision 2030

Acknowledgement

The 2009 Kenya Population and Housing Census (KPHC), whose theme was *"Counting our People for Implementation of Vision 2030"* was the fifth to be conducted in Kenya since independence, and the seventh in the country's history. The census was carried out on a *de facto* basis, with August 24th/25th as the reference night. The first series of the 2009 Census preliminary results were released in a set of four volumes, in August, 2010. This was achieved in a record time of one year after successful enumeration. This monograph is one among a set of thirteen, which are a culmination of an ambitious, synchronized and all-inclusive in-depth analysis process, addressing various topical areas regarding the demographic, social and economic profiles of the Kenyan population.

The 2009 Census was accomplished through concerted effort of various organizations, institutions, Government Ministries and individuals who assisted in a variety of ways to prepare, collect, compile, process, analyze and publish the results. Kenya National Bureau of Statistics (KNBS), on behalf of the Government, takes this opportunity to thank all those who participated in the preparation of this monograph.

Special appreciation goes to Dr. Edward Sambili, the Permanent Secretary in the Ministry of State for Planning, National Development and Vision 2030; the KNBS Board of Directors led by the Chairman, Mr. Edwin Shisia Osundwa, staff of Population and Social Statistics Directorate and the entire KNBS staff, for their spirited efforts towards successful compilation of the monographs.

We also thank our Development Partners, namely, UNFPA, USAID, UNICEF, DfID, UNDP, SIDA, and the US Census Bureau for their material, financial and technical support, offered during various phases of implementation. Additional gratitude goes to UNFPA for coordinating donor support to the Census process.

Finally, we sincerely hope that the data contained in this monograph will be fully utilized in the national development planning process by all stakeholders for, the welfare of the people of Kenya.

A.K.M Kilele, MBS

DIRECTOR GENERAL

KENYA NATIONAL BUREAU OF STATISTICS

Mortality at a Glance, 2009

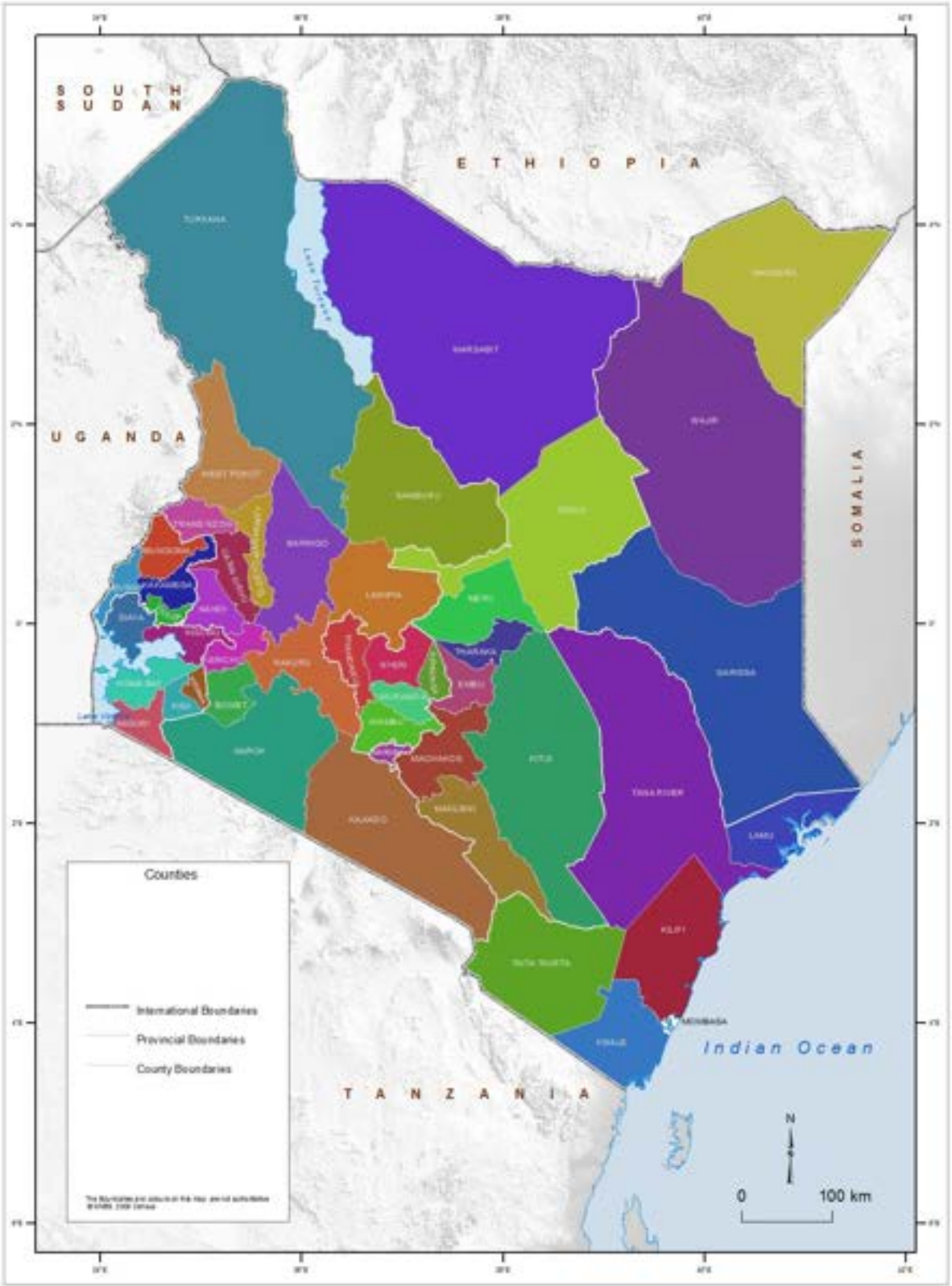
Table 1: Summary of Mortality Indicators, 2009

PROVINCE/COUNTY	IMR *(Per 1,000 Live Births)*	U5MR *(Per 1,000 Live Births)*	LIFE EXPECTANCY (Male) - *(Years)*	LIFE EXPECTANCY (Female) - *(Years)*	ADULT MORTALITY - MALE *(Probability of Dying between ages 15 and 60) per 1000*	ADULT MORTALITY - FEMALE *(Probability of Dying between ages 15 and 60) per 1000*	MMR *(Per 100,000 Live Births)*	CDR (Per 1,000)
Kenya	**54**	**79**	**58**	**61**	**348**	**313**	**495**	**10.4**
Nairobi	**46**	**56**	**62**	**63**	**310**	**300**	**212**	**6.3**
Nairobi	46	56	62	63	310	300	212	6.3
Central	**46**	**58**	**61**	**62**	**305**	**319**	**289**	**9.9**
Nyandarua	50	60	60	60	322	358	364	9.9
Nyeri	40	50	60	60	338	365	318	12.6
Kirinyaga	54	72	61	64	265	263	298	9.4
Murang'a	40	50	60	62	352	327	329	11.9
Kiambu	48	58	63	64	242	278	230	8
Coast	**67**	**94**	**56**	**55**	**352**	**394**	**328**	**11**
Mombasa	87	115	57	56	264	336	223	8.9
Kwale	56	77	58	56	355	574	346	10.1
Kilifi	55	72	57	62	350	282	290	9.3
Tana River	81	112	56	56	330	395	395	11
Lamu	76	106	58	53	305	406	676	11.5
Taita Taveta	61	78	53	51	483	521	603	15.2
Eastern	**47**	**57**	**62**	**67**	**262**	**198**	**400**	**9.2**
Marsabit	42	51	65	64	200	278	1127	7.3
Isiolo	50	60	65	70	195	182	790	6.6
Meru	40	48	62	66	284	174	262	7.7
Tharaka	46	59	60	64	227	162	191	9.6
Embu	44	49	59	65	249	190	388	8.3
Kitui	47	57	65	68	285	223	330	10.2
Machakos	48	56	62	69	318	242	425	12
Makueni	53	61	65	69	324	234	400	11.9
North Eastern	**111**	**148**	**49**	**53**	**462**	**385**	**2,041**	**10.5**
Garissa	92	129	56	65	310	175	646	7.8
Wajir	121	158	42	44	438	369	1,683	9.3
Mandera	118	155	51	55	600	553	3,795	14.3
Nyanza	**101**	**156**	**49**	**54**	**456**	**396**	**546**	**13**
Siaya	142	227	39	46	628	497	691	19.1
Kisumu	123	182	48	51	444	412	597	13.7
Migori	112	173	50	54	404	341	583	12.7
Homa Bay	112	170	47	55	508	354	673	13
Kisii	65	101	57	59	354	315	302	9.8
Nyamira	51	75	58	60	345	332	385	9.7
Rift Valley	**54**	**67**	**57**	**61**	**447**	**368**	**377**	**10**
Turkana	91	121	50	55	422	396	1,594	10.9
West Pokot	81	104	54	64	370	269	434	10.2
Samburu	49	60	54	65	460	357	472	8.5
Trans Nzoia	47	63	55	59	472	381	333	9.7
Baringo	58	70	54	59	462	365	375	10.7
Uasin Gishu	48	61	54	57	490	424	234	10.8
Elgeyo Marakwet	35	42	57	62	450	350	187	10.2
Nandi	39	49	56	57	463	413	408	11.5
Laikipia	43	53	53	57	523	431	221	11.9
Nakuru	64	80	52	55	502	428	374	11.8
Narok	46	58	61	67	326	267	191	6.9
Kajiado	44	53	60	64	347	283	299	7.5
Kericho	56	69	54	59	468	366	243	10.3
Bomet	46	55	55	61	464	390	247	9.4
Western	**65**	**118**	**52**	**54**	**407**	**355**	**319**	**12.8**
Kakamega	65	113	53	55	379	374	316	11.7

PROVINCE/COUNTY	IMR *(Per 1,000 Live Births)*	U5MR *(Per 1,000 Live Births)*	LIFE EXPECTANCY (Male) - *(Years)*	LIFE EXPECTANCY (Female) - *(Years)*	ADULT MORTALITY - MALE *(Probability of Dying between ages 15 and 60) per 1000*	ADULT MORTALITY - FEMALE *(Probability of Dying between ages 15 and 60) per 1000*	MMR *(Per 100,000 Live Births)*	CDR (Per 1,000)
Vihiga	55	94	49	49	555	553	531	16.8
Bungoma	61	115	57	58	282	309	259	10.2
Busia	84	149	51	54	385	356	307	12.6

COUNTY MAP OF KENYA

Map 1: New Administrative Units of Kenya



Executive Summary

The ever increasing demand for evidence based decision making requires data, and to this end, it is imperative that necessary data is collected and availed for use. Demographic data collected through censuses and other surveys produce indicators that assist the nation to evaluate its progress towards achievement of the Millennium Development Goals as well as Vision 2030. One of the objectives of the 2009 Kenya Population and Housing Census was to collect information that would be used to determine levels, trends and differentials in mortality.

Mortality estimates derived from the Census data are expected to assist in the assessment of the country's progress towards the achievement of the 4th MDG target of reduction of under-five mortality by two thirds and the 5th MDG, to improve maternal health. The estimates will also be useful for assessing implementation of national population and health policies, especially in their attempt to put in place mechanisms to reduce infant, child and maternal mortality as well as improving newborn health.

Indirect methods of estimation developed by William Brass (with various modifications) were used to estimate infant and child mortality indicators. However, due to the unreliable estimates derived from these methods, direct estimates were used to generate mortality estimates from the 2009 Census data. The estimates derived from this methods relate to a period five years prior to the Census, as opposed to the previous census estimates that related to a period of ten years prior to the Census.

Whereas in the 1999 Census there were indications of an upward trend in childhood mortality estimates, the 2009 Census estimates indicate there has been a drastic reduction. However, the reduction has not been uniform throughout the country. The traditionally high child mortality counties such as Siaya, Kisumu, Homa Bay, Migori, Wajir and Mandera, continue to experience high mortality.

Esimations of maternal mortality also show significant variations between the counties, with Mandera having the highest maternal mortality ratio and Elgeyo Marakwet the lowest. The results should however be intepreted with caution due to data quality issues alluded to in Chapter 2.

With regard to adult mortality the results indicate that there have been improvements in survival chances nationally. However there are marked differences between counties, with Siaya County having the worst scenario. The results indicate that of those aged 15 in Siaya, 65 percent will die before reaching age 60. This calls for programmatic interventions to change the scenario.

Chapter 1-Introduction

1.1 Census Background

A population census is the total process of collecting, compiling, evaluating, analyzing and publishing or otherwise disseminating demographic, economic, and social data pertaining, at a specified time, to all persons in a country or in a well delimited part of a country. It is vital for effective national development planning because it provides detailed benchmark data on all population characteristics. The UN (1998) recommends that national population censuses should be undertaken at regular intervals of ten years.

1.1.1 History of Census Taking

The 2009 Kenya Population and Housing Census was the fifth to be undertaken in Kenya since independence and the seventh since 1948. Like the previous censuses, the 2009 Census was a *de facto* census conducted on the night of 24th/25th August 2009, though the questionnaire also allowed *de jure* enumeration. The 2009 Census was implemented in accordance with the Statistics Act, 2006. The theme of the census was "*Counting our People for the Implementation of Vision 2030*".

1.1.2 Objectives

The main objective of the 2009 Census was to provide essential information on the demographic, social and economic characteristics of the population, as well as housing conditions and household amenities. This would assist the Government in the implementation, monitoring and evaluation of Kenya Vision 2030. The specific objectives were to ascertain the following:

1. Size, composition and spatial distribution of the population.
2. Levels of fertility, mortality and migration.
3. Rates and patterns of urbanization.
4. Levels of education attained by the population.
5. Size and deployment of the labour force.
6. Size, types and distribution of persons with disabilities.
7. Housing conditions and availability of household amenities.

1.2 Overview of Mortality

1.2.1 Recent Trends

This report looks at mortality, with a focus on infant mortality rate, childhood mortality rate, adult mortality and maternal mortality. Mortality in general and childhood mortality in particular, are used as indicators for social wellbeing. Infant mortality rate (IMR) is one of the clearest indicators of the socio-economic and health status of a community. This is because, more than any other age-group of a population, infant survival depends on the socioeconomic conditions of their environment (Madise et. al 2003). Hence its estimation is important for evaluating and planning public health strategies (Park, 2005). Goal four of the Millennium Development Goals (MDGs) aims to reduce infant and child mortality by two-thirds between 1990 and 2015. This implies that in order to achieve MDG 4 there has

to be a concerted effort to reduce the Infant Mortality Rate (IMR) in Kenya to about 22 per 1000 live births by 2015 (UNICEF, 2006). In Kenya, approximately 5 out of every 100 live births die before their first birthday (KNBS and ICF Macro, 2010). This is a remarkable improvement from 8 out of 100 according to the 2003 Kenya Demographic and Health Survey (2003 KDHS). One major drawback in tracking IMR is the inadequate and inefficient registration system of births and deaths. This forces the country to rely on census and survey data which introduces sampling issues and only provides data at certain points in time.

After Independence childhood mortality (specifically the under-five mortality rate (U5MR), in Kenya fell rapidly until the late 1970s. During this period U5MR dropped by 4 percent annually. However, this rate of decline slowed in the early 1980s, to about 2 percent per annum. Data from the 1998 KDHS showed that, far from declining, the U5MR increased by as much as 25 percent from the late 1980s to the mid-1990s. The upsurge in childhood mortality persisted in the first few years following the year 2000. The results of KDHS 2003 revealed that in Kenya, approximately 8 out of every 100 live births die before their first birthday, representing huge waste of potential manpower (CBS, 2004). The negative trend in child mortality coincided with a number of other adverse factors that included stagnation in growth of per capita income, declining levels of immunization, falling school enrolment, and the emergence of an HIV/AIDS epidemic (Hill et al., 2001). However, according to the results of the 2008/09 KDHS, marked declines have been observed in U5MR in Kenya in recent years to a rate of 74 per 1000 live births. These have been attributed to various intervention programmes by the government and development partners, such as nationwide campaigns aimed at increasing immunization coverage, prevention and treatment of malaria in pregnancy, and treatment of childhood fever (KNBS and ICF Macro, 2010).

With regard to adult mortality, there was a decrease in expectation of life after mid-1980s, coinciding with the onset of the HIV/AIDS pandemic. However, recent estimates of adult mortality based on data collected on orphanhood in the 2008/09 KDHS indicate that there has been a decline for both males and females. The data shows that female adult mortality was lower for ages below 35. For ages 35 and above the rates were more less the same as those reported in the 2003 KDHS. Male mortality was lower for most of the age groups except age groups 15-19 and 45-49. Overall, the summary measure of adult mortality for age group 15-49 showed a decrease of about 12 percent in female mortality and 3 percent in male mortality between 2003 and 2008 (KNBS and ICF Macro, 2010) surveys.

High maternal mortality rates and ratios depict poor access to maternal and child health care services. The health care a mother receives during pregnancy, at the time of delivery and after delivery is important for the survival of both the mother and child (KNBS and ICF Macro, 2010). In Kenya, maternal mortality and neonatal mortality remain high. In Kenya, 1 in 35 women face a risk of maternal death during their lifetime (Republic of Kenya, 2009). Maternal mortality ratio has been estimated at over 480 per 100,000 live births since 1998. Improvements in maternal mortality rates and ratios are desirable for the achievement of the MDG 5 whose aim is to improve maternal health to 147 per 100,000 by 2015.

1.2.2 Policies and Programmes.

This monograph is informed by the National Population Policy for Sustainable Development (NPPSD) of 2000 and the National Reproductive Health Strategy (2009-2015). The NPPSD set out the following targets:

- Reduction of infant mortality rate to 63 per 1000 live births by 2010
- Reduction of under-five mortality rate to 98 deaths per 1000 live births by 2010
- Reduction of maternal mortality rate to 1.7 per 1000 live births by 2010
- Reduction of crude death rate to 9 per 1000 population by 2010
- Improvement in life expectancy at birth for both sexes to 58 in 2010
- Stabilization of the population growth rate at 2.1 percent per year by 2010.

The National Reproductive Health Strategy (2009-2015) has also outlined strategies for the improvement of maternal and neonatal health based on six pillars. These are:

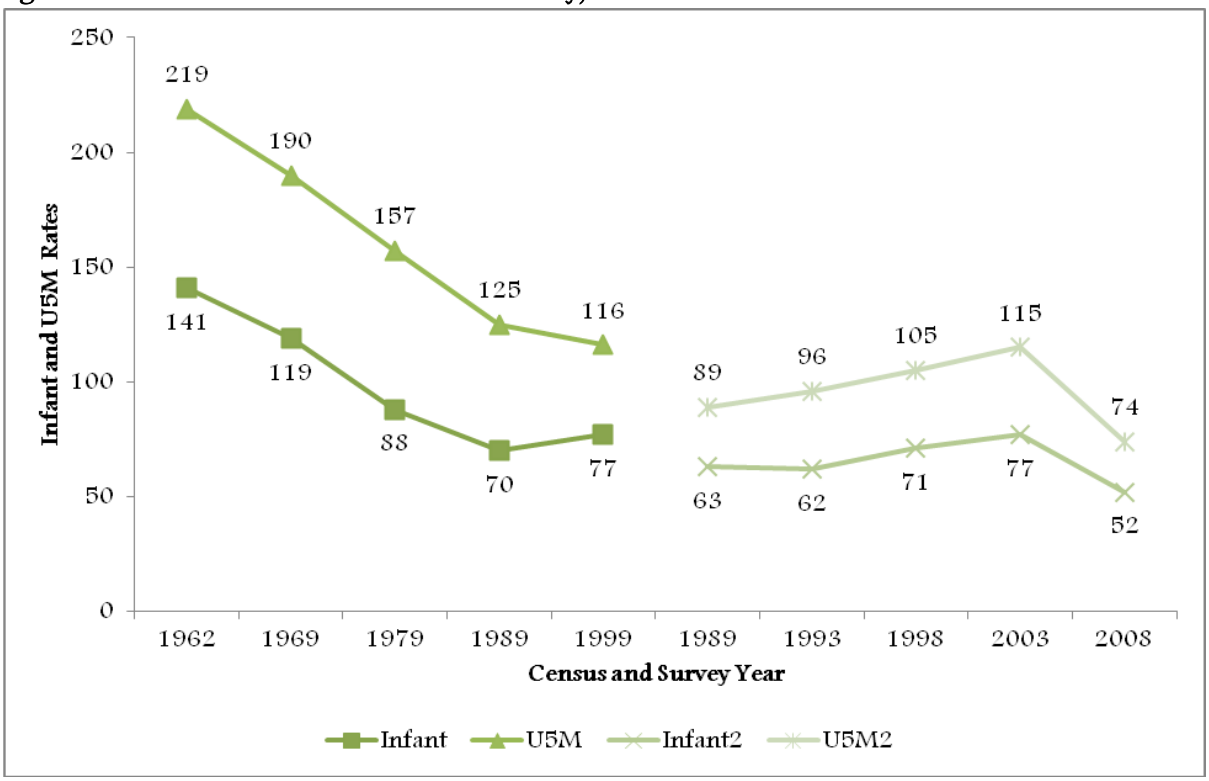
- Pre-conception care and family planning
- Focused antenatal care
- Essential obstetric care
- Essential newborn care
- Targeted postpartum care
- Post abortion care

The main objective is to reduce maternal, perinatal and neonatal morbidity and mortality. This is expected to be achieved through increase of equitable access to maternal and newborn care services, improvement in quality, efficiency and effectiveness of service delivery at all levels and improvement in responsiveness to client needs (Republic of Kenya, 2009).

1.2.3 General Trends

The general trends indicate that there was a steady decline in infant and under-five mortality rates, up to the late 1980s. However in the early 1990s to the early 2000, there was an upsurge in both infant and under-five mortality. As already noted, this was coupled with adverse trends in child health. According to the results of the 2008/09 KDHS, there are indications that there is a reversal in the trends as illustrated in Figure 1.1.

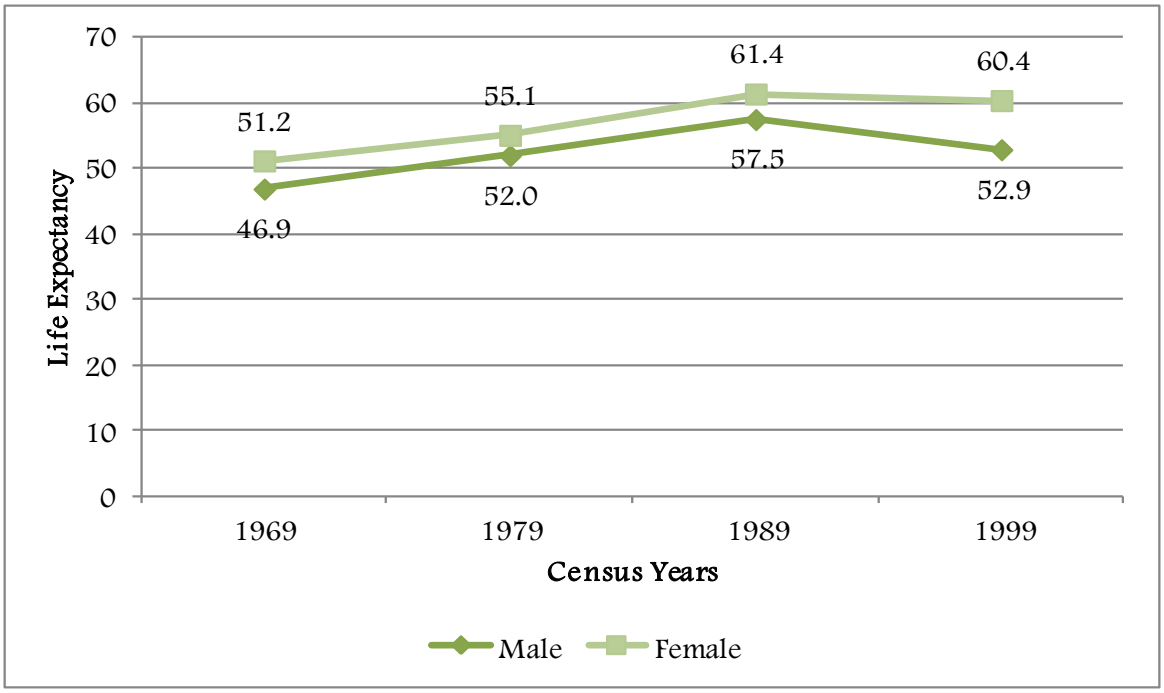
Figure1.1: Trends in Infant and Under Five Mortality, Census 1962-2009 and KDHS 1989-2008



Trends in Life Expectancy

Life expectancy at birth is associated with general trends in the health status and socio economic well-being of a nation. A decline in life expectancy at birth is also an indication of health service provision. Trends in life expectancy show that these have been declining over the years for both males and females as shown in Figure 1.2.

Figure 1.2: Trends in Life Expectancy at Birth, 1969-2009



Trends in Adult Mortality

Results based on survivorship probabilities and hypothetical cohorts over the years indicate a decline in adult mortality. However, evidence indicates a rise of 11 percent during the 1989 – 1999 inter-censal periods (CBS, MF&P 2002). This was experienced in both sexes.

1.3 Data Collection and Capture Methods

1.3.1 Data Collection Procedures

The 2009 KPHC, like the previous censuses, adopted the *de facto* as opposed to *de jure* approach, and the canvasser as opposed to the householder method. However, an additional question was included to identify whether each individual was a usual resident in the household of enumeration, which helped to compile the *de jure* population. Additionally, some foreign and diplomatic missions were allowed to enumerate themselves using a short questionnaire.

The target population was all persons who spent the night of 24th/25th August, 2009 in households, institutions, or outdoor locations within the administrative boundaries of Kenya as well as those transiting through Kenyan territory on the Census night. The frameworks of identification were defined to cover populations in conventional households, institutions, on transit and even those with no fixed abode (out-door sleepers). The unit of enumeration for housing characteristics was the main dwelling unit.

All persons in conventional households and institutions such as boarding schools and colleges were enumerated as scheduled within the seven days using the main (long) form, while the other categories such as hotels, travelers and out-door sleepers were strictly enumerated on the Census night using the short forms.

1.3.2 Types of Data Collected

The 2009 KPHC collected information on demographic and socio-economic indicators for the whole country by administrative and political units. The Census also collected information on the size and distribution of the population, fertility, mortality, school attendance and education attainment, disability status, access to and use of ICT, estimated Kenyans in the Diaspora, housing conditions and access to social amenities. New modules included in the 2009 Census questionnaires were Disability; Information, Communication and Technology (ICT), deaths in the household, number of livestock owned and information on emigrants.

1.3.3 Data Capture Methodology

During the 2009 KPHC, data capture was done using the Optical Character Recognition (OCR) process commonly referred to as the scanning method just like the 1999 KPHC. This mode of data capture was quite effective despite a few technological hitches which were resolved with the help of the US Census Bureau technical assistance. The process had several stages including: - Batching, Scanning, Keying from Image (KFI), optical character recognition (OCR) and the library. Batching involved putting together a number of booklets from the same enumeration area and giving it a unique number for tracking purposes. Scanning was the process of electronically capturing the information from the questionnaires and maintaining it in the system for processing. Keying from Image was the manual keying of the images that could not be recognized by the scanners due to various reasons. The characters that were not clear were done manually by the OCR team. All the captured data was then stored for analysis.

1.3.4 Data Quality

Demographic data collection in Kenya and elsewhere is riddled with problems of administration and logistics. These give rise to coverage and content errors, which vary both in nature and magnitude from one country to another and one region to another. Coverage errors result from omission of certain pockets of the population, while content errors pertain to misreporting or misclassification of events. The errors cause biases and distortions in the estimates.

1.4 Concepts and Definitions

Age-Specific Death Rate (ASDR): The total number of deaths per year per 1000 people of a given age or age group.

Child Mortality ($_4q_1$): The probability of dying between the first and fifth birthday

Childhood Mortality: This term is used in this monograph interchangeably with the term *Under-Five Mortality* (Under-5 Mortality) and refers to all those live births that die before exact age five. (Components include *neonatal, post neonatal, infant* and *child* mortality). However, only Infant and Under 5 mortality measures are presented in this monograph.

Children Ever Born (CEB): Refers to the life-time fertility experience of women 12 years and above. It is the total number of children a woman has given birth to in her lifetime.

Crude Death Rate (per 1000 population): is the annual number of deaths occurring per thousand mid-year populations.

Fertility: Fertility refers to the reproductive performance of a population

Infant Mortality: Deaths of newborns before attaining exact age 1.

Infant Mortality Rate (IMR): The probability of dying between birth and exact age 1.

Life Expectancy: The average number of additional years a person could expect to live if current mortality trends were to continue for the rest of that person's life. Most commonly cited as life expectancy at birth.

Life Table: A tabular display of life expectancy and the probability of dying at each age (or age group) for a given population, according to the age-specific death rates prevailing at that time. The life table gives an organized, complete picture of a population's mortality.

Maternal Death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Maternal Mortality Ratio (MMR): The number of women who die as a result of pregnancy and childbirth complications per 100,000 live births in a given year.

Maternal Mortality Rate (MMRate): The quotient between the number of maternal deaths in a given year and the number of women in the child bearing age, expressed per 100,000, for a given country.

Mortality: Mortality is the demographic study of death in human populations. There are several measures of mortality, namely infant mortality rate, mortality in the first five years of life (under-5 mortality rate), life expectancy at specific ages and maternal mortality rate (maternal deaths per 100 000 live births)

Parity Not-Stated: Refers to women who do not report the number of children they have had.

Proportion Father/Mother Alive: The number of respondents with father/mother alive to the total number of respondents interviewed.

Under-5 Mortality (U5M): Deaths occurring before exact age 5

Under-5 Mortality Rate (U5MR): This is an approximation of the probability of dying before the age of 5. It is the number of children who die before reaching 5 years of age (numerator), divided by the total number of live births in the given 1-year period (denominator), multiplied by 1,000.

Chapter 2 -Data and Methods

This chapter describes the data used in the analysis of mortality including data assessment, quality checks and methods used in the analysis.

2.1 Data

Four sets of questions were included in the 2009 Census questionnaires from which estimates on mortality were obtained.

(a) Questions on lifetime fertility were included in columns P22 to P31 and were asked to women aged 12 and above. The ratios of the number of children who had died (CD) to the total number of children ever born (CEB) and the sex of children and age group of the mother enable estimates of child mortality to be made.
(b) There were questions on particulars of the last live birth from women aged 12 and above. These allow for the estimation of infant mortality in the year preceding the census
(c) For the first time in the Kenyan census, there were questions on recent deaths in the household (1 year prior to the Census). These were included in columns H11 to H13 and contained information on sex and age at death of the deceased. These allow for direct estimation of mortality.
(d) Columns H14 to H16 contained questions on pregnancy related deaths. These facilitate direct estimation of maternal mortality ratios.
(e) Data on orphanhood in columns P22 and P23 was based on responses from all persons who reported that their mothers or fathers were still alive. This facilitates indirect estimation of adult mortality.

2.2 Data Quality Assessment

It has been observed in the data on CEB that a large number of women may fail to state their parities, when in fact they have children. This will tend to bias the numerator downwards. Hence one of the quality checks on data on CEB is to examine the percentage at each age whose parity is not stated and use the El-Badry correction to adjust the average parities in age range 15 to 49 years. Table 2.1 shows the percentage at each age group with parity not stated. Comparison of the percentage of women with parity not stated in 1999 and 2009 indicate that this has declined from 6.3 percent to 3.9 percent, respectively. The decline has been registered in all provinces except North Eastern, which registered an increase from the 1999 level of 5.2 percent to 7.5 percent in 2009.

Table 2.1: Parity Not-Stated By Age of Woman, 2009 Census

Age Group	Total No. of Women	Parity Not Stated	Percent Not Stated
KENYA			
15 - 19	2,044,206	162,829	45.8
20 - 24	2,013,675	78,136	22.0
25 - 29	1,666,223	44,094	12.4
30 - 34	1,249,121	28,482	8.0
35 - 39	980,748	18,816	5.3
40 - 44	695,195	13,171	3.7
45 - 49	587,412	10,191	2.9
TOTAL	**9,236,580**	**355,719**	**3.9**

Table 2.1 presents data on parity not-stated by age of women. The results show that the younger the females the higher the likelihood of not stating their parities. For example the youngest two age groups accounted for 67.8 percent of parity not stated (Please note that the percentage for parity not stated at each age group is based on total of the parity not stated). This problem has persisted in all the censuses that have been undertaken in the country to date. However it can be argued that majority of these cases were actually non-responses, given that reports given by younger women are less likely to be affected by memory lapse. Hence the most probable explanation is women of zero parity being misclassified under the category of not-stated.

Another way of checking on the quality of data on CEB is to place some control on the maximum number of CEB permissible by age group given that the number of births vary with the age of the mother. This control was applied to the number of CEB by women below age 40. These are presented in Table 2.2 below.

Table 2.2: Control on Number of CEB

	Age Group								
	12-15	16 - 19	20-22	23-25	26-28	29-31	32-35	36-37	38-39
Maximum Number of Children Ever Born	1	2	3	4	5	6	7	8	9

It is important to note that neither the direct nor the indirect methods of mortality analysis are free from data errors. The most common errors that could bias the results of both the direct and indirect methods are omission of live births or deaths and misreporting of dates.

The results of the direct methods are usually affected by under-reporting of infant deaths and wrong dating of births and age at death. In the case of infant mortality, unreported deaths relative to reported deaths are likely to exceed unreported births relative to all births, leading to a systematic downward bias in infant mortality estimates. Unreported deaths are especially likely when the infant lives only a very short period. Unreported deaths will be more likely for births outside of hospitals; both because risks are higher and reporting systems are weaker. Non-hospital births are more common in rural areas. It is possible that the deaths of some children who have not yet reached age 1 may be reported as deaths above age 1. It is also possible that some children who have died after their first

birthday may still be reported as infant deaths. If either of these two errors is more frequent than the other, the number of infant deaths is accordingly under-reported or over-reported.

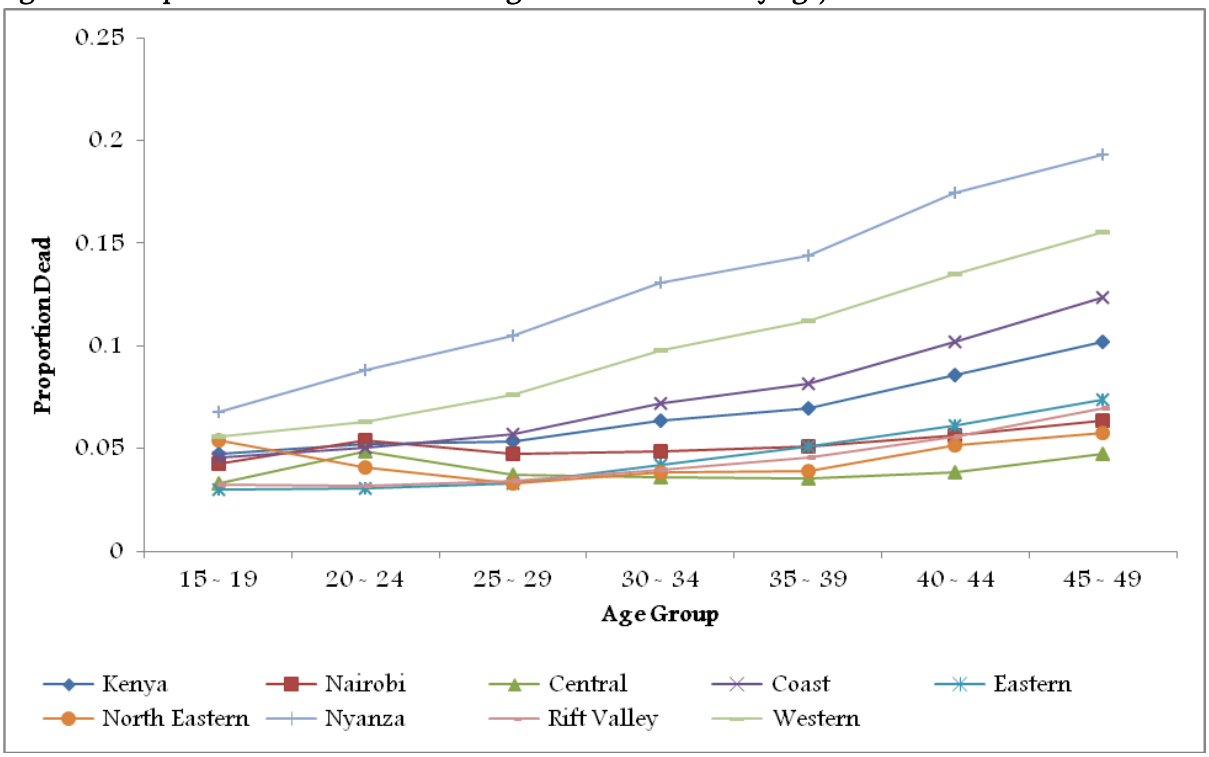
Other data quality problems may be introduced during the editing process, as was in the case of the 2009 Census data on child mortality, whereby the editing programme introduced some upward bias on the CEB by increasing it by almost 1 million children (4.3 percent) and reduced CD by 4.7 percent. This coupled by the slight increase in the number of women, 0.2 percent, could have a lowering effect on the overall estimates of childhood mortality from the edited data as presented in Table 2.3. Similarly, the value 99 which usually denotes non-response or not stated was taken to represent valid cases (There were women with 99 dead children each, which is biologically impossible).

Table 2.3: Differences in Raw and Edited Data Sets

Variable	RAW	EDITED	DIFFERENCE	% Change
Number of Women	9,334,621	9,352,743	18,122	0.2
CEB	22,912,563	23,887,150	974,587	4.3
CD	1,790,768	1,706,108	(84,660)	(4.7)

Additional data errors that could bias the indirect mortality estimates include maternal age misreporting, omission of live births, inclusion of stillbirths and omission of dead children. This is because estimation of mortality strictly relies on information on average parity and proportion of children dead, therefore any errors in the proportion dead translate directly to the estimate of mortality. In particular, the failure of the proportion dead to increase with age could be interpreted as evidence for poor data quality as it seems implausible for women aged 15-19 to have higher proportion of children dead than say, women aged 40-44. Figure 2.1 shows the distribution of proportion dead by province from the 2009 Census. It is only Nyanza, Western and Coast provinces that the proportion dead rose with age. It is evident from the data that there was not only under-reporting of births but also deaths. Reporting of dead children may have been more severe in some regions than others.

Figure 2.1: Proportion of Children Dead among Children Ever Born by Age, 2009 Census



2.3 Overall Mortality

Kenya does not have complete vital registration data that can be used to assess the estimates of mortality, the only available external source to verify the quality of data comes from the demographic and health surveys. Figures 2.2 and 2.3 show comparison of central age specific death rates between projected deaths rates based on the matched mortality derived from the 2008/09 KDHS and reported deaths in the last 12 months prior to the Census (non adjusted and adjusted for age not stated). The patterns are similar, with early childhood death rates quite close while there are indications of under-reporting at older ages.

Figure 2.2: Age Specific Death Rates For Projected, Census Unadjusted For Age Not-Stated and Census Adjusted (Males)

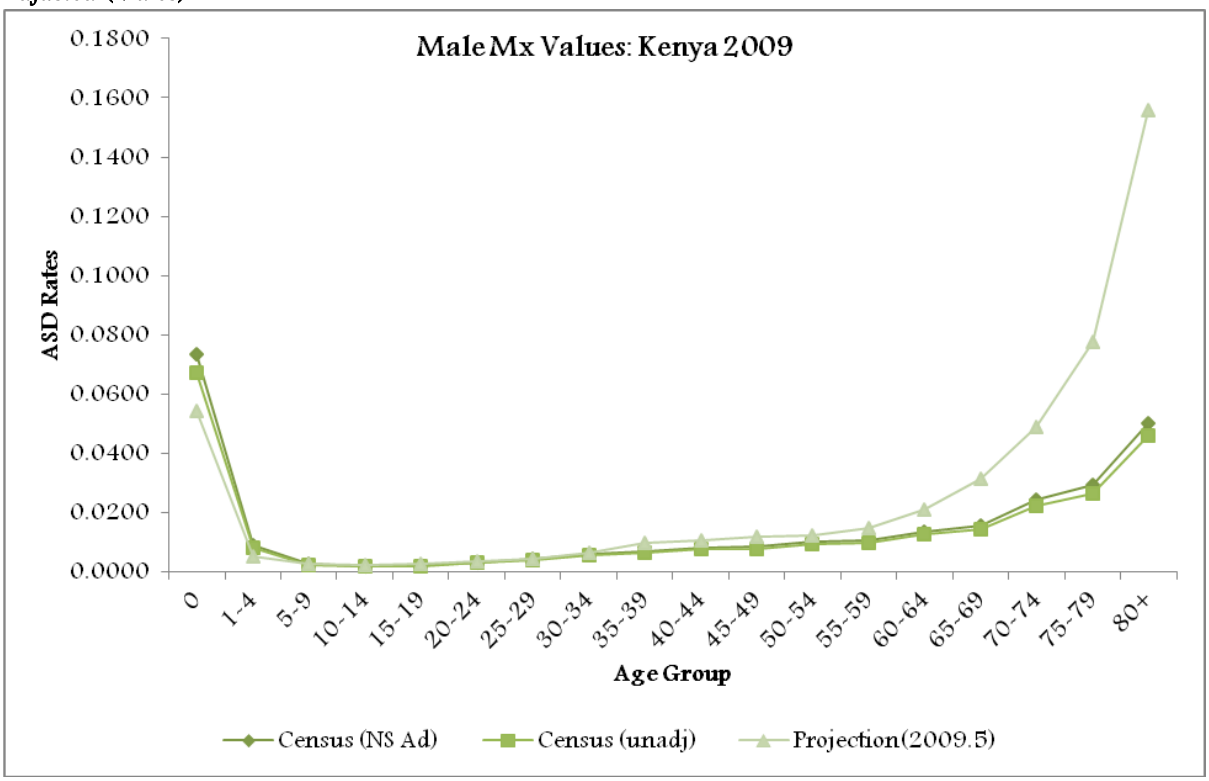


Figure 2.3: Age Specific Death Rates for Projected, Census Unadjusted For Age Not Stated and Census Adjusted (Females)

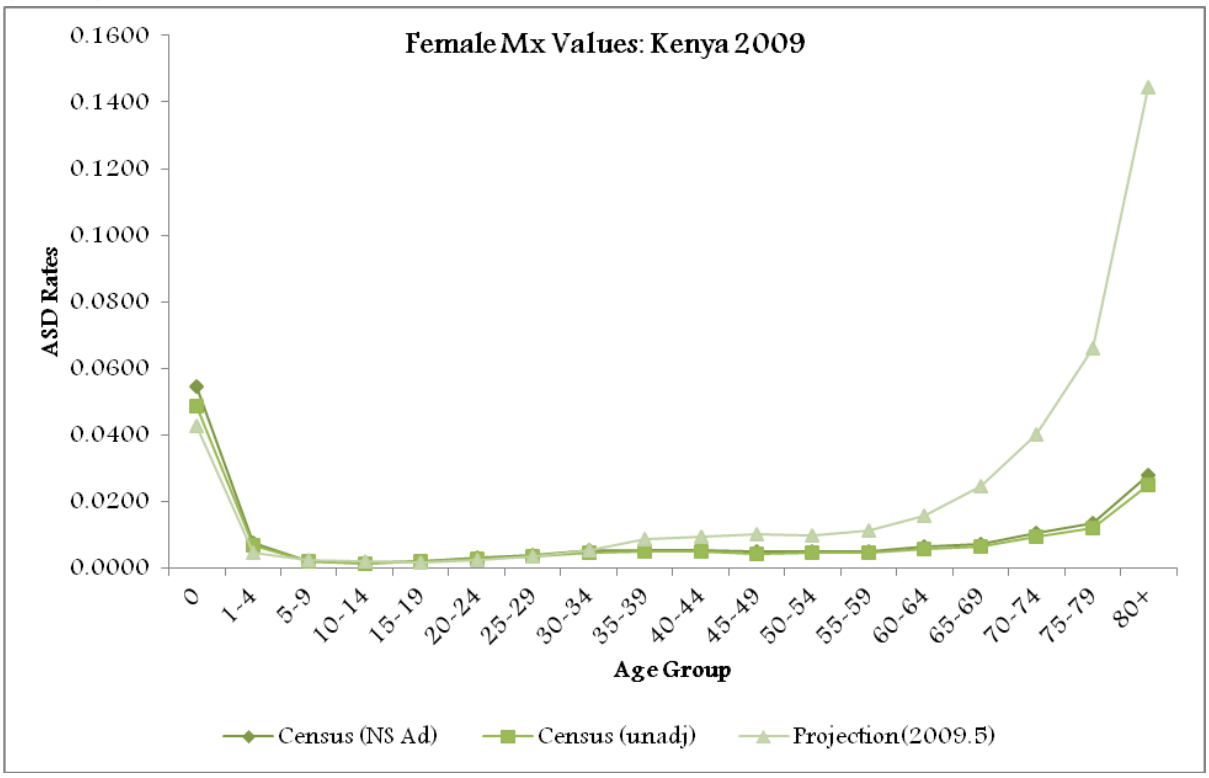
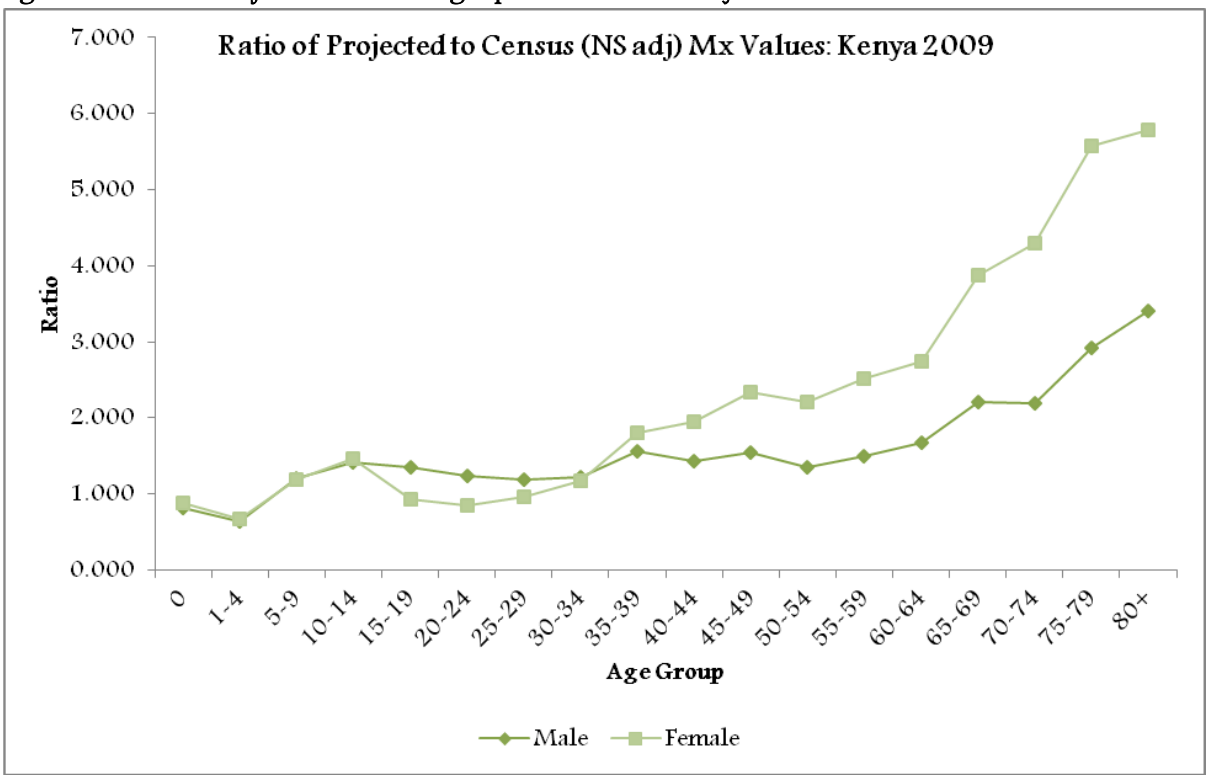


Figure 2.4 shows the ratios of the projected to reported age specific deaths rates by sex. Ratios below 1 are indication of over reporting while ratios above 1 show under-reporting.

For both sexes, there was slight under-reporting for both sexes while at ages 15-30, female death rates were under reported. At age 35 and above, there was more severe under-reporting of female deaths to male deaths.

Figure 2.4: Ratio of Projected to Census Age Specific Death Rates by Sex



Figures 2.5 and 2.6 show the central death rates for both projected and adjusted reported deaths. Male death rates are slightly higher than female death rates at all ages but the large differences occur in adult hood.

Figure 2.5: Age Specific Death Rates Adjusted for Age Not Stated by Sex

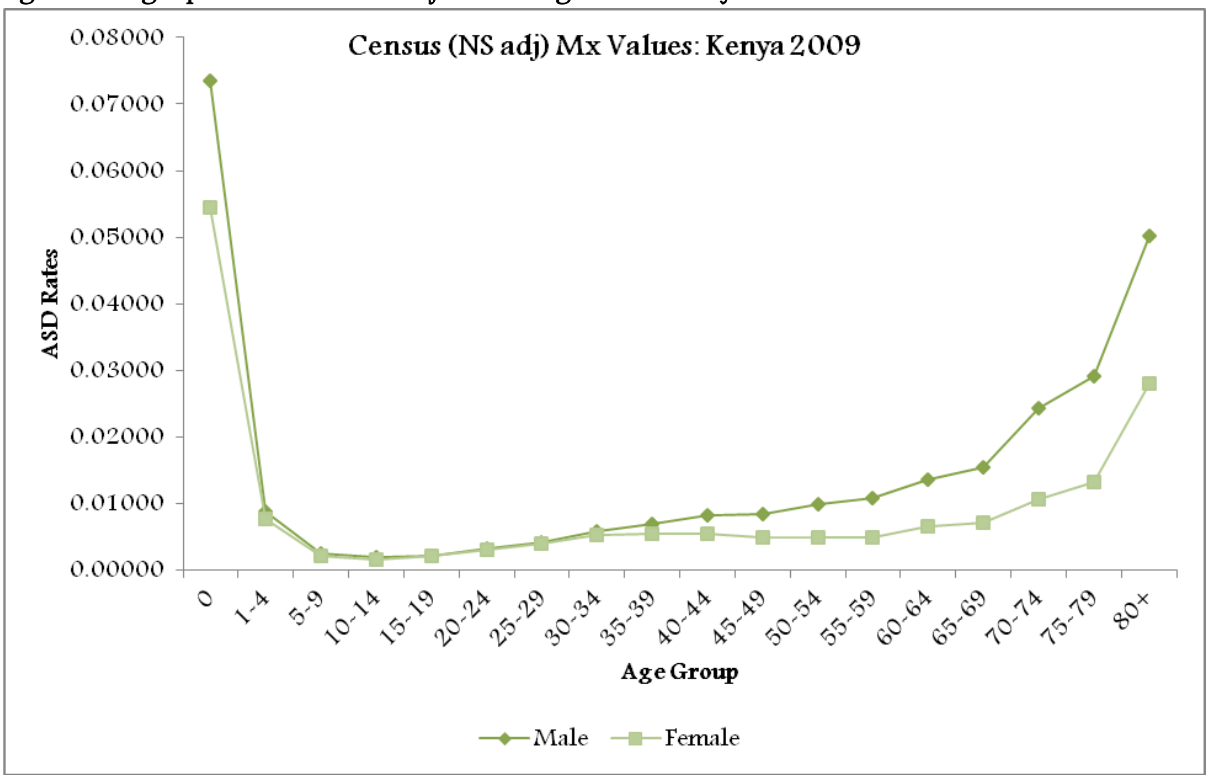
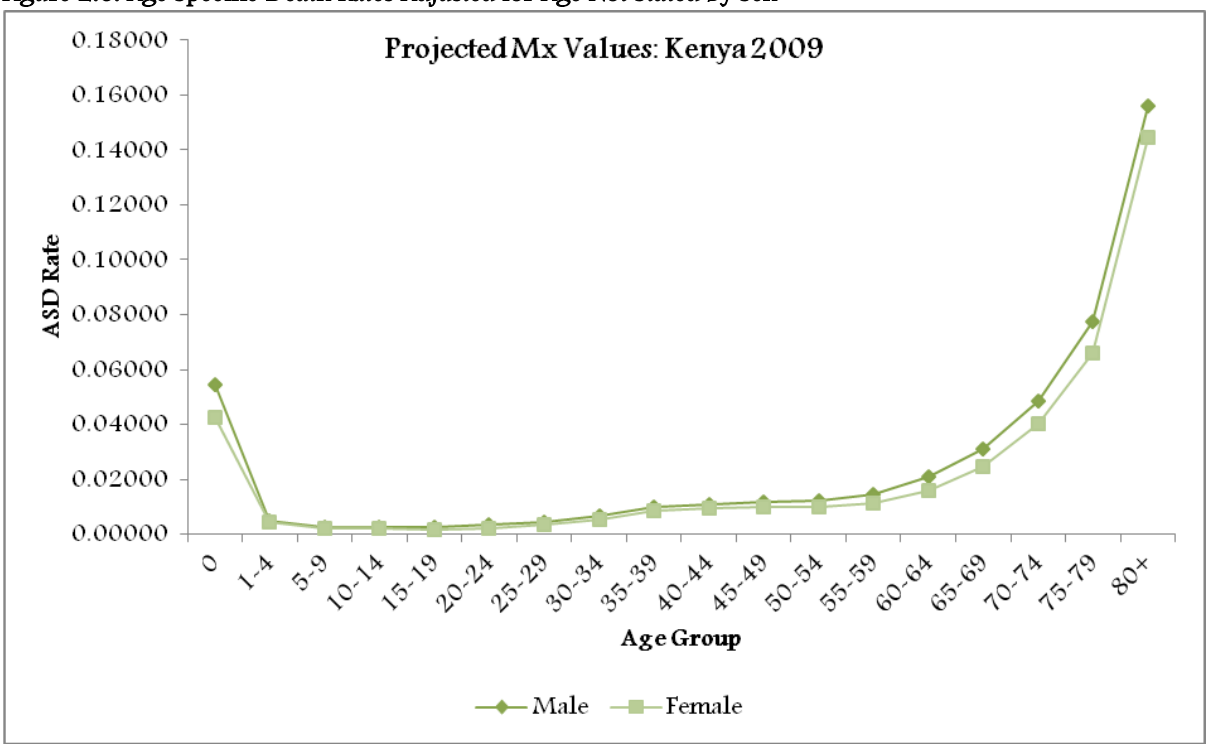


Figure 2.6: Age Specific Death Rates Adjusted for Age Not Stated by Sex



Since adult deaths appear under reported, an alternative method is to compare adult death rates with death rates obtained from the 2008/9 sibling history data. Adult deaths in the households in the last 12 months appear to have been under reported. The under-reporting was more severe for females than males as shown in figures 2.7 and 2.8.

Figure 2.7: Comparison of Age Specific Death Rates from Various Sources (Females)

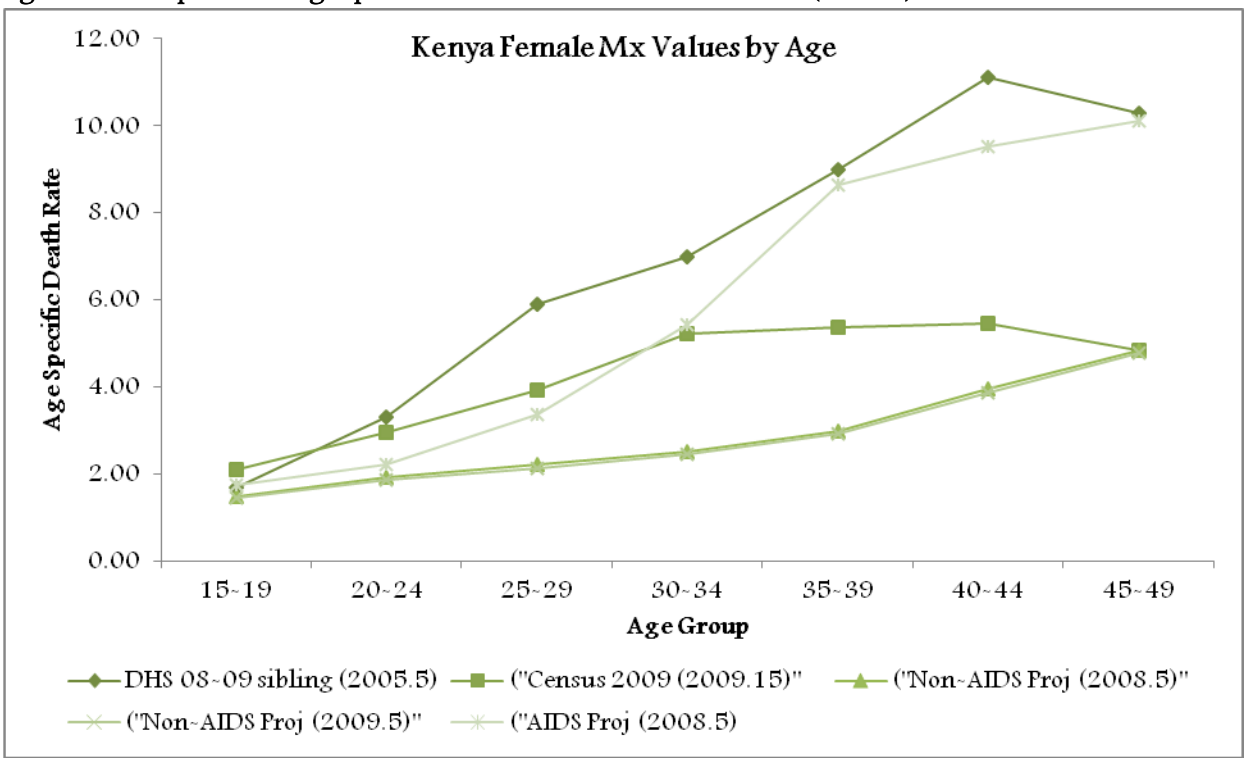
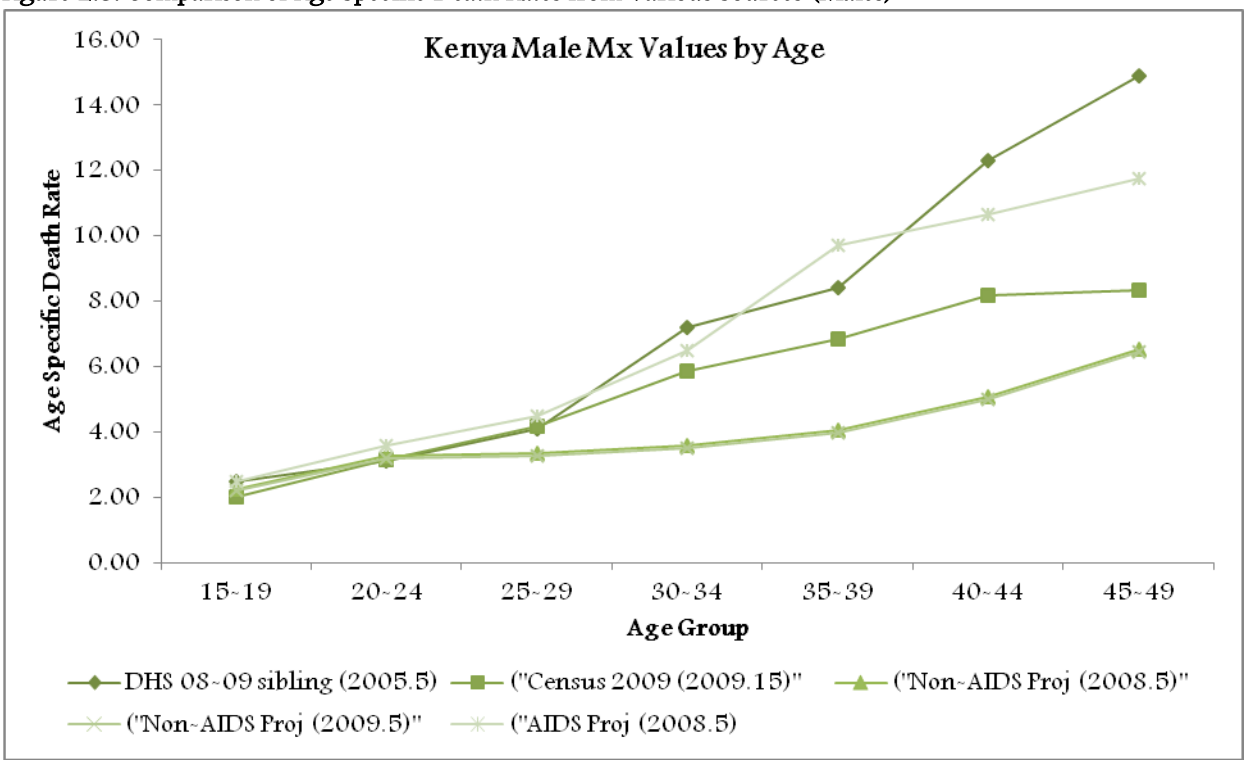


Figure 2.8: Comparison of Age Specific Death Rates from Various Sources (Males)



The assessment of data quality indicates that no measurement method works all the time. It is important to do, checks on data quality and consistency. What is most important is that data quality depends on fieldwork quality, which in turn depends on careful questionnaire

design, thorough training, and continuous supervision. This should be the focus of the future census.

2.4 Methodology

Various stages are involved in the analysis of mortality. To estimate child mortality, data on CEB and CD is used to generate proportions dead by age of mother. These are then converted into probabilities of dying by age x. For adult mortality, data on orphanhood is used to generate survivorship probabilities. The third aspect of analysis involves the linkage of child and adult mortality in order to construct life tables. All these methods were used, but the estimates obtained on childhood mortality were inconsistent due to some of the reasons that have already been alluded to in data quality assessment above. These included:

- Incorrect entries during the enumeration stage
- Problems during data capture and definition of value labels
- The respondents may have under-reported deaths relative to the births.

Examples of estimates of life expectancy at birth that were generated using indirect techniques which appeared to be inconsistent with other data sets are shown in Table 2.4.

Table 2.4: Comparison of Life Expectancy for Some Counties Using Indirect and Direct Estimation

County	Life Expectancy at Birth	
	Indirect	Direct
Mandera	79.2	53
Marsabit	71.6	65
Turkana	62.9	53

This was an indication that the quality of the data for indirect estimation may have been faulty.

Chapter 3-Child Mortality

3.0 Introduction

The chapter focuses on the measures of infant and under-five mortality using direct and indirect estimation. The first part looks at the data that was collected in the 2009 Census to estimate under-five mortality levels and patterns using direct estimation and the second part provides some highlights of indirect estimation.

3.1 Direct Estimates

For the first time in the history of census taking in Kenya, data was collected on recent deaths in the household i.e. deaths that occurred in the household, twelve months prior to the Census. Direct questions on mortality were obtained from responses to Questions H-11, H-12, H-14 and H-15 respectively. The respondents were asked whether any death had occurred in the household in the one year period before the Census date, that is between 24th August, 2008 and 24th August, 2009 including, name, age and sex of the dead member. Questions on recent deaths in households have not been as widely used in censuses. Early experiences revealed that there used to be severe under-reporting of deaths. Recent deaths provide information on age patterns of mortality. Table3.1 shows the distribution of deaths reported in households by age after strong smoothing. Majority of deaths are under age 1 and patterns of death by sex remain more or less the same for the other ages.

Table 3.1: Percent Distribution of Deaths in Households by Age and Sex

	Percent of Deaths in Age Group	
Age	**Males**	**Females**
0	31.9	30.7
1-4	14.6	16.5
5-9	5.1	5.5
10-14	3.3	3.6
15-19	3.0	4.0
20-24	3.9	5.6
25-29	4.5	6.1
30-34	5.2	6.2
35-39	4.8	5.0
40-44	4.3	3.7
45-49	3.7	2.9
50-54	3.4	2.2
55-59	2.7	1.6
60-64	2.8	1.8
65+	6.8	4.6
Total number of Deaths	**129,610**	**95,613**

Figures 3.1-3.4 attest to what has already been alluded to above with regard to the quality of data on recent deaths in the household.

Figure 3.1: Percent Distribution of Recent Household Deaths by Sex, Kenya 2009 Census

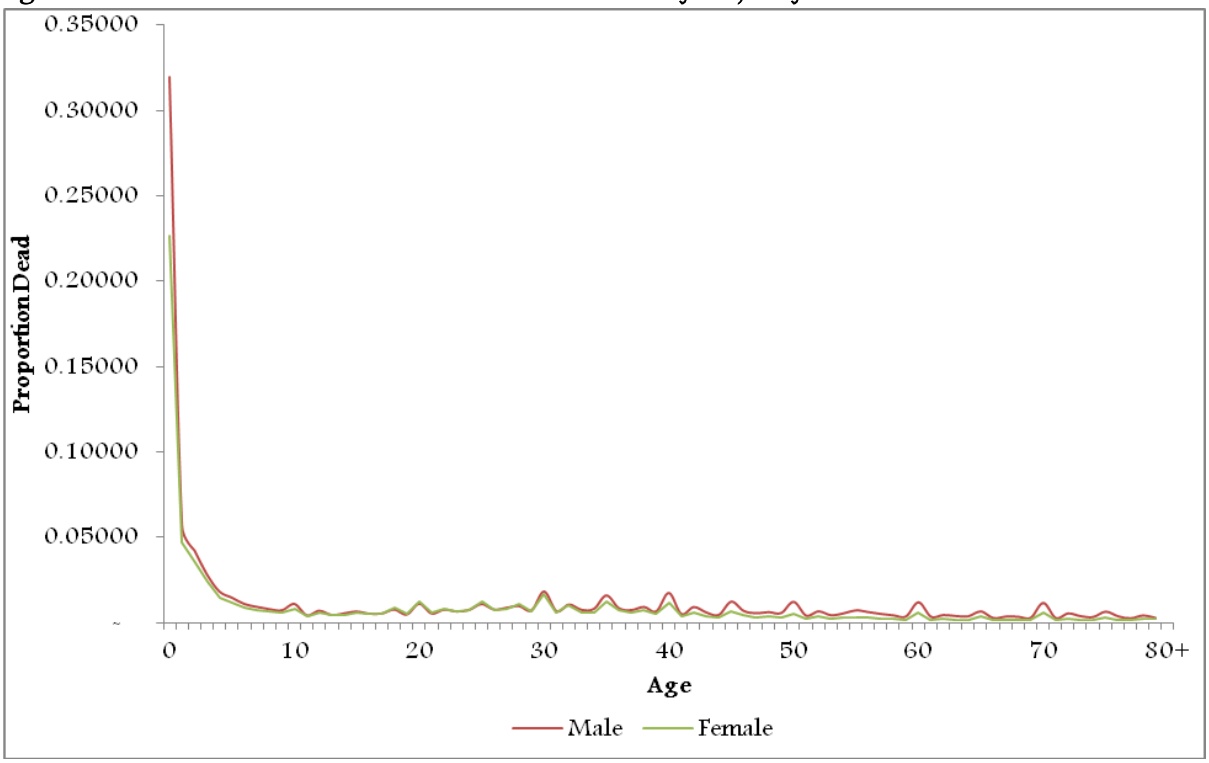


Figure 3.2: Sex Ratios by Age for Recent Deaths in Household, Kenya 2009 Census

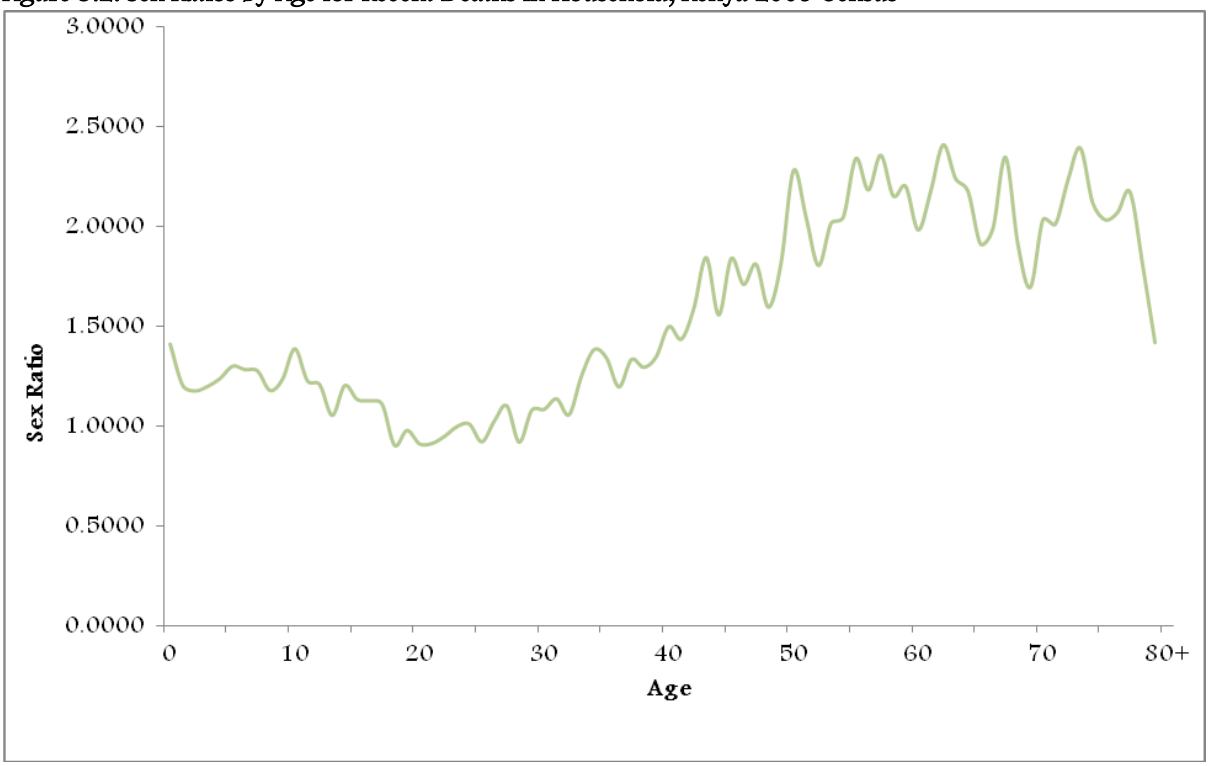
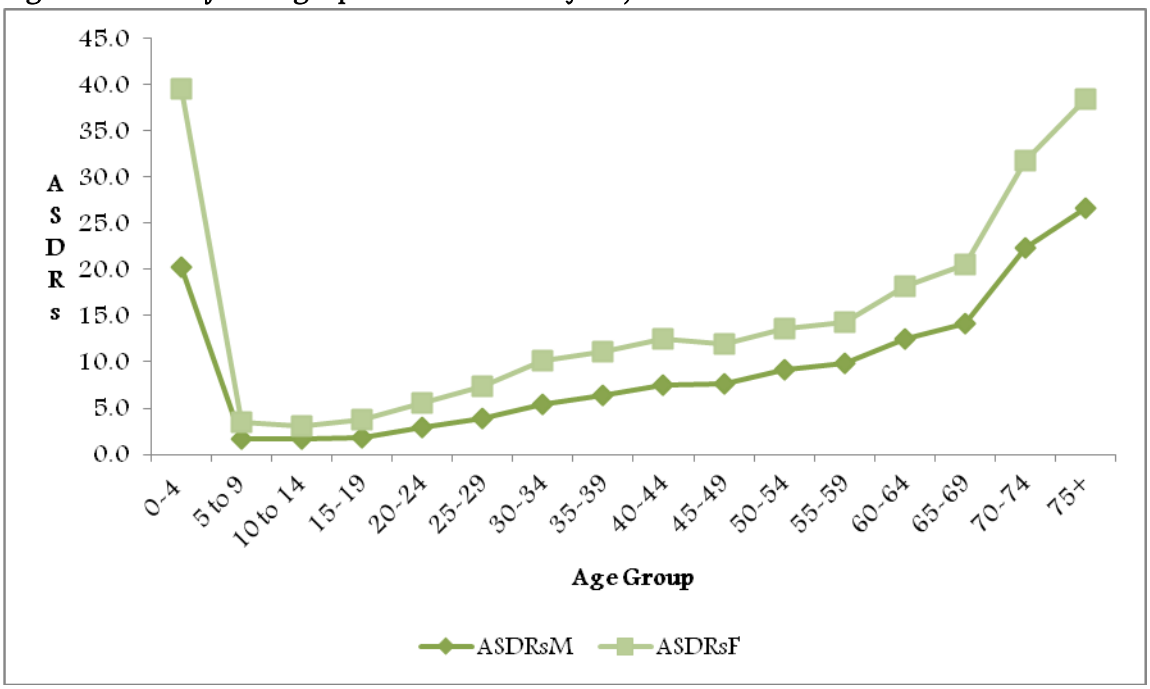
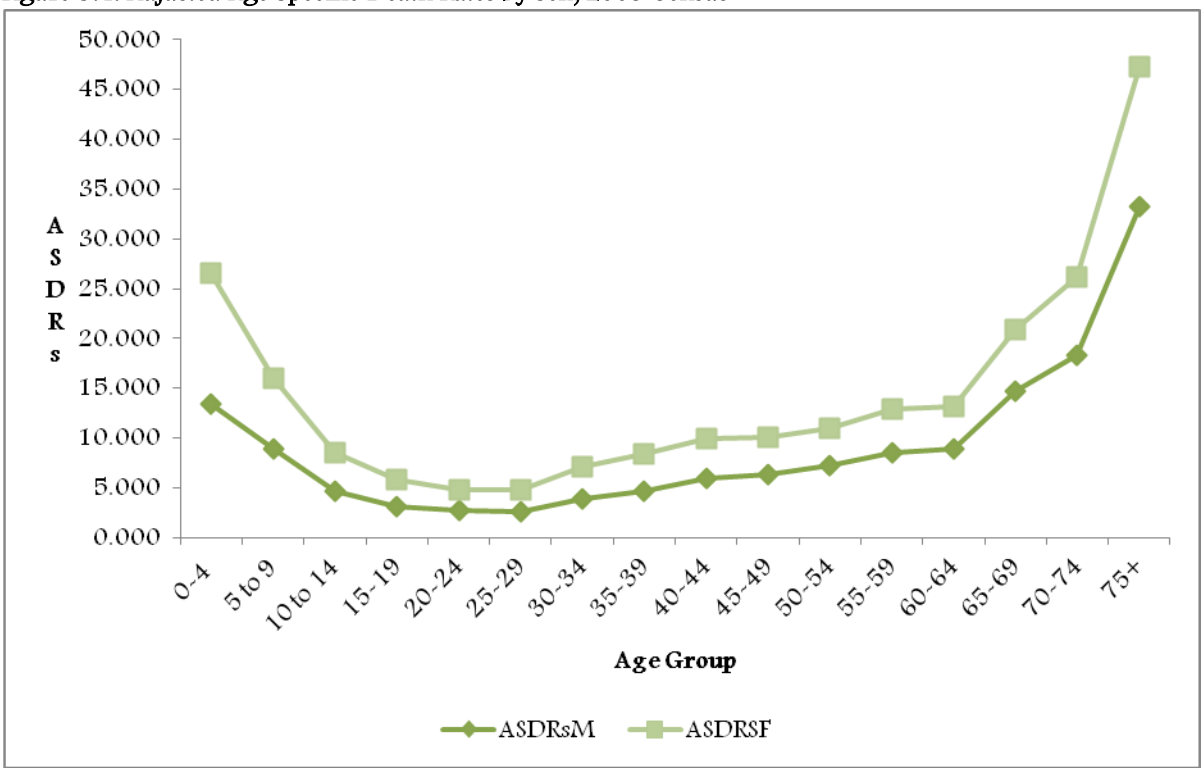


Figure 3.3: Un-Adjusted Age Specific Death Rates by Sex, 2009 Census



The chart above shows higher mortality at very young and older ages. However, after adjustment the graph shows the expected pattern of U-shaped. The estimation of crude death rate based on this data yielded a value of 6 deaths per 1,000 population for the country which is a gross underestimate given that the expected is between 10 to 12 deaths per 1000 population.

Figure 3.4: Adjusted Age Specific Death Rates by Sex, 2009 Census



3.2 Methodology for Estimation of Mortality Levels at County Level

Provincial level projected estimates were employed in the estimation of childhood mortality at the county level. The projection base was set at 2004 to reflect the period of the mortality estimates. Projected age specific death rates (denoted by Mx) values were obtained for the years 2008 and 2009 based on the projections from 2004 by sex. Mx values were then computed by age and sex for ages 0, 1-4, 5-9, etc 80+. Deaths in the household for the last 12 months by age and sex for 0, 1-4, 5-9, etc 80+ were obtained from the 2009 Census. Age specific death rates (ASDRs) were then obtained using the projected population and deaths in the household by age and sex. A ratio of age specific death rates and the projected population was computed by age and sex to obtain adjustment factors. The adjustment factors were then used to compute ASDRs (Mx) at county level. These were then used to generate life tables for the individual counties and from these summary indicators for each of the county from individual county life tables i.e. ${}_1q_0$, ${}_5q_0$, e_0, e_{20} and ${}_{45}q_{15}$ or ${}_{14}q_{45}$ (IMR,U5MR, Life expectancy etc).

3.3 Estimates of Childhood Mortality

The information presented in this section is important not only for the demographic assessment of the country's population, but also in the design and evaluation of health policies and programmes. The reduction of infant and under-five mortality and the incidence of high-risk pregnancies remain priority targets of the National Health Policy. Also MDG 4 aims to reduce childhood mortality by two thirds by the year 2015. Hence information on infant and under-five mortality would be an indicator to the relevant authorities as to how much still need to be done to attain the target.

The total number of deaths under 1 year was 70,739 while the total number of live births was 1,339,100 giving infants deaths as approximately 53 per 1000 live births prior to adjustment. However, because of severe under-reporting of births and deaths this estimate appears low. The estimates of death rates were converted to probabilities of death by age. The estimated probability of dying by age 1 (infant mortality rate) for males was 0.060 and 0.048 for females. While under five mortality rates for males and females were 87 per 1000 and 70 per 1000, respectively.

Table 3.2 below presents the probability of dying between age 0 and 1 (infancy), between age 1 and exact age 5 and between infancy and age five for males and females separately and jointly. The estimates are presented at the national, provincial and county levels. The county has been identified as the unit of planning in the country. Results presented here relate to a period five years prior to the Census (i.e. 2005 - 2009). The infant mortality rate is estimated at 54 per 1000 live births and the under-five mortality 79 per 1000 live births. This is higher than the KDHS 2008/09 estimates of 52 per 1000 for infant mortality and 74 per thousand for under-five mortality and lower than the Inter-agency estimates of 84 for under-five mortality (IGME, 2011). The results are however within the expected range of 42 to 61 for infant mortality and 62 to 86 for under-five mortality based on five years prior to the survey (KNBS and ICF Macro, 2010).

The results further indicate that there are substantial differences in childhood mortality estimates within and between the counties and between the sexes as can be seen in both Table 3.2 and Map II.

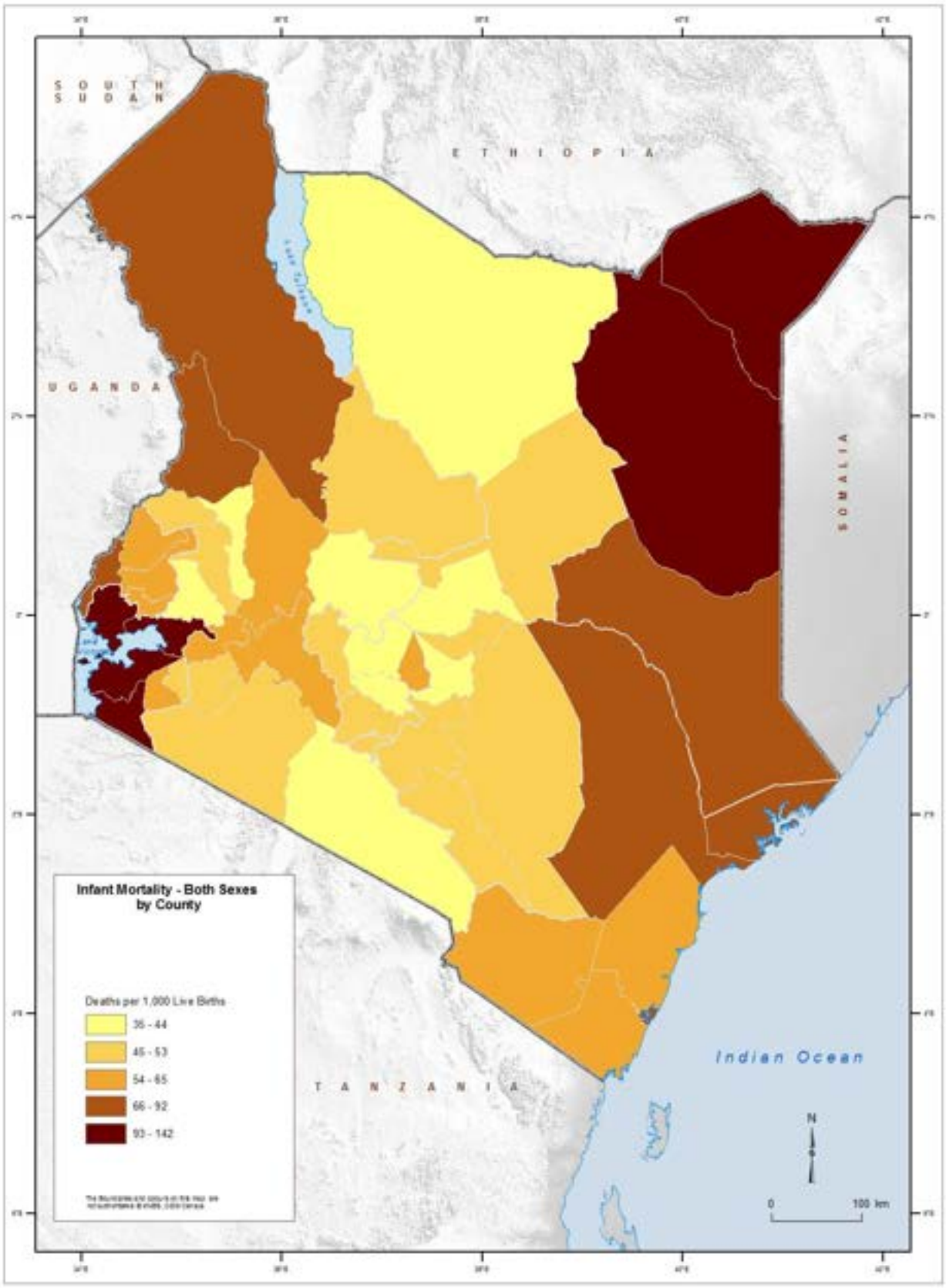
Table 3.2: Estimates of Childhood Mortality based on Recent Deaths in Households, National and County, 2009

Province/County	Male			Female			Both Sexes		
	$_1q_0$	$_4q_1$	$_5q_0$	$_1q_0$	$_4q_1$	$_5q_0$	$_1q_0$	$_4q_1$	$_5q_0$
Kenya	**60**	**26**	**87**	**48**	**22**	**70**	**54**	**24**	**79**
Nairobi	**52**	**12**	**63**	**39**	**10**	**49**	**46**	**12**	**56**
Nairobi	52	12	63	39	10	49	46	12	56
Central	**52**	**12**	**64**	**40**	**11**	**51**	**46**	**12**	**58**
Nyandarua	53	11	64	46	11	56	50	11	60
Nyeri	44	10	54	35	10	45	40	10	50
Kirinyaga	60	19	80	47	16	53	54	18	72
Murang'a	45	10	55	34	10	44	40	10	50
Kiambu	56	11	67	39	9	48	48	10	58
Coast	**69**	**31**	**100**	**70**	**17**	**87**	**67**	**24**	**94**
Mombasa	78	37	114	97	20	116	87	28	115
Kwale	53	25	78	60	16	76	56	21	77
Kilifi	60	22	82	51	12	62	55	17	72
Tana River	79	42	114	82	20	102	81	31	112
Lamu	79	37	116	72	23	95	76	30	106
Taita Taveta	62	24	86	60	10	70	61	17	78
Eastern	**52**	**11**	**63**	**42**	**8**	**50**	**47**	**10**	**57**
Marsabit	44	11	55	45	9	54	42	10	51
Isiolo	54	10	64	47	9	56	50	9	60
Meru	47	11	58	32	7	38	40	9	48
Tharaka	43	14	57	48	12	60	46	13	59
Embu	46	3	49	43	7	50	44	5	49
Kitui	57	11	68	37	8	45	47	10	57
Machakos	51	9	60	44	7	51	48	8	56
Makueni	69	9	78	38	6	44	53	8	61
North Eastern	**123**	**40**	**163**	**98**	**34**	**132**	**111**	**37**	**148**
Garissa	100	36	136	83	38	121	92	37	129
Wajir	151	47	198	91	27	118	121	37	158
Mandera	116	36	152	120	38	158	118	37	155
Nyanza	**113**	**58**	**172**	**89**	**50**	**139**	**101**	**54**	**156**
Siaya	159	92	251	125	78	203	142	85	227
Kisumu	137	66	203	108	53	160	123	60	182
Migori	123	66	188	101	57	158	112	62	173
Homa Bay	126	64	190	97	54	150	112	59	170
Kisii	73	37	110	57	34	91	65	36	101
Nyamira	57	26	82	45	23	68	51	25	75
Rift Valley	**60**	**15**	**75**	**47**	**13**	**59**	**54**	**14**	**67**
Turkana	97	28	125	86	31	117	91	29	121
West Pokot	90	25	115	72	21	94	81	23	104
Samburu	57	12	69	41	9	50	49	10	60
Trans Nzoia	54	19	73	40	14	54	47	17	63
Baringo	67	12	79	49	11	60	58	12	70
Uasin Gishu	54	14	68	41	12	53	48	13	61
Elgeyo Marakwet	42	9	51	28	6	34	35	7	42
Nandi	43	11	53	35	10	45	39	10	49
Laikipia	43	11	54	43	9	52	43	10	53
Nakuru	72	16	88	57	14	71	64	15	80
Narok	51	13	64	41	11	52	46	12	58
Kajiado	50	10	60	38	9	46	44	9	53
Kericho	67	15	82	45	12	57	56	13	69
Bomet	52	10	62	40	8	48	46	9	55
Western	**73**	**55**	**128**	**59**	**48**	**107**	**65**	**52**	**118**
Kakamega	72	51	123	57	46	103	65	49	113
Vihiga	60	41	101	49	37	87	55	39	94
Bungoma	69	59	128	53	48	101	61	54	115
Busia	91	70	161	76	60	136	84	65	149

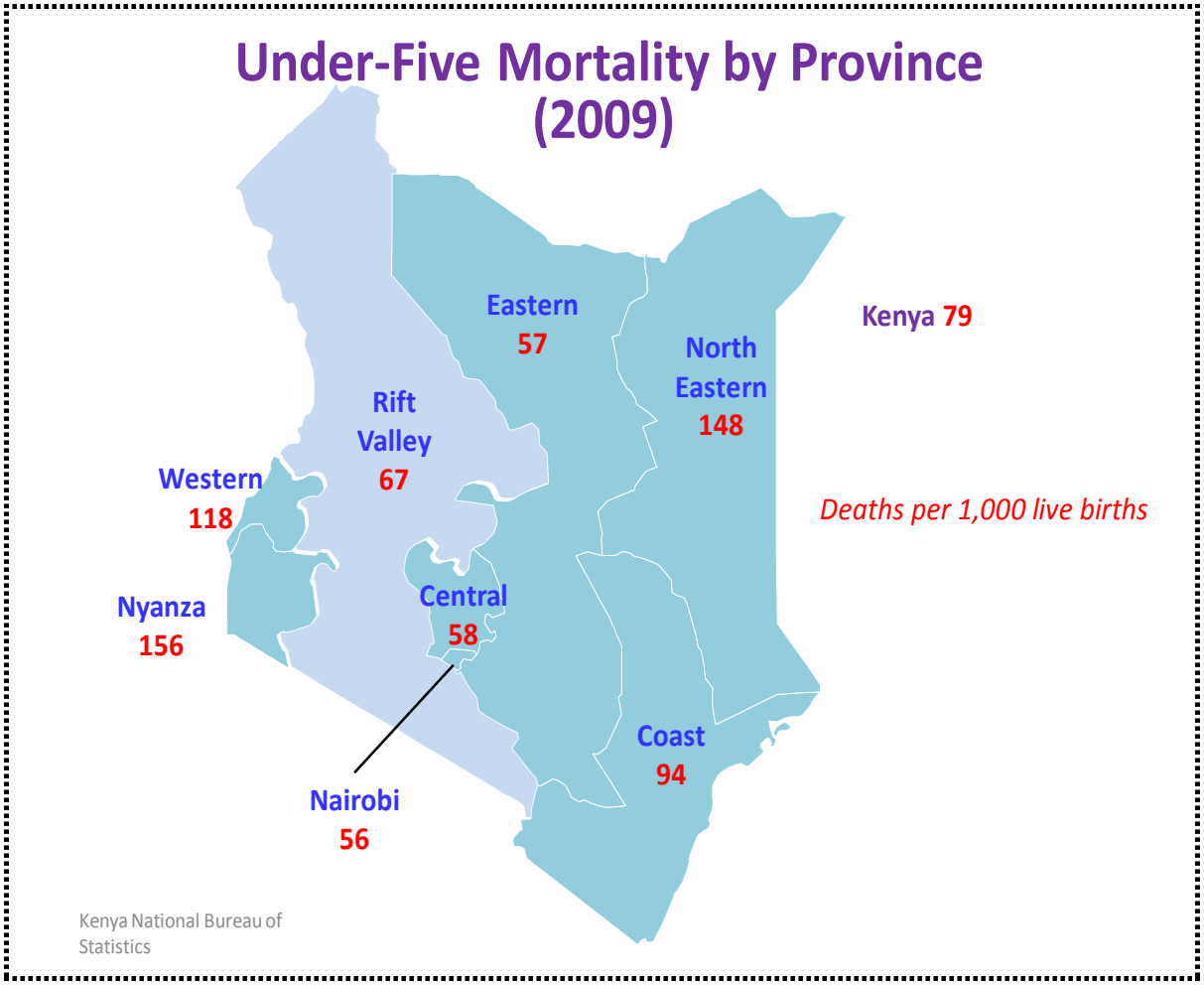
The traditionally high childhood (IMR and U5MR) mortality counties in Nyanza, Western, Coast and North Eastern provinces continue to have higher childhood mortality indicators.

However, some counties in the Rift Valley and Eastern provinces have exceptionally low mortality indicators, which are inconsistent with other development indicators within the counties, and points to possible under-reporting of deaths in these counties. Elgeyo Marakwet had both the lowest infant and under-five mortality estimates while Siaya had the highest for both. Overall, there is an indication of remarkable declines in all levels of childhood mortality from the rates observed in the 1999 Census and the 2003 KDHS. This could be attributed to the campaigns to increase childhood immunization coverage in the country. Immunization coverage for children aged 12 to 23 months increased from 57.0 percent in 2003 to 77.0 percent in 2008/09 KDHS. There were also differentials in immunization coverage in that the provinces with low childhood mortality also had higher immunization coverage i.e. Central and Rift Valley, while North Eastern and Nyanza provinces which also had higher childhood mortality rates had lower coverage.

Map 2: Differentials in Infant Mortality by County, 2009



Map 3: Levels of Under-Five Mortality by Province, 2009



Map 3.5 summarises the levels of under five death rates by province. Nyanza is leading with a rate of 156 deaths per 1000 live births followed closely by North Eastern with 148 children dying before age 5 in every 1000 born. Nairobi, Eastern and Central have the lowest rates 56, 57 and 58 deaths per 1000, respectively, showing that children born in these areas are almost three times more likely to survive to age 5 compared to their counterparts in Nyanza or North Eastern provinces. Figure 3.5 presents trends in infant and under-5 mortality from between 1989 and 2009. Under 5 has been declining steadily while infant mortality rose between 1989 and 1999 and declined from 77 to 54 deaths per 1000 live births.

Figure 3.5: Trends in Childhood Mortality, 1989-2009

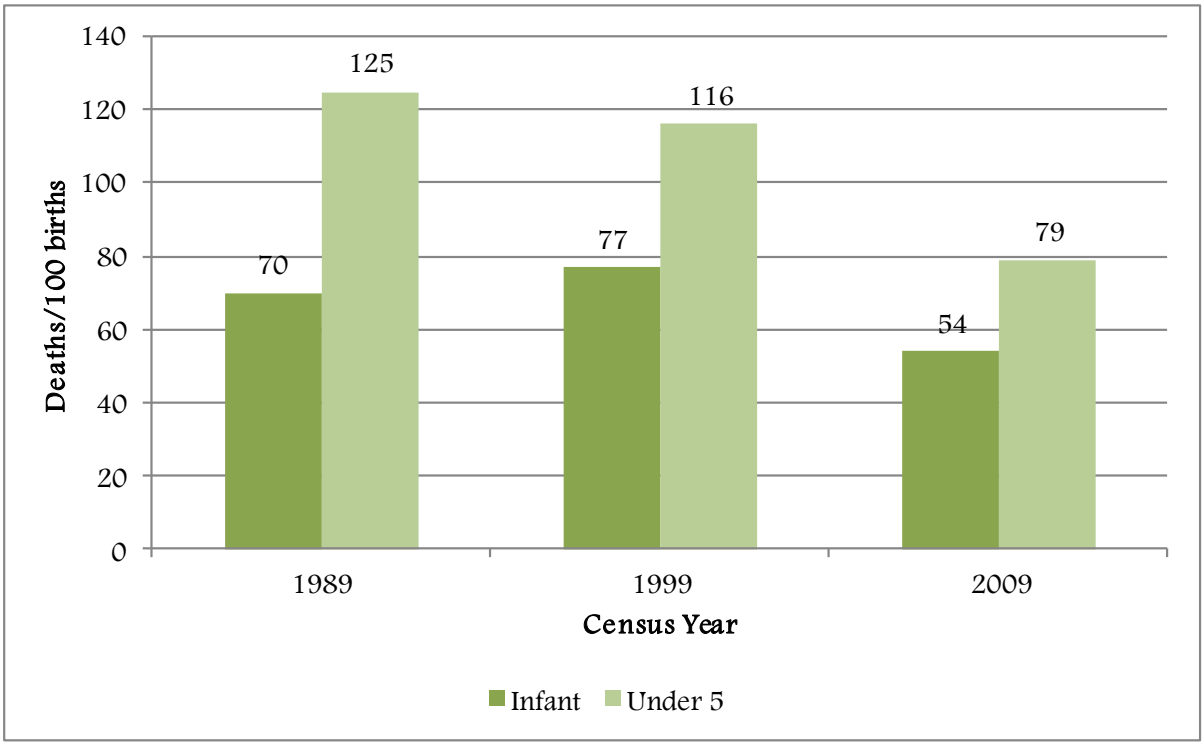


Table 3.3 presents the expectation of life at birth denoted by e_0, average life expectancy at age twenty and age sixty denoted by e_{20} and e_{60}, respectively. These represent mortality at adulthood and old age. The expectation of life at birth, like infant mortality, is an indicator of well-being as a result of improvements in health status and general living standards. It varies between males and females with that of females being slightly higher than that of males.

The expectation of life at birth shows an upward trend for all counties. The national life expectancies at birth are comparable with those of the World Health Organization (Global Health Observatory, 2009). Life expectancy at birth at national level from this source is 58 for males, 62 for females and 60 for both sexes, while the direct estimates from the 2009 Census gives 58 males, 61 for females and 60 for both sexes.

On average females live longer than males. However, the results indicate that for some counties in Coast Province, males had higher life expectancy at birth than females. This is more prominent in Lamu, Kwale, Taita Taveta and Mombasa, as well as in Marsabit in Eastern Province. Life expectancy gap may reflect patterns of discrimination which give preference to male over female infants and children in early life in terms of nutrition, medical care, mother's scarce time etc. Some counties such as Siaya, Wajir and Vihiga had life expectancy at birth of below 50 for both males and females' while Kisumu and Homa Bay had life expectancies at birth of below 50 for males. In general the lowest life expectancy at birth was in Siaya, which also had high infant and under-five mortality levels.

Table 3.3: Life Expectancy at Birth, By Sex and County, 2009

National, Province and County	Males e_0	Females e_0	Ratio of Male e_0 to Female e0
Kenya	**58**	**61**	**95**
Nairobi	**62**	**63**	**98**
Nairobi	62	63	98
Central	**61**	**62**	**98**
Nyandarua	60	60	100
Nyeri	60	60	100
Kirinyaga	61	64	95
Murang'a	60	62	97
Kiambu	63	64	98
Coast	**56**	**55**	**102**
Mombasa	57	56	102
Kwale	58	56	104
Kilifi	57	62	92
Tana River	56	56	100
Lamu	58	53	109
Taita Taveta	53	51	104
Eastern	**62**	**67**	**93**
Marsabit	65	64	102
Isiolo	65	70	93
Meru	62	66	94
Tharaka	60	64	94
Embu	59	65	91
Kitui	65	68	96
Machakos	62	69	90
Makueni	65	69	94
North Eastern	**49**	**53**	**94**
Garissa	56	65	86
Wajir	42	44	95
Mandera	51	55	93
Nyanza	**49**	**54**	**91**
Siaya	39	46	85
Kisumu	48	51	94
Migori	50	54	93
Homa Bay	47	55	85
Kisii	57	59	97
Nyamira	58	60	97
Rift Valley	**57**	**61**	**93**
Turkana	50	55	91
West Pokot	54	64	84
Samburu	54	65	83
Trans Nzoia	55	59	93
Baringo	54	59	92
Uasin Gishu	54	57	95
Elgeyo Marakwet	57	62	92
Nandi	56	57	98
Laikipia	53	57	93
Nakuru	52	55	95
Narok	61	67	91
Kajiado	60	64	94
Kericho	54	59	92
Bomet	55	61	90
Western	**52**	**54**	**96**
Kakamega	53	55	96
Vihiga	49	49	100
Bungoma	57	58	98
Busia	51	54	94

3.4 Indirect Estimates of Childhood Mortality

Given that the estimates of childhood mortality from lifetime fertility yielded quantities that were not comparable to previous childhood mortality estimates from previous censuses, only proportions dead among children ever born are presented in the following sections.

3.4.1 Proportions of Children Dead

Table 3.4 shows the proportions of children dead by the age group of the mother, from the 2009 Census, together with corresponding proportions from previous censuses since 1962.

Table 3.4: Proportion of Children Dead by Age of Mother and Percent Change 1962-2009

	Proportion Dead						Percent Change				
Age Group of Mother	1962	1969	1979	1989	1999	2009	62-69	69-79	79-89	89-99	99-09
15-19	0.146	0.128	0.116	0.111	0.117	0.047	-12.3	-9.4	-4.3	5.4	-51.8
20-24	0.170	0.147	0.125	0.104	0.108	0.052	-13.5	-15.0	16.8	3.8	-45.8
25-29	0.205	0.174	0.141	0.108	0.099	0.054	-15.1	-19.0	23.4	-8.3	-42.4
30-34	0,238	0.205	0.166	0.126	0.110	0.063	-15.1	-17.8	24.1	12.7	-40.8
35-39	0.269	0.238	0.185	0.139	0.118	0.070	-14.1	-19.9	24.9	15.1	-38.1
40-44	0.308	0.263	0.217	0.165	0.139	0.086	-14.6	-17.5	-24.0	15.8	-38.1
45-49	0.338	0.304	0.253	0.186	0.156	0.102	-10.1	-16.8	-26.5	16.1	-34.6
Average							-13.6	16.5	20.6	-8.4	-44.7

The data shows that there was a steady decline in childhood mortality between 1962 and 1989 censuses. During the 1989-99 period these trends were reversed, more so for younger women. However, in the period 1999-2009 there were indications of massive declines for all women, with the highest decline of over 50 percent having been registered for the youngest age group. These high declines at all age groups may be attributed to the data quality.

The proportions were calculated on the basis of information on children ever born (CEB) and children dead by the age of the mother (in the reproductive age range). These are then compared to those obtained from earlier censuses to show the trend over the years. The results in Table 3.4 indicate that there was a steady decline in childhood mortality between 1962 and1989 censuses. However in 1989-1999 inter-censal periods this trend was reversed which was attributed to the HIV/AIDS pandemic. Estimates from the 2009 census indicate a drastic decline which is attributed to issues of data quality alluded to in section 2.2.

Table 3.5 shows the proportions dead among male and female children compared with those from the 1979, 1989 and 1999 censuses (prior to 1979, information on the sex of the children was not collected).

Table 3.5: Proportions of Male and Female Children Dead, 1979-2009 Censuses

Age Group	Males				Females			
	1979	1989	1999	2009	1979	1989	1999	2009
15-19	0.12	0.11	0.12	0.05	0.11	0.11	0.12	0.04
20-24	0.13	0.11	0.11	0.06	0.12	0.1	0.11	0.05
25-29	0.15	0.11	0.1	0.06	0.13	0.1	0.1	0.05
30-34	0.17	0.14	0.11	0.07	0.16	0.12	0.12	0.06
35-39	0.19	0.14	0.12	0.07	0.18	0.13	0.12	0.07
40-44	0.23	0.17	0.14	0.09	0.21	0.16	0.14	0.08
45-49	0.26	0.19	0.16	0.11	0.24	0.18	0.16	0.12

Results indicate that there was higher mortality among males than females with the exception of age group 45-49. Also noticeable is that the proportions dead in 2009 are very low compared to 1999. This will inadvertently affect the infant and under-five mortality estimates.

3.4.2 Regional Differentials in Proportions of Children Dead 2009 Census

The values below indicate that the data for Central and Nairobi provinces may have some discrepancies in reporting, especially for the age group 15-19. There is a substantial reduction in proportions of children dead from 0.2399 to 0.0332 for the 15-19 age groups in Central and 0.1545 to 0.0429 in Nairobi, respectively, as reported in the 1999 Census. These could also be a result of non-response or parity not stated being taken as valid cases. As already noted these led to under-estimates of infant and under-five mortality and as such direct estimates have been adopted for this report.

Table 3.6: Regional Differentials in Proportions of Children Dead by Age of Mother and Province, 2009 Census

	Age Group of Mother							
PROVINCE	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	Average
Kenya	0.0472	0.0521	0.0537	0.0634	0.0699	0.0861	0.1021	0.0678
Nairobi	0.0429	0.0543	0.0474	0.0488	0.0513	0.0563	0.0637	0.0521
Central	0.0332	0.0486	0.0370	0.0359	0.0354	0.0386	0.0475	0.0395
Coast	0.0455	0.0503	0.0572	0.0718	0.0819	0.1020	0.1233	0.0760
Eastern	0.0302	0.0307	0.0331	0.0420	0.0511	0.0611	0.0737	0.0460
North Eastern	0.0541	0.0407	0.0331	0.0386	0.0388	0.0519	0.0574	0.0449
Nyanza	0.0677	0.0883	0.1051	0.1310	0.1437	0.1746	0.1929	0.1290
Rift Valley	0.0324	0.0321	0.0340	0.0397	0.0454	0.0561	0.0698	0.0442
Western	0.0559	0.0632	0.0764	0.0976	0.1121	0.1348	0.1555	0.0993

The results further indicate that there were substantial differentials in proportion dead by region. County estimates in Table 3.7 also show differentials in proportion dead between and within the counties. It is important to note that some counties in Eastern Province such as Tharaka, Meru and Makueni and in Rift Valley, counties such as Samburu, Trans Nzoia, Laikipia, Narok, Kajiado, and Bomet, had exceptionally low estimates of proportion of children dead among women aged 15-19. Given cultural practices of early marriage in some of these counties, this is not plausible. There is therefore suspicion that there was

under-reporting of dead children in these counties and as such there is need to carry out specialized childhood mortality surveys to confirm the estimates.

Table 3.7: Regional Differentials in Proportions of Children Dead by Age of Mother and County, 2009

PROVINCE/COUNTY	Age Group of Mother							
	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	Average
Kenya	**0.0472**	**0.0521**	**0.0537**	**0.0634**	**0.0699**	**0.0861**	**0.1021**	**0.0678**
Nairobi	**0.0429**	**0.0543**	**0.0474**	**0.0488**	**0.0513**	**0.0563**	**0.0637**	**0.0521**
Nairobi	0.0429	0.0543	0.0474	0.0488	0.0513	0.0563	0.0637	0.0521
Central Province	**0.0332**	**0.0486**	**0.037**	**0.0359**	**0.0354**	**0.0386**	**0.0475**	**0.0395**
Nyandarua	0.0315	0.0372	0.0347	0.0319	0.0318	0.0365	0.0450	0.0355
Nyeri	0.0318	0.0319	0.0299	0.0301	0.0280	0.0310	0.0363	0.0313
Kirinyaga	0.0525	0.0406	0.0350	0.0358	0.0364	0.0372	0.0495	0.0410
Murang'a	0.0261	0.0510	0.0390	0.0400	0.0384	0.0434	0.0529	0.0415
Kiambu	0.0310	0.0589	0.0398	0.0375	0.0380	0.0405	0.0495	0.0421
Coast	**0.0455**	**0.0503**	**0.0572**	**0.0718**	**0.0819**	**0.102**	**0.1233**	**0.076**
Mombasa	0.0474	0.0493	0.0515	0.0596	0.0637	0.0756	0.0883	0.0622
Kwale	0.0483	0.0573	0.0705	0.0872	0.0992	0.1235	0.1486	0.0906
Kilifi	0.0378	0.0448	0.0540	0.0719	0.0850	0.1086	0.1335	0.0765
Tana River	0.0586	0.0626	0.0663	0.0838	0.0983	0.1223	0.1437	0.0908
Lamu	0.0500	0.0590	0.0574	0.0678	0.0788	0.1002	0.1113	0.0749
Taita Taveta	0.0335	0.0377	0.0412	0.0513	0.0588	0.0670	0.0869	0.0538
Eastern	**0.0302**	**0.0307**	**0.0331**	**0.042**	**0.0511**	**0.0611**	**0.0737**	**0.0460**
Marsabit	0.0393	0.0326	0.0311	0.0403	0.0484	0.0628	0.0721	0.0467
Isiolo	0.0411	0.0412	0.0426	0.0539	0.0659	0.0906	0.1055	0.0630
Meru	0.0210	0.0177	0.0183	0.0230	0.0279	0.0335	0.0416	0.0261
Tharaka	0.0231	0.0307	0.0356	0.0446	0.0588	0.0671	0.0796	0.0485
Embu	0.0473	0.0304	0.0301	0.0335	0.0416	0.0458	0.0563	0.0407
Kitui	0.0366	0.0413	0.0504	0.0689	0.0815	0.0972	0.1189	0.0707
Machakos	0.0302	0.0331	0.0321	0.0384	0.0444	0.0543	0.0690	0.0431
Makueni	0.0271	0.0350	0.0357	0.0416	0.0511	0.0616	0.0739	0.0466
North Eastern	**0.0541**	**0.0407**	**0.0331**	**0.0386**	**0.0388**	**0.0519**	**0.0574**	**0.0449**
Garissa	0.0428	0.0447	0.0438	0.0562	0.0603	0.0766	0.0835	0.0583
Wajir	0.0505	0.0437	0.0352	0.0393	0.0375	0.0531	0.0568	0.0452
Mandera	0.0669	0.0349	0.0247	0.0283	0.0291	0.0375	0.0454	0.0381
Nyanza	**0.0677**	**0.0883**	**0.1051**	**0.131**	**0.1437**	**0.1746**	**0.1929**	**0.129**
Siaya	0.0972	0.1236	0.1484	0.1784	0.1946	0.2179	0.2463	0.1723
Kisumu	0.0722	0.0971	0.1177	0.1453	0.1644	0.2013	0.2271	0.1464
Migori	0.0846	0.1098	0.1354	0.1644	0.1790	0.2076	0.2350	0.1594
Homa Bay	0.0801	0.1137	0.1410	0.1709	0.1919	0.2194	0.2496	0.1666
Kisii	0.0292	0.0330	0.0400	0.0588	0.0754	0.0979	0.1116	0.0637
Nyamira	0.0196	0.0286	0.0305	0.0397	0.0472	0.0625	0.0741	0.0432
Rift Valley	**0.0324**	**0.0321**	**0.034**	**0.0397**	**0.0454**	**0.0561**	**0.0698**	**0.0442**
Turkana	0.0470	0.0393	0.0410	0.0466	0.0527	0.0647	0.0797	0.0530
West Pokot	0.0399	0.0443	0.0497	0.0619	0.0744	0.0919	0.1206	0.0690
Samburu	0.0234	0.0218	0.0246	0.0324	0.0394	0.0535	0.0638	0.0370
Trans Nzoia	0.0299	0.0331	0.0363	0.0446	0.0539	0.0699	0.0822	0.0500
Baringo	0.0362	0.0383	0.0387	0.0459	0.0527	0.0662	0.0820	0.0514
Uasin Gishu	0.0327	0.0349	0.0341	0.0368	0.0388	0.0506	0.0585	0.0409
Elgeyo-Marakwet	0.0319	0.0283	0.0258	0.0279	0.0345	0.0465	0.0593	0.0363
Nandi	0.0356	0.0393	0.0403	0.0497	0.0587	0.0682	0.0854	0.0539
Laikipia	0.0233	0.0240	0.0253	0.0295	0.0296	0.0353	0.0448	0.0303
Nakuru	0.0436	0.0362	0.0360	0.0380	0.0405	0.0483	0.0608	0.0433
Narok	0.0227	0.0239	0.0260	0.0335	0.0392	0.0461	0.0642	0.0365
Kajiado	0.0191	0.0219	0.0241	0.0261	0.0299	0.0375	0.0489	0.0296
Kericho	0.0376	0.0329	0.0373	0.0440	0.0516	0.0641	0.0796	0.0496
Bomet	0.0263	0.0257	0.0268	0.0312	0.0364	0.0439	0.0553	0.0351
Western	**0.0559**	**0.0632**	**0.0764**	**0.0976**	**0.1121**	**0.1348**	**0.1555**	**0.0993**
Kakamega	0.0588	0.0673	0.0824	0.1048	0.1194	0.1439	0.1657	0.1060
Vihiga	0.0456	0.0538	0.0678	0.0849	0.1010	0.1247	0.1462	0.0891
Bungoma	0.0474	0.0495	0.0581	0.0795	0.0946	0.1134	0.1332	0.0822
Busia	0.0668	0.0803	0.1002	0.1225	0.1359	0.1606	0.1821	0.1212

3.5 Differentials in Childhood Mortality by Place of Residence of Mother

Regional differentials in proportion dead by age of women between 1979 and 2009 indicate that during the 10 year period 1979 and 1989, there was a consistent decline in the proportions of children dead between rural and urban as shown in Table 3.8. However during the 1989 – 1999 periods, the tempo of the decline in the proportion of dead children by place of residence declined drastically. The period 1999 – 2009 indicate substantial declines in the proportion of dead children both for rural and urban. However, these results should be interpreted with caution due to data issues alluded to in Chapter 2.

Table 3.8: Proportions of Children Dead by Place of Residence and Mother's Age Group, 1979 - 2009

Year	Place of Residence	Age Group of Mother						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	Average
1979	Urban	0.11	0.11	0.12	0	0.16	0.19	0.22	0.15
	Rural	0.12	0.13	0.15	0	0.19	0.22	0.26	0.18
1989	Urban	0.11	0.1	0.1	0	0.11	0.14	0.16	0.12
	Rural	0.11	0.11	0.11	0	0.14	0.17	0.19	0.14
1999	Urban	0.12	0.11	0.09	0	0.1	0.12	0.13	0.11
	Rural	0.12	0.11	0.1	0	0.12	0.14	0.16	0.12
2009	Urban	0.05	0.05	0.05	0	0.06	0.07	0.09	0.06
	Rural	0.05	0.05	0.06	0	0.07	0.09	0.07	0.07

3.6 Estimates of Childhood Mortality from Children Ever Born

The relationship between proportions dying to each age group of mothers and the life-table probabilities of dying between birth and specified ages in childhood was first established by Brass (1968) as follows in Table 3.9.

Table 3.9: Probability of Dying By Age (X) By Age Group of Mother

Age group of mothers	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Probability of dying, q (x) by age (x):	1	2	3	5	10	15	20

When the estimates of q(x) are matched against a model life-table system, equivalent values of infant mortality denoted by q(1) and under-five mortality denoted by q(5) can be obtained and hence the time trends in infant and under-five mortality as shown in Table 3.10.

Table 3.10: Comparison of Indirect and Direct Estimates of Childhood Mortality, 2009 Census

	(Direct)		Indirect		Relative Difference.	
National/Province	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$	$_1q_0$	$_5q_0$
Kenya	54	79	43	70	20.3	11.4
Nairobi	46	56	39	71	15.2	-26.7
Central	46	58	32	57	30.4	1.8
Coast	67	94	43	71	35.8	-5.9
Eastern	47	57	27	45	45.6	4.2
North Eastern	111	148	28	55	74.8	62.8
Nyanza	101	156	81	123	18.0	21.2
Rift Valley	54	67	28	45	48.1	32.8
Western	65	118	60	96	7.7	18.6

Given the data quality issues alluded to earlier, these estimates are presented at regional level only. The purpose is to show the relative differences between the direct and indirect estimates as can be seen from Table 3.10. The differences indicate there may have been omission and under-reporting of childhood, deaths especially in North Eastern, Rift Valley and Eastern provinces.

Chapter 4 - Maternal Mortality

4.0 Overview

The status of maternal health in Kenya is still a challenge to the government and other stakeholders if the 5th Millennium Development Goal, whose target is to reduce maternal deaths by 75 percent by 2015, is to be achieved. Maternal mortality is one of the indicators of the poor outcomes of pregnancy related complications. Evidence suggests that little progress has been made in achieving this goal as it still stands at a high of 488 maternal deaths per 100,000 live births nationally (2008/09 KDHS). This is well above the anticipated ratio of 172 per 100,000 live births envisaged in the 5th MDG. In the 2010 round of censuses, the United Nations Statistical Division (UNSD) encouraged many developing countries to include questions on pregnancy related deaths as a way of helping improve on the quantity and quality of data needed in the estimation of maternal mortality in the world.

4.1 Direct Estimates of Maternal Mortality

This chapter describes estimates of maternal mortality derived from information on recent deaths in the household for deceased females (column H-15), subsequent questions were asked in H-16 on whether the female deaths were pregnancy related (i.e. during pregnancy, during delivery or within two months after delivery i.e. Pregnancy Related Deaths (PRD)). This information was meant to provide data necessary for estimation of maternal mortality in the country.

Table 4.1 shows the reported number of female deaths and pregnancy related deaths in the year preceding the 2009 Census. A total of 32,021 women of reproductive age were reported to have died while 6,623 women died of pregnancy related causes. This translates to 21 percent of deaths of women in the reproductive age and a maternal mortality rate of about 0.708. When this rate is divided by the general fertility rate (number of births per women of reproductive age) maternal mortality ratio is obtained. During the year preceding the Census, there were a total of 1,339,100 births giving a general fertility rate of about 0.143. The maternal mortality ratio is about 495 deaths per 100,000 live births. Figure 4.1 shows the approximate ratios by age of women for the period 2008-2009. The results indicate that maternal mortality risk is higher among older and younger women.

Table 4.1: Distribution of the Number of Women and Women Dead Due To Pregnancy Related Causes

Age Group	No. of Women	Total Number of Female Deaths	No Pregnancy Related Deaths (PRD) i.e. Pregnancy Related Causes	Percent of Deaths That are Pregnancy Related Column 3 Divided By Column 2	Pregnancy Related Death Rates Per 1000 (Column 4 Divided by Column 2	Number of Births in Last 12 Months
15-19	2,049,578	3,813	994	26.1	0.486	148,910
20-24	2,023,751	5,318	1,548	29.1	0.769	429,800
25-29	1,674,971	5,873	1,418	24.1	0.851	357,320
30-34	1,265,034	5,881	1,251	21.3	0.994	222,280
35-39	1,006,133	4,813	833	17.3	0.832	123,090
40-44	735,166	3,575	427	11.9	0.584	43,520
45-49	639,498	2,748	152	5.5	0.239	14,180
Total	**9,352,748**	**32,021**	**6,623**	**20.7**	**0.708**	**1,339,100**
General Fertility Rate			0.143			
Maternal Mortality ratio (per 100,000 live births)			495			

4.2 Differentials in Maternal Mortality

Table 4.2 shows the National and County distributions of maternal deaths and Maternal Mortality Ratios (MMRs). Overall maternal mortality ratio is still high at 495 per 100,000 live births, this is slightly higher than that of 488 deaths per 100,000 live births reported in the 2008/09 KDHS and lower than 530 reported by the WHO global Health Observatory (2009). However, the level of reporting is subject to some errors as no proper certification of cause of death can be made and relied on causes of deaths as perceived and reported by the respondents(verbal autopsy).

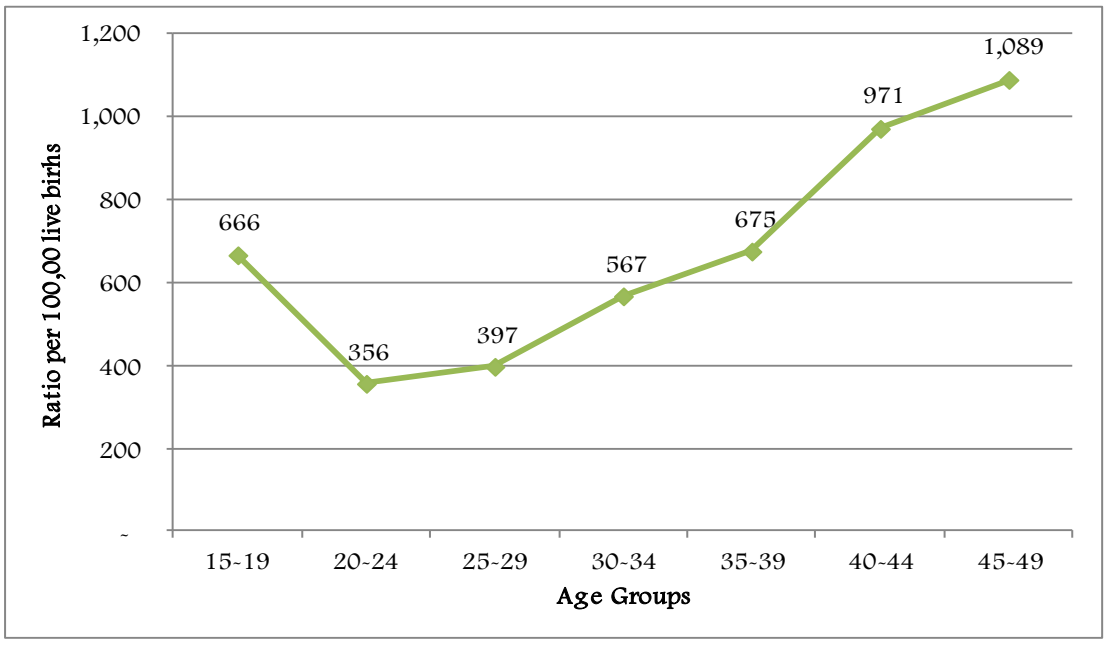
Sub-regional disparities exist at county levels, with Mandera County leading with a MMR of 3795 per 100,000 live births followed by Wajir, with almost half of that value at 1683, Turkana is third with a MMR of 1594 and Marsabit is fourth with a MMR of 1127 per 100,000 live births. However where the numerator is below 20, studies show that the results should be interpreted with caution as such results may not be plausible.

Table 4.2: Maternal Mortality Ratios by County, 2009

County	Maternal Deaths	MMR		Maternal Deaths	MMR
Kenya	6,623	495	Siaya	246	691
			Kisumu	249	597
Nairobi	533	212	Homa Bay	262	583
Nyandarua	115	364	Migori	257	673
Nyeri	90	318	Kisii	141	302
Kirinyaga	68	298	Nyamira	87	385
Murang'a	131	329	Turkana	175	1,594
Kiambu	192	230	West Pokot	175	434
Mombasa	164	223	Samburu	97	472
Kwale	203	346	Trans Nzoia	234	333
Kilifi	289	290	Baringo	145	375
Tana River	103	395	Uasin Gishu	155	234
Lamu	52	676	Elgeyo Marakwet	57	187
Taita Taveta	129	603	Nandi	266	408
Marsabit	97	1,127	Laikipia	62	221
Isiolo	32	790	Nakuru	444	374
Meru	87	262	Narok	156	191
Tharaka	17	191	Kajiado	159	299
Embu	43	388	Kericho	113	243
Kitui	92	330	Bomet	184	247
Machakos	105	425	Kakamega	364	316
Makueni	83	400	Vihiga	186	531
Garissa	208	646	Bungoma	266	259
Wajir	581	1,683	Busia	164	307
Mandera	2,136	3,795			

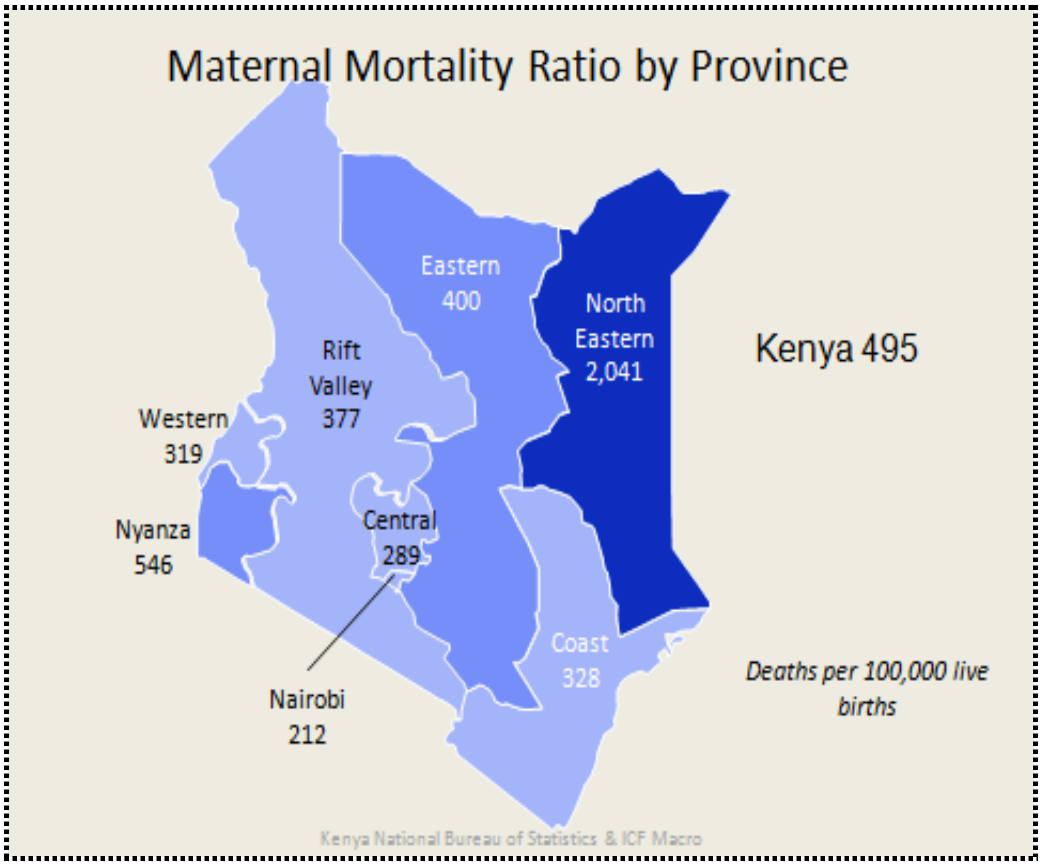
Maternal deaths are high for women in the younger age groups (15-19) and for women at older ages (40-44, 45-49) as depicted in Figure 4.1. This is due to the high risks associated with childbirth at younger and older ages.

Figure 4.1: Approximate Maternal Mortality Ratio by Age of Women, 2009



Map 4 shows levels of maternal mortality ratios at provincial level. Even though North Eastern Province is leading with a MMR of 2,041, this need to be interpreted with caution as all female deaths reported as being maternal may not have been pregnancy related. Nyanza has the second highest ratio of 546 deaths per 100 000 live births. Nairobi has the lowest with a ratio of 212 while Central Province has the second lowest with an MMR of 289 per 100,000 live births.

Map 4: Maternal Mortality Ratios by Province, Kenya 2009



Chapter 5-Adult Mortality

5.0 Direct Estimates of Adult Mortality

This section presents adult mortality estimates based on direct questions on recent deaths in the household.

Table 5.1 shows life expectancies at ages 20 and 60. Age 20 represents adult mortality while age 60 is a proxy for old age mortality. The results indicate that in some counties especially in Eastern Province, life expectancy at age 20 approximates that of life expectancy at birth. In Marsabit, Isiolo, Kitui and Machakos counties, life expectancy at age 20 for both males and females are over 50. This implies those who reach age 20 in these counties are expected to survive for another 50 years or more. The lowest life expectancy at age 20 was in Siaya County, males at 34 years and Wajir at 35 for both males and females.

At age 60, life expectancies range from a minimum of 14 years in Taita Taveta and Wajir for males to a high of 19 years in a number of counties as shown in Table 5.1. Similarly, Female life expectancy at age 60 ranges from 15 years in Mombasa, Wajir, Uasin Gishu and Nandi counties, to 23 years in Turkana County.

Table 5.1: Life Expectancies at Adulthood and Old Age, 2009

	Male		Female	
National, Prov. and County	e_{20}	e_{60}	e_{20}	e_{60}
Kenya	**45**	**17**	**47**	**18**
Nairobi	**48**	**17**	**48**	**19**
Nairobi	48	17	48	19
Central	**47**	**17**	**46**	**18**
Nyandarua	46	16	45	17
Nyeri	45	16	44	18
Kirinyaga	49	18	51	21
Murang'a	45	16	48	18
Kiambu	49	17	48	18
Coast	**45**	**16**	**43**	**17**
Mombasa	47	15	45	15
Kwale	45	16	43	17
Kilifi	44	16	48	18
Tana River	48	19	45	20
Lamu	47	17	41	15
Taita Taveta	39	14	37	16
Eastern	**48**	**17**	**52**	**17**
Marsabit	52	19	48	18
Isiolo	52	19	56	22
Meru	48	17	50	17
Tharaka	45	15	49	17
Embu	45	15	49	17
Kitui	52	19	54	20
Machakos	48	17	53	19
Makueni	51	18	53	19
North Eastern	**40**	**17**	**43**	**17**
Garissa	48	19	57	23
Wajir	35	14	35	15
Mandera	42	16	44	17

National, Prov. and County	Male		Female	
	e_{20}	e_{60}	e_{20}	e_{60}
Nyanza	**41**	**17**	**44**	**18**
Siaya	34	15	38	18
Kisumu	41	16	42	18
Migori	44	18	45	18
Homa Bay	39	17	47	21
Kisii	46	18	47	18
Nyamira	45	16	45	16
Rift Valley	**41**	**17**	**45**	**18**
Turkana	42	17	46	23
West Pokot	46	19	55	27
Samburu	42	20	51	28
Trans Nzoia	42	20	44	18
Baringo	40	16	44	18
Uasin Gishu	40	15	42	15
Elgeyo Marakwet	42	16	45	16
Nandi	40	15	41	15
Laikipia	38	16	41	17
Nakuru	39	16	41	17
Narok	48	20	52	22
Kajiado	46	17	49	19
Kericho	40	16	45	23
Bomet	40	16	45	20
Western	**42**	**15**	**42**	**16**
Kakamega	43	15	44	17
Vihiga	36	14	36	17
Bungoma	47	16	57	17
Busia	43	16	45	17

5.1 Probability of Dying Between 15 and 60 Years for Male and Female (Per 1000 Population)

Another way of assessing mortality in adulthood is through observation of the probability of dying between age 15 and 60 as presented in Table 5.2. The results indicate that the overall probability for males and female nationally were 348 and 313 per 1000 respectively. Males had on average a higher probability of dying between ages 15 and 60 than females as expected. These estimates are lower than those of the Inter-agency group of 358 for males but higher for females of 282 (IGME, 2011). With regard to counties, in Siaya and Mandera, males had the highest probability of dying of 628 and 600 respectively, while Meru had the lowest at 195. These are also the counties with the lowest expectation of life at birth for males in the whole country. Garissa and Tharaka had the lowest probabilities for females, however given the poor development indicators in these counties, the estimates need to be interpreted with caution.

Table 5.2: Probability of Dying Between Ages 15 and 60 by Sex (Per 1,000 Population), 2009

National, Province and County	Male	Female
Kenya	**348**	**313**
Nairobi	**310**	**300**
Nairobi	310	300
Central	**305**	**319**
Nyandarua	322	358
Nyeri	338	365
Kirinyaga	265	263
Murang'a	352	327
Kiambu	242	278
Coast	**352**	**394**
Mombasa	264	336
Kwale	355	574
Kilifi	350	282
Tana River	330	395
Lamu	305	406
Taita Taveta	483	521
Eastern	**262**	**198**
Marsabit	200	278
Isiolo	195	182
Meru	284	174
Tharaka	227	162
Embu	249	190
Kitui	285	223
Machakos	318	242
Makueni	324	234
North Eastern	**462**	**385**
Garissa	310	175
Wajir	438	369
Mandera	600	553
Nyanza	**456**	**396**
Siaya	628	497
Kisumu	444	412
Migori	404	341
Homa Bay	508	354
Kisii	354	315
Nyamira	345	332
Rift Valley	**447**	**368**
Turkana	422	396
West Pokot	370	269
Samburu	460	357
Trans Nzoia	472	381
Baringo	462	365
Uasin Gishu	490	424
Elgeyo Marakwet	450	350

National, Province and County	Male	Female
Nandi	463	413
Laikipia	523	431
Nakuru	502	428
Narok	326	267
Kajiado	347	283
Kericho	468	366
Bomet	464	390
Western	**407**	**355**
Kakamega	379	374
Vihiga	555	553
Bungoma	282	309
Busia	385	356

5.2 Data on Orphanhood

Data on orphanhood has been the main source of indirect estimation of adult mortality in majority of developing countries. This is due to the fact that vital registration statistics are inadequate and incomplete for the purpose of providing accurate estimates of adult mortality. Coupled with this is the fact that collection of accurate data directly from surveys has proved to be difficult.

Orphanhood data, although useful for estimation of adult mortality, can give rise to possible biases that may lead to over-reporting or under-reporting of mortality. If for example questions on orphanhood are asked of the entire population, parents with several surviving children will tend to be over-represented. On the other hand under-reporting of orphanhood may occur as a result of those children whose parents die when they are young. Such persons may not be aware of the death of their parents, especially after adoption where they identify the parents or relatives who adopted them as their real parents. Another possible source of bias is that orphanhood data does not refer to the entire population since it reflects the mortality experience of parents with surviving children.

Since 1969, simple questions have been included in Kenyan censuses to elicit information on survivorship status of parents. Typical questions on orphanhood are “Is your father alive” and “Is your mother alive?” the possible responses are “yes”, “no” and “not known”.

5.3 Proportions with Surviving Parents

Responses to questions on orphanhood yielded proportions of persons with father or mother alive as presented in Table 5.3

Table 5.3: Proportions of Persons with Father Alive By Sex and Age Group of Respondents, Kenya, 1969 - 2009

Age Group of Respondents	Proportions with Father Alive									
	1969		1979		1989		1999		2009	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Total	**0.713**	**0.709**	**0.741**	**0.735**	**0.765**	**0.756**	**0.743**	**0.731**	**0.721**	**0.839**
0-4	0.955	0.954	0.956	0.956	0.969	0.969	0.956	0.955	0.955	0.990
5-9	0.933	0.935	0.935	0.936	0.946	0.947	0.923	0.923	0.926	0.976
10-14	0.869	0.901	0.904	0.905	0.914	0.916	0.886	0.887	0.879	0.951
15-19	0.833	0.837	0.857	0.853	0.867	0.866	0.843	0.841	0.819	0.917
20-24	0.744	0.739	0.784	0.778	0.806	0.798	0.786	0.778	0.754	0.877
25-29	0.634	0.633	0.687	0.681	0.729	0.715	0.715	0.703	0.695	0.851
30-34	0.524	0.500	0.568	0.547	0.629	0.609	0.628	0.612	0.615	0.814
35-39	0.415	0.404	0.461	0.442	0.519	0.503	0.539	0.520	0.527	0.765
40-44	0.305	0.285	0.348	0.319	0.398	0.372	0.425	0.398	0.423	0.687
45-49	0.214	0.200	0.256	0.230	0.298	0.280	0.315	0.302	0.334	0.612
50-54	0.126	0.120	0.155	0.138	0.201	0.186	.215	0.199	0.222	0.476
55-59	0.089	0.086	0.098	0.090	0.139	0.131	0.149	0.138	0.157	0.374
60-64	0.064	0.065	0.060	0.061	0.087	0.089	0.099	0.093	0.100	0.240
65-69	0.050	0.057	0.041	0.049	0.065	0.068	0.072	0.069	0.077	0.167
70+	0.036	0.057	0.040	0.057	0.053	0.068	0.088	0.089	0.103	0.259

5.4 Crude Deaths Rate (CDR)

Table 5.4 depicts crude death rates for Kenya. Crude death rates are a rough estimate of mortality for the whole population. Nairobi County had the lowest CDR of 6.3 while Siaya had the highest of 19.1. Crude death rates are influenced by the structure of the population; in that in populations with a young age structure CDRs tend to be lower than in populations whose age structure has older people. The results from the crude death rates indicate that mortality in the country has declined as compared to that of 1999 Census. In 1999 the crude death rate was 12 per 1000 population while in 2009 it was 10.4 per 1000 population nationally. In total, 21 counties, representing 45.0 percent, had higher crude death rates than the national rate of 10.4.

Table 5.4: Crude Death Rates for National and County, 2009

COUNTY	CDR	COUNTY	CDR
Kenya	**10.4**	Siaya	19.1
Nairobi	6.3	Kisumu	13.7
Nyandarua	9.9	Homa Bay	12.7
Nyeri	12.6	Migori	13.0
Kirinyaga	9.4	Kisii	9.8
Murang'a	11.9	Nyamira	9.7
Kiambu	8.0	Turkana	10.9
Mombasa	8.9	West Pokot	10.2
Kwale	10.1	Samburu	8.5
Kilifi	9.3	Trans Nzoia	9.7
Tana River	11.0	Baringo	10.7
Lamu	11.5	Uasin Gishu	10.8
Taita Taveta	15.2	Elgeyo Marakwet	10.2
Marsabit	7.3	Nandi	11.5
Isiolo	6.6	Laikipia	11.9
Meru	7.7	Nakuru	11.8
Tharaka	9.6	Narok	6.9
Embu	8.3	Kajiado	7.5
Kitui	10.2	Kericho	10.3
Machakos	12.0	Bomet	9.4
Makueni	11.9	Kakamega	11.7
Garissa	7.8	Vihiga	16.8
Wajir	9.3	Bungoma	10.2
Mandera	14.3	Busia	12.6

5.5 Death Notification

In addition, the 2009 Census collected information on death registration coverage. Questions were asked on recent deaths at household level, in question H-11. This was followed further by question H-13 on whether the death was notified or not, which aimed at determining the level of death registration in the country.

5.5.1 Results

In the period August, 2008 – August, 2009, a total of 263,564 deaths occurred in Kenyan households as shown in Table 5.5. Out of these, the majority occurred in Rift Valley Province, Nyanza Province, Eastern Province and Western Province with 67,034, 53,620, 34,183 and 29,178 deaths, respectively.

Nationally, of the 263, 564 reported deaths, 57 percent were male and 43 percent female, showing more male deaths than female. The data shows that 7 in every 10 deaths or 72 percent of all deaths are notified once they occur. More male deaths are notified compared to female with percentage rates of 73 and 71respectively. However, these deaths do not reflect the true mortality in each region. Regionally, Central Province leads in death notification with 95 percent, well above the national average, followed by Western 87 percent and Eastern third with 84 percent. The least number of registered deaths are found in North Eastern Province with 22 percent, thus only 2 out every 10 deaths occurring in the province are notified.

Table 5.5: Percentage Distribution of Registered Deaths by County, 2009

Province/County	Number of Deaths 1 Year Prior to Census			% of Deaths Registered		
	Total	Male	Female	Total	Male	Female
Kenya	**263,564**	**150,024**	**113,540**	**72**	**73**	**71**
Nairobi	**18,108**	**10,707**	**7,401**	**82**	**82**	**82**
Nairobi	18,108	10,707	7,401	82	82	82
Central	**25,621**	**15,278**	**10,343**	**95**	**95**	**94**
Nyandarua	3,575	2,080	1,495	91	92	90
Nyeri	4,515	2,643	1,872	97	98	96
Kirinyaga	3,218	1,961	1,257	95	96	95
Murang'a	6,058	3,680	2,378	96	95	96
Kiambu	8,255	4,914	3,341	94	94	94
Coast	**17,907**	**9,861**	**8,046**	**72**	**73**	**71**
Mombasa	4,827	2,631	2,196	75	76	74
Kwale	3,369	1,717	1,652	66	67	65
Kilifi	5,480	3,157	2,323	77	77	76
Tana River	1,730	988	742	43	43	43
Lamu	632	341	291	66	67	66
Taita Taveta	1,869	1,027	842	92	93	91
Eastern	**34,183**	**19,680**	**14,503**	**84**	**84**	**84**
Marsabit	1,731	934	797	35	37	33
Isiolo	772	436	336	54	56	50
Meru	7,719	4,769	2,950	83	84	82
Tharaka	2,047	1,147	900	79	82	76
Embu	2,766	1,612	1,154	94	95	93
Kitui	6,235	3,432	2,803	86	87	86
Machakos	7,210	4,005	3,205	94	94	93
Makueni	5,703	3,345	2,358	87	82	93
North Eastern	**17,915**	**9,185**	**8,730**	**22**	**23**	**22**
Garissa	3,947	2,176	1,771	25	26	23
Wajir	4,123	2,238	1,885	18	17	20
Mandera	9,845	4,771	5,074	23	24	22
Nyanza	**53,620**	**30,752**	**22,868**	**72**	**72**	**70**
Siaya	12,168	7,080	5,088	82	82	81
Kisumu	10,191	5,855	4,336	82	83	81
Migori	9,500	5,294	4,206	57	58	57
Homa Bay	10,112	5,906	4,206	54	56	52
Kisii	7,968	4,485	3,483	75	76	74
Nyamira	3,681	2,132	1,549	85	86	85
Rift Valley	**67,032**	**37,833**	**29,199**	**62**	**64**	**61**
Turkana	10,222	5,325	4,897	28	28	28
West Pokot	5,318	2,923	2,395	27	28	26
Samburu	1,858	1,081	777	37	39	35
Trans Nzoia	5,053	2,906	2,147	74	75	73
Baringo	3,620	2,121	1,499	57	57	57
Uasin Gishu	5,137	2,935	2,202	80	80	80
Elgeyo Marakwet	1,737	1,026	711	75	74	76
Nandi	4,019	2,248	1,771	83	84	83
Laikipia	2,450	1,371	1,079	82	85	78
Nakuru	11,131	6,358	4,773	83	83	82
Narok	4,733	2,693	2,040	50	51	47
Kajiado	3,373	1,915	1,458	71	73	69
Kericho	3,602	2,143	1,459	74	74	75
Bomet	4,779	2,788	1,991	76	76	76

Province/County	Number of Deaths 1 Year Prior to Census			% of Deaths Registered		
	Total	Male	Female	Total	Male	Female
Western	**29,178**	**16,728**	**12,450**	**87**	**87**	**87**
Kakamega	10,818	6,173	4,645	90	91	90
Vihiga	4,490	2,630	1,860	92	92	92
Bungoma	8,180	4,652	3,528	84	84	83
Busia	5,690	3,273	2,417	82	82	82

Chapter 6-Conclusion and Recommendations

6.1 Introduction

The over-reaching goal of Vision 2030 is to transform Kenya into a globally competitive middle income country with a high quality of life for all Kenyans. The Vision 2030 programs also take into consideration the Millennium Development Goals (MDGs) given that Kenya is a contracting party to the Millennium Declaration of 2000, thus obliging the country to meet the goals by 2015. To this end, implementation of measures in the health sector and other sectors is expected to facilitate achievement of important targets in the medium term plan (2008 – 2012) of the Vision 2030 goals. These include: increasing average life expectancy of Kenyans from 47 years to 60 years; reducing under five infant mortality from 120 to 33 per 1,000; reducing maternal mortality from 410 to 147 per 100,000 live births, increasing the proportion of birth deliveries by skilled personnel from 42 to 95 percent; reducing cases of TB from 888 to 444 per 100,000; reducing the proportion of in-patient malaria fatality to 3 percent; and further reducing the HIV prevalence rate to less than 5 percent from the current rate of 6.3.

The objectives of the mortality monograph are to provide indicators on mortality levels and differentials and to determine progress towards MDGs 4 and 5 and Vision 2030.

6.2 Major Findings

One major finding from the analysis of mortality data is that there has been a dramatic decline in childhood mortality from 116 per 1000 in the under -five in 1999 census to 79 per 1000 per the 2009 census. This compares favourably with the results obtained from the Kenya Demographic and Health Survey of 2008/09 where under-five mortality was 74 per 1000 live births.

6.2.1 Data Quality

It has been observed in the data on life time fertility that a large number of women may fail to state their parities, when infact they have children. This will tend to bias the numerator downwards. Hence one of the quality checks on data on life time fertility is to examine the percentage at each age whose parity is not stated and use the El-Badry correction to adjust the average parities in age range 15 to 49. This problem has persisted in all censuses. The 2009 Census is no exception in that 3.9 percent of women in age range 15-49 did not state their parity. This is however a decline from the 1999 Census of 6.3 percent. Further observations on data quality indicate that there may have been omission and under-reporting of dead children by of younger and older women.

6.2.2 Childhood Mortality

Results of the analysis of the 2009 Census indicate that there has been a downward trend in childhood mortality. In 2009 Census IMR was 60 per 1000 live births and under five mortality rate was 87 per 1000 live births, compared to 116 per 1000 live births in 1999,

and infant mortality rate of 77 per 1000 live births. However regional and sub-regional disparities continue to exist. All counties in North Eastern Province, Western Province, Nyanza Province (except Nyamira) had under-five mortality rates ranging from over 100 to over 200.Siayacountyregistered the highest under five mortality of 227 per 100 live births while Elgeyo Marakwet registered the lowest at 42 per 1000. In Rift valley only Samburu and West Pokot had under-five mortality rates that were greater than the national average. Despite the dramatic declines in childhood mortality, the country is not likely to achieve the Vision 2030 medium plan goal of 33 per 1000 live births or 4th MDG.

6.2.3 Life Expectancy

The results further indicate that life expectancy at birth has increased to 60 for both sexes (58 for males and 61 for females). This implies that the country has achieved Vision 2030 medium plan goal. Disparities at regional and sub-regional levels were observed. Counties with life expectancy of above 60 are Nairobi, the entire Central, Eastern provinces (except Embu, which had 59 for males). Rift Valley (except Narok and Kajiado) North Eastern Province, Nyanza Province and Western all had life expectancy of less than 60, with Siaya having the least at 39. These are also regions with high childhood mortality rates.

6.2.4 Maternal Mortality

The maternal mortality ratio in the country is estimated at 495 per 100,000 births. This is slightly higher than that obtained in the 2008/09 KDHS of 488, and lower than the estimates of the Inter-agency group of 530 per 100,000. Regional disparities in maternal mortality ratios were observed with those counties with better indicators of child survival also recording lower maternal mortality ratios. The highest recorded was 3795 per 100,000 live births in Mandera and the least was 139 per 100,000 live births in Tharaka.

6.2.5 Adult Mortality

In order to estimate adult mortality, probabilities of dying between age 15 and 60 (i.e. ${}_{45}q_{15}$) were used. Nationally for males aged 15 only 35 percent will not survive to age 60 compared with 31 percent of females of the same age. Siaya County had the highest probability of dying; with the results indicating that for males aged 15, years 65 percent will not survive to age 60.

6.2.6 Crude Death Rate

The crude death rate in Kenya was estimated at 10.4 per 1000 population according to 2009 Census data. Nairobi, Central (except Nyeri and Murang'a), Eastern (except Kitui, Makueni and Machakos) had CDR of below 10 while counties in Western, Nyanza (except Nyamira and Kisii) and Rift Valley (except Kajiado, Narok, Bomet, Trans Nzoia and Samburu) had CDR above the national. Siaya County again registered the highest CDR.

6.3 Implications

Though there is an improvement in infant and child mortality, at national level the rates still remain high and the country is still far from achieving targets set out in Vision 2030, of reducing under-five mortality from 120 to 33 per 1000 and the 4th MDG by 2015.

High infant and child mortality have implications on the country's future development. Poverty, maternal and paternal education, access to health facilities are among the factors that influence levels of mortality. These and other factors bring about inequities in under-five mortalities and regional and county disparities. Counties with high under-five mortality are likely to lag behind in development.

Life expectancy at birth has increased with many more people expected to live on average at least 60 years or more. The implications of this are an increase in the population of the old in the country and the dependency ratio.

High maternal mortality has an impact on the survival status of infants and children under five. The disparities in maternal mortality reflect the socio-economic disparities that exist in the different provinces and counties. In the analysis most counties recording high under five mortalities also had high maternal mortality rates.

6.4 Recommendations

To achieve Vision 2030 and the 4th and 5th MDGs there is need to:

- Intensify immunization campaigns especially in counties with high infant and child mortality.
- Intensify family planning campaigns and access to reproductive health services.
- Improve access and quality of infrastructure for maternal and child health care.
- Increase equitable access to health services for all through addressing equity and by expanding access to basic services with special focus on the community level.
- Develop interventions to achieve the intended impact by targeting populations with the most needs, i.e. urban and rural poor, the "hard to reach" groups and persons with disabilities.
- Increase and sustain health financing.
- Identify priority areas (both in terms of health interventions and targeted population) for interventions.
- Enhance strategies to eradicate poverty which is a major contributing factor to disparities in health outcomes and also poor health outcomes.
- Improve access to ARVs and PMTCT in order to reduce child, adult and maternal mortalities.
- Increase enrolment and attainment of higher levels in education especially for girls.
- Formulate and implement policies and strategies to improve the quality of life (health status) of populations of all ages.
- Formulate and implement policies and strategies that ensure the wellbeing of the elderly.

In order to improve on the quality of data collected for the estimation of mortality indicators, there is need for:

- Intense training of field interviewers and supervisors.
- Reduction in the number of questions in the census questionnaire.
- Improvement of the civil registration system.
- Formulating and implementing policies and strategies to ensure the wellbeing of the elderly.

References

Kenya National Bureau of Statistics (KNBS) and ICF Macro. 2010. *Kenya Demographic and Health Survey 2008-09*. Calverton, Maryland: KNBS and ICF Macro.

Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya], and ORC Macro. 2004. Kenya Demographic and Health Survey 2003. Calverton, Maryland: CBS, MOH, and ORC Macro

Central Bureau of Statistics (CBS) Kenya 1999 population and Housing Census, Ministry of Finance and Planning, 2002. Volume V Analytical Report on Mortality

Brass, W. et al. 1968. The Demography of Tropical Africa, Princeton, New Jersey, Princeton University Press.

Hill, K., G. Bicego, and M. Mahy, 2001. "Childhood Mortality in Kenya: An Examination of

Trends and Determinants in the Late 1980s to Mid-1990s", Macro International Report

Madise et. al 2003. Child Mortality in Southern and Eastern Africa

United Nations. 1998. Principles and Recommendations for Population and Housing Census

UNICEF, 2006. The State of the World's Children Report, 2006

Republic of Kenya, 2009. The National Reproductive Health Strategy (2009-2015)

Republic of Kenya, 2004. National Population Policy for Sustainable Development (NPPSD) of 2000

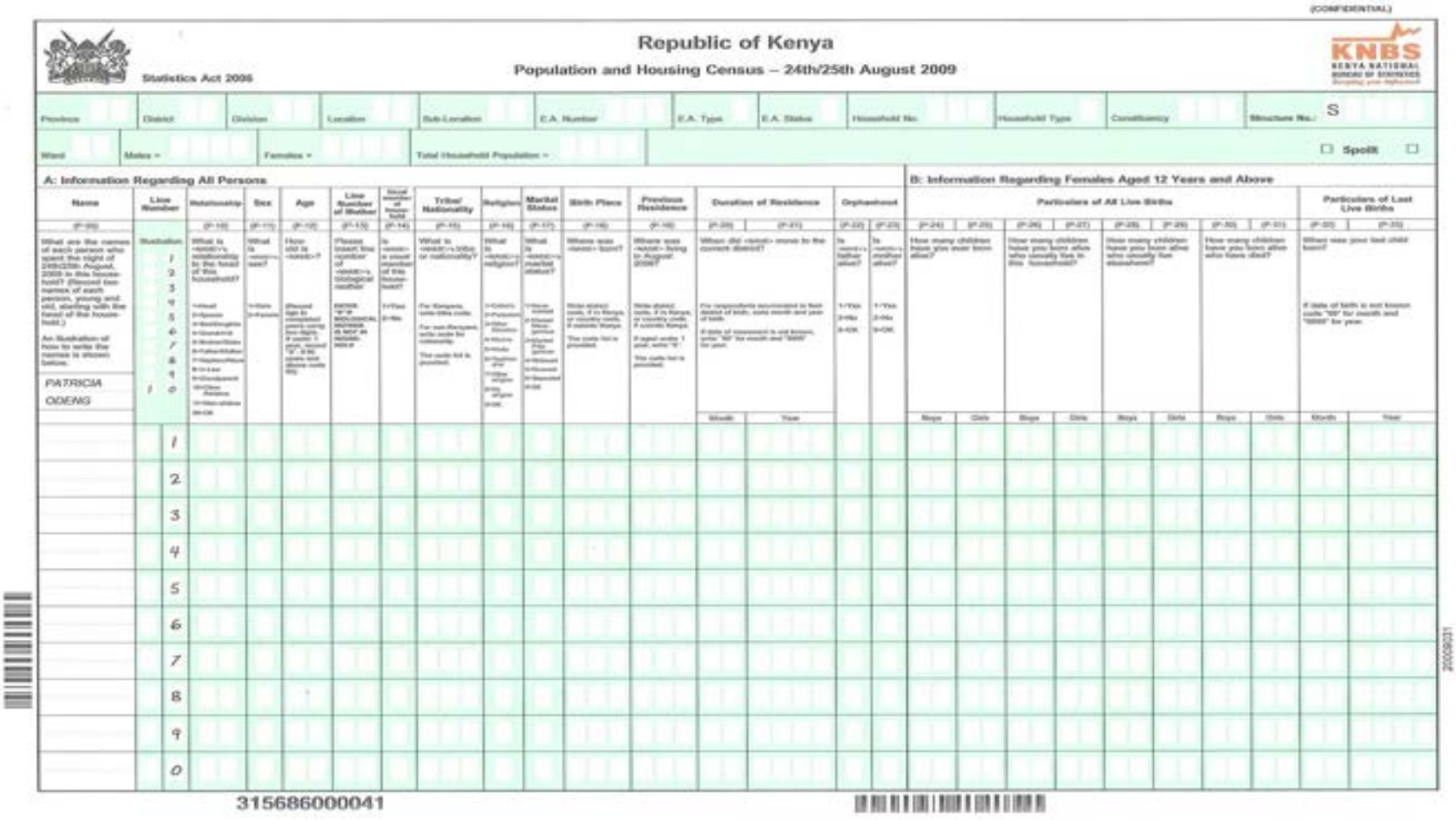
National Council for Population and Development (NCPD), Central Bureau of Statistics (CBS) (Office of the Vice President and Ministry of Planning and National Development) [Kenya], and Macro International Inc. (MI). 1999. Kenya Demographic and Health Survey 1998. Calverton, Maryland: NDPD, CBS, and MI

Park, K. (2005): "Preventive Medicine in Obstetrics, Pediatrics and Geriatrics", PARK'S textbook of preventive and social medicine, (18th edition) India: BHANOT (2005); Pp 414-422

IGME, 2011. www.int/gho.org

Appendices

Appendix 1(a): Main Census Questionnaires



(CONFIDENTIAL)

Republic of Kenya

Statistics Act 2006

Population and Housing Census – 24th/25th August 2009

KNBS KENYA NATIONAL BUREAU OF STATISTICS

Province | District | Division | Location | Sub-Location | E.A. Number | E.A. Type | E.A. Status | Household No. | Household Type | Constituency | Structure No.: S

Ward | Males = | Females = | Total Household Population = | ☐ Spoilt ☐

A: Information Regarding All Persons

B: Information Regarding Females Aged 12 Years and Above

Name	Line Number	Relationship	Sex	Age	Line Number of Mother	Usual member of household	Tribe/ Nationality	Religion	Marital Status	Birth Place	Previous Residence	Duration of Residence		Orphanhood		Particulars of All Live Births								Particulars of Last Live Births	
(P-S5)		(P-S6)	(P-S7)	(P-S8)	(P-S9)	(P-S4)	(P-S10)	(P-S11)	(P-S12)	(P-S13)	(P-S14)	(P-S15)	(P-S16)	(P-S17)	(P-S18)	(P-S19)	(P-S20)	(P-S21)	(P-S22)	(P-S23)	(P-S24)	(P-S25)	(P-S26)	(P-S27)	(P-S28)	(P-S29)	(P-S30)	(P-S31)	(P-S32)	(P-S33)
What are the names of each person who spent the night of 24th/25th August, 2009 in this household? (Record first names of each person, young and old, starting with the head of the household.) An illustration of how to write the names is shown below.	Illustration	What is <NAME>'s relationship to the head of this household?	What is <NAME>'s sex?	How old is <NAME>?	Please insert line number of <NAME>'s biological mother	Is <NAME> a usual member of this household?	What is <NAME>'s tribe or nationality?	What is <NAME>'s religion?	What is <NAME>'s marital status?	Where was <NAME> born?	Where was <NAME> living on 24th August 2008?	When did <NAME> move to the current district?		Is <NAME>'s father alive?	Is <NAME>'s mother alive?	How many children have you ever been alive?		How many children have you born alive who usually live in this household?		How many children have you born alive who usually live elsewhere?		How many children have you born alive who have died?		When was your last child born?	
PATRICIA ODENG	1 0												Month	Year			Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Month	Year
	1																									
	2																									
	3																									
	4																									
	5																									
	6																									
	7																									
	8																									
	9																									
	0																									

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Line Number	B: Information Regarding Females Aged 12 Years and Above			C: Information Regarding Persons with Disability		D: Information Regarding Persons Aged 3 Years and Above			E: Labour Force Particulars (To be asked of all persons aged 5 years and above)			F: Information Regarding ICT (To be asked of persons aged 3 years & above)							G: Annual Live Births	H: Information About Deaths in the Household				
	Particulars of Last Live Births					Education			Economic Activity	For those who worked or held a job (including those on leave)		Was <name> able to get a service from the following items within the last one month?											Age	Sex
	Was this last birth notified? 1=Yes 2=No 9=DK	Was this child male or female?	Is this child still alive?	What type of disability does <name> have? (List not more than three) 1. Visual 2. Hearing 3. Speech 4. Physical 5. Mental 6. Self care 7. Others 8. None	Because of the disability, does <name> have difficulties in engaging in any economic activity? 1=Yes 2=No 3=NA 9=DK	What is the school/ Learning institution attendance status of <name>?	What is the highest Std/Form/Level reached by <name>?	What is the highest Std/Form/Level completed by <name>?	What was <name> mainly doing during the last 7 days preceding the census night?	Who was <name>'s main employer?	How many hours did <name> work in the last 7 days preceding the census night?	Radio 1=Yes 2=No 9=DK	TV Set 1=Yes 2=No 9=DK	Mobile Phone 1=Yes 2=No 9=DK	Landline 1=Yes 2=No 9=DK	Computer 1=Yes 2=No 9=DK	How often does <name> use internet (e.g. email, chatting, etc.)? 1. Daily 2. Weekly 3. Monthly 4. Yearly 5. Never 9. DK	Where did <name> mainly use the internet?	How many live births occurred in this household between 24/08/2008 and 24/08/2009 (last 12 months)?	How many deaths occurred in this household between 24/08/2008 and 24/08/09 (last 12 months)?	Name of the household member who died	Was this death notified? 1=Yes 2=No 9=DK	How old was <name>'s at his/her death? In completed years	1=Male 2=Female
1																					1.			
2																					2.			
3																					3.			
4																					4.			
5																					5.			
6																								
7																								
8																								
9																								
0																								

Remarks

Continuation page of

H: Information About Deaths in the Household	I: Information Regarding Livestock			
For females who died at age 12 - 49 years	How many of each of the following livestock are currently owned by this household?			
Did the death occur... 1=During pregnancy? 2=During delivery? 3=Within two months after delivery? 4=Other 9=DK	Livestock	Number	Livestock	Number
	1. Exotic cattle		7. Pigs	
	2. Indigenous cattle		8. Indigenous chicken	
	3. Sheep		9. Chicken Commercial	
	4. Goat		10. Bee Hives	
	5. Camels		11. Other	
	6. Donkeys			

J: Housing Conditions and Amenities – To be Asked of the Household Head or Any Other Responsible Person

Dwelling Units	Habitable	Tenure Status of Main Dwelling Unit	Dominant Construction Material of Main Dwelling Unit: Roof	Wall	Floor	Main Source of Water	Main Mode of Human Waste Disposal	Main Type of Cooking Fuel	Main Type of Lighting Fuel
How many dwelling units does this household occupy?	How many habitable rooms do these units contain?	If owner occupied, state whether: 1=Purchased 2=Constructed 3=Inherited. If rented/provided, state whether: 4=Government 5=Local Authority 6=Parastatal 7=Private Company 8=Individual 9=Faith based organisation/NGO 10=Other form							

K: Ownership of Household Assets				L: Emigrants
Did the Household own any of the following items? 1=Yes 2=No				Emigrants in the last 10 years (since 1999)
1. Radio		8. Car		How many members of this household have migrated to another country since 1999?
2. TV		9. Truck/Lorry/ tractor/bus		
3. Mobile Phone		10. Refrigerator		
4. Landline Telephone		11. Boat		
5. Computer		12. Animal Drawn cart		If NONE write "0" and end the interview
6. Bicycle		13. Canoes		If NOT "0" fill the Emigrant Sheet Questionnaire
7. Motor Cycle		14. Tuk tuk		

CODE LIST FOR HIGHEST EDUCATION LEVEL REACHED AND COMPLETED FOR P-40 & P41

Not Stated/DK 99
Never Attended 97

PRE-PRIMARY

Pre Primary (ECD) 96

PRIMARY

Standard 1(Incomplete) 0
Standard 1 1
Standard 2 2
Standard 3 3
Standard 4 4
Standard 5 5
Standard 6 6
Standard 7 7
Standard 8 8

SECONDARY

Form 1 9
Form 2 10
Form 3 11
Form 4 12
Form 5 13
Form 6 14

TERTIARY-MIDDLE LEVEL COLLEGES

Not Completed/Attending Post Secondary Education 15
Completed Post Secondary Education 16

UNIVERSITY

Not Completed/ Attending Undergraduate 17
Completed Undergraduate 18
Not Completed/ Attending Masters/PhD Degree 19
Completed Masters/PhD Degree 20

NON-FORMAL EDUCATION

Not Completed/Attending Basic/Post Literacy 21
Completed Basic/Post Literacy 22

YOUTH POLYTECHNIC

Not Completed/Attending Youth Polytechnic 23
Completed Youth Polytechnic 24

OTHER EDUCATION

Attending Madrassa/Duksi 25
Completed Madrassa/Duksi 26

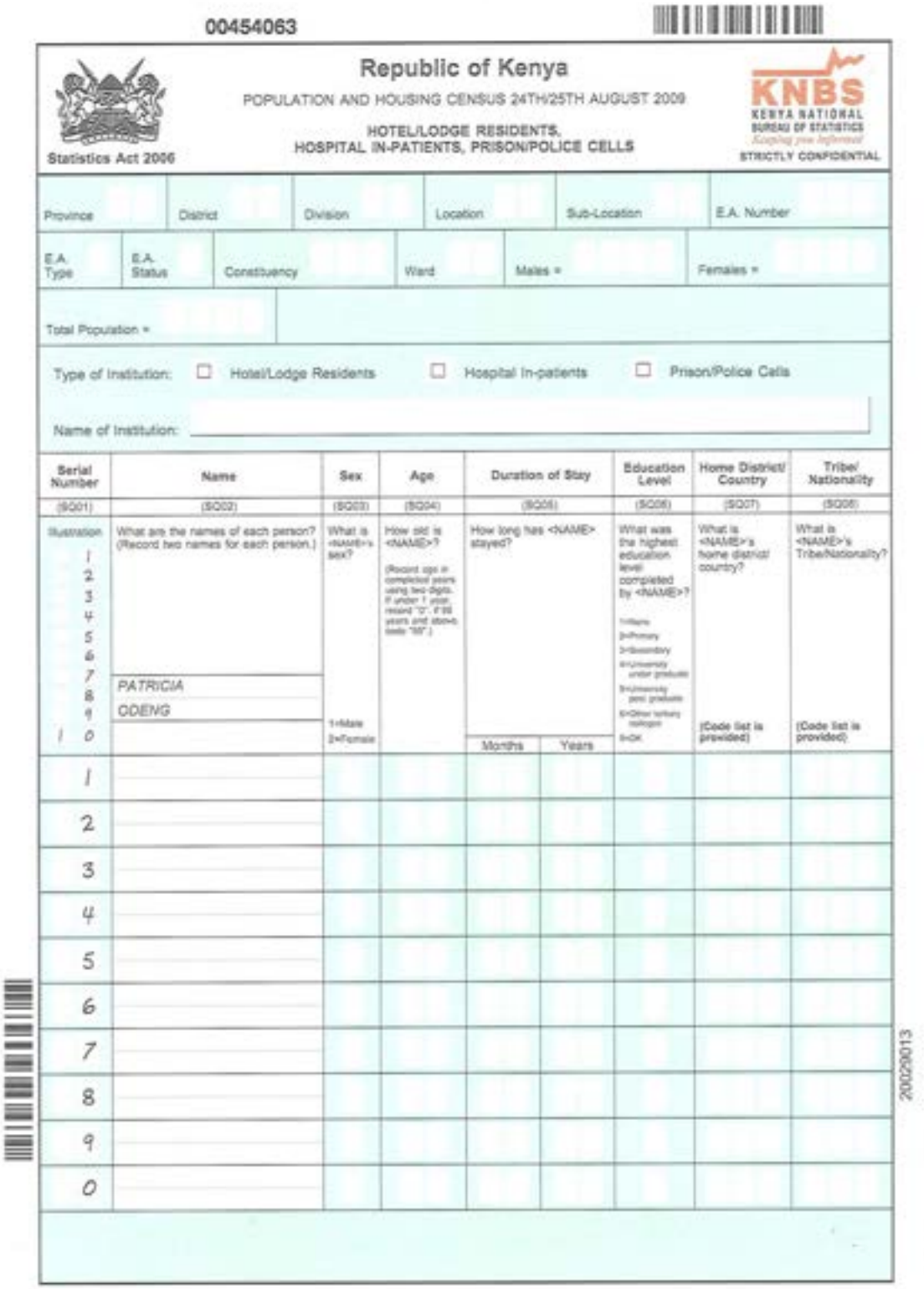
CODE LIST FOR P42-ECONOMIC ACTIVITY CODE

Worked For Pay 1
On Leave 2
Sick Leave 3
Worked On Own/Family Business 4
Worked On Own/Family Agricultural Holding 5
Apprentice/Intern 6
Volunteer 7
Seeking Work (Action Taken) 8
Seeking Work (No Action Taken) 9
No Work Available 10
Retired 11
Homemaker 12
Full Time Student 13
Incapacitated 14
Other (Specify) 15

CODE LIST FOR P43- MAIN EMPLOYER

Private Sector Enterprise 1
Local Authorities 2
Central Government 3
Teachers Service Commission (TSC) 4
State Owned Enterprise 5
International NGO 6
Local NGO/CBO 7
Faith Based Organization 8
Self Modern 9
Informal Sector 'Jua Kali' (Employed) 10
Self Employed - Informal 11
Small Scale Agriculture (Employed) 12
Self Small Scale Agriculture 13
Pastoralist Activities (Employed) 14
Self Pastoralist Activities 15
Individual/Private Household 16
Other (Specify) 17

Appendix 1(b): Hotel/Lodge Residents, Hospital In-Patients, Prison/Police Cells Questionnaires



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Republic of Kenya

POPULATION AND HOUSING CENSUS 24TH/25TH AUGUST 2009

HOTEL/LODGE RESIDENTS, HOSPITAL IN-PATIENTS, PRISON/POLICE CELLS

Statistics Act 2006

KNBS KENYA NATIONAL BUREAU OF STATISTICS

STRICTLY CONFIDENTIAL

Province | District | Division | Location | Sub-Location | E.A. Number

E.A. Type | E.A. Status | Constituency | Ward | Males = | Females =

Total Population =

Type of Institution: ☐ Hotel/Lodge Residents ☐ Hospital In-patients ☐ Prison/Police Cells

Name of Institution:

Serial Number	Name	Sex	Age	Duration of Stay		Education Level	Home District/ Country	Tribe/ Nationality
(SQ01)	(SQ02)	(SQ03)	(SQ04)	(SQ05)		(SQ06)	(SQ07)	(SQ08)
Illustration 1	What are the names of each person? (Record two names for each person.)	What is <NAME>'s sex? 1=Male 2=Female	How old is <NAME>? (Record age in completed years using two digits. If under 1 year, record "0". If 95 years and above, code "95".)	How long has <NAME> stayed? Months	Years	What was the highest education level completed by <NAME>? 1=None 2=Primary 3=Secondary 4=University under graduate 5=University post graduate 6=Other tertiary colleges 9=DK	What is <NAME>'s home district/ country? (Code list is provided)	What is <NAME>'s Tribe/Nationality? (Code list is provided)
1	PATRICIA							
2	COENG							
3								
4								
5								
6								
7								
8								
9								
10								

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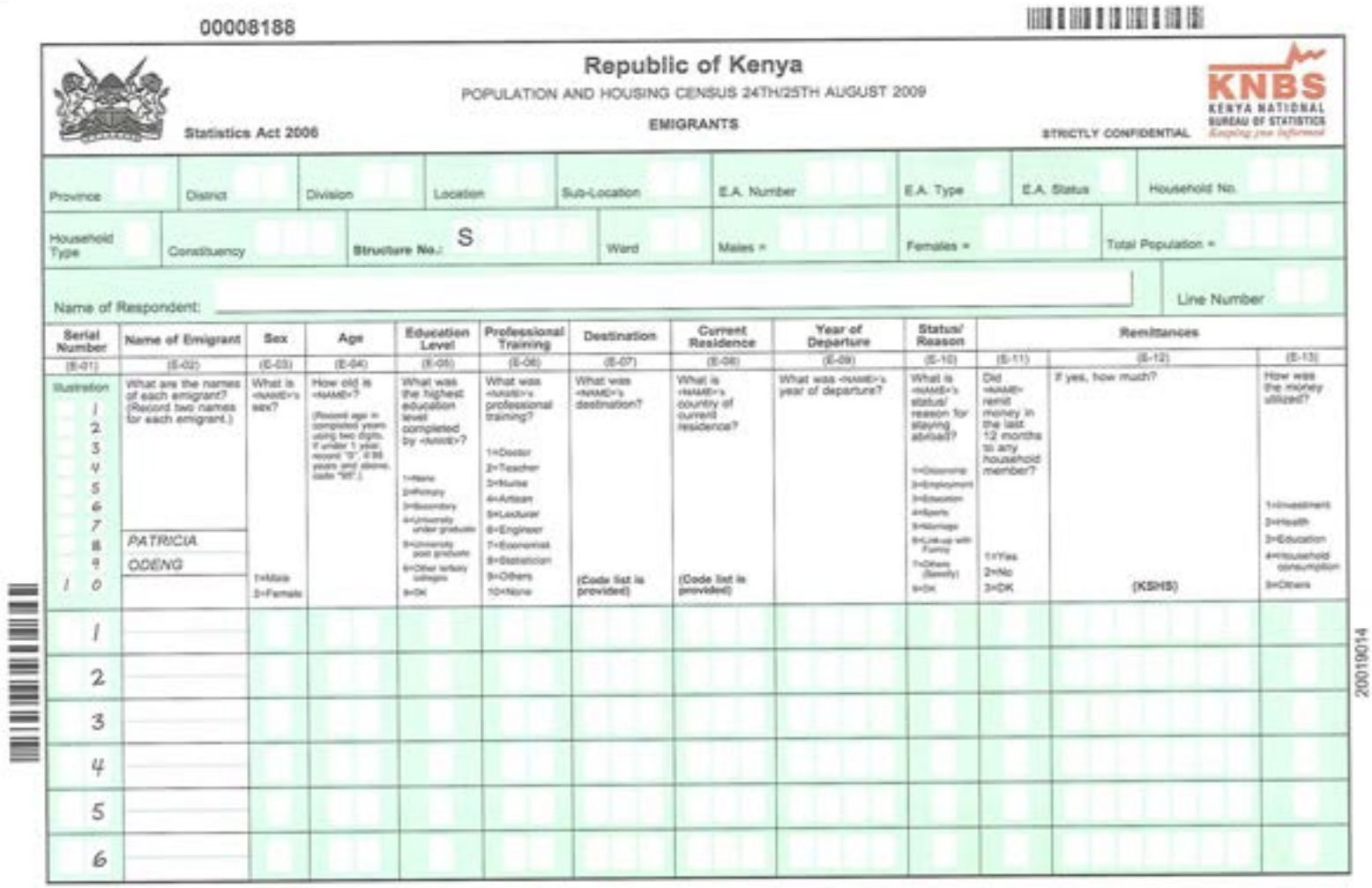
Appendix 1(c): Emigrants Questionnaires



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Republic of Kenya

POPULATION AND HOUSING CENSUS 24TH/25TH AUGUST 2009

Statistics Act 2006

EMIGRANTS

STRICTLY CONFIDENTIAL

KNBS KENYA NATIONAL BUREAU OF STATISTICS *Keeping you Informed*

Province | District | Division | Location | Sub-Location | E.A. Number | E.A. Type | E.A. Status | Household No.

Household Type | Constituency | Structure No.: S | Ward | Males = | Females = | Total Population =

Name of Respondent: | Line Number

Serial Number	Name of Emigrant	Sex	Age	Education Level	Professional Training	Destination	Current Residence	Year of Departure	Status/ Reason	Remittances		
(E-01)	(E-02)	(E-03)	(E-04)	(E-05)	(E-06)	(E-07)	(E-08)	(E-09)	(E-10)	(E-11)	(E-12)	(E-13)
Illustration 1	What are the names of each emigrant? (Record two names for each emigrant.)	What is <NAME>'s sex?	How old is <NAME>? (Record age in completed years using two digits. If under 1 year, record '0'. If 95 years and above, code '95'.)	What was the highest education level completed by <NAME>? 1=None 2=Primary 3=Secondary 4=University under graduate 5=University post graduate 6=Other tertiary colleges 9=DK	What was <NAME>'s professional training? 1=Doctor 2=Teacher 3=Nurse 4=Artisan 5=Lecturer 6=Engineer 7=Economist 8=Statistician 9=Others 10=None	What was <NAME>'s destination? (Code list is provided)	What is <NAME>'s country of current residence? (Code list is provided)	What was <NAME>'s year of departure?	What is <NAME>'s status/ reason for staying abroad? 1=Citizenship 2=Employment 3=Education 4=Sports 5=Marriage 6=Link-up with Family 7=Others (Specify) 9=DK	Did <NAME> remit money in the last 12 months to any household member? 1=Yes 2=No 3=DK	If yes, how much? (KSHS)	How was the money utilized? 1=Investment 2=Health 3=Education 4=Household consumption 5=Others
1	PATRICIA ODENG	1=Male 2=Female										
2												
3												
4												
5												
6												

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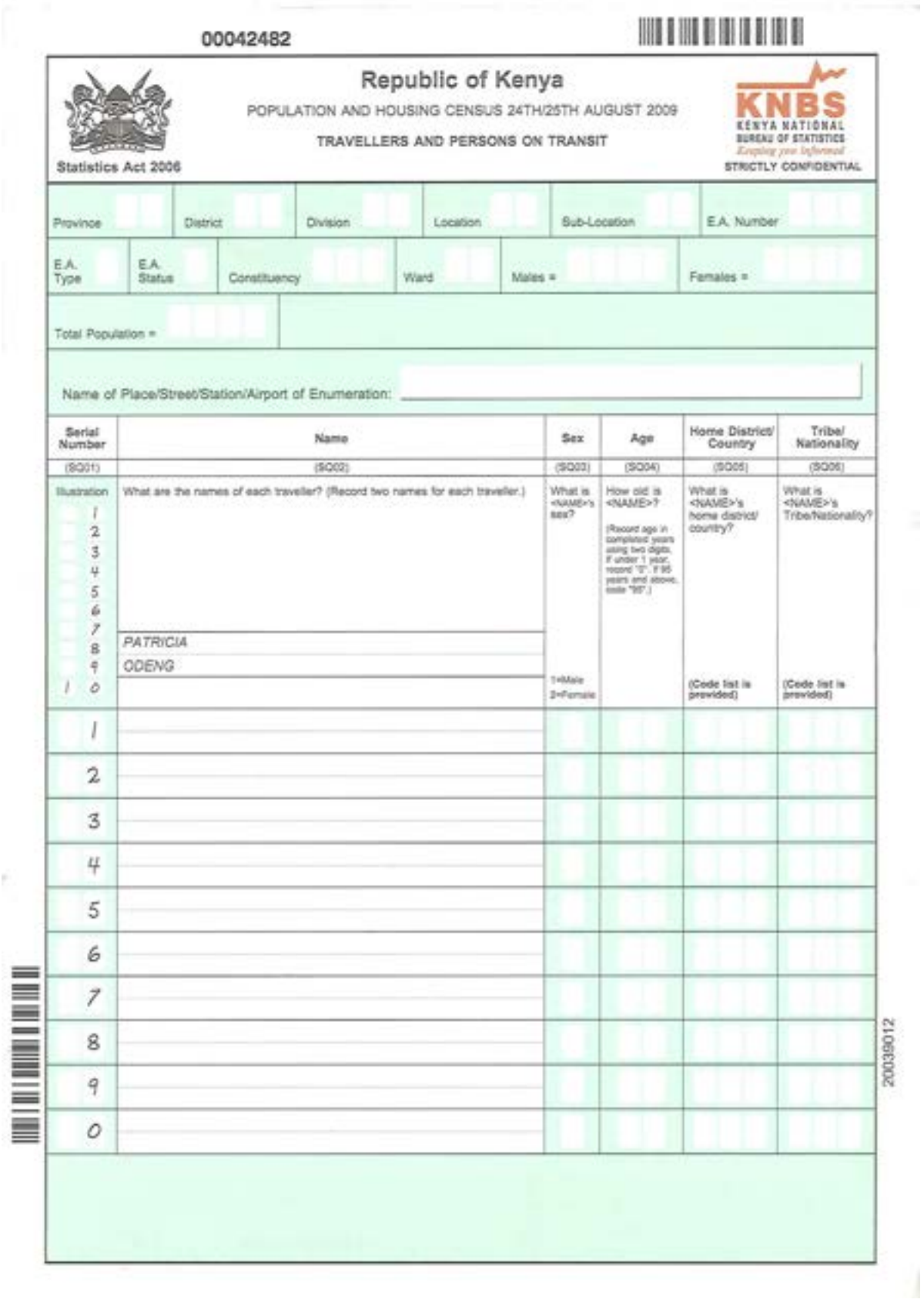
Appendix 1(d): Travellers and Persons on Transit Questionnaire



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Republic of Kenya

POPULATION AND HOUSING CENSUS 24TH/25TH AUGUST 2009

TRAVELLERS AND PERSONS ON TRANSIT

KNBS KENYA NATIONAL BUREAU OF STATISTICS *Keeping you Informed*

Statistics Act 2006

STRICTLY CONFIDENTIAL

Province | District | Division | Location | Sub-Location | E.A. Number

E.A. Type | E.A. Status | Constituency | Ward | Males = | Females =

Total Population =

Name of Place/Street/Station/Airport of Enumeration:

Serial Number	Name	Sex	Age	Home District/ Country	Tribe/ Nationality
(SQ01)	(SQ02)	(SQ03)	(SQ04)	(SQ05)	(SQ06)
Illustration	What are the names of each traveller? (Record two names for each traveller.)	What is <NAME>'s sex? 1=Male 2=Female	How old is <NAME>? (Record age in completed years using two digits. If under 1 year, record '0'. If 95 years and above, code '95'.)	What is <NAME>'s home district/ country? (Code list is provided)	What is <NAME>'s Tribe/Nationality? (Code list is provided)
1					
2					
3					
4					
5					
6					
7	PATRICIA				
8	ODENG				
9					
10					
1					
2					
3					
4					
5					
6					
7					
8					
9					
0					

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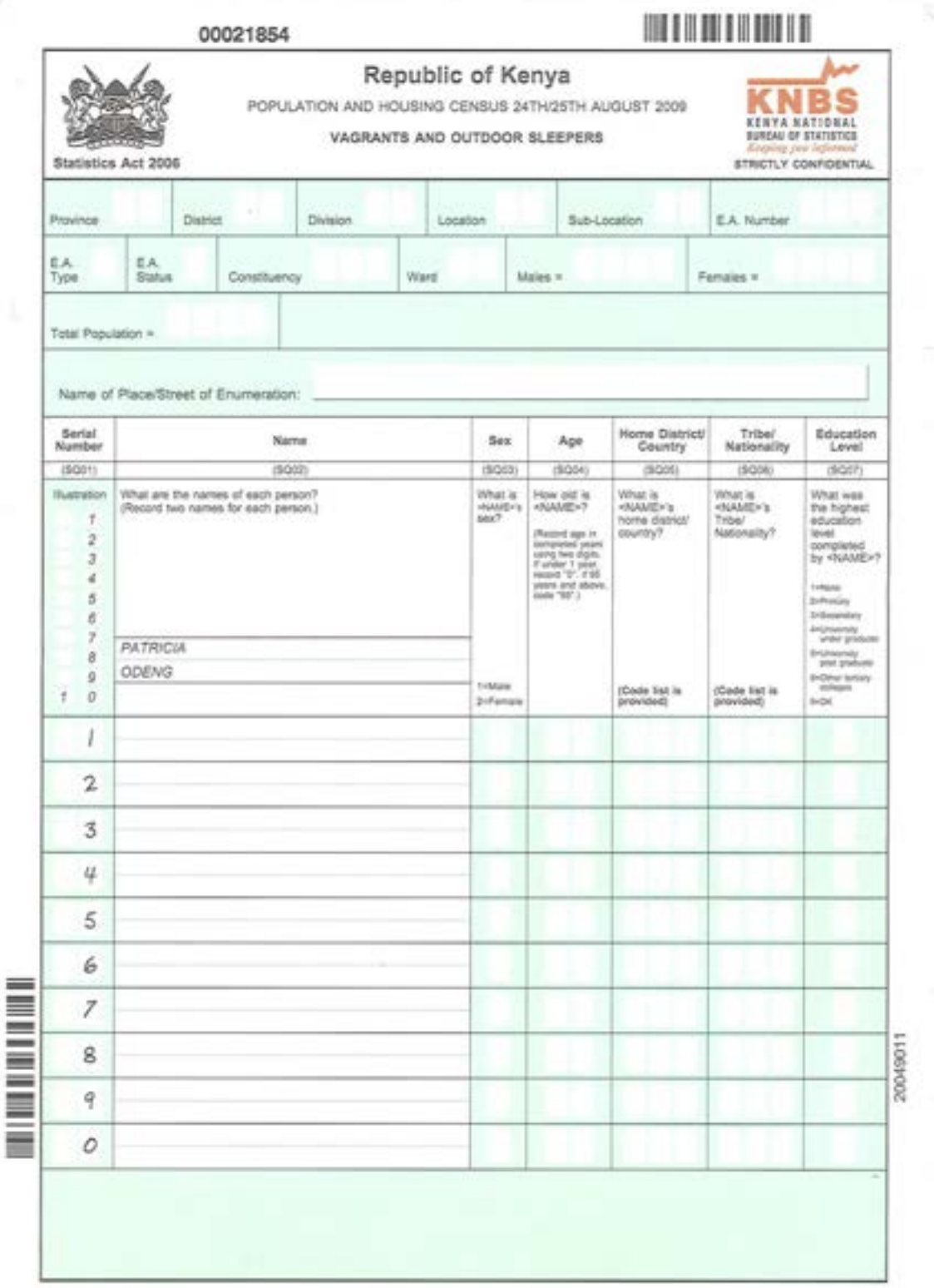
Appendix 1(e): Vagrants and Outdoor Sleepers Questionnaire



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Republic of Kenya

POPULATION AND HOUSING CENSUS 24TH/25TH AUGUST 2009

VAGRANTS AND OUTDOOR SLEEPERS

KNBS KENYA NATIONAL BUREAU OF STATISTICS *Keeping you informed*

Statistics Act 2006

STRICTLY CONFIDENTIAL

Province	District	Division	Location	Sub-Location	E.A. Number

E.A. Type	E.A. Status	Constituency	Ward	Males =	Females =

Total Population =

Name of Place/Street of Enumeration: _____

Serial Number	Name	Sex	Age	Home District/ Country	Tribe/ Nationality	Education Level
(SQ01)	(SQ02)	(SQ03)	(SQ04)	(SQ05)	(SQ06)	(SQ07)
Illustration	What are the names of each person? (Record two names for each person.)	What is <NAME>'s sex?	How old is <NAME>? (Record age in completed years using two digits. If under 1 year record "0". If 95 years and above, code "95".)	What is <NAME>'s home district/ country?	What is <NAME>'s Tribe/ Nationality?	What was the highest education level completed by <NAME>?
1	PATRICIA	1=Male 2=Female		(Code list is provided)	(Code list is provided)	1=None 2=Primary 3=Secondary 4=University under graduate 5=University post graduate 6=Other tertiary colleges 9=DK
2	ODENG					
3						
4						
5						
6						
7						
8						
9						
10						

20049011

Appendix 1(f): Diplomatic Missions Questionnaire

Serial Number of Form: .....

REPUBLIC OF KENYA

POPULATION AND HOUSING CENSUS 24TH/25TH AUGUST 2009

QUESTIONNAIRE FOR

DIPLOMATIC MISSIONS

KNBS
KENYA NATIONAL BUREAU OF STATISTICS
Keeping you informed

STATISTICS ACT 2006 **STRICTLY CONFIDENTIAL**

Province		District		Division	
Location		Sub-Location		E. A. Number	
E.A. Type		E.A. Status		Household Type	
Constituency		Ward		Males	
Females				Total Population	

Name of Hotel/Institution _____

Sno.	Name	Sex	Age	Duration of Stay		Education Level	Home District/ Nationality	Proffessional Training
(D01)		(D02)	(D03)	(D04)		(D05)	(D06)	(D07)
	What are the names of each person who spent the night of 24th/25th August, 2009 in this household ?	What is <NAME>'s sex ?	How old is <NAME>?	How long has <NAME>'s stayed ?		What is the highest education level completed by <NAME> ?	What is <NAME>'s home district/ country?	What is <NAME>'s proffessional training ?
	PATRICIA ODENG	1=Male 2=Female	(Record age in completed years using two digits.If under 1 year, record "00". If 95 years and above code 95)	Months	Years			1=Doctor 2=Teacher 3=Nurse 4=Artisan 5=Lecturer 6=Engineer 7=Economis 8=Statistcia 9=Others 10=None
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Appendix 2: Life Tables by Sex and County, 2009

KENYA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0632	0.0602	100,000	57.8	0.0501	0.0481	100,000	60.7
1	0.0067	0.0264	93,979	60.5	0.0055	0.0219	95,187	62.7
5	0.0030	0.0148	91,494	58.1	0.0023	0.0116	93,106	60.1
10	0.0029	0.0145	90,137	53.9	0.0024	0.0120	92,027	55.8
15	0.0025	0.0123	88,830	49.7	0.0018	0.0092	90,918	51.4
20	0.0035	0.0171	87,734	45.3	0.0030	0.0150	90,083	46.9
25	0.0048	0.0236	86,230	41.0	0.0056	0.0275	88,734	42.6
30	0.0077	0.0376	84,192	36.9	0.0107	0.0519	86,292	38.7
35	0.0122	0.0594	81,025	33.3	0.0138	0.0668	81,814	35.7
40	0.0132	0.0637	76,215	30.2	0.0110	0.0534	76,350	33.0
45	0.0140	0.0676	71,357	27.1	0.0101	0.0492	72,275	29.8
50	0.0133	0.0641	66,535	23.9	0.0090	0.0440	68,718	26.2
55	0.0146	0.0704	62,268	20.4	0.0102	0.0499	65,695	22.3
60	0.0203	0.0965	57,886	16.7	0.0146	0.0706	62,419	18.3
65	0.0300	0.1397	52,300	13.2	0.0231	0.1090	58,012	14.5
70	0.0466	0.2085	44,992	10.0	0.0378	0.1727	51,690	11.0
75	0.0750	0.3158	35,610	7.0	0.0631	0.2725	42,765	7.7
80	0.2495	1.0000	24,366	4.0	0.2128	1.0000	31,113	4.7

NAIROBI PROVINCE

NAIROBI

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.05377	0.05153	100,000	61.9	0.04012	0.03882	100,000	62.8
1	0.00292	0.01158	94,847	64.3	0.00254	0.01010	96,118	64.3
5	0.00221	0.01099	93,748	61.0	0.00196	0.00974	95,147	61.0
10	0.00198	0.00985	92,718	56.7	0.00220	0.01094	94,220	56.6
15	0.00223	0.01110	91,804	52.2	0.00168	0.00838	93,189	52.2
20	0.00323	0.01604	90,785	47.8	0.00287	0.01425	92,408	47.6
25	0.00403	0.01993	89,329	43.5	0.00542	0.02675	91,091	43.2
30	0.00579	0.02852	87,549	39.3	0.01047	0.05102	88,654	39.3
35	0.00859	0.04205	85,052	35.4	0.01361	0.06580	84,131	36.3
40	0.00947	0.04626	81,475	31.9	0.01081	0.05264	78,595	33.7
45	0.01062	0.05170	77,706	28.3	0.01009	0.04919	74,458	30.4
50	0.01158	0.05629	73,689	24.7	0.00901	0.04405	70,795	26.9
55	0.01390	0.06718	69,541	21.0	0.01030	0.05019	67,676	23.0
60	0.02046	0.09732	64,869	17.4	0.01487	0.07169	64,280	19.1
65	0.03121	0.14474	58,556	14.0	0.02353	0.11111	59,671	15.4
70	0.04907	0.21854	50,080	10.9	0.03909	0.17807	53,041	12.0
75	0.07946	0.33147	39,136	8.2	0.06538	0.28099	43,596	9.0
80	0.16438	1.00000	26,163	6.1	0.15129	1.00000	31,346	6.6

CENTRAL PROVINCE

AGE	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.054	0.0518	100,000	60.8	0.0416	0.0402	100,000	61.6
1	0.0031	0.0122	94,823	63.2	0.0027	0.0109	95,983	63.1
5	0.0024	0.0118	93,662	59.9	0.0021	0.0104	94,941	59.8
10	0.0021	0.0104	92,554	55.6	0.0023	0.0114	93,953	55.4
15	0.0023	0.0115	91,587	51.2	0.0019	0.0093	92,886	51.0
20	0.0035	0.0171	90,534	46.7	0.0032	0.0159	92,025	46.5
25	0.0047	0.023	88,982	42.5	0.0059	0.0292	90,560	42.2
30	0.0064	0.0317	86,935	38.5	0.0112	0.0543	87,912	38.4
35	0.009	0.0439	84,183	34.6	0.014	0.0677	83,137	35.5
40	0.0098	0.0477	80,483	31.1	0.0106	0.0514	77,512	32.9
45	0.011	0.0534	76,642	27.5	0.0101	0.0492	73,526	29.5
50	0.012	0.0584	72,548	23.9	0.0092	0.045	69,911	25.9
55	0.0141	0.0681	68,311	20.3	0.0109	0.0532	66,764	22.0
60	0.0205	0.0975	63,657	16.6	0.0147	0.0707	63,215	18.1
65	0.0311	0.1442	57,447	13.1	0.0237	0.1117	58,748	14.3
70	0.0486	0.2166	49,165	9.9	0.0394	0.1792	52,184	10.8
75	0.0764	0.3209	38,516	6.9	0.064	0.2759	42,832	7.6
80	0.2498	1	26,158	4.0	0.2234	1	31,017	4.5

COAST PROVINCE

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0725	0.0687	100,000	56.4	0.0416	0.0402	100,000	61.6
1	0.0079	0.031	93,129	59.5	0.0027	0.0109	95,983	63.1
5	0.0037	0.0182	90,246	57.4	0.0021	0.0104	94,941	59.8
10	0.0028	0.0138	88,605	53.4	0.0023	0.0114	93,953	55.4
15	0.0028	0.0138	87,384	49.1	0.0019	0.0093	92,886	51.0
20	0.0044	0.0215	86,179	44.8	0.0032	0.0159	92,025	46.5
25	0.0056	0.0275	84,324	40.7	0.0059	0.0292	90,560	42.2
30	0.0079	0.0387	82,003	36.8	0.0112	0.0543	87,912	38.4
35	0.0106	0.0515	78,827	33.1	0.014	0.0677	83,137	35.5
40	0.0109	0.053	74,771	29.8	0.0106	0.0514	77,512	32.9
45	0.0125	0.0605	70,811	26.3	0.0101	0.0492	73,526	29.5
50	0.0136	0.0658	66,525	22.9	0.0092	0.045	69,911	25.9
55	0.0185	0.0885	62,149	19.3	0.0109	0.0532	66,764	22.0
60	0.0219	0.104	56,651	15.9	0.0147	0.0707	63,215	18.1
65	0.0344	0.1584	50,759	12.5	0.0237	0.1117	58,748	14.3
70	0.0487	0.217	42,719	9.4	0.0394	0.1792	52,184	10.8
75	0.0868	0.3565	33,448	6.3	0.064	0.2759	42,832	7.6
80	0.2973	1	21,525	3.4	0.2234	1	31,017	4.5

EASTERN PROVINCE

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0544	0.0521	100,000	62.4	0.0433	0.0418	100,000	67.2
1	0.0027	0.0108	94,791	64.9	0.002	0.0079	95,815	69.1
5	0.0023	0.0114	93,766	61.6	0.0015	0.0074	95,055	65.7
10	0.0023	0.0113	92,694	57.2	0.0015	0.0074	94,353	61.1
15	0.0024	0.0119	91,648	52.9	0.0016	0.008	93,654	56.6
20	0.0031	0.0153	90,558	48.5	0.002	0.0102	92,907	52.0
25	0.0037	0.0185	89,175	44.2	0.0029	0.0146	91,963	47.5
30	0.005	0.0245	87,525	40.0	0.0048	0.0237	90,619	43.2
35	0.007	0.0345	85,378	35.9	0.006	0.0297	88,471	39.2
40	0.0083	0.0406	82,431	32.1	0.0054	0.0266	85,847	35.3
45	0.0089	0.0436	79,081	28.4	0.0062	0.0304	83,567	31.2
50	0.0099	0.0483	75,635	24.5	0.0068	0.0337	81,026	27.1
55	0.0123	0.0598	71,985	20.7	0.0082	0.0403	78,297	22.9
60	0.0195	0.0929	67,677	16.8	0.0125	0.0605	75,140	18.8
65	0.0277	0.1297	61,389	13.3	0.0206	0.0978	70,592	14.8
70	0.0454	0.204	53,428	9.9	0.0336	0.1548	63,685	11.2
75	0.0724	0.3065	42,530	6.8	0.0564	0.2471	53,823	7.8
80	0.2745	1	29,494	3.6	0.2236	1	40,522	4.5

NORTH EASTERN PROVINCE

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.1339	0.1229	100,000	48.6	0.1048	0.0981	100,000	53.2
1	0.0102	0.0397	87,712	54.4	0.0088	0.0343	90,193	58.0
5	0.0044	0.0217	84,233	52.6	0.0035	0.0173	87,098	56.0
10	0.0043	0.0215	82,405	48.7	0.0033	0.0164	85,595	51.9
15	0.0032	0.0159	80,633	44.7	0.0023	0.0114	84,195	47.8
20	0.0045	0.0222	79,354	40.4	0.0041	0.0204	83,232	43.3
25	0.0073	0.0358	77,590	36.3	0.0075	0.0369	81,535	39.1
30	0.0122	0.059	74,814	32.5	0.014	0.0676	78,529	35.5
35	0.0199	0.0946	70,400	29.4	0.0176	0.0841	73,223	32.9
40	0.0208	0.0989	63,741	27.2	0.0143	0.069	67,065	30.7
45	0.0205	0.0976	57,440	24.9	0.0127	0.0613	62,438	27.8
50	0.0181	0.0866	51,833	22.3	0.0118	0.0575	58,609	24.5
55	0.0176	0.0844	47,346	19.2	0.0129	0.0623	55,241	20.8
60	0.0242	0.1141	43,350	15.8	0.0189	0.0904	51,798	17.0
65	0.0332	0.1533	38,406	12.5	0.0271	0.1268	47,118	13.4
70	0.0514	0.2279	32,518	9.3	0.0453	0.2034	41,142	10.0
75	0.0839	0.3468	25,107	6.3	0.0735	0.3105	32,772	7.0
80	0.3058	1	16,400	3.3	0.2525	1	22,597	4.0

NYANZA PROVINCE

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.1226	0.1133	100,000	49.2	0.095	0.0892	100,000	53.8
1	0.0152	0.0584	88,667	54.5	0.0129	0.0497	91,081	58.0
5	0.0034	0.0168	83,487	53.8	0.0024	0.0117	86,551	57.0
10	0.0039	0.0193	82,082	49.6	0.0029	0.0145	85,539	52.7
15	0.0027	0.0135	80,495	45.6	0.0019	0.0096	84,295	48.4
20	0.0038	0.0187	79,409	41.1	0.0036	0.0177	83,484	43.8
25	0.0064	0.0314	77,922	36.9	0.0074	0.0362	82,005	39.6
30	0.0118	0.0573	75,477	33.0	0.0147	0.0708	79,036	36.0
35	0.0206	0.0981	71,153	29.8	0.0192	0.0918	73,441	33.5
40	0.0211	0.1	64,175	27.8	0.0145	0.0698	66,701	31.7
45	0.0215	0.1022	57,756	25.6	0.0129	0.0625	62,045	28.9
50	0.0171	0.0821	51,856	23.3	0.0102	0.0499	58,168	25.6
55	0.0168	0.0807	47,599	20.1	0.0112	0.0543	55,268	21.8
60	0.0216	0.1026	43,757	16.7	0.0153	0.0737	52,269	17.9
65	0.0314	0.1457	39,267	13.3	0.0241	0.1138	48,418	14.2
70	0.0476	0.2125	33,546	10.1	0.0404	0.1835	42,910	10.7
75	0.0759	0.319	26,416	7.2	0.0714	0.303	35,036	7.5
80	0.2282	1	17,989	4.4	0.2152	1	24,419	4.7

RIFT VALLEY PROVINCE

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0516	0.0495	100,000	57.2	0.04	0.0387	100,000	61.3
1	0.0035	0.0137	95,045	59.2	0.003	0.0118	96,127	62.8
5	0.0032	0.0156	93,741	56.0	0.0023	0.0113	94,990	59.5
10	0.0036	0.0178	92,276	51.9	0.0027	0.0133	93,918	55.1
15	0.0025	0.0122	90,635	47.7	0.0018	0.009	92,672	50.8
20	0.0035	0.0171	89,527	43.3	0.0032	0.016	91,837	46.3
25	0.0058	0.0283	87,996	39.0	0.0066	0.0323	90,371	42.0
30	0.0106	0.0516	85,502	35.1	0.0133	0.0642	87,454	38.3
35	0.0182	0.0872	81,091	31.9	0.0174	0.0831	81,838	35.8
40	0.0189	0.0902	74,022	29.7	0.0132	0.0638	75,034	33.8
45	0.0193	0.0919	67,346	27.3	0.0118	0.0572	70,250	30.9
50	0.0155	0.0747	61,158	24.9	0.0094	0.0459	66,231	27.6
55	0.0155	0.0745	56,593	21.7	0.0102	0.0495	63,189	23.8
60	0.02	0.0954	52,378	18.2	0.014	0.0678	60,062	20.0
65	0.0286	0.1335	47,380	14.9	0.0216	0.1025	55,989	16.2
70	0.0437	0.1968	41,055	11.8	0.0355	0.1629	50,252	12.8
75	0.0703	0.2988	32,976	9.0	0.059	0.2569	42,063	9.8
80	0.1468	1	23,121	6.8	0.1367	1	31,256	7.3

WESTERN PROVINCE

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0632	0.0602	100,000	55.7	0.0498	0.0479	100,000	57.2
1	0.0131	0.0508	93,980	58.3	0.0113	0.0439	95,214	59.1
5	0.0042	0.0207	89,207	57.3	0.0037	0.0185	91,038	57.7
10	0.0029	0.0145	87,361	53.5	0.0031	0.0154	89,352	53.8
15	0.0033	0.0163	86,091	49.2	0.0028	0.0137	87,977	49.6
20	0.0047	0.0233	84,686	45.0	0.004	0.0198	86,776	45.2
25	0.0055	0.0273	82,711	41.0	0.0066	0.0323	85,058	41.1
30	0.0073	0.0357	80,451	37.1	0.0114	0.0555	82,313	37.4
35	0.0101	0.0493	77,579	33.4	0.0146	0.0702	77,743	34.4
40	0.0114	0.0552	73,758	30.0	0.0122	0.0592	72,282	31.8
45	0.0129	0.0624	69,687	26.6	0.0117	0.0568	68,000	28.7
50	0.0143	0.069	65,340	23.2	0.0112	0.0543	64,135	25.2
55	0.0175	0.0836	60,829	19.7	0.0133	0.0645	60,654	21.5
60	0.0248	0.1168	55,744	16.3	0.0191	0.0912	56,739	17.8
65	0.0368	0.1685	49,235	13.1	0.0295	0.1372	51,564	14.4
70	0.057	0.2494	40,941	10.3	0.0472	0.2113	44,488	11.3
75	0.0891	0.3644	30,730	7.8	0.0753	0.317	35,090	8.6
80	0.1698	1	19,533	5.9	0.1546	1	23,966	6.5

COUNTIES - NAIROBI PROVINCE

NAIROBI

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.05377	0.05153	100,000	61.9	0.04012	0.03882	100,000	62.8
1	0.00292	0.01158	94,847	64.3	0.00254	0.01010	96,118	64.3
5	0.00221	0.01099	93,748	61.0	0.00196	0.00974	95,147	61.0
10	0.00198	0.00985	92,718	56.7	0.00220	0.01094	94,220	56.6
15	0.00223	0.01110	91,804	52.2	0.00168	0.00838	93,189	52.2
20	0.00323	0.01604	90,785	47.8	0.00287	0.01425	92,408	47.6
25	0.00403	0.01993	89,329	43.5	0.00542	0.02675	91,091	43.2
30	0.00579	0.02852	87,549	39.3	0.01047	0.05102	88,654	39.3
35	0.00859	0.04205	85,052	35.4	0.01361	0.06580	84,131	36.3
40	0.00947	0.04626	81,475	31.9	0.01081	0.05264	78,595	33.7
45	0.01062	0.05170	77,706	28.3	0.01009	0.04919	74,458	30.4
50	0.01158	0.05629	73,689	24.7	0.00901	0.04405	70,795	26.9
55	0.01390	0.06718	69,541	21.0	0.01030	0.05019	67,676	23.0
60	0.02046	0.09732	64,869	17.4	0.01487	0.07169	64,280	19.1
65	0.03121	0.14474	58,556	14.0	0.02353	0.11111	59,671	15.4
70	0.04907	0.21854	50,080	10.9	0.03909	0.17807	53,041	12.0
75	0.07946	0.33147	39,136	8.2	0.06538	0.28099	43,596	9.0
80	0.16438	1.00000	26,163	6.1	0.15129	1.00000	31,346	6.6

COUNTIES - CENTRAL PROVINCE

NYANDARUA

AGE	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0555	0.0531	100,000	60.2	0.0473	0.0455	100,000	59.6
1	0.0027	0.0109	94,690	62.6	0.0027	0.0106	95,446	61.4
5	0.0022	0.0109	93,661	59.2	0.0019	0.0095	94,436	58.0
10	0.0018	0.0091	92,637	54.9	0.0021	0.0105	93,540	53.6
15	0.0022	0.0109	91,791	50.3	0.0019	0.0096	92,556	49.1
20	0.0038	0.0191	90,794	45.9	0.0037	0.0184	91,664	44.6
25	0.0064	0.0316	89,064	41.7	0.0064	0.0313	89,979	40.4
30	0.0079	0.0389	86,253	38.0	0.0141	0.0680	87,160	36.6
35	0.0081	0.0399	82,900	34.4	0.0157	0.0756	81,232	34.1
40	0.0099	0.0482	79,594	30.7	0.0109	0.0531	75,087	31.7
45	0.0113	0.0548	75,759	27.2	0.0088	0.0429	71,096	28.3
50	0.0131	0.0632	71,606	23.6	0.0104	0.0505	68,048	24.5
55	0.0149	0.0721	67,079	20.0	0.0168	0.0805	64,611	20.6
60	0.0200	0.0951	62,246	16.4	0.0163	0.0783	59,411	17.2
65	0.0358	0.1643	56,324	12.8	0.0287	0.1340	54,758	13.5
70	0.0501	0.2226	47,070	9.9	0.0393	0.1788	47,421	10.1
75	0.0687	0.2930	36,593	7.0	0.0689	0.2940	38,943	6.8
80	0.2600	1.0000	25,870	3.8	0.2770	1.0000	27,492	3.6

NYERI

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0462	0.0445	100,000	60.4	0.0361	0.0350	100,000	59.9
1	0.0025	0.0100	95,553	62.2	0.0025	0.0097	96,495	61.0
5	0.0018	0.0091	94,599	58.8	0.0019	0.0093	95,555	57.6
10	0.0018	0.0088	93,740	54.4	0.0024	0.0121	94,666	53.1
15	0.0021	0.0102	92,915	49.8	0.0021	0.0107	93,523	48.8
20	0.0034	0.0169	91,967	45.3	0.0043	0.0210	92,523	44.3
25	0.0054	0.0267	90,411	41.1	0.0072	0.0354	90,576	40.2
30	0.0069	0.0337	87,997	37.1	0.0138	0.0666	87,366	36.5
35	0.0092	0.0449	85,031	33.3	0.0172	0.0823	81,549	34.0
40	0.0119	0.0576	81,216	29.8	0.0115	0.0559	74,835	31.8
45	0.0135	0.0655	76,540	26.4	0.0123	0.0595	70,652	28.5
50	0.0142	0.0684	71,528	23.1	0.0124	0.0604	66,451	25.2
55	0.0160	0.0768	66,635	19.6	0.0099	0.0482	62,439	21.6
60	0.0213	0.1011	61,520	16.0	0.0166	0.0798	59,431	17.6
65	0.0342	0.1574	55,301	12.6	0.0204	0.0972	54,691	13.9
70	0.0475	0.2122	46,595	9.4	0.0434	0.1958	49,375	10.1
75	0.0925	0.3757	36,708	6.3	0.0686	0.2927	39,706	7.0
80	0.2769	1.0000	22,917	3.6	0.2583	1.0000	28,085	3.9

KIRINYAGA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0633	0.0603	100,000	61.1	0.0492	0.0473	100,000	64.2
1	0.0049	0.0193	93,968	64.0	0.0039	0.0156	95,268	66.4
5	0.0040	0.0199	92,159	61.2	0.0031	0.0152	93,779	63.4
10	0.0032	0.0158	90,324	57.4	0.0027	0.0134	92,356	59.4
15	0.0030	0.0151	88,892	53.3	0.0025	0.0123	91,118	55.1
20	0.0033	0.0164	87,554	49.1	0.0025	0.0125	89,995	50.8
25	0.0030	0.0149	86,122	44.8	0.0049	0.0243	88,870	46.4
30	0.0045	0.0223	84,843	40.5	0.0068	0.0336	86,710	42.5
35	0.0081	0.0398	82,951	36.4	0.0100	0.0487	83,793	38.9
40	0.0077	0.0378	79,649	32.8	0.0076	0.0373	79,716	35.8
45	0.0091	0.0444	76,637	28.9	0.0099	0.0483	76,740	32.0
50	0.0104	0.0507	73,233	25.2	0.0074	0.0362	73,033	28.5
55	0.0124	0.0603	69,522	21.4	0.0095	0.0462	70,393	24.5
60	0.0210	0.0997	65,329	17.6	0.0105	0.0511	67,143	20.6
65	0.0247	0.1162	58,814	14.3	0.0221	0.1047	63,710	16.6
70	0.0442	0.1991	51,980	10.8	0.0399	0.1813	57,036	13.2
75	0.0566	0.2480	41,629	7.9	0.0495	0.2202	46,697	10.6
80	0.2145	1.0000	31,307	4.7	0.1272	1.0000	36,413	7.9

MURANG'A

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0467	0.0449	100,000	59.8	0.0492	0.0473	100,000	64.2
1	0.0024	0.0097	95,506	61.6	0.0039	0.0156	95,268	66.4
5	0.0018	0.0091	94,580	58.1	0.0031	0.0152	93,779	63.4
10	0.0019	0.0093	93,720	53.7	0.0027	0.0134	92,356	59.4
15	0.0022	0.0110	92,847	49.1	0.0025	0.0123	91,118	55.1
20	0.0042	0.0206	91,825	44.7	0.0025	0.0125	89,995	50.8
25	0.0058	0.0286	89,933	40.5	0.0049	0.0243	88,870	46.4
30	0.0088	0.0432	87,362	36.7	0.0068	0.0336	86,710	42.5
35	0.0127	0.0613	83,591	33.2	0.0100	0.0487	83,793	38.9
40	0.0116	0.0563	78,464	30.2	0.0076	0.0373	79,716	35.8
45	0.0125	0.0605	74,048	26.9	0.0099	0.0483	76,740	32.0
50	0.0134	0.0648	69,567	23.4	0.0074	0.0362	73,033	28.5
55	0.0155	0.0748	65,060	19.9	0.0095	0.0462	70,393	24.5
60	0.0223	0.1056	60,196	16.3	0.0105	0.0511	67,143	20.6
65	0.0316	0.1465	53,841	12.9	0.0221	0.1047	63,710	16.6
70	0.0483	0.2155	45,952	9.7	0.0399	0.1813	57,036	13.2
75	0.0834	0.3451	36,052	6.7	0.0495	0.2202	46,697	10.6
80	0.2587	1.0000	23,609	3.9	0.1272	1.0000	36,413	7.9

KIAMBU

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0585	0.0559	100,000	63.1	0.0403	0.0390	100,000	63.6
1	0.0029	0.0114	94,407	65.8	0.0022	0.0087	96,102	65.2
5	0.0020	0.0101	93,333	62.5	0.0016	0.0082	95,264	61.8
10	0.0018	0.0091	92,388	58.1	0.0019	0.0096	94,483	57.3
15	0.0021	0.0104	91,547	53.6	0.0013	0.0066	93,571	52.8
20	0.0026	0.0128	90,596	49.2	0.0021	0.0103	92,957	48.1
25	0.0026	0.0131	89,440	44.8	0.0040	0.0199	92,002	43.6
30	0.0041	0.0200	88,265	40.3	0.0081	0.0396	90,173	39.4
35	0.0068	0.0336	86,496	36.1	0.0113	0.0550	86,605	36.0
40	0.0079	0.0386	83,588	32.3	0.0109	0.0532	81,844	32.9
45	0.0085	0.0416	80,358	28.5	0.0095	0.0463	77,488	29.6
50	0.0091	0.0447	77,016	24.6	0.0084	0.0412	73,900	25.9
55	0.0117	0.0567	73,574	20.6	0.0095	0.0465	70,859	21.9
60	0.0180	0.0861	69,405	16.7	0.0173	0.0830	67,568	17.9
65	0.0291	0.1357	63,430	13.1	0.0236	0.1115	61,959	14.3
70	0.0528	0.2332	54,824	9.7	0.0365	0.1674	55,052	10.8
75	0.0810	0.3367	42,040	6.9	0.0628	0.2715	45,835	7.4
80	0.2387	1.0000	27,886	4.2	0.2345	1.0000	33,392	4.3

COAST PROVINCE

MOMBASA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0822	0.0775	100,000	57.1	0.1033	0.0967	100,000	55.5
1	0.0094	0.0368	92,247	60.9	0.0049	0.0194	90,328	60.4
5	0.0039	0.0191	88,854	59.2	0.0035	0.0172	88,577	57.6
10	0.0039	0.0195	87,158	55.3	0.0031	0.0153	87,050	53.5
15	0.0035	0.0173	85,462	51.3	0.0015	0.0073	85,722	49.3
20	0.0035	0.0175	83,984	47.2	0.0025	0.0124	85,096	44.7
25	0.0035	0.0175	82,516	43.0	0.0044	0.0218	84,038	40.2
30	0.0043	0.0213	81,068	38.7	0.0096	0.0467	82,209	36.0
35	0.0066	0.0324	79,345	34.5	0.0096	0.0469	78,369	32.7
40	0.0080	0.0395	76,775	30.6	0.0115	0.0560	74,694	29.2
45	0.0083	0.0408	73,746	26.7	0.0135	0.0653	70,513	25.8
50	0.0105	0.0509	70,735	22.8	0.0119	0.0578	65,908	22.4
55	0.0131	0.0635	67,133	18.8	0.0175	0.0838	62,096	18.6
60	0.0219	0.1038	62,869	15.0	0.0211	0.1000	56,895	15.1
65	0.0364	0.1667	56,342	11.4	0.0497	0.2210	51,206	11.5
70	0.0688	0.2934	46,950	8.2	0.0637	0.2746	39,890	9.0
75	0.1074	0.4233	33,177	5.5	0.0867	0.3563	28,937	6.5
80	0.3610	1.0000	19,134	2.8	0.2709	1.0000	18,626	3.7

KWALE

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0552	0.0529	100,000	58.2	0.0629	0.0599	100,000	56.0
1	0.0064	0.0250	94,713	60.5	0.0040	0.0159	94,005	58.5
5	0.0026	0.0131	92,341	58.0	0.0030	0.0147	92,508	55.5
10	0.0016	0.0077	91,133	53.7	0.0030	0.0149	91,150	51.3
15	0.0021	0.0104	90,428	49.1	0.0034	0.0167	89,793	47.0
20	0.0036	0.0179	89,489	44.6	0.0053	0.0263	88,293	42.8
25	0.0049	0.0242	87,885	40.4	0.0090	0.0440	85,974	38.8
30	0.0096	0.0469	85,755	36.3	0.0123	0.0595	82,193	35.5
35	0.0141	0.0681	81,729	33.0	0.0185	0.0882	77,299	32.6
40	0.0118	0.0573	76,166	30.2	0.0148	0.0714	70,481	30.5
45	0.0136	0.0655	71,801	26.9	0.0120	0.0582	65,446	27.7
50	0.0140	0.0676	67,095	23.6	0.0099	0.0483	61,639	24.2
55	0.0140	0.0678	62,556	20.1	0.0153	0.0735	58,661	20.3
60	0.0231	0.1094	58,317	16.4	0.0185	0.0884	54,348	16.7
65	0.0336	0.1550	51,939	13.1	0.0300	0.1396	49,546	13.1
70	0.0409	0.1854	43,888	10.0	0.0460	0.2063	42,627	9.8
75	0.0706	0.2999	35,749	6.7	0.0951	0.3840	33,832	6.7
80	0.2805	1.0000	25,028	3.6	0.2277	1.0000	20,841	4.4

KILIFI

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0633	0.0603	100,000	57.4	0.0527	0.0506	100,000	62.0
1	0.0055	0.0215	93,973	60.1	0.0030	0.0118	94,939	64.3
5	0.0028	0.0138	91,949	57.4	0.0024	0.0119	93,817	61.0
10	0.0019	0.0096	90,680	53.1	0.0021	0.0103	92,703	56.7
15	0.0027	0.0132	89,807	48.6	0.0020	0.0099	91,746	52.3
20	0.0049	0.0240	88,621	44.2	0.0035	0.0172	90,839	47.8
25	0.0063	0.0311	86,490	40.3	0.0058	0.0287	89,280	43.6
30	0.0081	0.0396	83,799	36.5	0.0098	0.0476	86,718	39.8
35	0.0102	0.0497	80,477	32.9	0.0115	0.0559	82,591	36.7
40	0.0120	0.0583	76,481	29.5	0.0099	0.0484	77,977	33.7
45	0.0132	0.0641	72,021	26.1	0.0072	0.0353	74,206	30.3
50	0.0136	0.0660	67,404	22.8	0.0080	0.0394	71,587	26.3
55	0.0151	0.0729	62,957	19.2	0.0085	0.0416	68,766	22.3
60	0.0246	0.1160	58,366	15.5	0.0157	0.0757	65,906	18.1
65	0.0330	0.1526	51,594	12.2	0.0240	0.1131	60,916	14.4
70	0.0637	0.2746	43,722	9.0	0.0357	0.1638	54,029	10.9
75	0.0865	0.3557	31,715	6.4	0.0576	0.2519	45,181	7.6
80	0.2790	1.0000	20,434	3.6	0.2320	1.0000	33,802	4.3

TANA RIVER

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0843	0.0794	100,000	56.5	0.0868	0.0818	100,000	55.6
1	0.0108	0.0421	92,060	60.3	0.0050	0.0199	91,818	59.5
5	0.0053	0.0262	88,185	58.9	0.0052	0.0258	89,994	56.7
10	0.0048	0.0239	85,871	55.4	0.0053	0.0260	87,671	53.2
15	0.0043	0.0212	83,822	51.7	0.0022	0.0109	85,396	49.5
20	0.0037	0.0183	82,042	47.8	0.0038	0.0188	84,463	45.0
25	0.0056	0.0276	80,540	43.6	0.0079	0.0386	82,878	40.8
30	0.0059	0.0290	78,316	39.8	0.0145	0.0700	79,679	37.4
35	0.0091	0.0446	76,048	35.9	0.0143	0.0690	74,101	35.0
40	0.0088	0.0432	72,657	32.4	0.0086	0.0422	68,990	32.4
45	0.0135	0.0652	69,519	28.8	0.0185	0.0885	66,082	28.7
50	0.0125	0.0604	64,988	25.6	0.0185	0.0886	60,235	26.3
55	0.0168	0.0808	61,061	22.1	0.0120	0.0582	54,897	23.6
60	0.0177	0.0850	56,129	18.8	0.0098	0.0480	51,702	19.9
65	0.0266	0.1246	51,359	15.3	0.0113	0.0552	49,223	15.8
70	0.0200	0.0953	44,960	12.2	0.0261	0.1225	46,508	11.5
75	0.0662	0.2839	40,677	8.2	0.0814	0.3382	40,811	7.8
80	0.1837	1.0000	29,130	5.4	0.1812	1.0000	27,010	5.5

LAMU

AGE	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0844	0.0795	100,000	57.5	0.0868	0.0818	100,000	55.6
1	0.0094	0.0366	92,047	61.5	0.0050	0.0199	91,818	59.5
5	0.0050	0.0249	88,674	59.8	0.0052	0.0258	89,994	56.7
10	0.0022	0.0111	86,469	56.2	0.0053	0.0260	87,671	53.2
15	0.0008	0.0041	85,511	51.8	0.0022	0.0109	85,396	49.5
20	0.0055	0.0272	85,163	47.0	0.0038	0.0188	84,463	45.0
25	0.0052	0.0255	82,849	43.3	0.0079	0.0386	82,878	40.8
30	0.0096	0.0467	80,737	39.3	0.0145	0.0700	79,679	37.4
35	0.0071	0.0351	76,963	36.1	0.0143	0.0690	74,101	35.0
40	0.0054	0.0265	74,263	32.4	0.0086	0.0422	68,990	32.4
45	0.0052	0.0258	72,297	28.2	0.0185	0.0885	66,082	28.7
50	0.0084	0.0411	70,429	23.9	0.0185	0.0886	60,235	26.3
55	0.0256	0.1204	67,536	19.8	0.0120	0.0582	54,897	23.6
60	0.0138	0.0667	59,404	17.1	0.0098	0.0480	51,702	19.9
65	0.0285	0.1329	55,445	13.2	0.0113	0.0552	49,223	15.8
70	0.0311	0.1441	48,076	9.8	0.0261	0.1225	46,508	11.5
75	0.0802	0.3339	41,148	6.1	0.0814	0.3382	40,811	7.8
80	0.3528	1.0000	27,410	2.8	0.1812	1.0000	27,010	5.5

TAITA TAVETA

AGE	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0656	0.0624	100,000	52.9	0.0626	0.0597	100,000	51.1
1	0.0060	0.0237	93,760	55.4	0.0024	0.0095	94,028	53.3
5	0.0024	0.0119	91,539	52.7	0.0031	0.0153	93,133	49.8
10	0.0022	0.0108	90,446	48.3	0.0029	0.0143	91,704	45.5
15	0.0033	0.0165	89,472	43.8	0.0048	0.0236	90,394	41.2
20	0.0049	0.0242	87,999	39.5	0.0057	0.0281	88,261	37.1
25	0.0080	0.0390	85,870	35.4	0.0119	0.0577	85,783	33.1
30	0.0099	0.0485	82,517	31.7	0.0231	0.1094	80,832	30.0
35	0.0163	0.0781	78,515	28.2	0.0362	0.1660	71,991	28.4
40	0.0192	0.0917	72,383	25.4	0.0182	0.0873	60,039	28.5
45	0.0211	0.1000	65,743	22.7	0.0184	0.0878	54,800	26.0
50	0.0227	0.1073	59,168	19.9	0.0149	0.0717	49,988	23.2
55	0.0263	0.1235	52,821	17.0	0.0140	0.0675	46,402	19.8
60	0.0305	0.1415	46,300	14.1	0.0209	0.0993	43,270	16.1
65	0.0484	0.2157	39,748	11.0	0.0209	0.0993	38,975	12.6
70	0.0678	0.2897	31,174	8.3	0.0707	0.3006	35,106	8.7
75	0.1098	0.4307	22,142	5.7	0.0783	0.3276	24,555	6.4
80	0.3268	1.0000	12,607	3.1	0.3055	1.0000	16,511	3.3

EASTERN PROVINCE

MARSABIT

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.04578	0.04410	100,000	65.3	0.04029	0.03898	100,000	63.6
1	0.00268	0.01066	95,590	67.3	0.00219	0.00872	96,102	65.2
5	0.00373	0.01846	94,571	64.1	0.00165	0.00820	95,264	61.8
10	0.00428	0.02118	92,825	60.2	0.00194	0.00965	94,483	57.3
15	0.00359	0.01777	90,859	56.5	0.00132	0.00657	93,571	52.8
20	0.00285	0.01414	89,244	52.4	0.00206	0.01027	92,957	48.1
25	0.00340	0.01687	87,982	48.2	0.00402	0.01989	92,002	43.6
30	0.00348	0.01725	86,498	43.9	0.00807	0.03957	90,173	39.4
35	0.00452	0.02234	85,006	39.7	0.01131	0.05497	86,605	36.0
40	0.00646	0.03180	83,106	35.5	0.01093	0.05322	81,844	32.9
45	0.00531	0.02619	80,464	31.6	0.00948	0.04630	77,488	29.6
50	0.00789	0.03869	78,356	27.4	0.00840	0.04116	73,900	25.9
55	0.00712	0.03496	75,325	23.4	0.00951	0.04645	70,859	21.9
60	0.01627	0.07819	72,691	19.1	0.01732	0.08301	67,568	17.9
65	0.01333	0.06450	67,008	15.6	0.02361	0.11147	61,959	14.3
70	0.02904	0.13536	62,686	11.5	0.03654	0.16743	55,052	10.8
75	0.06121	0.26543	54,200	7.9	0.06282	0.27148	45,835	7.4
80	0.20895	1.00000	39,814	4.8	0.23447	1.00000	33,392	4.3

ISIOLO

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.05618	0.05375	100,000	65.4	0.04978	0.04786	100,000	69.7
1	0.00259	0.01031	94,625	68.1	0.00216	0.00862	95,214	72.2
5	0.00200	0.00993	93,649	64.8	0.00180	0.00896	94,394	68.8
10	0.00362	0.01792	92,719	60.4	0.00168	0.00837	93,548	64.4
15	0.00296	0.01469	91,058	56.5	0.00217	0.01080	92,765	59.9
20	0.00245	0.01218	89,721	52.3	0.00170	0.00845	91,763	55.5
25	0.00312	0.01546	88,628	47.9	0.00252	0.01254	90,988	51.0
30	0.00226	0.01122	87,257	43.6	0.00559	0.02755	89,846	46.6
35	0.00277	0.01375	86,278	39.1	0.00624	0.03071	87,371	42.9
40	0.00827	0.04050	85,092	34.6	0.00339	0.01680	84,688	39.1
45	0.00569	0.02806	81,646	30.9	0.00598	0.02948	83,264	34.8
50	0.00384	0.01900	79,355	26.8	0.00600	0.02958	80,810	30.8
55	0.01204	0.05843	77,848	22.2	0.00650	0.03198	78,420	26.6
60	0.01943	0.09264	73,299	18.4	0.00713	0.03500	75,912	22.4
65	0.02214	0.10488	66,509	15.1	0.00802	0.03929	73,255	18.1
70	0.04088	0.18545	59,533	11.5	0.02367	0.11174	70,376	13.8
75	0.05084	0.22552	48,493	8.6	0.01717	0.08233	62,513	10.2
80	0.18577	1.00000	37,557	5.4	0.17018	1.00000	57,366	5.9

MERU

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.04932	0.04740	100,000	62.1	0.03272	0.03183	100,000	69.4
1	0.00270	0.01073	95,260	64.2	0.00163	0.00649	96,817	70.7
5	0.00203	0.01010	94,238	60.9	0.00103	0.00515	96,188	67.1
10	0.00186	0.00925	93,287	56.4	0.00114	0.00571	95,693	62.4
15	0.00282	0.01398	92,424	52.0	0.00120	0.00598	95,147	57.8
20	0.00325	0.01610	91,132	47.7	0.00181	0.00899	94,577	53.1
25	0.00368	0.01821	89,665	43.4	0.00261	0.01297	93,727	48.6
30	0.00553	0.02727	88,032	39.1	0.00425	0.02103	92,511	44.2
35	0.00755	0.03706	85,631	35.2	0.00499	0.02466	90,565	40.1
40	0.00892	0.04361	82,458	31.4	0.00479	0.02369	88,332	36.0
45	0.00986	0.04810	78,861	27.8	0.00406	0.02012	86,240	31.8
50	0.01102	0.05364	75,068	24.0	0.00579	0.02853	84,505	27.4
55	0.01407	0.06797	71,042	20.2	0.00876	0.04286	82,094	23.2
60	0.02145	0.10177	66,213	16.5	0.01557	0.07495	78,575	19.1
65	0.03092	0.14351	59,475	13.1	0.02470	0.11632	72,686	15.4
70	0.05107	0.22645	50,940	9.9	0.03149	0.14597	64,231	12.2
75	0.06689	0.28653	39,404	7.1	0.05349	0.23591	54,855	8.8
80	0.25443	1.00000	28,114	3.9	0.17397	1.00000	41,915	5.7

THARAKA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.04467	0.04306	100,000	64.6	0.03272	0.03183	100,000	69.4
1	0.00357	0.01418	95,694	66.5	0.00163	0.00649	96,817	70.7
5	0.00301	0.01496	94,336	63.4	0.00103	0.00515	96,188	67.1
10	0.00203	0.01009	92,925	59.3	0.00114	0.00571	95,693	62.4
15	0.00246	0.01222	91,988	54.9	0.00120	0.00598	95,147	57.8
20	0.00290	0.01439	90,864	50.6	0.00181	0.00899	94,577	53.1
25	0.00300	0.01486	89,556	46.3	0.00261	0.01297	93,727	48.6
30	0.00562	0.02769	88,225	41.9	0.00425	0.02103	92,511	44.2
35	0.00728	0.03577	85,782	38.1	0.00499	0.02466	90,565	40.1
40	0.00550	0.02712	82,713	34.4	0.00479	0.02369	88,332	36.0
45	0.00739	0.03628	80,471	30.3	0.00406	0.02012	86,240	31.8
50	0.00734	0.03603	77,551	26.3	0.00579	0.02853	84,505	27.4
55	0.01005	0.04900	74,757	22.2	0.00876	0.04286	82,094	23.2
60	0.01542	0.07425	71,095	18.2	0.01557	0.07495	78,575	19.1
65	0.02352	0.11105	65,816	14.5	0.02470	0.11632	72,686	15.4
70	0.04369	0.19695	58,507	11.0	0.03149	0.14597	64,231	12.2
75	0.05144	0.22789	46,984	8.0	0.05349	0.23591	54,855	8.8
80	0.21386	1.00000	36,276	4.7	0.17397	1.00000	41,915	5.7

EMBU

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.04467	0.04306	100,000	64.6	0.04400	0.04247	100,000	69.4
1	0.00357	0.01418	95,694	66.5	0.00174	0.00691	95,753	71.5
5	0.00301	0.01496	94,336	63.4	0.00139	0.00691	95,091	67.9
10	0.00203	0.01009	92,925	59.3	0.00096	0.00479	94,434	63.4
15	0.00246	0.01222	91,988	54.9	0.00138	0.00690	93,982	58.7
20	0.00290	0.01439	90,864	50.6	0.00177	0.00883	93,333	54.1
25	0.00300	0.01486	89,556	46.3	0.00236	0.01173	92,509	49.5
30	0.00562	0.02769	88,225	41.9	0.00436	0.02154	91,424	45.1
35	0.00728	0.03577	85,782	38.1	0.00590	0.02905	89,455	41.0
40	0.00550	0.02712	82,713	34.4	0.00524	0.02585	86,856	37.2
45	0.00739	0.03628	80,471	30.3	0.00608	0.02995	84,611	33.1
50	0.00734	0.03603	77,551	26.3	0.00532	0.02625	82,077	29.1
55	0.01005	0.04900	74,757	22.2	0.00965	0.04713	79,922	24.8
60	0.01542	0.07425	71,095	18.2	0.01158	0.05627	76,155	20.9
65	0.02352	0.11105	65,816	14.5	0.01229	0.05963	71,870	17.0
70	0.04369	0.19695	58,507	11.0	0.02849	0.13299	67,584	12.9
75	0.05144	0.22789	46,984	8.0	0.04357	0.19647	58,596	9.5
80	0.21386	1.00000	36,276	4.7	0.16131	1.00000	47,084	6.2

KITUI

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.05934	0.05667	100,000	61.7	0.03848	0.03728	100,000	65.8
1	0.00284	0.01129	94,333	64.4	0.00196	0.00780	96,272	67.3
5	0.00178	0.00887	93,268	61.2	0.00135	0.00673	95,521	63.8
10	0.00147	0.00731	92,441	56.7	0.00107	0.00533	94,878	59.3
15	0.00173	0.00860	91,766	52.1	0.00092	0.00458	94,372	54.6
20	0.00341	0.01689	90,976	47.5	0.00179	0.00893	93,940	49.8
25	0.00391	0.01935	89,440	43.3	0.00295	0.01464	93,101	45.2
30	0.00588	0.02899	87,709	39.1	0.00515	0.02544	91,738	40.9
35	0.00672	0.03305	85,166	35.2	0.00683	0.03358	89,404	36.9
40	0.00937	0.04578	82,352	31.3	0.00608	0.02995	86,402	33.1
45	0.01144	0.05559	78,581	27.7	0.00762	0.03740	83,814	29.0
50	0.01175	0.05709	74,213	24.2	0.00878	0.04294	80,679	25.0
55	0.01310	0.06341	69,976	20.5	0.01021	0.04976	77,215	21.0
60	0.01922	0.09169	65,539	16.7	0.01478	0.07128	73,372	17.0
65	0.02585	0.12142	59,530	13.1	0.02685	0.12580	68,142	13.1
70	0.04398	0.19813	52,302	9.6	0.04774	0.21323	59,570	9.7
75	0.08914	0.36446	41,939	6.3	0.08466	0.34937	46,868	6.6
80	0.28273	1.00000	26,654	3.5	0.26324	1.00000	30,494	3.8

MACHAKOS

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.05364	0.05140	100,000	60.2	0.04595	0.04429	100,000	64.4
1	0.00224	0.00893	94,860	62.4	0.00177	0.00704	95,571	66.3
5	0.00214	0.01065	94,013	59.0	0.00123	0.00613	94,898	62.8
10	0.00157	0.00783	93,011	54.6	0.00102	0.00510	94,317	58.2
15	0.00209	0.01041	92,283	50.0	0.00116	0.00578	93,836	53.5
20	0.00286	0.01419	91,323	45.5	0.00230	0.01142	93,293	48.8
25	0.00412	0.02037	90,027	41.1	0.00365	0.01811	92,228	44.3
30	0.00551	0.02718	88,194	36.9	0.00621	0.03059	90,558	40.1
35	0.00949	0.04635	85,797	32.9	0.00724	0.03557	87,788	36.2
40	0.01017	0.04961	81,820	29.3	0.00802	0.03933	84,666	32.5
45	0.01163	0.05653	77,761	25.7	0.00766	0.03760	81,336	28.7
50	0.01295	0.06271	73,365	22.1	0.00843	0.04126	78,278	24.7
55	0.01772	0.08486	68,765	18.5	0.01060	0.05165	75,049	20.7
60	0.02272	0.10751	62,929	14.9	0.01473	0.07101	71,173	16.7
65	0.04147	0.18788	56,164	11.4	0.02624	0.12312	66,118	12.8
70	0.05962	0.25942	45,612	8.5	0.04881	0.21749	57,978	9.2
75	0.09423	0.38133	33,779	5.6	0.07806	0.32659	45,368	6.1
80	0.39772	1.00000	20,898	2.5	0.35391	1.00000	30,552	2.8

MAKUENI

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.07271	0.06891	100,000	58.8	0.03909	0.03785	100,000	65.1
1	0.00229	0.00909	93,109	62.1	0.00149	0.00593	96,215	66.6
5	0.00210	0.01046	92,262	58.7	0.00128	0.00638	95,644	63.0
10	0.00157	0.00783	91,297	54.3	0.00116	0.00577	95,034	58.4
15	0.00165	0.00819	90,582	49.7	0.00132	0.00656	94,486	53.7
20	0.00411	0.02032	89,840	45.1	0.00211	0.01049	93,865	49.1
25	0.00537	0.02649	88,014	40.9	0.00382	0.01890	92,881	44.6
30	0.00692	0.03400	85,683	37.0	0.00536	0.02644	91,126	40.4
35	0.01094	0.05326	82,770	33.2	0.00806	0.03952	88,716	36.4
40	0.00953	0.04654	78,361	29.9	0.00703	0.03455	85,211	32.8
45	0.01183	0.05744	74,714	26.3	0.00764	0.03749	82,266	28.9
50	0.01363	0.06592	70,423	22.7	0.00880	0.04303	79,182	24.9
55	0.01428	0.06894	65,781	19.2	0.00908	0.04437	75,775	20.9
60	0.01934	0.09224	61,246	15.4	0.01618	0.07774	72,413	16.8
65	0.03691	0.16896	55,596	11.7	0.02438	0.11489	66,783	13.0
70	0.05778	0.25242	46,202	8.6	0.05280	0.23322	59,111	9.3
75	0.10101	0.40322	34,540	5.6	0.07325	0.30957	45,325	6.4
80	0.36891	1.00000	20,613	2.7	0.31392	1.00000	31,294	3.2

NORTH EASTERN PROVINCE

GARISSA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.10766	0.10041	100,000	56.3	0.08806	0.08294	100,000	65.4
1	0.00914	0.03578	89,959	61.5	0.00968	0.03785	91,706	70.3
5	0.00445	0.02199	86,740	59.8	0.00391	0.01936	88,234	69.0
10	0.00422	0.02086	84,832	56.0	0.00308	0.01527	86,526	65.3
15	0.00303	0.01502	83,063	52.2	0.00097	0.00483	85,204	61.3
20	0.00329	0.01630	81,815	47.9	0.00121	0.00605	84,793	56.6
25	0.00443	0.02192	80,481	43.7	0.00216	0.01074	84,279	51.9
30	0.00616	0.03032	78,717	39.6	0.00496	0.02449	83,374	47.4
35	0.01277	0.06188	76,331	35.8	0.00590	0.02906	81,332	43.5
40	0.01149	0.05584	71,607	33.0	0.00468	0.02314	78,968	39.8
45	0.01170	0.05684	67,608	29.8	0.00335	0.01659	77,141	35.7
50	0.01174	0.05705	63,766	26.4	0.00652	0.03207	75,861	31.2
55	0.00961	0.04693	60,128	22.9	0.00881	0.04309	73,429	27.2
60	0.01770	0.08475	57,306	18.9	0.00983	0.04795	70,264	23.3
65	0.01927	0.09193	52,450	15.4	0.00959	0.04683	66,895	19.3
70	0.02971	0.13829	47,628	11.7	0.01886	0.09005	63,763	15.1
75	0.06213	0.26890	41,041	8.2	0.04001	0.18187	58,021	11.4
80	0.19000	1.00000	30,005	5.3	0.11934	1.00000	47,469	8.4

WAJIR

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.12594	0.11614	100,000	50.7	0.09651	0.09058	100,000	55.4
1	0.00925	0.03619	88,386	56.3	0.00687	0.02702	90,942	59.9
5	0.00325	0.01613	85,187	54.3	0.00242	0.01205	88,485	57.5
10	0.00336	0.01667	83,813	50.2	0.00222	0.01105	87,419	53.1
15	0.00239	0.01186	82,416	46.0	0.00130	0.00647	86,453	48.7
20	0.00373	0.01850	81,438	41.5	0.00253	0.01259	85,894	44.0
25	0.00798	0.03911	79,932	37.3	0.00496	0.02447	84,812	39.5
30	0.01095	0.05327	76,806	33.7	0.01166	0.05667	82,737	35.5
35	0.01709	0.08193	72,714	30.4	0.01548	0.07453	78,048	32.4
40	0.02117	0.10052	66,757	27.9	0.01462	0.07050	72,231	29.9
45	0.01798	0.08604	60,047	25.8	0.01373	0.06639	67,139	26.9
50	0.01825	0.08725	54,880	22.9	0.01488	0.07173	62,681	23.7
55	0.01561	0.07514	50,092	19.9	0.01273	0.06171	58,185	20.3
60	0.02378	0.11222	46,328	16.3	0.02460	0.11588	54,595	16.5
65	0.03043	0.14138	41,129	13.1	0.02451	0.11545	48,268	13.3
70	0.04951	0.22029	35,314	9.8	0.03823	0.17446	42,695	9.7
75	0.08472	0.34958	27,535	6.9	0.11106	0.43462	35,247	6.2
80	0.23801	1.00000	17,909	4.2	0.24278	1.00000	19,928	4.1

MANDERA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.16811	0.15109	100,000	41.7	0.09651	0.09058	100,000	55.4
1	0.01215	0.04721	84,891	48.1	0.00687	0.02702	90,942	59.9
5	0.00547	0.02697	80,883	46.4	0.00242	0.01205	88,485	57.5
10	0.00546	0.02695	78,702	42.6	0.00222	0.01105	87,419	53.1
15	0.00418	0.02066	76,580	38.7	0.00130	0.00647	86,453	48.7
20	0.00647	0.03184	74,998	34.5	0.00253	0.01259	85,894	44.0
25	0.00945	0.04616	72,610	30.5	0.00496	0.02447	84,812	39.5
30	0.01937	0.09237	69,259	26.9	0.01166	0.05667	82,737	35.5
35	0.02971	0.13828	62,861	24.3	0.01548	0.07453	78,048	32.4
40	0.02975	0.13843	54,169	22.8	0.01462	0.07050	72,231	29.9
45	0.03189	0.14767	46,670	21.1	0.01373	0.06639	67,139	26.9
50	0.02430	0.11453	39,778	19.3	0.01488	0.07173	62,681	23.7
55	0.02764	0.12928	35,222	16.5	0.01273	0.06171	58,185	20.3
60	0.03110	0.14427	30,669	13.6	0.02460	0.11588	54,595	16.5
65	0.04993	0.22193	26,244	10.5	0.02451	0.11545	48,268	13.3
70	0.07510	0.31615	20,420	7.7	0.03823	0.17446	42,695	9.7
75	0.10485	0.41537	13,964	5.2	0.11106	0.43462	35,247	6.2
80	0.48933	1.00000	8,164	2.0	0.24278	1.00000	19,928	4.1

NYANZA PROVINCE

SIAYA

AGE	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.1778	0.1589	100,000	39.4	0.1358	0.1248	100,000	45.7
1	0.0243	0.0918	84,110	45.7	0.0205	0.0781	87,520	51.2
5	0.0040	0.0200	76,387	46.2	0.0026	0.0127	80,681	51.4
10	0.0051	0.0253	74,858	42.1	0.0033	0.0163	79,654	47.0
15	0.0038	0.0188	72,963	38.1	0.0026	0.0127	78,358	42.8
20	0.0056	0.0275	71,588	33.8	0.0055	0.0273	77,359	38.3
25	0.0108	0.0524	69,621	29.7	0.0123	0.0596	75,246	34.3
30	0.0199	0.0948	65,974	26.2	0.0231	0.1091	70,765	31.3
35	0.0379	0.1732	59,719	23.7	0.0306	0.1420	63,046	29.8
40	0.0339	0.1563	49,373	23.1	0.0219	0.1036	54,094	29.4
45	0.0336	0.1552	41,657	21.9	0.0202	0.0961	48,489	27.5
50	0.0288	0.1345	35,193	20.5	0.0114	0.0552	43,831	25.1
55	0.0229	0.1085	30,459	18.3	0.0125	0.0606	41,410	21.4
60	0.0262	0.1227	27,155	15.2	0.0174	0.0834	38,900	17.7
65	0.0434	0.1959	23,822	12.0	0.0283	0.1321	35,654	14.0
70	0.0527	0.2327	19,156	9.3	0.0421	0.1905	30,945	10.8
75	0.0983	0.3944	14,698	6.4	0.0644	0.2774	25,050	7.8
80	0.2577	1.0000	8,900	3.9	0.2091	1.0000	18,100	4.8

KISUMU

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.1507	0.1368	100,000	47.8	0.1156	0.1075	100,000	51.2
1	0.0172	0.0661	86,316	54.3	0.0136	0.0527	89,250	56.3
5	0.0036	0.0180	80,610	54.0	0.0027	0.0135	84,546	55.4
10	0.0028	0.0140	79,163	50.0	0.0028	0.0138	83,405	51.1
15	0.0022	0.0108	78,053	45.7	0.0022	0.0111	82,254	46.8
20	0.0033	0.0163	77,210	41.1	0.0036	0.0177	81,343	42.3
25	0.0062	0.0306	75,949	36.8	0.0080	0.0392	79,905	38.0
30	0.0108	0.0524	73,627	32.8	0.0172	0.0823	76,774	34.4
35	0.0202	0.0961	69,767	29.5	0.0223	0.1055	70,456	32.3
40	0.0183	0.0876	63,061	27.4	0.0170	0.0815	63,026	30.8
45	0.0213	0.1013	57,538	24.8	0.0143	0.0692	57,891	28.3
50	0.0159	0.0764	51,708	22.3	0.0124	0.0601	53,884	25.2
55	0.0192	0.0915	47,759	18.9	0.0093	0.0454	50,644	21.7
60	0.0261	0.1226	43,391	15.6	0.0187	0.0891	48,343	17.6
65	0.0378	0.1727	38,071	12.4	0.0231	0.1093	44,035	14.1
70	0.0545	0.2400	31,497	9.5	0.0401	0.1822	39,223	10.5
75	0.0912	0.3714	23,939	6.7	0.0729	0.3083	32,077	7.3
80	0.2388	1.0000	15,047	4.2	0.2260	1.0000	22,189	4.4

MIGORI

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.1338	0.1228	100,000	50.2	0.1082	0.1011	100,000	53.8
1	0.0171	0.0657	87,724	56.2	0.0147	0.0568	89,894	58.8
5	0.0039	0.0195	81,962	56.1	0.0028	0.0140	84,789	58.2
10	0.0050	0.0247	80,360	52.1	0.0034	0.0171	83,602	54.0
15	0.0031	0.0153	78,375	48.4	0.0020	0.0098	82,172	49.9
20	0.0036	0.0180	77,178	44.1	0.0034	0.0171	81,370	45.4
25	0.0052	0.0254	75,791	39.9	0.0066	0.0324	79,981	41.1
30	0.0102	0.0496	73,863	35.8	0.0117	0.0566	77,388	37.4
35	0.0168	0.0806	70,199	32.6	0.0161	0.0775	73,005	34.5
40	0.0161	0.0772	64,540	30.2	0.0141	0.0681	67,347	32.2
45	0.0186	0.0889	59,555	27.5	0.0111	0.0540	62,764	29.4
50	0.0166	0.0796	54,262	25.0	0.0088	0.0432	59,378	25.9
55	0.0133	0.0643	49,945	21.9	0.0095	0.0463	56,815	22.0
60	0.0173	0.0828	46,733	18.3	0.0165	0.0795	54,183	17.9
65	0.0318	0.1474	42,862	14.7	0.0256	0.1205	49,878	14.3
70	0.0371	0.1696	36,545	11.8	0.0453	0.2036	43,870	10.9
75	0.0613	0.2656	30,346	8.7	0.0698	0.2971	34,937	8.0
80	0.1682	1.0000	22,285	5.9	0.1869	1.0000	24,559	5.3

HOMA BAY

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.1370	0.1255	100,000	46.9	0.1031	0.0965	100,000	55.4
1	0.0167	0.0641	87,448	52.6	0.0139	0.0538	90,349	60.3
5	0.0035	0.0176	81,843	52.1	0.0026	0.0129	85,490	59.6
10	0.0035	0.0176	80,406	48.0	0.0028	0.0140	84,390	55.4
15	0.0026	0.0127	78,992	43.8	0.0023	0.0115	83,210	51.1
20	0.0044	0.0218	77,988	39.3	0.0044	0.0216	82,250	46.7
25	0.0077	0.0377	76,291	35.1	0.0083	0.0408	80,474	42.7
30	0.0144	0.0696	73,415	31.4	0.0144	0.0696	77,193	39.4
35	0.0246	0.1161	68,304	28.6	0.0180	0.0860	71,817	37.1
40	0.0264	0.1240	60,377	27.0	0.0102	0.0499	65,642	35.4
45	0.0269	0.1259	52,891	25.5	0.0108	0.0527	62,366	32.1
50	0.0172	0.0826	46,231	23.8	0.0107	0.0521	59,077	28.7
55	0.0173	0.0828	42,413	20.7	0.0082	0.0400	55,997	25.2
60	0.0202	0.0963	38,902	17.4	0.0119	0.0580	53,755	21.1
65	0.0249	0.1173	35,158	13.9	0.0180	0.0859	50,638	17.3
70	0.0530	0.2339	31,034	10.5	0.0230	0.1087	46,287	13.7
75	0.0621	0.2689	23,776	7.9	0.0394	0.1791	41,255	10.0
80	0.2057	1.0000	17,383	4.9	0.1497	1.0000	33,864	6.7

KISII

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0773	0.0731	100,000	57.0	0.0601	0.0574	100,000	59.5
1	0.0093	0.0366	92,689	60.5	0.0086	0.0339	94,258	62.1
5	0.0026	0.0131	89,300	58.8	0.0021	0.0103	91,063	60.2
10	0.0037	0.0182	88,131	54.5	0.0024	0.0121	90,121	55.8
15	0.0022	0.0110	86,526	50.5	0.0013	0.0067	89,028	51.5
20	0.0030	0.0147	85,570	46.0	0.0022	0.0110	88,434	46.8
25	0.0041	0.0201	84,309	41.7	0.0044	0.0216	87,457	42.3
30	0.0078	0.0383	82,616	37.5	0.0113	0.0550	85,569	38.2
35	0.0123	0.0597	79,454	33.9	0.0153	0.0736	80,865	35.2
40	0.0159	0.0765	74,709	30.8	0.0104	0.0506	74,912	32.8
45	0.0163	0.0782	68,995	28.2	0.0098	0.0480	71,124	29.4
50	0.0137	0.0662	63,602	25.4	0.0086	0.0419	67,709	25.8
55	0.0120	0.0582	59,392	22.0	0.0125	0.0606	64,870	21.8
60	0.0182	0.0872	55,935	18.2	0.0128	0.0621	60,941	18.1
65	0.0195	0.0929	51,060	14.7	0.0199	0.0946	57,154	14.1
70	0.0378	0.1726	46,319	10.9	0.0413	0.1870	51,744	10.3
75	0.0725	0.3070	38,324	7.7	0.0632	0.2730	42,066	7.1
80	0.1993	1.0000	26,558	5.0	0.2600	1.0000	30,583	3.8

NYAMIRA

AGE	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0592	0.0566	100,000	58.0	0.0471	0.0454	100,000	59.7
1	0.0065	0.0256	94,344	60.5	0.0057	0.0226	95,463	61.5
5	0.0026	0.0128	91,929	58.0	0.0013	0.0067	93,301	58.9
10	0.0033	0.0161	90,755	53.7	0.0028	0.0140	92,677	54.3
15	0.0025	0.0123	89,289	49.6	0.0012	0.0059	91,383	50.0
20	0.0028	0.0140	88,195	45.2	0.0023	0.0115	90,841	45.3
25	0.0044	0.0217	86,961	40.8	0.0047	0.0232	89,797	40.8
30	0.0077	0.0377	85,073	36.6	0.0104	0.0508	87,712	36.7
35	0.0119	0.0576	81,862	33.0	0.0132	0.0640	83,256	33.5
40	0.0157	0.0756	77,144	29.8	0.0132	0.0641	77,928	30.6
45	0.0124	0.0604	71,310	27.1	0.0111	0.0541	72,934	27.6
50	0.0105	0.0512	67,005	23.6	0.0095	0.0465	68,986	24.0
55	0.0163	0.0782	63,577	19.8	0.0150	0.0722	65,780	20.0
60	0.0218	0.1033	58,607	16.2	0.0144	0.0695	61,033	16.4
65	0.0311	0.1445	52,552	12.8	0.0299	0.1390	56,790	12.4
70	0.0504	0.2236	44,959	9.6	0.0506	0.2247	48,897	9.0
75	0.0700	0.2978	34,905	6.6	0.1189	0.4584	37,908	5.9
80	0.2997	1.0000	24,510	3.3	0.2596	1.0000	20,532	3.9

RIFT VALLEY PROVINCE

TURKANA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.1039	0.0970	100,000	50.4	0.0911	0.0856	100,000	54.5
1	0.0071	0.0279	90,298	54.8	0.0079	0.0309	91,435	58.5
5	0.0077	0.0376	87,777	52.3	0.0058	0.0286	88,612	56.4
10	0.0079	0.0387	84,478	49.3	0.0071	0.0350	86,081	52.9
15	0.0045	0.0221	81,207	46.2	0.0048	0.0237	83,066	49.8
20	0.0059	0.0290	79,411	42.2	0.0077	0.0375	81,097	45.9
25	0.0093	0.0454	77,112	38.3	0.0105	0.0511	78,054	42.6
30	0.0142	0.0684	73,612	35.0	0.0193	0.0921	74,065	39.8
35	0.0148	0.0712	68,579	32.4	0.0173	0.0827	67,246	38.5
40	0.0189	0.0903	63,698	29.7	0.0133	0.0643	61,685	36.8
45	0.0200	0.0951	57,948	27.4	0.0099	0.0484	57,719	34.2
50	0.0126	0.0609	52,439	25.0	0.0087	0.0424	54,925	30.8
55	0.0096	0.0469	49,243	21.5	0.0094	0.0457	52,594	27.0
60	0.0153	0.0735	46,936	17.4	0.0154	0.0741	50,189	23.2
65	0.0279	0.1302	43,487	13.6	0.0072	0.0354	46,470	19.8
70	0.0419	0.1898	37,824	10.3	0.0345	0.1588	44,824	15.5
75	0.0615	0.2665	30,645	7.1	0.0422	0.1909	37,707	12.9
80	0.2646	1.0000	22,478	3.8	0.0962	1.0000	30,509	10.4

WEST POKOT

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0962	0.0901	100,000	53.8	0.0761	0.0721	100000	63.5
1	0.0064	0.0253	90,986	58.1	0.0054	0.0214	92790	67.4
5	0.0073	0.0359	88,686	55.6	0.0054	0.0268	90807	64.8
10	0.0089	0.0437	85,499	52.5	0.0072	0.0353	88372	61.6
15	0.0046	0.0229	81,767	49.8	0.0031	0.0154	85251	58.7
20	0.0053	0.0264	79,894	45.9	0.0047	0.0232	83937	54.6
25	0.0057	0.0279	77,788	42.1	0.0078	0.0383	81986	50.8
30	0.0113	0.0548	75,616	38.3	0.0094	0.0461	78849	47.8
35	0.0094	0.0457	71,470	35.3	0.0123	0.0598	75216	44.9
40	0.0149	0.0717	68,204	31.9	0.0072	0.0356	70716	42.6
45	0.0154	0.0744	63,314	29.2	0.0095	0.0462	68201	39.1
50	0.0139	0.0669	58,605	26.3	0.0040	0.0200	65052	35.9
55	0.0119	0.0576	54,682	23.0	0.0044	0.0219	63750	31.6
60	0.0138	0.0668	51,531	19.3	0.0119	0.0576	62355	27.2
65	0.0140	0.0677	48,091	15.5	0.0184	0.0880	58762	23.7
70	0.0314	0.1456	44,834	11.4	0.0208	0.0990	53588	20.8
75	0.0285	0.1331	38,306	7.9	0.0265	0.1243	48282	17.8
80	0.2646	1.0000	33,207	3.8	0.0668	1.0000	42282	15.0

SAMBURU

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0597	0.0570	100,000	54.6	0.0426	0.0411	100000	65.0
1	0.0030	0.0120	94,297	56.9	0.0022	0.0089	95885	66.8
5	0.0039	0.0191	93,167	53.5	0.0033	0.0164	95033	63.4
10	0.0048	0.0236	91,384	49.5	0.0039	0.0192	93477	59.4
15	0.0052	0.0255	89,230	45.7	0.0028	0.0140	91684	55.5
20	0.0074	0.0364	86,955	41.8	0.0050	0.0249	90402	51.3
25	0.0084	0.0410	83,787	38.3	0.0059	0.0293	88152	47.5
30	0.0189	0.0900	80,353	34.8	0.0141	0.0681	85573	43.9
35	0.0189	0.0902	73,120	33.0	0.0195	0.0932	79747	41.9
40	0.0256	0.1201	66,526	31.0	0.0129	0.0624	72317	40.9
45	0.0204	0.0972	58,534	29.9	0.0142	0.0688	67806	38.5
50	0.0081	0.0399	52,842	27.9	0.0085	0.0419	63141	36.1
55	0.0103	0.0500	50,735	23.9	0.0050	0.0249	60499	32.6
60	0.0174	0.0833	48,199	20.0	0.0034	0.0167	58993	28.4
65	0.0177	0.0849	44,182	16.6	0.0079	0.0385	58010	23.8
70	0.0339	0.1564	40,429	13.0	0.0083	0.0405	55774	19.7
75	0.0440	0.1981	34,106	9.9	0.0099	0.0485	53518	15.4
80	0.1489	1.0000	27,351	6.7	0.0906	1.0000	50925	11.0

TRANS NZOIA

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0597	0.0570	100,000	54.6	0.0409	0.0396	100000	58.8
1	0.0030	0.0120	94,297	56.9	0.0035	0.0140	96042	60.2
5	0.0039	0.0191	93,167	53.5	0.0026	0.0129	94697	57.0
10	0.0048	0.0236	91,384	49.5	0.0027	0.0136	93478	52.7
15	0.0052	0.0255	89,230	45.7	0.0016	0.0082	92207	48.4
20	0.0074	0.0364	86,955	41.8	0.0038	0.0189	91451	43.8
25	0.0084	0.0410	83,787	38.3	0.0086	0.0420	89722	39.6
30	0.0189	0.0900	80,353	34.8	0.0161	0.0772	85956	36.2
35	0.0189	0.0902	73,120	33.0	0.0185	0.0885	79316	34.0
40	0.0256	0.1201	66,526	31.0	0.0132	0.0637	72298	32.1
45	0.0204	0.0972	58,534	29.9	0.0116	0.0563	67693	29.1
50	0.0081	0.0399	52,842	27.9	0.0128	0.0621	63884	25.7
55	0.0103	0.0500	50,735	23.9	0.0098	0.0478	59916	22.2
60	0.0174	0.0833	48,199	20.0	0.0116	0.0564	57051	18.2
65	0.0177	0.0849	44,182	16.6	0.0175	0.0838	53833	14.2
70	0.0339	0.1564	40,429	13.0	0.0333	0.1536	49324	10.2
75	0.0440	0.1981	34,106	9.9	0.0842	0.3478	41749	6.6
80	0.1489	1.0000	27,351	6.7	0.2601	1.0000	27229	3.8

BARINGO

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0707	0.0671	100,000	53.9	0.0508	0.0488	100000	59.0
1	0.0031	0.0123	93,290	56.7	0.0027	0.0108	95124	61.0
5	0.0029	0.0143	92,145	53.4	0.0022	0.0108	94095	57.6
10	0.0036	0.0179	90,827	49.2	0.0026	0.0131	93074	53.2
15	0.0020	0.0099	89,197	45.0	0.0017	0.0084	91853	48.9
20	0.0033	0.0161	88,310	40.4	0.0028	0.0138	91080	44.3
25	0.0065	0.0318	86,885	36.1	0.0065	0.0318	89823	39.9
30	0.0148	0.0713	84,123	32.2	0.0148	0.0712	86971	36.1
35	0.0195	0.0930	78,126	29.4	0.0167	0.0800	80779	33.7
40	0.0191	0.0911	70,861	27.2	0.0123	0.0597	74316	31.4
45	0.0231	0.1091	64,407	24.7	0.0139	0.0672	69881	28.3
50	0.0191	0.0913	57,378	22.4	0.0116	0.0563	65182	25.1
55	0.0168	0.0805	52,141	19.4	0.0108	0.0524	61512	21.5
60	0.0266	0.1245	47,945	15.9	0.0087	0.0426	58287	17.5
65	0.0300	0.1394	41,975	12.8	0.0302	0.1404	55806	13.2
70	0.0426	0.1926	36,124	9.4	0.0371	0.1699	47972	9.9
75	0.0917	0.3731	29,166	6.1	0.0629	0.2719	39821	6.4
80	0.3129	1.0000	18,283	3.2	0.3439	1.0000	28994	2.9

UASIN GISHU

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0569	0.0544	100,000	54.3	0.0429	0.0414	100000	57.2
1	0.0035	0.0140	94,559	56.4	0.0029	0.0115	95858	58.7
5	0.0025	0.0126	93,235	53.2	0.0022	0.0111	94760	55.3
10	0.0028	0.0137	92,059	48.8	0.0016	0.0081	93712	50.9
15	0.0021	0.0105	90,800	44.5	0.0016	0.0079	92954	46.3
20	0.0023	0.0114	89,843	39.9	0.0024	0.0122	92216	41.7
25	0.0053	0.0260	88,821	35.3	0.0076	0.0374	91095	37.2
30	0.0103	0.0502	86,512	31.2	0.0114	0.0556	87687	33.5
35	0.0206	0.0981	82,172	27.7	0.0166	0.0797	82809	30.3
40	0.0223	0.1055	74,109	25.5	0.0171	0.0819	76210	27.7
45	0.0236	0.1114	66,290	23.2	0.0177	0.0849	69970	25.0
50	0.0248	0.1169	58,902	20.8	0.0157	0.0757	64030	22.1
55	0.0233	0.1101	52,016	18.2	0.0201	0.0957	59183	18.7
60	0.0263	0.1234	46,291	15.1	0.0288	0.1344	53520	15.4
65	0.0309	0.1435	40,578	11.9	0.0340	0.1565	46325	12.4
70	0.0696	0.2964	34,754	8.5	0.0538	0.2372	39075	9.2
75	0.0839	0.3468	24,454	6.0	0.0726	0.3072	29806	6.3
80	0.3495	1.0000	15,974	2.9	0.3281	1.0000	20649	3.0

ELGEYO MARAKWET

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0435	0.0420	100,000	57.4	0.0284	0.0277	100000	62.0
1	0.0022	0.0086	95,799	58.9	0.0015	0.0059	97230	62.7
5	0.0018	0.0090	94,977	55.4	0.0006	0.0031	96655	59.1
10	0.0014	0.0068	94,126	50.9	0.0008	0.0040	96354	54.3
15	0.0019	0.0093	93,482	46.2	0.0011	0.0054	95972	49.5
20	0.0015	0.0076	92,613	41.6	0.0014	0.0069	95450	44.7
25	0.0043	0.0214	91,908	36.9	0.0032	0.0161	94796	40.0
30	0.0098	0.0478	89,944	32.7	0.0136	0.0658	93274	35.6
35	0.0153	0.0735	85,643	29.2	0.0116	0.0565	87137	33.0
40	0.0242	0.1139	79,351	26.3	0.0120	0.0584	82210	29.8
45	0.0260	0.1219	70,311	24.3	0.0172	0.0823	77406	26.5
50	0.0191	0.0912	61,742	22.4	0.0104	0.0505	71034	23.6
55	0.0177	0.0847	56,114	19.4	0.0156	0.0749	67449	19.7
60	0.0242	0.1140	51,364	15.9	0.0176	0.0844	62394	16.1
65	0.0337	0.1553	45,510	12.6	0.0257	0.1209	57127	12.4
70	0.0436	0.1965	38,442	9.5	0.0669	0.2866	50218	8.8
75	0.0797	0.3323	30,887	6.2	0.0719	0.3048	35824	6.3
80	0.3250	1.0000	20,624	3.1	0.3410	1.0000	24906	2.9

NANDI

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0441	0.0425	100,000	55.9	0.0361	0.0350	100000	57.3
1	0.0026	0.0105	95,746	57.3	0.0025	0.0098	96499	58.3
5	0.0023	0.0114	94,742	53.9	0.0015	0.0077	95549	54.9
10	0.0022	0.0108	93,659	49.5	0.0016	0.0080	94813	50.3
15	0.0018	0.0089	92,650	45.0	0.0011	0.0055	94056	45.7
20	0.0026	0.0130	91,826	40.4	0.0027	0.0135	93537	40.9
25	0.0055	0.0273	90,629	35.9	0.0066	0.0327	92275	36.5
30	0.0119	0.0580	88,155	31.9	0.0157	0.0754	89259	32.6
35	0.0206	0.0979	83,041	28.7	0.0257	0.1208	82526	30.1
40	0.0205	0.0974	74,912	26.5	0.0169	0.0810	72556	28.9
45	0.0230	0.1086	67,614	24.1	0.0126	0.0610	66680	26.2
50	0.0168	0.0806	60,269	21.7	0.0103	0.0504	62609	22.7
55	0.0215	0.1020	55,409	18.4	0.0147	0.0708	59453	18.8
60	0.0273	0.1279	49,760	15.2	0.0252	0.1186	55244	15.0
65	0.0387	0.1763	43,394	12.1	0.0389	0.1774	48694	11.7
70	0.0478	0.2135	35,746	9.1	0.0619	0.2682	40056	8.7
75	0.0920	0.3739	28,114	5.9	0.0829	0.3432	29315	6.0
80	0.3373	1.0000	17,601	3.0	0.3549	1.0000	19255	2.8

LAIKIPIA

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0444	0.0429	100,000	53.4	0.0443	0.0428	100000	56.9
1	0.0027	0.0107	95,714	54.7	0.0022	0.0087	95723	58.5
5	0.0023	0.0116	94,690	51.3	0.0016	0.0080	94889	55.0
10	0.0025	0.0125	93,593	46.9	0.0020	0.0098	94132	50.4
15	0.0027	0.0132	92,422	42.4	0.0014	0.0071	93211	45.8
20	0.0050	0.0245	91,203	38.0	0.0046	0.0228	92550	41.2
25	0.0111	0.0540	88,965	33.9	0.0072	0.0353	90440	37.1
30	0.0135	0.0655	84,163	30.7	0.0219	0.1038	87248	33.3
35	0.0261	0.1224	78,649	27.6	0.0199	0.0950	78190	31.9
40	0.0252	0.1186	69,025	26.1	0.0208	0.0991	70763	30.0
45	0.0202	0.0961	60,839	24.3	0.0119	0.0578	63752	28.0
50	0.0253	0.1191	54,993	21.6	0.0127	0.0614	60067	24.6
55	0.0187	0.0892	48,445	19.2	0.0123	0.0595	56376	21.0
60	0.0244	0.1150	44,125	15.9	0.0156	0.0752	53021	17.2
65	0.0338	0.1560	39,049	12.6	0.0272	0.1276	49036	13.4
70	0.0447	0.2011	32,956	9.5	0.0458	0.2054	42781	10.0
75	0.0859	0.3535	26,329	6.2	0.0820	0.3403	33995	6.9
80	0.3070	1.0000	17,022	3.3	0.2406	1.0000	22428	4.2

NAKURU

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0755	0.0714	100,000	51.7	0.0443	0.0428	100000	56.9
1	0.0041	0.0164	92,855	54.6	0.0022	0.0087	95723	58.5
5	0.0032	0.0158	91,332	51.5	0.0016	0.0080	94889	55.0
10	0.0035	0.0172	89,894	47.3	0.0020	0.0098	94132	50.4
15	0.0029	0.0146	88,351	43.1	0.0014	0.0071	93211	45.8
20	0.0048	0.0239	87,060	38.7	0.0046	0.0228	92550	41.2
25	0.0076	0.0373	84,977	34.6	0.0072	0.0353	90440	37.1
30	0.0151	0.0729	81,811	30.8	0.0219	0.1038	87248	33.3
35	0.0255	0.1198	75,849	28.0	0.0199	0.0950	78190	31.9
40	0.0213	0.1012	66,759	26.5	0.0208	0.0991	70763	30.0
45	0.0253	0.1192	60,002	24.2	0.0119	0.0578	63752	28.0
50	0.0161	0.0773	52,852	22.2	0.0127	0.0614	60067	24.6
55	0.0207	0.0984	48,768	18.8	0.0123	0.0595	56376	21.0
60	0.0259	0.1216	43,969	15.6	0.0156	0.0752	53021	17.2
65	0.0343	0.1581	38,624	12.4	0.0272	0.1276	49036	13.4
70	0.0532	0.2349	32,517	9.3	0.0458	0.2054	42781	10.0
75	0.0807	0.3358	24,880	6.3	0.0820	0.3403	33995	6.9
80	0.3070	1.0000	16,526	3.3	0.2406	1.0000	22428	4.2

NAROK

Age			Male				Female	
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0532	0.0510	100,000	61.3	0.0422	0.0407	100000	66.5
1	0.0034	0.0134	94,897	63.6	0.0029	0.0113	95926	68.3
5	0.0024	0.0122	93,628	60.4	0.0015	0.0077	94839	65.1
10	0.0034	0.0168	92,490	56.1	0.0019	0.0095	94110	60.6
15	0.0020	0.0101	90,932	52.1	0.0014	0.0072	93218	56.1
20	0.0028	0.0138	90,016	47.6	0.0026	0.0130	92545	51.5
25	0.0041	0.0201	88,772	43.2	0.0041	0.0204	91345	47.2
30	0.0074	0.0362	86,991	39.0	0.0091	0.0445	89486	43.1
35	0.0146	0.0707	83,840	35.4	0.0145	0.0701	85504	40.0
40	0.0172	0.0824	77,916	32.9	0.0106	0.0517	79510	37.8
45	0.0109	0.0532	71,494	30.6	0.0052	0.0256	75400	34.7
50	0.0112	0.0543	67,687	27.2	0.0061	0.0302	73473	30.6
55	0.0086	0.0420	64,014	23.6	0.0084	0.0412	71254	26.4
60	0.0189	0.0902	61,326	19.6	0.0069	0.0342	68315	22.5
65	0.0215	0.1021	55,794	16.3	0.0144	0.0693	65982	18.2
70	0.0216	0.1022	50,100	12.8	0.0231	0.1091	61412	14.4
75	0.0362	0.1662	44,977	9.0	0.0512	0.2271	54714	10.8
80	0.1893	1.0000	37,504	5.3	0.1213	1.0000	42291	8.2

KAJIADO

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.05219	0.05006	100,000	59.9	0.03891	0.03768	100,000	63.9
1	0.00251	0.01000	94,994	62.1	0.00213	0.00846	96,232	65.4
5	0.00274	0.01361	94,044	58.7	0.00191	0.00950	95,418	61.9
10	0.00384	0.01901	92,764	54.4	0.00226	0.01121	94,511	57.5
15	0.00216	0.01075	91,001	50.5	0.00161	0.00802	93,451	53.1
20	0.00247	0.01227	90,022	46.0	0.00240	0.01194	92,702	48.5
25	0.00366	0.01812	88,918	41.5	0.00440	0.02174	91,596	44.1
30	0.00614	0.03026	87,306	37.2	0.00984	0.04803	89,604	40.0
35	0.01231	0.05970	84,664	33.3	0.01671	0.08020	85,301	36.9
40	0.01168	0.05672	79,610	30.3	0.00918	0.04487	78,460	34.9
45	0.01471	0.07093	75,094	26.9	0.00917	0.04480	74,939	31.4
50	0.01623	0.07797	69,767	23.8	0.00702	0.03450	71,581	27.7
55	0.01574	0.07573	64,328	20.6	0.00628	0.03090	69,112	23.6
60	0.01438	0.06941	59,457	17.1	0.00904	0.04422	66,976	19.3
65	0.03046	0.14152	55,330	13.2	0.01350	0.06528	64,015	15.1
70	0.04163	0.18853	47,500	9.9	0.04036	0.18332	59,836	11.0
75	0.09378	0.37984	38,545	6.7	0.05094	0.22592	48,867	7.9
80	0.23607	1.00000	23,904	4.2	0.22471	1.00000	37,827	4.5

KERICHO

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.07082	0.06719	100,000	53.6	0.04665	0.04494	100,000	59.3
1	0.00364	0.01445	93,281	56.4	0.00311	0.01235	95,506	61.0
5	0.00343	0.01701	91,933	53.2	0.00217	0.01081	94,326	57.8
10	0.00317	0.01573	90,370	49.1	0.00299	0.01484	93,307	53.4
15	0.00230	0.01145	88,948	44.8	0.00175	0.00869	91,922	49.2
20	0.00331	0.01641	87,930	40.3	0.00330	0.01636	91,123	44.6
25	0.00494	0.02439	86,487	35.9	0.00760	0.03730	89,633	40.3
30	0.01010	0.04926	84,377	31.8	0.01268	0.06147	86,289	36.7
35	0.02552	0.11994	80,221	28.3	0.01734	0.08310	80,985	34.0
40	0.02323	0.10975	70,600	26.8	0.01361	0.06580	74,255	31.8
45	0.02512	0.11817	62,851	24.8	0.01286	0.06229	69,369	28.9
50	0.01615	0.07761	55,424	22.8	0.01116	0.05431	65,048	25.6
55	0.01561	0.07510	51,122	19.5	0.01082	0.05269	61,516	22.0
60	0.01590	0.07646	47,283	15.9	0.01906	0.09095	58,275	18.0
65	0.03546	0.16288	43,668	12.0	0.02449	0.11538	52,974	14.6
70	0.06580	0.28253	36,555	8.8	0.03100	0.14384	46,862	11.2
75	0.07614	0.31981	26,227	6.3	0.05211	0.23050	40,122	7.6
80	0.32034	1.00000	17,839	3.1	0.23906	1.00000	30,873	4.2

BOMET

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.05454	0.05224	100,000	54.9	0.04091	0.03957	100,000	60.5
1	0.00253	0.01006	94,776	57.0	0.00200	0.00795	96,043	62.0
5	0.00234	0.01166	93,823	53.5	0.00158	0.00786	95,280	58.5
10	0.00267	0.01324	92,729	49.1	0.00179	0.00892	94,531	54.0
15	0.00164	0.00819	91,501	44.8	0.00132	0.00658	93,687	49.4
20	0.00311	0.01544	90,752	40.1	0.00263	0.01307	93,071	44.7
25	0.00667	0.03280	89,351	35.7	0.00781	0.03830	91,855	40.3
30	0.01158	0.05627	86,420	31.8	0.01523	0.07336	88,337	36.8
35	0.02257	0.10684	81,558	28.6	0.02033	0.09671	81,857	34.5
40	0.02836	0.13239	72,844	26.7	0.01641	0.07880	73,940	32.9
45	0.01960	0.09340	63,200	25.4	0.01612	0.07748	68,114	30.5
50	0.01748	0.08374	57,297	22.7	0.01023	0.04988	62,836	27.9
55	0.01377	0.06655	52,499	19.6	0.00866	0.04237	59,702	24.2
60	0.02133	0.10123	49,005	15.8	0.01424	0.06876	57,172	20.2
65	0.03428	0.15788	44,044	12.3	0.01057	0.05147	53,241	16.5
70	0.05870	0.25593	37,091	9.1	0.02495	0.11743	50,500	12.3
75	0.08223	0.34103	27,598	6.4	0.04924	0.21920	44,570	8.6
80	0.29215	1.00000	18,186	3.4	0.19033	1.00000	34,800	5.3

WESTERN PROVINCE

KAKAMEGA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0766	0.0725	100,000	53.4	0.0598	0.0572	100,000	55.1
1	0.0131	0.0507	92,752	56.6	0.0119	0.0463	94,285	57.4
5	0.0042	0.0207	88,047	55.5	0.0036	0.0177	89,919	56.1
10	0.0033	0.0163	86,227	51.6	0.0036	0.0181	88,324	52.1
15	0.0038	0.0189	84,823	47.5	0.0032	0.0158	86,730	48.0
20	0.0049	0.0243	83,222	43.3	0.0043	0.0211	85,362	43.7
25	0.0057	0.0281	81,198	39.3	0.0070	0.0342	83,564	39.6
30	0.0076	0.0373	78,914	35.4	0.0126	0.0611	80,702	35.9
35	0.0116	0.0565	75,967	31.7	0.0158	0.0758	75,769	33.1
40	0.0131	0.0634	71,679	28.4	0.0130	0.0628	70,022	30.6
45	0.0122	0.0592	67,136	25.2	0.0129	0.0627	65,625	27.5
50	0.0160	0.0770	63,160	21.6	0.0119	0.0580	61,510	24.2
55	0.0202	0.0961	58,294	18.2	0.0131	0.0632	57,942	20.5
60	0.0287	0.1339	52,694	14.9	0.0204	0.0971	54,279	16.7
65	0.0421	0.1903	45,638	11.8	0.0262	0.1228	49,008	13.3
70	0.0652	0.2802	36,953	9.0	0.0582	0.2540	42,991	9.8
75	0.1015	0.4047	26,599	6.5	0.0779	0.3261	32,071	7.2
80	0.2378	1.0000	15,833	4.2	0.2207	1.0000	21,612	4.5

VIHIGA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0629	0.0600	100,000	48.6	0.0515	0.0494	100,000	49.2
1	0.0105	0.0411	94,003	50.7	0.0095	0.0373	95,056	50.7
5	0.0041	0.0204	90,137	48.8	0.0036	0.0176	91,509	48.6
10	0.0025	0.0125	88,296	44.7	0.0035	0.0172	89,898	44.4
15	0.0044	0.0219	87,193	40.3	0.0029	0.0143	88,352	40.2
20	0.0082	0.0403	85,281	36.1	0.0070	0.0345	87,092	35.7
25	0.0112	0.0545	81,841	32.5	0.0119	0.0578	84,088	31.9
30	0.0155	0.0746	77,385	29.2	0.0255	0.1198	79,226	28.7
35	0.0223	0.1055	71,614	26.4	0.0304	0.1414	69,732	27.3
40	0.0218	0.1033	64,062	24.2	0.0238	0.1122	59,872	26.3
45	0.0279	0.1303	57,443	21.7	0.0205	0.0975	53,153	24.4
50	0.0232	0.1095	49,958	19.6	0.0176	0.0843	47,971	21.7
55	0.0272	0.1274	44,490	16.7	0.0211	0.1004	43,927	18.5
60	0.0354	0.1625	38,822	13.8	0.0259	0.1215	39,517	15.3
65	0.0448	0.2015	32,512	11.0	0.0399	0.1815	34,716	12.0
70	0.0730	0.3087	25,960	8.1	0.0517	0.2291	28,414	9.2
75	0.1212	0.4652	17,947	5.6	0.1140	0.4435	21,905	6.1
80	0.3038	1.0000	9,598	3.3	0.2480	1.0000	12,191	4.0

BUNGOMA

Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0725	0.0687	100,000	56.5	0.0550	0.0527	100,000	57.6
1	0.0154	0.0595	93,125	59.7	0.0123	0.0479	94,731	59.8
5	0.0050	0.0247	87,587	59.4	0.0048	0.0237	90,194	58.7
10	0.0034	0.0169	85,426	55.8	0.0033	0.0164	88,060	55.1
15	0.0028	0.0140	83,979	51.7	0.0030	0.0149	86,615	50.9
20	0.0042	0.0208	82,800	47.4	0.0035	0.0172	85,323	46.7
25	0.0044	0.0215	81,074	43.4	0.0056	0.0276	83,856	42.4
30	0.0056	0.0278	79,329	39.3	0.0078	0.0381	81,541	38.6
35	0.0068	0.0337	77,125	35.3	0.0116	0.0562	78,431	35.0
40	0.0075	0.0369	74,530	31.5	0.0098	0.0478	74,026	31.9
45	0.0108	0.0525	71,778	27.6	0.0104	0.0508	70,488	28.4
50	0.0113	0.0548	68,008	24.0	0.0091	0.0444	66,907	24.8
55	0.0128	0.0621	64,281	20.2	0.0132	0.0640	63,933	20.8
60	0.0201	0.0957	60,286	16.4	0.0188	0.0897	59,844	17.1
65	0.0326	0.1508	54,517	12.9	0.0309	0.1435	54,478	13.5
70	0.0573	0.2508	46,296	9.7	0.0453	0.2035	46,661	10.4
75	0.0889	0.3636	34,686	7.1	0.0792	0.3306	37,165	7.4
80	0.2108	1.0000	22,074	4.7	0.2083	1.0000	24,880	4.8

BUSIA

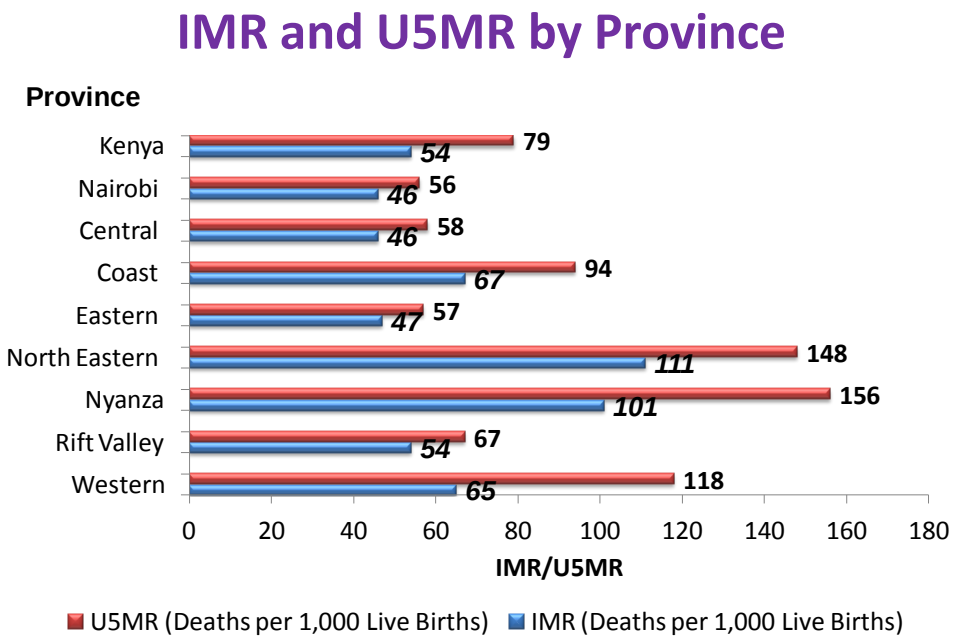
Age	Male				Female			
(x)	nMx	nqx	l(x)	e(x)	nMx	nqx	l(x)	e(x)
0	0.0974	0.0912	100,000	51.1	0.0803	0.0759	100,000	54.0
1	0.0181	0.0695	90,876	55.2	0.0156	0.0601	92,414	57.4
5	0.0051	0.0252	84,559	55.3	0.0044	0.0217	86,862	57.0
10	0.0032	0.0160	82,431	51.6	0.0030	0.0150	84,979	53.2
15	0.0040	0.0199	81,109	47.4	0.0028	0.0139	83,701	49.0
20	0.0058	0.0287	79,495	43.3	0.0047	0.0233	82,534	44.6
25	0.0072	0.0353	77,217	39.5	0.0074	0.0366	80,613	40.6
30	0.0084	0.0410	74,492	35.9	0.0116	0.0562	77,666	37.1
35	0.0101	0.0493	71,436	32.3	0.0132	0.0638	73,297	34.1
40	0.0130	0.0628	67,911	28.9	0.0121	0.0587	68,624	31.3
45	0.0143	0.0692	63,646	25.6	0.0101	0.0490	64,595	28.1
50	0.0159	0.0766	59,242	22.3	0.0127	0.0615	61,429	24.4
55	0.0184	0.0879	54,703	19.0	0.0134	0.0648	57,648	20.8
60	0.0252	0.1186	49,892	15.6	0.0201	0.0956	53,914	17.1
65	0.0438	0.1973	43,975	12.3	0.0399	0.1812	48,758	13.6
70	0.0516	0.2284	35,299	9.8	0.0484	0.2159	39,921	11.1
75	0.0755	0.3174	27,238	6.9	0.0638	0.2752	31,300	8.5
80	0.2522	1.0000	18,593	4.0	0.1744	1.0000	22,687	5.7

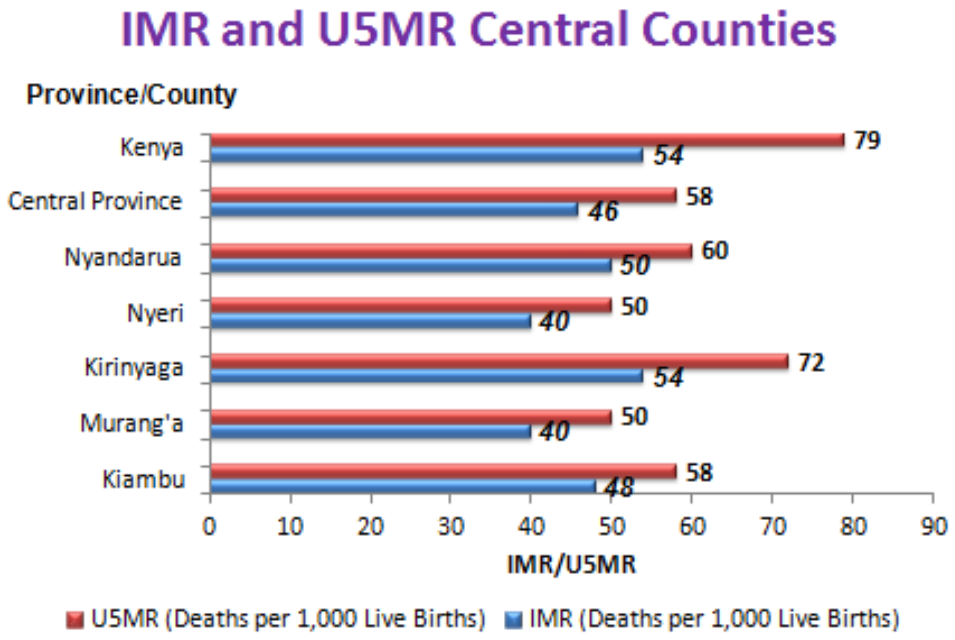
Appendix 3: Selected Comparable Statistical Indicators by Global Health Observatory, 2009

Total population	**39,802,000**
Gross national income per capita (PPP international $)	**1,560**
Life expectancy at birth m/f (years)	**58/62**
Probability of dying under five (per 1 000 live births)	**84**
Probability of dying between 15 and 60 years m/f (per 1 000 population)	**358/282**
Total expenditure on health per capita (Intl $, 2009)	**68**
Total expenditure on health as % of GDP (2009)	**4.3**
Maternal Mortality Ratio (per 100000 Live Births	**530**
Figures are for 2009 unless indicated. Source: Global Health Observatory	

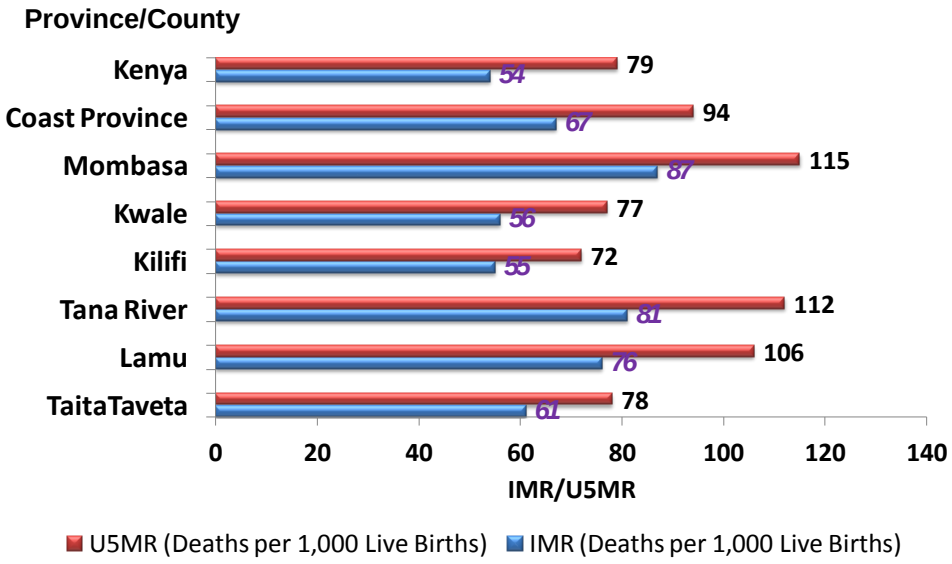
Appendix 4: Figures on Selected Mortality Indicators

a. Infant and Under Five Mortality by County

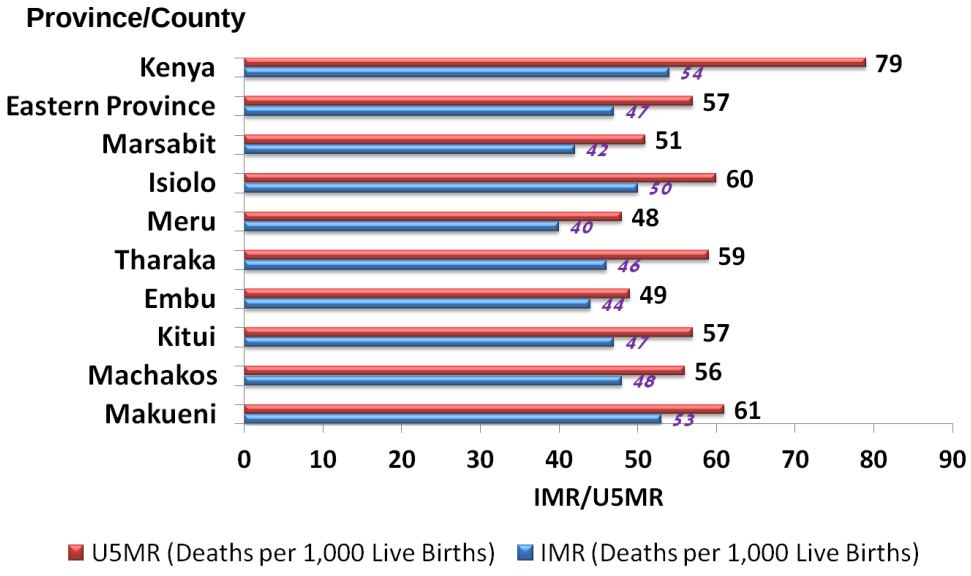




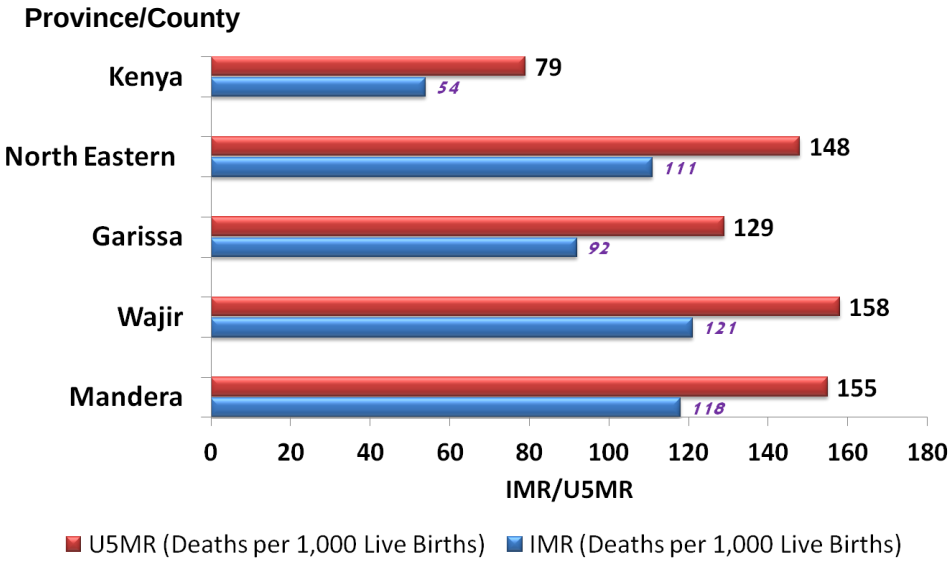
IMR and U5MR Coast Counties



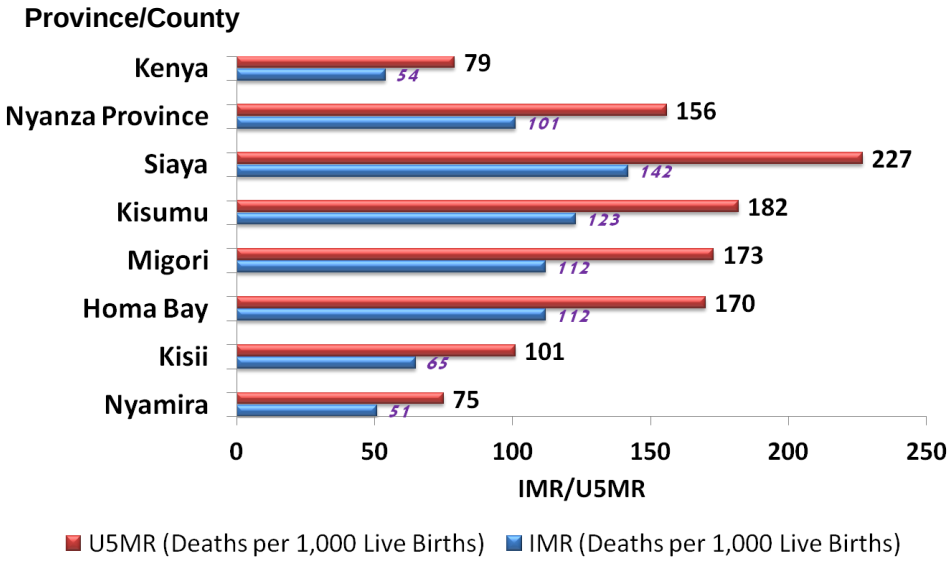
IMR and U5MR Eastern Counties



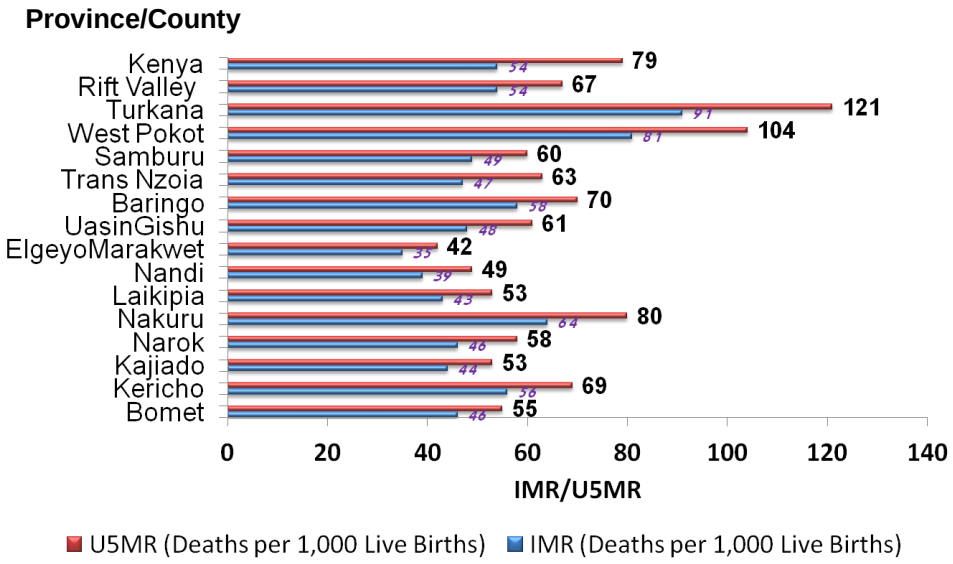
IMR and U5MR North Eastern Counties



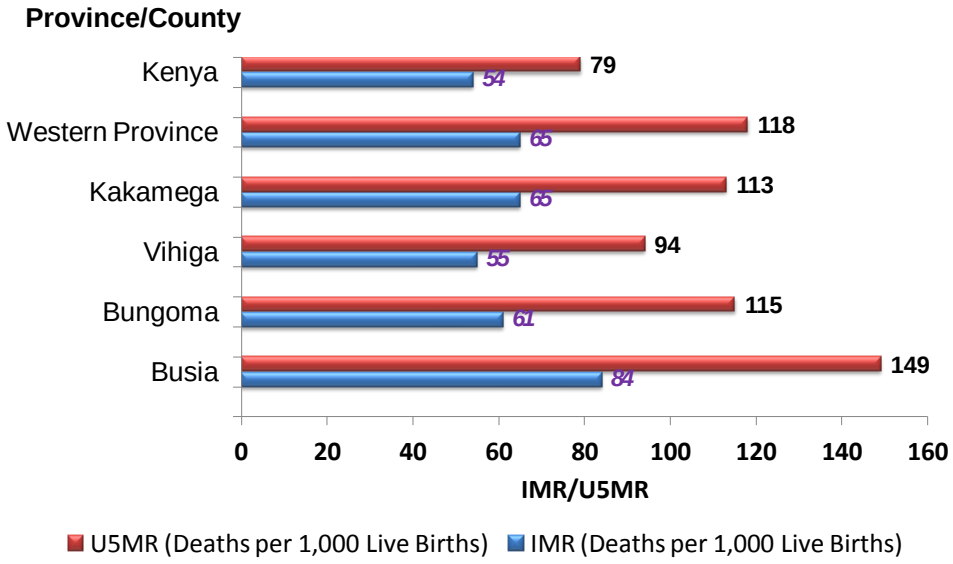
IMR and U5MR Nyanza Counties



IMR and U5MR Rift Valley Counties

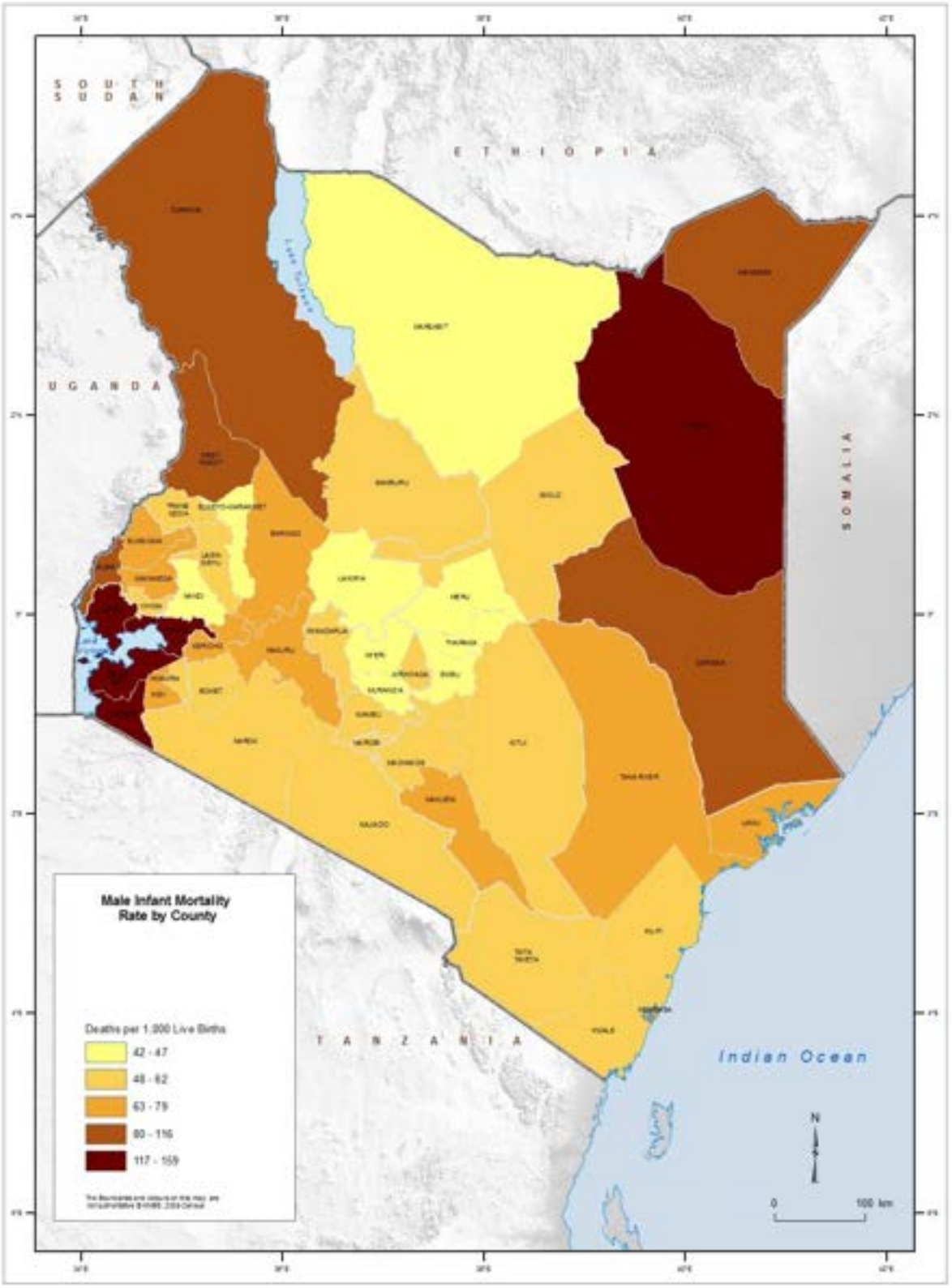


IMR and U5MR Western Counties

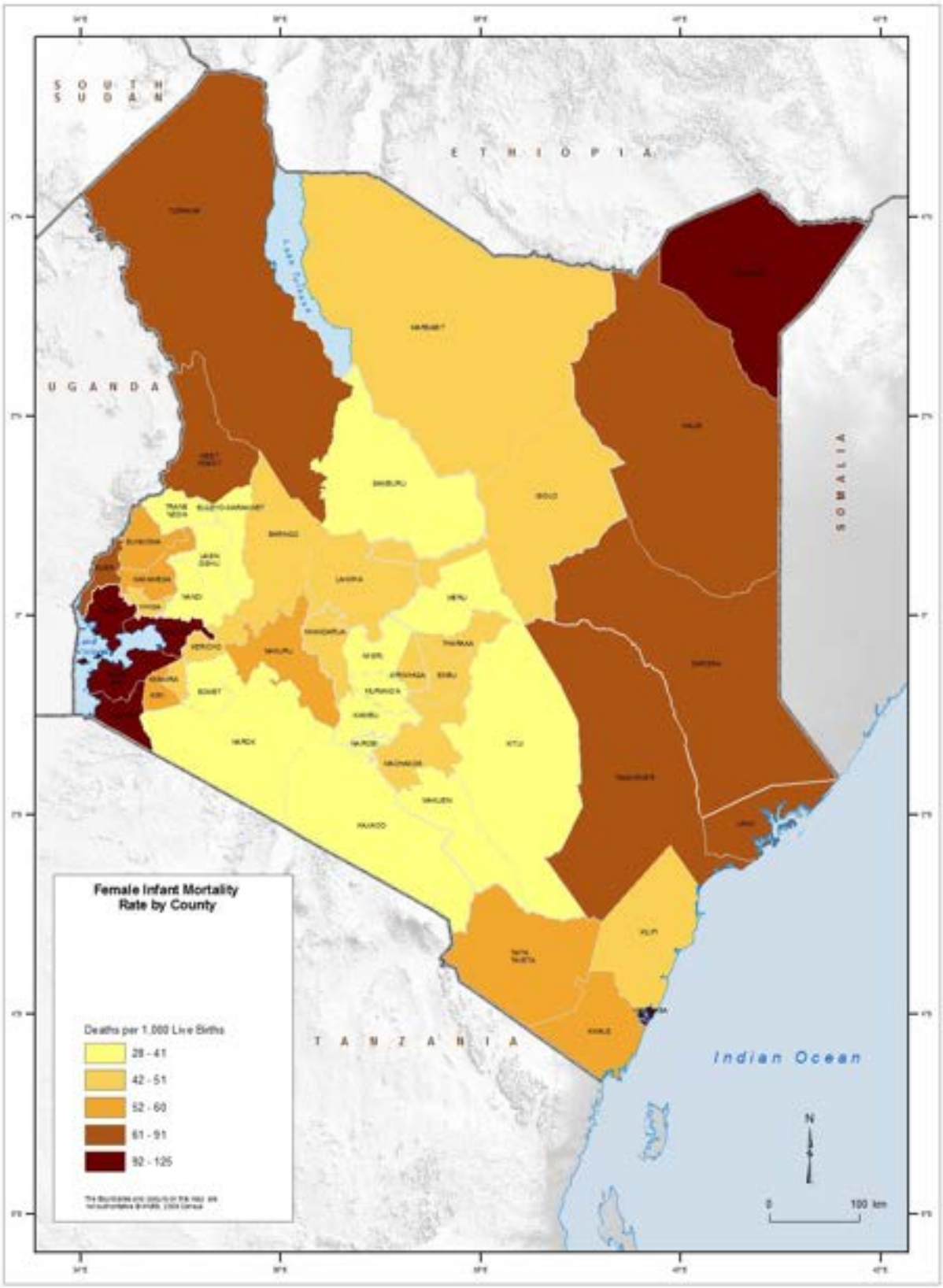


Appendix 5: Mortality Indicator Maps

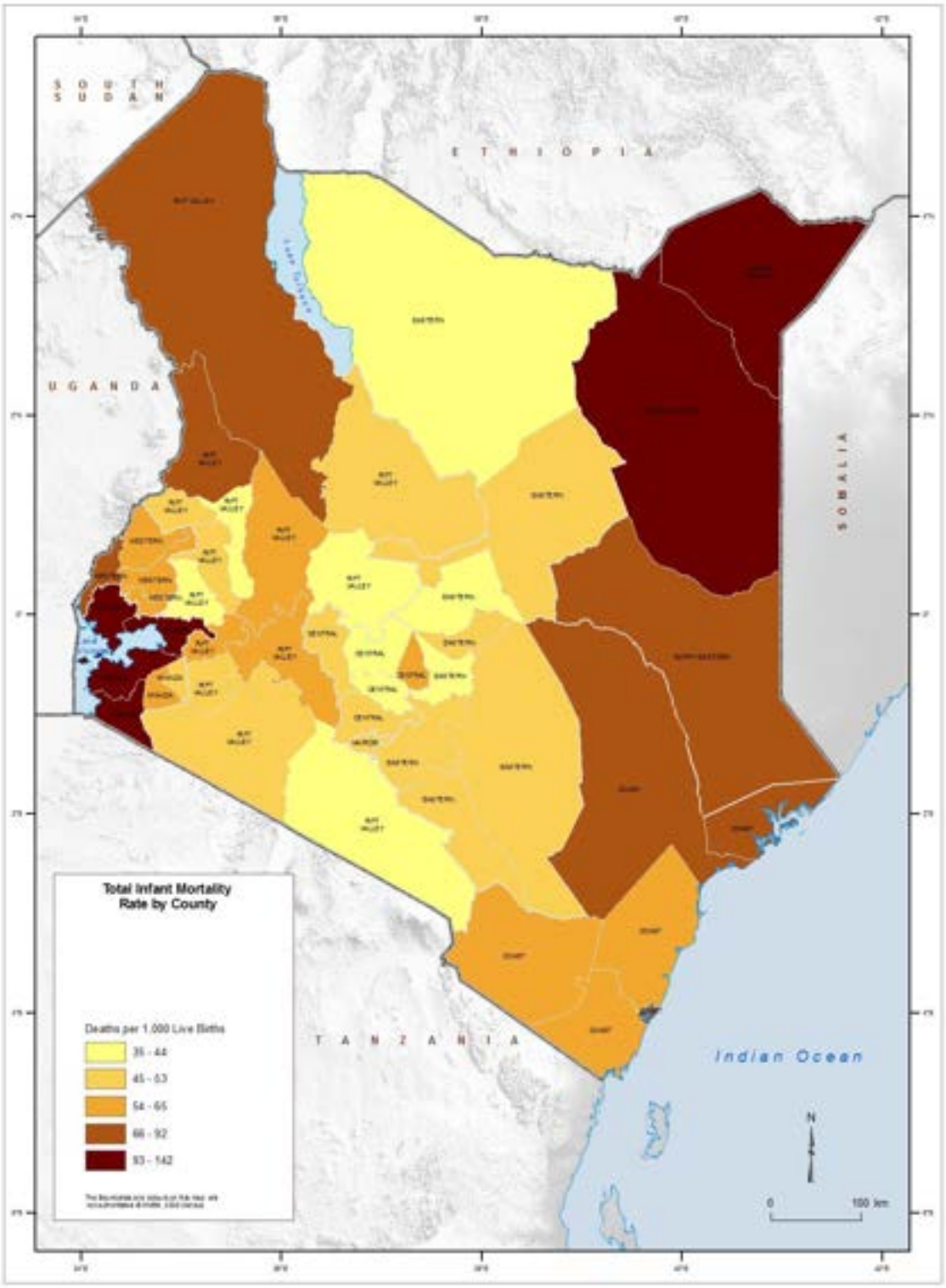
Map 5: Infant Mortality Rate- Male, Kenya 2009



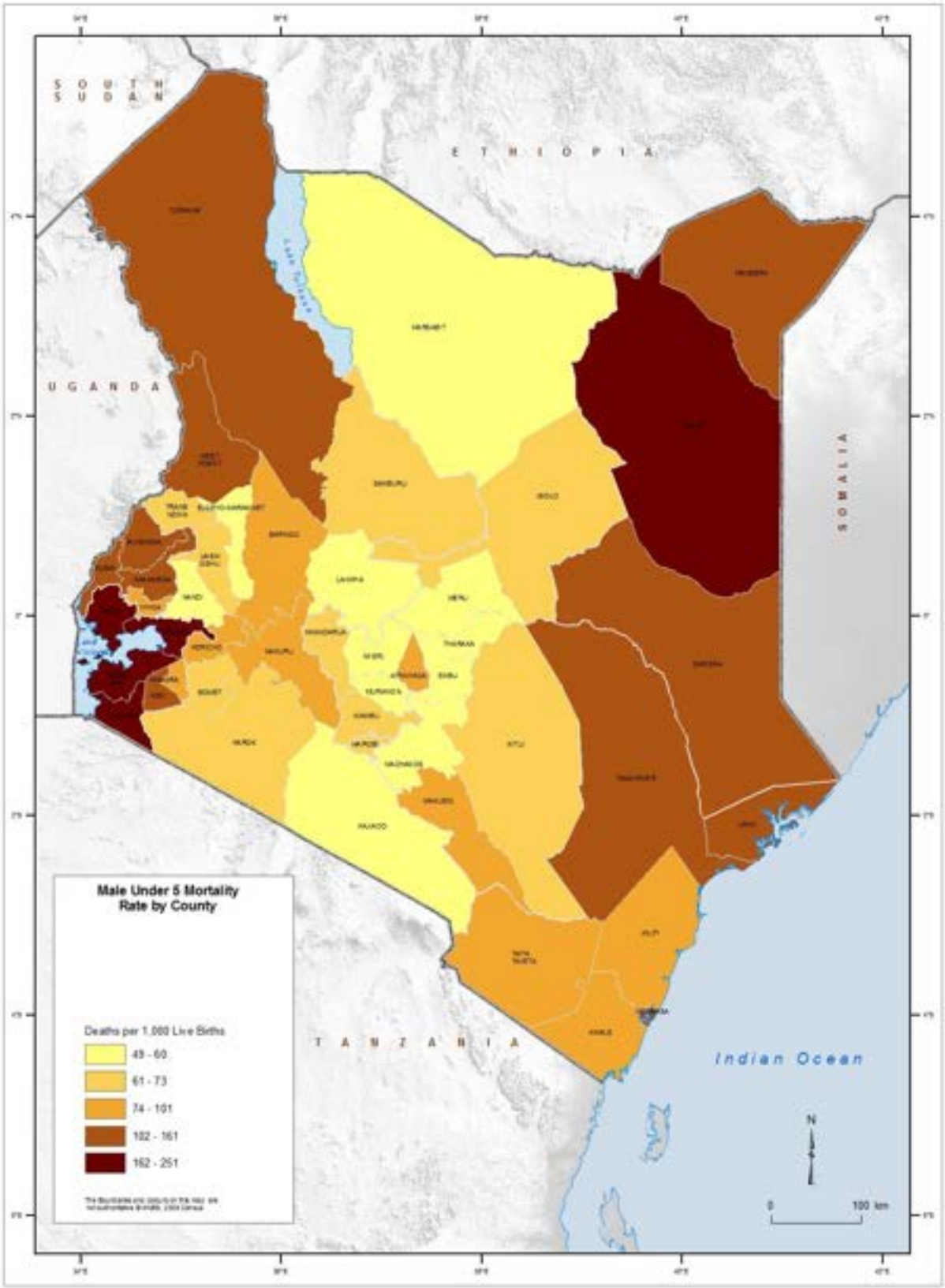
Map 6: Infant Mortality Rate- Female, Kenya 2009



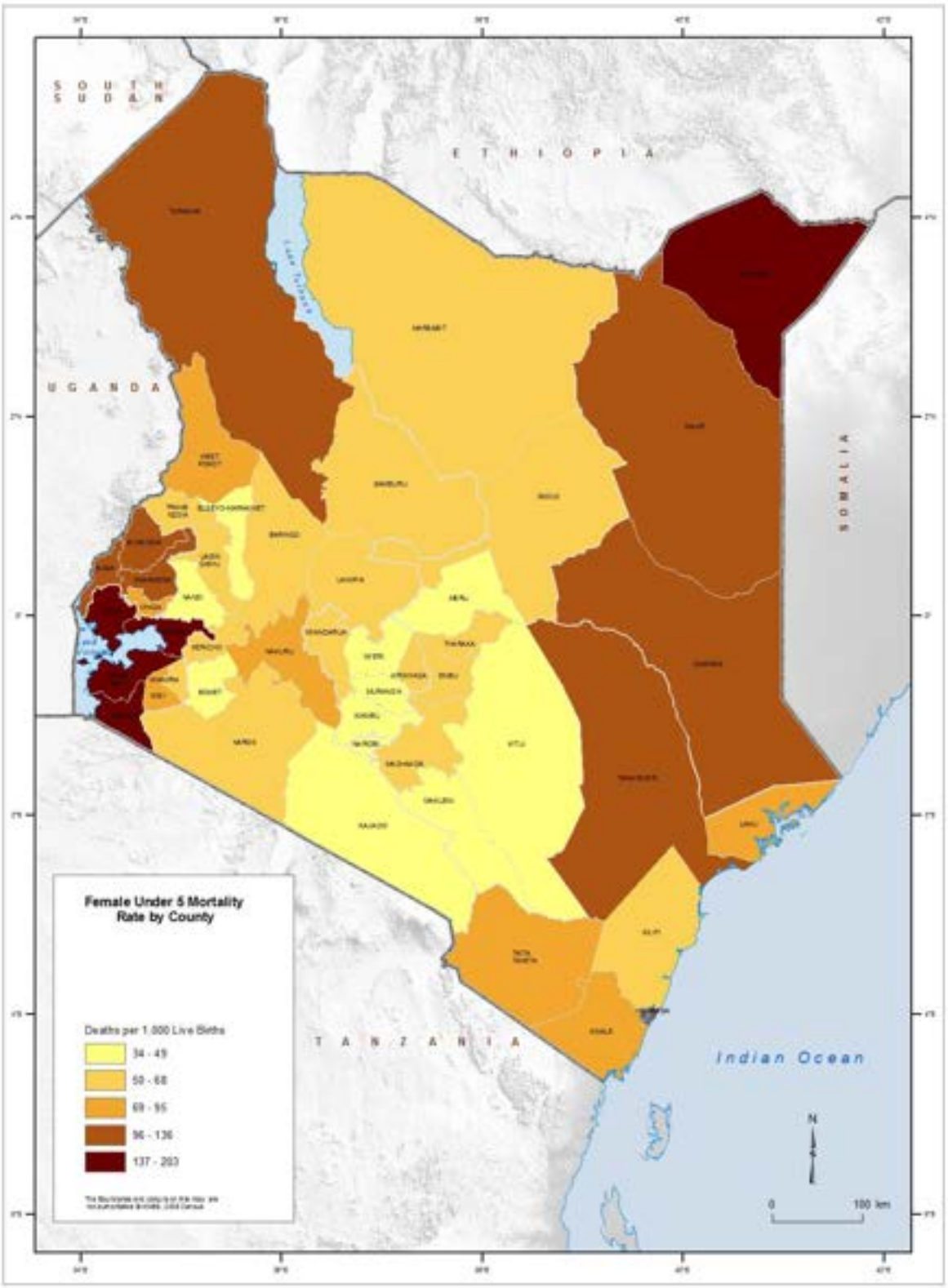
Map 7: Infant Mortality Rate – Both Sexes by County, 2009



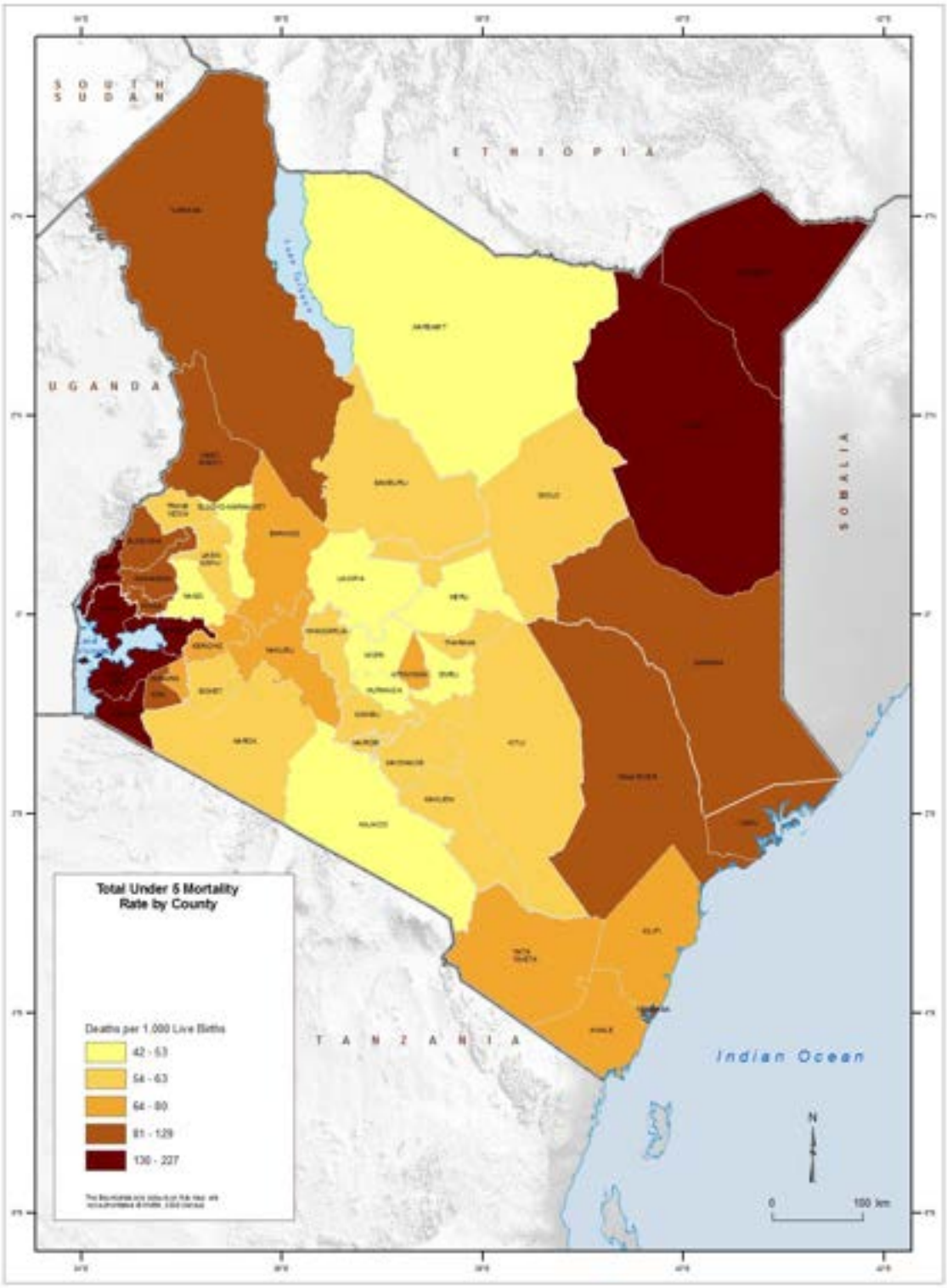
Map 8: Under Five Mortality Rate – Male, Kenya 2009



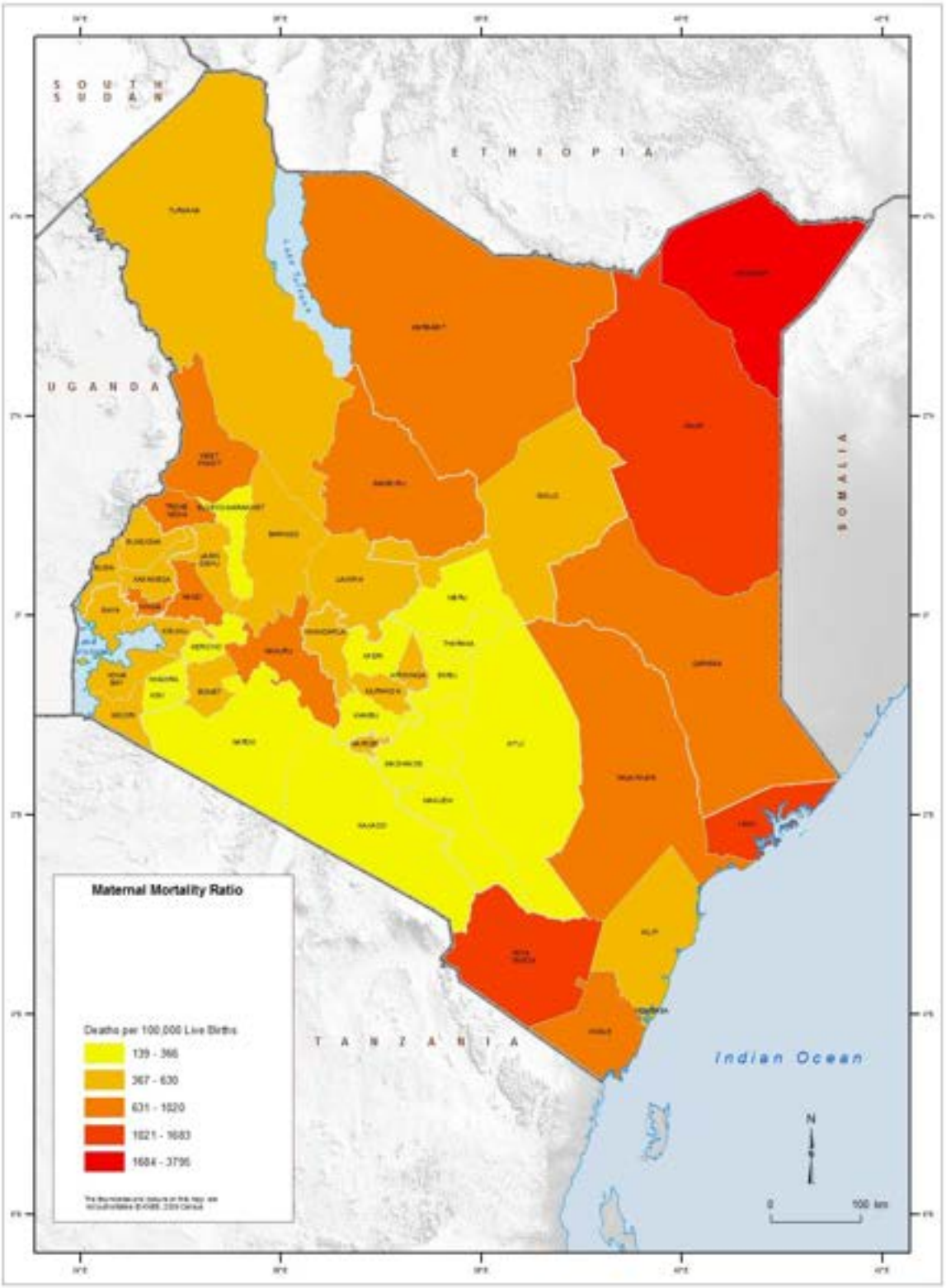
Map 9: Under Five Mortality Rate- Female, Kenya 2009



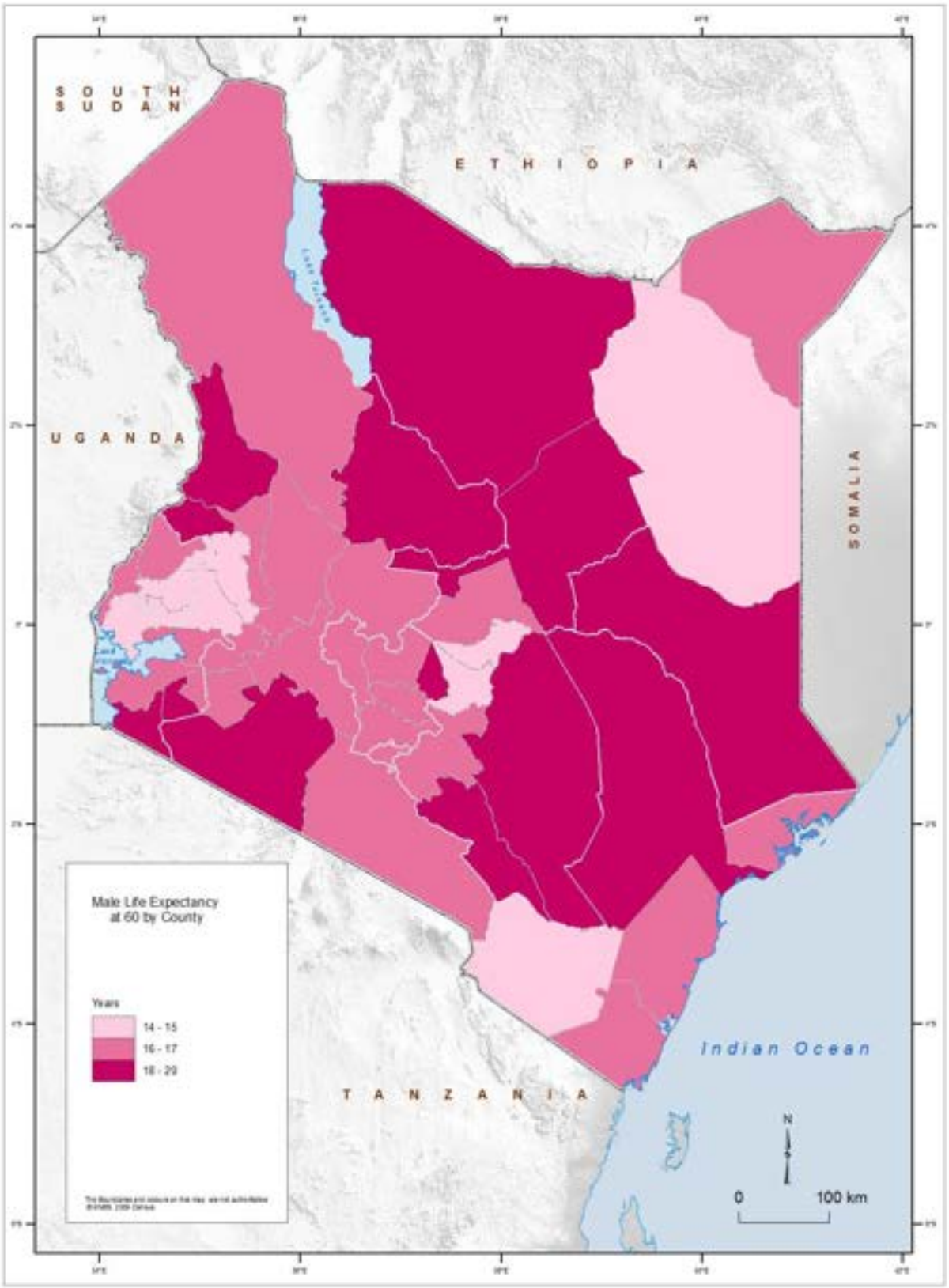
Map 10: Under Five Mortality Rate by County- Both Sexes, 2009



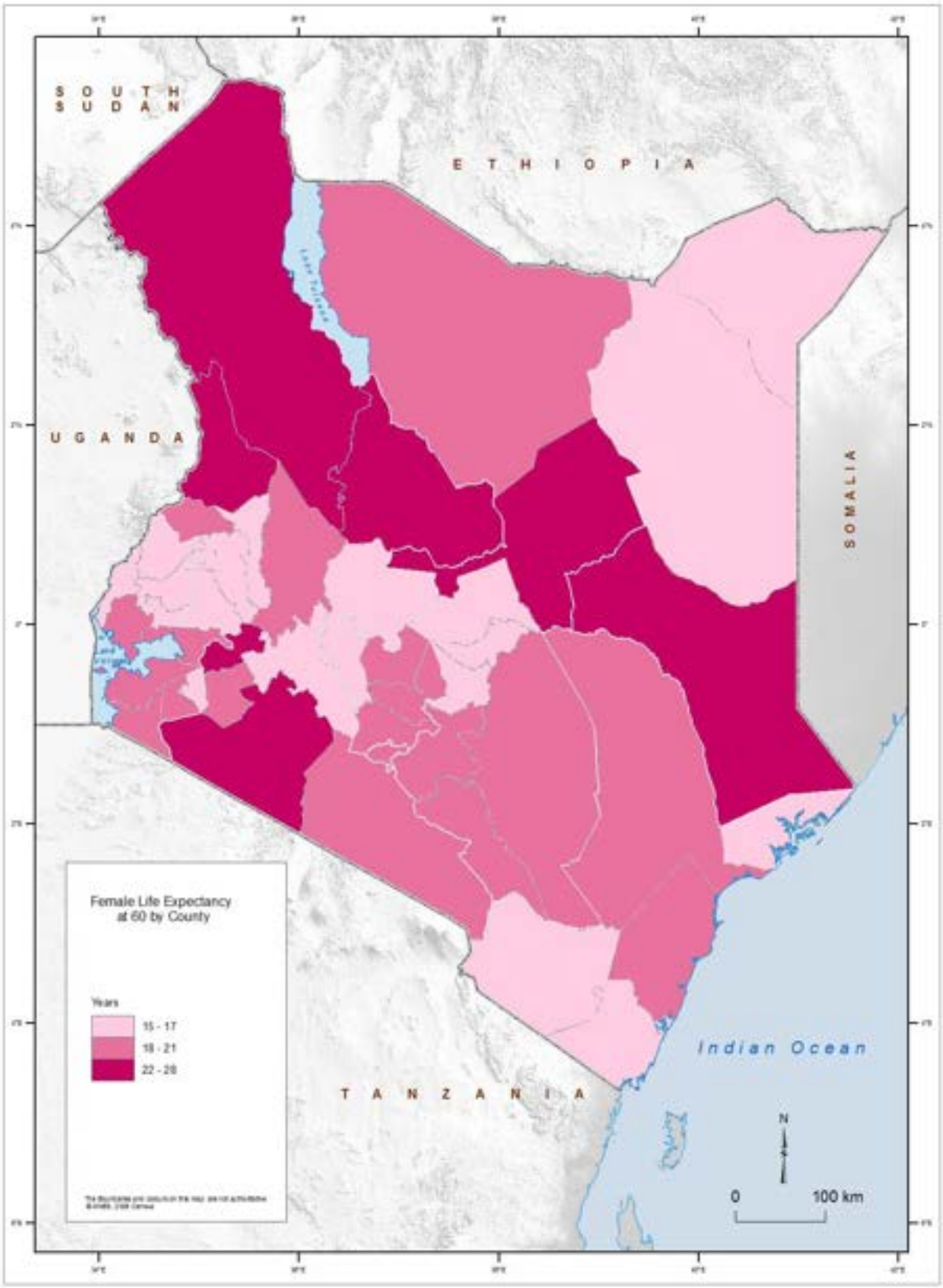
Map 11: Maternal Mortality Ratio, Kenya 2009



Map 12: Male Life Expectancy at Age 60, Kenya 2009



Map 13: Female Life Expectancy at Age 60, Kenya 2009



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