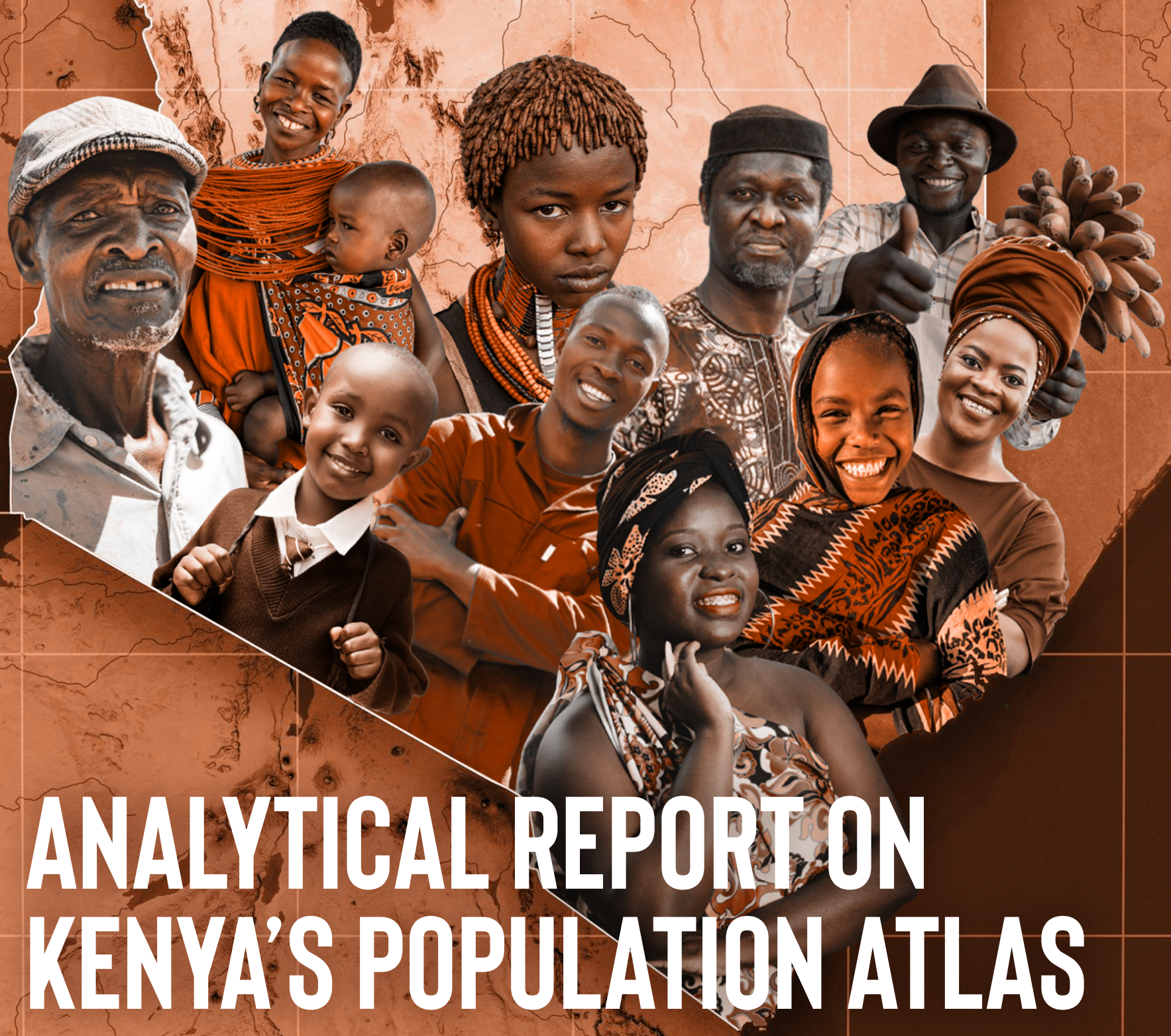
REPUBLIC OF KENYA

KNBS
KENYA NATIONAL BUREAU OF STATISTICS
Keeping you informed

2019 KENYA POPULATION AND HOUSING CENSUS



ANALYTICAL REPORT ON KENYA'S POPULATION ATLAS

VOLUME XXII

ANALYTICAL REPORT ON KENYA'S POPULATION CENSUS

VOLUME XXII

2019 KENYA POPULATION AND HOUSING CENSUS

Published by:
Kenya National Bureau of Statistics
Real Towers, Hospital Road, Upper Hill
P.O. Box 30266 - 00100
Nairobi, Kenya

Tel: +254-20-3317583, +254-20-2911000/1, +254-20-3317612/22/23/51
Email: info@knbs.or.ke / directorgeneral@knbs.or.ke/ library@knbs.or.ke
Facebook: Kenya Stats
Twitter: @KNBStats
Website: www.knbs.or.ke

© 2025 Kenya National Bureau of Statistics

ISBN: 978-9914-9987-9-5 (Print)
ISBN: 978-9914- 9705-1-7 (PDF)
Published 2025

Some rights reserved.
This work is made available under the Attribution-Noncommercial 4.0 International (CC BY-NC 4.0) available at https:/creativecommons.org/licenses/by-nc/4.0/ This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format for noncommercial purposes only, and only so long as the work is appropriately cited and attribution is given to the creator.

Users wishing to reuse material from this work attributed to a third party such as tables, figures or images are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third party owned component in the work rests solely with the user.

Any enquiries relating to this publication should be addressed to the Director General, Kenya National Bureau of Statistics. Subscription correspondence may be addressed directly to the Head of Library Services.

Image source: Istock © 2025 accessed via www. Istockphoto.com
Recommended citation: KNBS 2025. Analytical Report on Kenya's Population Atlas: 2019 Kenya Population and Housing Census. Nairobi, Kenya.





Contents

Foreword		1
Acknowledgement		2
Section A: Reference Maps		**3**
A.1	Geographical Overview of Kenya	3
A.2	Topography	5
A.3	Drainage system	4
A.4	Kenya from space	10
A.5	Relief and Transportation Network	12
A.6	Kenya Land Cover	14
A.7	Kenya Counties	16
Section B: General Demographic Characteristic		**19**
Introduction		19
B.1	Population Distribution	20
B.2	Population Density 2019	23
Section C: Fertility and Nuptiality		26
Introduction		26
C.1	Crude Birth Rate by County	28
C.2	Total Fertility Rates by County	30
C.3	Nuptiality	32
C.4	Births and Place of Occurrence	37
Section D: Mortality		39
Introduction:		39
D.1	Infant Mortality Rate (IMR)	40
D.2	Under Five Mortality Rate (IMR)	42
D. 3	Maternal Mortality Ratio	43
D.4	Crude Death Rate	44
D.5	Expectation of life at Birth (e00), 2019	45
D.6	Life Expectancy at Age 60	46
D.7	Life Expectancy at Age 70	46
Section E: Migration		48
Introduction		48
Measurement of migration		49
E.1	Lifetime Migrants by Sex and County	49
E.2	Male Lifetime Net - Migrants by County	52
E.3	Female Lifetime Net - Migrants by County	53
E.4	Recent Male and Female In and Out Migrants by County	54
E.5	Recent Male and Female Net Migrants by County	55
Section F: Urbanization		57
Introduction		57
F.1	Spatial Distribution of Urban Centres by Population Size	58
F.2	Major Urban Centres	51
F.3	Proportion of Urban Population by County	62
F.4	Spatial Concentration of Informal Settlements in Nairobi	63
Section G: Household and Family Dynamics		64
Introduction		64
G.1	Household density by County	65
G.2	Household Size	67
G.3	Household Structure and Composition	69
G.4	Household Headship	72
Section H: Housing		73
Introduction		73
H.1	Tenure Status of Main Dwelling Unit by County	74
H.2	Percentage Distribution of Households with Adequate Housing Quality Index by County	76

H.3 Roofing Material of the Main Dwelling Unit by County 77
H.4 Dominant Wall Material of Main Dwelling Unit by County 78
H.5 Floor Material of the Main Dwelling Unit by County 79
H.6 Mode of Human Waste Disposal 80
H.7 Percentage distribution of sharing of human waste disposal facility by county 81
H.8 Source of Drinking Water by County 82
H.9 Source of Cooking Fuel by County 83
H.10 Source of Lighting Fuel by County 84
H.11 Deficits of Dwelling Units by County 85
H12 Crowding Index by County 86
Section J: Information and Communication Technology (ICT) 87
Introduction 87
J.1 Proportion of individuals owning a mobile phone 89
J.2 Proportion of Individuals Using and Sharing Mobile Phones 90
J.3 Proportion of Individuals using Computer, E-commerce and Internet 91
J.4 Proportion of Households Owning ICT related assets 93
Section K: Education 97
Introduction 97
K.1 Pre-Primary Education Gross Enrollment Rate 98
K.1 Pre-Primary Education Gross Enrollment Rate 98
K.2 Pre-Primary Education net Enrolment Rate Age 4-5 Years 100
K.3 Gross Enrolment Rate in Primary School 102
K.4 Net Enrolment Rate in Primary School 104
K.5 Gross Enrolment Rate in Secondary School 106
K.6 Net Enrolment Rate in Secondary School 108
K.7 Population at School by County 110
K.8 Population That Never Attended School by County 112
K.9 Primary Education Out-of-School Population by County 114
K.10 Secondary Education Out-of-School Population by County 116
K.11 Primary School Dropout Rates by County 118
K.12 Secondary School Dropout Rates by County 120

Section L: Labour Force 123
Introduction 123
L.1: Total dependency ratios by County 125
L.2: Child dependency ratio by County 126
L.3: Old Age dependency ratio by County 128
L.4: Economically Active Population 129
L.5: Working Population 131
Percentage distribution of Working Population by Sex and County 119
L.6: Population Not in Labour Force 133
L.7: Employment to Population Ratio by County 135
L.8: Unemployment rates 137
Section M: Disability 139
Introduction 139
M.1 Distribution of Population of Persons with Disabilities by County 141
M.2 Severity in Disability 127
M.3 Distribution of Persons With Albinism by County 148




I am 7 years
My school is





Section N: Gender Dimensions 149
Introduction 149
N.1 Gender Gap in Life Expectancy at Birth 150
N.2 Children Born to Women age 12 to 19 152
N.3 Gender Parity for the Population Age 25 and Above Who Have Never Attended School by County 153
N.4 Percentage distribution of households by main type of cooking fuel – firewood by county 154
N.5 Gender Parity in Computer and Internet User, Mobile Ownership and Mobile Sharers 155
Section P: Agriculture 157
Introduction 157
P.1 Distribution of Farming Households by County 159
P.2 Distribution of Crop Only Farming Households by County 160
P.3 Distribution of Livestock Only Farming Households by County 161
P.4 Distribution of Mixed Farming Households by County 163
P.5 Distribution of Farming Population (18yrs+) by County 164
P.6 Distribution of Youth Farming Population (18-34yrs) by County 165
P.7 Distribution of Elderly Farming Population (65yrs+) by County 167
P.8 Distribution of Households Undertaking Irrigation by County 168
P.9 Distribution of Land Cultivated by County 169
P.10 Distribution of Agricultural Assets (Tractor, Ox-Plough and Animal Drawn Cart) by county 171
Section Q : The Older and Vulnerable Population 173
Introduction 173
Q 1: Percentage Distribution of the Older Population by County 175
Q 2: Percentage Distribution of Working Children Age 5 - 17 Years by County 176
Q.3: Percentage Distribution of Child-Headed Households by County 177
Q.4: Percentage Distribution of Children in Child-Headed Households by County 179
Q.5: Percentage Distribution of Orphans by County 180
Q.6: Percentage Distribution of Homeless Population by County 181
Section R: Adolescents 183
Introduction 183
R.1 Adolescents and Youth (Age 15-34) Not in Education, Employment and Training (Y-NEET) 183
R.2 Adolescents and Youth (Age 15-34) who are unemployed 185
R.3 Adolescents (15-19) who have given birth to one or more children 186
R.4 Adolescents and Youth (Age 15-34) who own a mobile phone 164

List of Maps

Map A.1	Locational Map of Kenya	4
Map A.2	Topography and major physical features in Kenya	7
Map A.3	Distribution of drainage basins and wetlands within the country	9
Map A.4	Kenya from space	11
Map A.5	Relief and Transportation Network	13
Map A.6	Kenya Land Cover	15
Map A.7	Kenya Counties	17
Map B.1	2019 KPHC Population Distribution by County	21
Map B.2	2019 KPHC Population Distribution by County	22
Map B.3	2019 KPHC Population Density by County	24
Map B.4	A, B 4 B,B 4 C,B 4 D	20
Map C.1	Crude Birth Rate by County	29
Map C.2	Total Fertility Rate by County	31
Map C.3	A, B Percentage of never married females & males age 12 years and above by county	33
Map C.3	C, D Percentage of females & males in monogamous union by county	33
Map C.3	E, F Percentage of divorced or separated females & males 12 years and above by county	34
Map C.3	G, H Percentage of females & males in polygamous unions by county	36
Map C.3	J, K Percentage of widowed females & males by county	36
Map C.4	A, B Percentage of births in health facilities and notified by county	37
Map D.1	Infant Mortality Rate (IMR)	41
Map D.2	Under Five Mortality (U5MR)	42
Map D.3	Maternal Mortality Ratio (MMR)	43
Map D.4	Crude Death Rate by County	44
Map D.5:	A and B Male and female Life Expectancy at Birth, 2019	45
Map D.6	A and B Male and Female Life Expectancy at age 60	47
Map D.7	A and B Male and Female Life Expectancy at age 70	47
Map E.1	A and B Lifetime Male and Female in Migration	51
Map E.1	C and D Lifetime Male and Female Out Migration	51
Map E.2	Lifetime Male Net Migration by County	52
Map E.3	LifeTime Female Net Migration by County	53
Map E.4	A and B Recent Male and Female in Migration	54
Map E.4	C and D Recent Male and Female out Migration	54
Map E.5A	Recent Male Net Migrants by County	55
Map E.5B	Recent Female Net Migrants by County	56
Map F.1 :	Spatial Distribution of Urban Centres by Population Size	59
Map F.2 :	Major Urban Centres	61
Map F.3 :	Proportion of Urban Population by County	62
Map F.4 :	Spatial Concentration of informal Settlements in Nairobi	63
Map G.1:	Household Density by County	66
Map G.2 :	Mean Household Size by County	67
Map G.2:	A and B Distribution of one member and Large Households by County	68
Map G.3 :	Distribution of Nuclear Households by County	69
Map G.3 :	A and B Households with at least one child under 5 years and at least one Orphan	71
Map G.4 :	1A and 1B Distribution of Male and Female Headed Households by County	72
Map H.1 :	Distribution of Households by Owner Occupation of Main Dwelling Unit by County	75
Map H.2:	The Percentage Distribution of Households by Adequate Housing Quality Index by County	76

Map H.3: Percentage Distribution of Households by Durable Roofing Material of the Main Dwelling Unit by County 77
Map H.4: Percentage Distribution of Households by Durable Wall Material of the Main Dwelling Unit by County 78
Map H.5: Percentage Distribution of Households by Durable Floor Material of Main Dwelling Unit by County 79
Map H.6: Percentage Distribution of Households by Improved Mode of Human Waste Disposal by County 80
Map H.7: Percentage Distribution of Households by Sharing of the Mode of Human Waste Disposal by County 81
Map H.8: Percentage Distribution of Households by Improved Sources of Drinking Water by County 82
Map H.9: Percentage Distribution of Households by Clean Sources of Cooking Fuel by County 83
Map H.10: Percentage Distribution of Households by Clean Sources of Lighting Fuel by County 84
Map H.11: Percentage Distribution of the Number of Dwelling Units Deficit by County 85
Map H.12 : Percentage Distribution of the Crowding Index by County 86

Map J.1: Proportion of individuals owning a mobile phone 89
Map J.2: A and B Proportion of Individuals Using and Sharing Mobile phones by County 90
Map J.3: A ,B and C Proportion of Individuals Using Computers, e-Commerce and Internet 92
Map J.4: proportion of Households Owning a Stand-Alone Radio 93
Map J.4: A and B Proportion of Households owning functional and Analogue Televisions by County 96
Map J.4: C and D Proportion of Households with Internet Connection and owning a Laptop/Tablet by County 96

Map K 1: Pre-Primary Education Total Gross Enrolment Rate Age 4-5 by County 99
Map K.1: A and B Male and Female Pre-Primary Education Gross Enrolment Rate Age 4-5 by County 100
Map K.2 : Pre-Primary Education Total Net Enrolment Rate Age 4-5 by County 101
Map K.2 : A and B Male Pre-Primary Education Net Enrolment Rate Age 4-5 by County 102
Map K.3: Gross Enrolment Rate in Primary School by County 103
Map K.3: A and B Male and Female Gross Enrolment Rate in Primary School by County 104
Map K.4: Total Net Enrolment Rate for Primary School by County 105
Map K.4: A and B Male and Female Net Enrolment Rate in Primary School by County 105
Map K.5: Gross Enrolment Rate in Secondary School by County 107
Map K.5: A and B Male and Female Gross Enrolment Rate in Secondary School by County 107
Map K.6: Total Net Enrolment Rate in Secondary School by County 109
Map K.6: A and B Male and Female Net Enrolment Rate in Secondary School by County 110
Map K.7: Percentage of Population at School by County 111
Map K.7: Percentage of Population at School by County 111
Map K.7: A and B Percentage of Male and Female Population at School by County 112
Map K.8: A and B Percentage of Male and Female Population that Never Attended School by County 113
Map K.8: Percentage of Population that Never Attended School by County 113
Map K.9: Percentage of Population Age 6-13 Out-of-School by County 115
Map K.9: A and B Percentage of Male Population Age 6-13 Out-of-School by County 116
Map K.10: Percentage of Population Age 14-17 Out-of-School by County 114
Map K.10: A and B Percentage of Male and Female Population Age 14-17 Out-of-School by County 118
Map K.11: Primary School Dropout Rates by County 119
Map K.11: A and B Male and Female Primary School Dropout Rates by County 120
Map K.12: Secondary School Dropout Rates by County 121
Map K.12: Secondary School Dropout Rates by County 121

Map L.1: Total dependency ratios by County 125
Map L.2: Child dependency ratios by County 127
Map L.3: Age dependency ratios by County 128
Map L.4 : Percentage distribution of economically active population by County 129
Map L.4 : A and B Percentage distribution of Male and Female economically active population by County 130
Map L.5 : Percentage distribution of total working population by County 131
Map L.5 : A and B Percentage distribution of Male and Female working population 5 years and Above by County 132

Map L.6:	Percentage of Population not in Labour Force by County	133
Map L.6:	A and B Percentage Distribution of Male and Female Not in Labour Force Population	134
Map L.7:	Employment to Population Ratio by County	135
Map L.7:	A and B Employment to Population Ratios for Male and Female by County	136
Map L.8 :	Unemployment rates by County	137
Map L.8 :	A and B Percentage Distribution of Male and female Unemployment rates by County	138
Map M.1:	Distribution of Persons with Disability by County	141
Map M.1:	A, B and C Proportion of Population With Any Disability, Vision Disability and Hearing Disability	141
Map M.1:	D and E Proportion of Population With Mobility and Cognition Disability	145
Map M.1:	F and G Proportion of Population With Selfcare and Communication Disability	145
Map M.2:	A, B and C Proportion of Population With Mild, Moderate and Severe Disability	147
Map M.3:	Distribution of Persons With Albinism by County	148
Map N.1:	Gender Gap In Life Expectancy at Birth	151
Map N.2:	Average Number of Children Ever Born to Women aged 12-19 Years Per 1,000 Women by County	152
Map N.3:	Gender Parity Index for the Population Age 25 and Above who have Never Attended School by County by County	153
Map N.4:	Percentage Distribution of Households that Use Firewood as the main type of cooking fuel by County	154
Map N.5:	A and B Gender Parity Index in Mobile Phone Ownership and Sharing	156
Map N.5:	C and D Gender Parity Index in Computer and Internet Use	156
Map P.1:	Distribution of Farming Households by County	159
Map P.2:	Distribution of crop Only Farming Households by County	160
Map P.3:	Distribution of livestock Only Farming Households by County	161
Map P.4:	Distribution of Mixed Farming Households by County	163
Map P.5:	Distribution of Farming Population (18yrs+) by County	164
Map P.6:	Distribution of Youth Farming Population (18-34 yrs) by County	165
Map P.7:	Distribution of Elderly Farming Population (65yrs+) by County	167
Map P.8:	Distribution of Households undertaking Irrigation Activities by County	168
Map P.9:	A and B Less than One Hectare and 1-99 Ha Agricultural Land Cultivated	169
Map P.9:	C and D 2- 4.99 and 5-9.99 Ha Agricultural Land Cultivated	169
Map P.9:	E Over 10 Ha Agricultural Land Owned	170
Map P.10:	A and B Agricultural Asset Owned, Tractor and OxPlough	171
Map P.10:	C and D Agricultural Asset Owned, Animal Drawn Cart and Motorcycle	171
Map P.10:	E Agricultural Asset Owned, Bicycle	172
Map Q.1:	Percentage Distribution of Older Population by County	175
Map Q.2:	Percentage Distribution of Working Children Age 5-17 years by County	176
Map Q.3:	Percentage Distribution of Child-Headed Households by County	177
Map Q.4:	Percentage Distribution of Children in Child-Headed Households by County	179
Map Q.5:	Percentage Distribution of Orphans by County	180
Map Q.6:	Percentage Distribution of Homeless Population by County	181
Map R.1:	A and B Male and Female (15-34) Not in Education, Employment and Training	184
Map R.2:	Distribution of Unemployed Adolescents and Youth (Age 15-34) by County	154
Map R.3:	Distribution of Adolescents (15-19) who have given birth to one or more children by county	186
Map R.4:	Distribution of Adolescents and Youth (15-34) who own a mobile phone by county	187

List of abbreviations and acronyms

AfDB	African Development Bank
AICS	Italian Agency for Development Cooperation
ASAL	Arid and Semi-Arid Land
AU	African Union
CBR	Crude Birth Rate
CDR	Crude Death Rate
EAC	East African Community
FBO	Faith-Based Organization
GDP	Gross Domestic Product
ICT	Information and Communication Technology
IMR	Infant Mortality Rate
KPHC	Kenya Population and Housing Census
LPG	Liquefied Petroleum Gas
MMR	Maternal Mortality Ratio
MTP	Medium Term Plan
NGO	Non-Governmental Organization
ONS-UK	Office of National Statistics – United Kingdom
PWD	Persons with Disability
SBA	Skilled Birth Attendant
SDGs	Sustainable Development Goals
SMAM	Singulate Mean Age at Marriage
TFR	Total Fertility Rate
U5MR	Under Five Mortality Rate
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNRCO	United Nations Resident Coordinator
WG_SS	Washington Group on Disability Short Set of questions
WHO	World Health Organization



This Atlas represents an invaluable resource for those in charge of devising development initiatives at both the national and the county government levels. The indicators provide fact-based insights for both levels of government. County governments, in particular, will find the Atlas highly useful as a planning and policy tool, as they strive to fulfil their critical functions and steer development processes at devolved levels

Foreword

Kenya's Population Atlas is an important report that provides geo spatial information on socio-economic and demographic indicators. Other than the first five basic reports, this Atlas is one of the 17 Analytical reports developed from the 2019 Kenya Population and Housing Census dataset. It was developed at a crucial time when the implementation of the fourth Medium Term Plan (2023-2027) and the Bottom-Up Economic Transformation Agenda (BETA) were being rolled out. The implementation of these national development frameworks will benefit greatly from the depiction and deep analysis of socio-economic and demographic indicators in this Atlas. This Atlas also provides information on the country's efforts to attain the Sustainable Development Goals (SDGs).

Information presented in this Atlas includes population distribution and density; fertility; mortality and migration; urbanization and housing; spatial concentration of informal settlements; housing quality; mode of human waste disposal; sources of drinking water and crowded dwellings; usage of ICT related assets; schooling population; out of school dropout population; school dropout rates at all levels and adolescents and youth Not in Education, Employment and Training (NEET). Labor force indicators such as dependency ratios (Total, old age and child), working population and unemployment rate are also presented in this Atlas. Other indicators presented include population with disability and albinism as well as distribution of older persons, orphans and homeless population.

This Atlas represents an invaluable resource for those in charge of devising development initiatives at both the national and the county government levels. The indicators provide fact-based insights for both levels of government. County governments, in particular, will find the Atlas highly useful as a planning and policy tool, as they strive to fulfil their critical functions and steer development processes at devolved levels. It is a good source of general information for the representatives of the commercial and non-commercial private sector, as well as for the broader public, who can utilize it as a valuable source of evidence to support specific development debates and decisions.

It is my hope that this Atlas will be a great resource for policy makers, programmers, public and private sector, researchers, development partners, civil society organizations and the general public in tracking, monitoring and evaluating the country's development progress.

DR. DANIEL MWIRIGI M'AMANJA
CHAIRMAN, BOARD OF DIRECTORS,
KENYA NATIONAL BUREAU OF STATISTICS



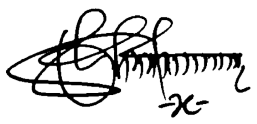
The 2019 KPHC implementation process was accomplished through a concerted effort of various government Ministries, Departments and Agencies, local and international organizations together with individuals who assisted during preparation, collection, compilation, processing, analysis and publication of the results. Kenya National Bureau of Statistics (KNBS), on behalf of the Government of Kenya, takes this opportunity to sincerely thank all those who participated in the preparation of this report

Acknowledgement

The 2019 Kenya Population and Housing Census (KPHC) was implemented under the provisions of the Constitution of Kenya (2010) and the Statistics Act (2006). The Census was the sixth to be conducted in Kenya since independence and the first that was fully digitized, where the latest technology was embraced. Apart from the first five basic reports, this monograph is among the set of 17 such Census Analytical reports, that address various topical areas regarding the demographic, social, and economic profiles of the Kenyan population.

The 2019 KPHC implementation process was accomplished through a concerted effort of various government Ministries, Departments and Agencies, local and international organizations together with individuals who assisted during preparation, collection, compilation, processing, analysis and publication of the results. Kenya National Bureau of Statistics (KNBS), on behalf of the Government of Kenya, takes this opportunity to sincerely thank all those who participated in the preparation of this report.

The Bureau is indebted to all the organs of government, the private sector, and the general public for the overwhelming support and participation in the successfully implemented 2019 Census. Special gratitude goes to United Nations Population Fund (UNFPA); United Nations Entity for Gender Equality and the Empowerment of Women (UN Women); United Nations Children's Fund (UNICEF); United Nations Economic Commission for Africa (UNECA); World Health Organization (WHO); United Nations Development Programme (UNDP) under the coordination of the UN Resident Coordinators' Office (UNRCO); African Development Bank (AfDB); Statistics Sweden; Office of National Statistics, United Kingdom (ONS-UK) and Italian Agency for Development Cooperation (AICS) for their immense support. I also recognize the census personnel (coordinators, content and ICT supervisors, enumerators, village elders and security) for their respective roles in the overall success of the 2019 KPHC.



MACDONALD G. OBUDHO, PHD, EBS, MBS
DIRECTOR GENERAL
KENYA NATIONAL BUREAU OF STATISTICS