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GHANA 2021 POPULATION AND HOUSING CENSUS

GENERAL REPORT VOLUME 3K

HOUSING CHARACTERISTICS



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**THE COORDINATED PROGRAMME OF ECONOMIC AND
SOCIAL DEVELOPMENT POLICIES 2017-2024**
AN AGENDA FOR JOBS: CREATING PROSPERITY
AND EQUAL OPPORTUNITY FOR ALL



**TRANSFORMING OUR WORLD
THE 2030 AGENDA FOR SUSTAINABLE
DEVELOPMENT**

GHANA 2021 POPULATION AND HOUSING CENSUS

**GENERAL REPORT
VOLUME 3K**

**GHANA STATISTICAL SERVICE
FEBRUARY 2022**

ADMINISTRATIVE MAP OF GHANA



GHANA 2021 POPULATION AND HOUSING CENSUS PUBLICATIONS

Volume 1	Preliminary Report
Volume 2	Residential Proximity to Essential Service Facilities Report
Volume 3A	Population of Regions and Districts
Volume 3B	Age and Sex Profile
Volume 3C	Background Characteristics
Volume 3D	Literacy and Education
Volume 3E	Economic Activity
Volume 3F	Difficulty in Performing Activities
Volume 3G	Information and Communication Technology
Volume 3H	Fertility and Mortality
Volume 3K	Housing Characteristics
Volume 3M	Water and Sanitation
Volume 3N	Structures
Volume 4	Thematic Reports
Volume 5	Analytical Reports
Volume 6	Census Atlas

FOREWORD

The Ghana 2021 Population and Housing Census (PHC) was conducted to provide updated demographic, social and economic data for research, policy and planning to support national development activities and track the implementation of national, continental, and global development goals, such as the Coordinated Programme of Economic and Social Development Policies, 2017-2024: An Agenda for Jobs: Creating Prosperity and Equal Opportunity for All; Agenda 2063, The Africa We Want; and Transforming Our World: the 2030 Agenda for Sustainable Development.

Embedded in the aforementioned development goals is the need to provide an adequate standard of living for all persons as required by the Universal Declaration of Human Rights. One of the rights outlined as necessary for ensuring an acceptable standard of living is access to adequate housing. To that end, the 2021 PHC featured an expanded housing module that was used to collect detailed information on housing characteristics and indicators which, among other welfare indicators, will be used for the estimation of multidimensional poverty.

Volume 3K: Housing, Characteristics presents statistics on housing stock, types of dwelling (occupied and unoccupied) units, main construction materials, tenure and holding arrangement, ownership type, number of rooms, sources of lighting and cooking fuel, cooking and bathing spaces; disaggregated by region and type of locality (urban/rural).

This publication targets Government Ministries, Departments, and Agencies (MDAs), Metropolitan, Municipal and District Assemblies (MMDAs), Development Partners, Civil Society Organisations (CSOs), Private Sector, Research and Academia, and the public. Specifically, the report is expected to aid the Ministry of Works and Housing and the relevant private sector stakeholders in the implementation of the National Housing Policy (2015) which aims to provide an enabling framework for public-private partnerships to resolve the nation's housing challenges.

Adopting the inclusive approach to guide the implementation of both the National Urban Planning Policy (2011) and the Coordinated Programme of Economic and Social Development Policy requires disaggregated data by type of locality. This will make it possible to support the implementation of the goal of planned urban development with adequate housing and the objective of integrating rural housing provisioning into mainstream national housing policy. The information on housing characteristics and occupancy status makes it possible to go beyond access to housing to the issues of adequacy and security of housing arrangements.

Further, the detailed statistics on housing characteristics provides a better understanding of the different areas of deprivation. Additionally, key housing indicators in this report such as construction materials, cooking spaces and fuels have implications for the health and well-being of households. Thus, the report provides timely data for evidence-based policymaking and planning to improve living standards and increase access to adequate housing.

PROFESSOR SAMUEL KOBINA ANNIM

CHIEF CENSUS OFFICER AND GOVERNMENT STATISTICIAN

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We are indeed grateful to the Ministry of Finance, Ministry of Education, Ghana Education Service (GES), Ministry of Information, Information Services Department, Ministry of Local Government, Decentralisation and Rural Development, Local Government Service, and the various District Assemblies, National Identification Authority, Ministry of Defence, Ghana Armed Forces, Ministry of Interior, Ghana Police Service, Ghana Immigration Service, Ghana Civil Aviation Authority, Ghana Airports Company Limited, Ghana Fire Service, Ghana Prisons Service, Ministry of Health, Ghana Health Service, Ministry of Foreign Affairs and Regional Integration, National Commission for Civic Education (NCCE), Electoral Commission (EC), Office of Government Machinery, Ministry of Parliamentary Affairs, Parliament, Ministry of National Security, National Sports Authority, National Communication Authority, Ghana Highways Authority, Survey Department, Ministry of Sanitation and Water Resources, Ministry of Food and Agriculture, Births and Deaths Registry, Religious and Traditional Leaders, individuals and all other organisations that provided the needed support to enable GSS execute this essential national exercise.

We are also indebted to our partners and collaborators, notably, the United Nations Population Fund (UNFPA), World Bank, European Union (EU), International Organisation for Migration (IOM), United Nations Development Programme (UNDP), United Nations Economic Commission for Africa (UNECA), United Kingdom Office for National Statistics (ONS), Statistics Denmark, Geo-Referenced Infrastructure and Demographic Data for Development (GRID³), Jospong Group of Companies, IPMC Ghana, telecommunication companies, CalBank, Windy Lodge Beach Resort, and tertiary institutions for their technical, logistic and financial support, and publicity, education and advocacy campaigns that led to the effective and efficient management of the census processes.

The Statistical Service also appreciates the contributions of the general public, the media, all Census officials and field officers for ensuring a successful enumeration.

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ABBREVIATIONS AND ACRONYMS

CAPI	Computer-Assisted Personal Interview
CCT	Census Coordinating Team
CSOs	Civil Society Organisations
CSPro	Census and Survey Processing System
CTA	Chief Technical Advisor
DCICs	District Census Implementation Committees
DCOs	District Census Officers
DDQM	District Data Quality Monitor
DFSs	District Field Supervisors
DPs	Development Partners
DQMTs	Data Quality Management Teams
EAs	Enumeration Areas
EBRP	Enumerator Bureau Recruitment Portal
EC	Electoral Commission
EU	European Union
GCA	Ghana Census of Agriculture
GES	Ghana Education Service
GHS	Ghana Health Service
GoG	Government of Ghana
GRID ³	Geo-Referenced Infrastructure and Demographic Data for Development
GSS	Ghana Statistical Service
HQ	Headquarters
IOM	International Organisation for Migration
IT	Information Technology
MDAs	Ministries, Departments, and Agencies
MMDAs	Metropolitan, Municipal and District Assemblies
NCCE	National Commission for Civic Education
NDQMT	National Data Quality Management Team
NGOs	Non-Governmental Organisations
NIA	National Identification Authority
NPEAC	National Publicity, Education and Advocacy Committee
NTAC	National Technical Advisory Committee
ONS	United Kingdom Office for National Statistics
PEA	Publicity, Education and Advocacy
PES	Post-Enumeration Survey
PHC	Population and Housing Census
PPEs	Personal Protective Equipment
RCICs	Regional Census Implementation Committees
RDQMT	Regional Data Quality Management Team
RFs	Regional Field Supervisors
SA	Supervisory Area
SDGs	Sustainable Development Goals
UNDP	United Nations Development Programme

UNECA
UNFPA
WAEC
ZFCs

United Nations Economic Commission for Africa
United Nations Population Fund
West African Examinations Council
Zonal Field Coordinators

1. OVERVIEW OF 2021 POPULATION AND HOUSING CENSUS

1.1. Introduction

Population census is the complete enumeration of all persons in a country at a specified time. It involves the collection, compilation and dissemination of demographic, social and economic statistics relating to the population. The complementary housing census is the complete enumeration of all living quarters (both occupied and vacant) in a country at a specified time. It also involves collection, compilation, and dissemination of statistical data on living quarters and occupants. Ghana has been conducting censuses since 1891 but Population and Housing censuses since 2000. In total, twelve population censuses have been conducted in the country — six during the pre-independence era and the other six in the post-independence era. The 2021 PHC is the 12th census and the first fully digital census (E-Census) conducted in the country.

The 2021 PHC was a count of all persons present in Ghana on the Census Night (27th June, 2021), irrespective of their nationality. It also involved counting all living quarters in the country. The Census operations focused on strategic areas to ensure that everyone is counted, enumerated once, and at the right place. These were anchored on five main strategic pillars: deployment of ICT solutions to drive the entire census process; use of geo-spatial data; decentralised data flow, management and analysis; integrated and enhanced field operations; and enhanced use of census processes and outcomes, notably census data.

The Census was designed and implemented to provide reliable and accurate data for evidence-based decision making, to support the implementation and tracking of progress and achievement of national agenda (e.g., The Coordinated Programme of Economic and Social Development Policies (2017-2024), Ghana Centennial Development Plan, NDPC Agenda 2057); continental (e.g., Agenda 2063) and global development agenda (e.g., the Sustainable Development Goals [SDGs]).

As a country, the Population and Housing Census provides information on who we are, how many we are, and where and how we are living. This information is essential for national development as the size, composition and characteristics of the population are useful for planning by all Ministries, Departments and Agencies (MDAs) and the private sector. The results will form the basis for the estimation and projection of needs in all sectors of the economy.

This report focuses on the regions and districts, which constitute the units of administration and planning in the country. It presents data on the population of administrative units, age and sex structure and the background characteristics of the population.

1.2. History of Census Taking in Ghana

The history of official census taking in Ghana dates back to 1891 when the first census was conducted by the colonial administration. The census recorded a total population

of 764,613. Since then, censuses have been held every 10 years in accordance with the United Nations recommendations. The expectation is that the decennial interval is an appropriate period to determine a change in a country's population structure, composition and socio-economic arrangements. However, the decennial interval was distorted in 1941, 1980, 1990 and 2020. The Second World War which occurred between 1939 and 1945 was the reason the census was not conducted in 1941. After the war, the census was conducted in 1948. In the late 1970s and early 1980s the country was hit with economic challenges and political instability that did not make it possible for a census to be conducted in 1980 but instead in 1984. Having taken a census in 1984, the next census could not have been held in 1990, as the time was too short to plan the Census, nor could the ten-year interval be maintained in 1994. More recently, due to the emergence of COVID-19, the Census that had been planned for 2020 had to be conducted in 2021 and a total population of 30,832,019 was recorded (Table 1.1).

TABLE 1.1: GHANA'S POPULATION IN CENSUS YEARS

Pre-independence		Post-independence	
Year	Count	Year	Count
1891	764,613	1960	6,726,815
1901	1,549,661	1970	8,559,313
1911	1,503,911	1984	12,296,081
1921	2,296,400	2000	18,912,079
1931	3,160,386	2010	24,658,823
1948	4,118,459	2021	30,832,019

1.3. Objectives of 2021 PHC

Generally, censuses provide data for comparing and projecting demographic, social and economic characteristics, as well as household and housing conditions at all levels of the country's administrative units and dimensions: national, regional, districts and localities.

The Ghana 2021 PHC had an overarching goal of generating updated demographic, social and economic data, housing characteristics and dwelling conditions to support national development planning activities. This was reinforced by eight specific objectives, which are to:

- a) Generate data on population and housing to determine, analyse and assess the population structure and the demographic, social, economic and housing characteristics of the population;
- b) Identify and analyse the availability, ownership and accessibility to ICT and ICT devices by the population, and how ICT is used by the different cohorts within the population;
- c) Collect and analyse the sanitation characteristics and conditions in households, localities, districts and regions in the country;
- d) Generate data on economic activities to determine the population in employment and multidimensional poverty;

- e) Identify the population that have difficulties in performing activities due to disability;
- f) Develop sampling frame on population and housing to serve as a basis for intercensal and other surveys;
- g) Track the implementation of national, continental and global goals including the Coordinated Programme of Economic and Social Development Policies, 2017-2024; An Agenda for Jobs: Creating Prosperity and Equal Opportunity for All; Agenda 2063: The Africa We Want; and Transforming Our World: The 2030 Agenda for Sustainable Development; and
- h) Generate and develop datasets as bases for detailed and specific researches that contribute to context-specific planning and decision making.

The intended outcomes of the 2021 PHC were to make available these datasets and information for four broad categories of users: the government, global development partners, private sector, and academics/analysts. The government is the primary and utmost user of the 2021 PHC data. The central government, policy-makers and local governments need the data to plan for the socio-economic development of the country in diverse areas including education, health, housing, and other social services for different groups of persons such as children, aged, young people, the vulnerable, marginalised as well as those with special needs. Beyond the government, results from the PHC will provide corporate Ghana, development partners and the private sector with the required data and information to facilitate innovative interventions, programmes and activities to contribute to the infrastructural and socio-economic development of the country. Furthermore, the data would serve as the base for present and future modelling of the country's development framework.

1.4. Legal Framework

The 2021 PHC, derived its legal authority from the Statistical Service Act, 2019 (Act 1003), which stipulates inter alia, that the Service shall conduct a census of population every ten years in the month of March¹. The Act, therefore, empowered the Government Statistician to conduct the 2021 PHC. All the census activities, namely collection, compilation and dissemination of demographic, social and economic statistics relating to the population derived their legal basis from Act 1003.

In pursuance of the dictates of the Statistical Service Act, 2019, all the field officers were educated about the responsibility of the public to provide information, and they in turn, to collect the information accordingly; as well as the relevance of adhering to the principles and dictates of the Statistical Service Act. The field officers were trained about how to execute their mandate before, during and after the 2021 PHC within the legal framework. One of the fundamental principles which informed the 2021 PHC operations and activities is the ethic of confidentiality. The knowledge that the disclosure without lawful authorisation of information obtained in the 2021 PHC is an offence liable for a fine

¹ The Census could not be organised in March 2020 because of the COVID-19 situation in the country.

or a term of imprisonment or both, as stipulated in the Statistical Service Act, ensured confidentiality at all levels. In keeping with the ethical principle, enumerators verbally informed all respondents prior to the data collection that the data being collected would only be used by the Ghana Statistical Service for statistical purposes as stipulated in Act 1003.

In addition, the field officers complied with the section of the Act that compelled them to handle 2021 PHC documents and logistics with utmost care. Largely, the intent was achieved through two processes. The first was that all field officers were educated during the training on all matters relating to confidentiality, and attention was drawn to Clause 55 of the Act, which stipulates that:

"Any person, who, without lawful authority, destroys, defaces or mutilates any schedule, form or other document containing particulars obtained in pursuance of the provisions of this Act shall be guilty of an offence and liable on summary conviction to a fine or to imprisonment for a term not exceeding twelve months or to both fine and imprisonment".

The second was that all the field officers swore the Oath of Secrecy in accordance with the Statistical Service Act, 2019. They swore to uphold secrecy in the fulfilment of their assigned duties and tasks according to law in the discharge of their duties in all matters relating to the Census.

The public was also educated via the various media outlets about their responsibility to provide accurate responses during the 2021 PHC in accordance with the Act. This notwithstanding, there were few instances where, as a last resort, GSS activated the District Census Implementation Committee (DCIC) and the Ghana Police Service to persuade some persons and households to comply with the law.

1.5. E-Census

The 2021 PHC was fully digital (E-Census) with all the processes based on IT solutions. The IT platforms that were adopted are: Computer Assisted Personal Interview (CAPI) and Batch Program for Data Entry and Cleaning; Census Management Systems to integrate the activities of all the Census implementation teams on a common platform; Census Coverage System which harnessed all the Geo-Data from Demarcation and the Census Listing Data to determine physical coverage of the Census; Census Dynamic Dashboard for monitoring of fieldwork; and Census Citizens Platform for citizen engagement. These are based on three-pronged objectives: to receive data in near real-time; to correct inconsistencies associated with the data; and to release census data on time. The E-Census is consistent with the recommendations from the United Nations which stipulate that all the 2020 round of population censuses should be digitalised. The approach also addressed some of the challenges that were posed by the COVID-19 pandemic.

The IT platform was also used for recruitment of officers, instrumentation, training, mapping, logistic management, enumeration in the census, transmission and management of data, analysis, post enumeration survey and payment of funds.

1.6. Census in COVID-19 Era

The outbreak of COVID-19 impacted the Census in diverse ways. It disrupted staff work schedules, finances, timing of recruitment, training and all related activities. This led to its postponement from March 2020 to June 2021. In response to the pandemic in general and the restrictions and associated disruption, GSS developed a Business Continuity Plan (BCP) to serve as the framework to guide the implementation of the Census. Key strategies that were put in place were with respect to staff management, resource re-mobilisation, transfer of funds, hybrid training models, adherence to COVID-19 protocols and vaccination. The BCP underscored and facilitated the implementation of the E-Census.

Staff work schedules were restructured to accommodate virtual interactions and work-from-home plans while maintaining a section to keep the offices running. Official vehicles were used to pick up some of the staff from home to work due to the partial lockdown that was imposed by the government. Moreover, activities such as meetings and consultations were done in virtual spaces.

Based on the BCP, revised financial, logistics and procurement strategies were presented to and approved by the National Census Steering Committee. Local and international partners and collaborators were further engaged to support in various ways including financial and logistic commitments. In addition, payments to suppliers and personnel contracted were done electronically.

Hybrid training models, comprising self-learning, virtual and face-to-face interactions were developed and employed at different phases of the training programme. These were adopted to train the national and regional trainers as well as field officers to ensure adherence to the social distancing protocol, and to limit travel. During the face-to-face interaction, the maximum number of participants was pegged at 40 to achieve social distancing in training rooms.

A COVID-19 prevention team was constituted to ensure that all the COVID-19 protocols were adhered to during training, meetings and the fieldwork. Running water, soap, tissue paper, hand sanitisers and face masks were provided and social distancing was observed. In addition, the Ghana Health Service was engaged to vaccinate all staff of the GSS and field officers.

1.7. Census Organisational Structure

The Chief Census Officer who is also the Government Statistician had the overall responsibility for coordinating all the Census activities. Strategic implementation structures were set up at the national, regional and district levels. At the apex of the census organisation structure was the National Steering Committee, chaired by the Minister of Finance, and was supported by the National Publicity, Education and Advocacy Committee (NPEAC), chaired by the Minister of Information; and the National Technical Advisory Committee (NTAC) with the Governing Board of GSS providing oversight for the entire census.

The Census operation was managed by the Census Coordinating Team (CCT) comprising the Deputy Government Statisticians, UNFPA Chief Technical Advisor (CTA) and three other Technical Advisors. The implementation was organised under seven workstreams, with the National Census Secretariat performing the administrative functions. The workstreams were Census Methodology; Logistics and Finance; IT and Data Processing; Publicity, Education and Advocacy; Monitoring and Evaluation; Census Mapping and Post-Enumeration Survey.

At the regional level, 16 Regional Census Implementation Committees (RCICs) and at the district level, 272² District Census Implementation Committees (DCICs), chaired by the Regional and District Coordinating Directors, respectively, coordinated the exercise. For effective coordination between the national and sub-national levels, the regions were zoned into six areas and coordinated by Zonal Field Coordinators (ZFCs).

1.8. Finance and Logistics

The main funding and logistics for the Census were provided by the Government of Ghana, and partly by the World Bank, development partners and the private sector. Funding and support came in various forms — cash, technical assistance, provision of logistics and infrastructure (offices, storage and training), and financial administration. These were mainly coordinated at the GSS Headquarters (HQ). However, the regional and district offices processed and validated payments at their respective levels. With respect to fund transfer and payment of enumerators, the Electronic Payment System (G-Money) was used. This facilitated the timely transfer of money to recipients (persons or accounts) with less costs (financial and time).

The logistics and finance workstream was constituted to ensure that the right products, and the needed quantities reached the right location safely and timely to facilitate effective and efficient training of census personnel, conduct of fieldwork, write reports and disseminate them. The workstream coordinated the distribution of census materials from GSS HQ to the regions and districts and also ensured that damaged materials were replaced expeditiously for seamless implementation of the Census.

1.9. Publicity, Education and Advocacy

The Publicity, Education and Advocacy (PEA) workstream engaged various stakeholders; primarily, ministries, departments and agencies (GES, NCCE, GHS, Information Service Department) at the various levels of administration and governance (i.e., including MMDAs) and the private sectors for public education on the 2021 PHC. Also, religious groups and traditional authorities at the community level were contacted and they played specific roles to enhance the publicity of the 2021 PHC. The media

² The Metropolitan areas were represented at the sub-metro level and this brought the total number of statistical districts to 272, as opposed to the 261 District Assemblies in the country.

(print, electronic and social media), on their part, played an important role in the publicity.

The 2021 PHC was publicised through diverse and myriad outlets to inform the public about the exercise, and their civic responsibility of allowing field officers to enter their communities and houses, and to provide the required information. The PEA workstream with its institutional partners and the media rolled out strategic programmes to enhance the communication messaging to the public regarding the 2021 PHC. Notable was the television programme that was developed to educate children about the 2021 PHC, with the expectation that they would share information with their parents and guardians; and discussions on local and international platforms to inform the local and global communities about the exercise.

PEA activities were conducted at all three phases of the exercise: during pre-enumeration, main enumeration and post-enumeration.

1.9.1. Pre-Enumeration

Two main PEA activities were conducted during the pre-enumeration stage. First, the PEA workstream led the development of key communication messages and instructional materials for information, education and communication. For instance, GSS developed a document on 100 uses of census data; a quarterly newsletter; information sheets for targeted groups; posters and flyers; census drama and advocacy videos. Secondly, public education through media outlets (print, electronic and social) were provided to create awareness, as well as to sensitise and educate the public about the importance of the 2021 PHC, and to encourage them to participate in the exercise.

1.9.2. Main Enumeration

The public education during the main enumeration covered three essential issues. First, it touched on how to identify an enumerator, and by extension, a census officer. Second, the education related to how to receive the field officer, and what households were expected to do whenever a census officer entered their premises. Third, the education and sensitisation programmes presented the general categories of questions that would be asked, and who could respond to these questions.

1.9.3. Post-Enumeration

The public education undertaken during the post-enumeration phase expressed commendations to the various segments of the public for contributing to the success of the 2021 PHC. In addition, the public was sensitised about the schedule for the release of the results, the impending Post-Enumeration Survey (PES), and the rationale for the exercise. The post-enumeration publicity on the PES appealed to the public to provide similar reception to the enumerators as they did during the main enumeration.

1.9.4. Special Events

GSS put up a series of special events to sensitise, educate and create awareness about the PHC. These included a 100-Day Countdown to the Census Night which was launched by Alhaji Dr. Mahamudu Bawumia, Vice President of Ghana; and the 30-Day Countdown to the Census Night launched by Nana Addo Dankwa Akufo-Addo, President of Ghana, and subsequently launched concurrently in all the districts by District Chief Executives. Census Night was set for mid-night of 27th June 2021 as a statistical reference point for the Census. The night signified an imaginary snapshot of the status of the population in the country at that point in time. To ensure that people remembered the night, activities were organised and celebrated concurrently at the national, regional, and all the 272 Statistical Districts in the country.

1.10. Instruments and Procedures

GSS developed two categories of instruments for the 2021 PHC: the listing form and the enumeration instruments. The listing form was only one, while the enumeration instruments comprised six questionnaires, designated as PHC 1A, PHC 1B, PHC 1C, PHC 1D, PHC 1E and PHC 1F. The PHC 1A was the most comprehensive with the others being its subsets.

1.10.1. Listing Form

The listing form was developed to collect data on type of structures, level of completion, whether occupied or vacant and use(s) of the structures. There were also modules used to collect information about the availability, number and types of toilet facilities in the structures. It was also used to capture the number of households in a structure, number of persons in households and the sex of the persons residing in the households if occupied. Finally, the listing form was used to capture data on non-household populations such as the population in institutions, floating population and sex of the non-household populations. The form was administered two weeks prior to Census Night.

1.10.2. PHC 1A

The PHC 1A questionnaire was used to collect data from all households in the country. Primarily, it was used to capture household members and visitors who spent the Census Night in the dwelling of the household, and their relationship with the head of the household. It was also used to collect data on homeless households. Members of the households who were absent were enumerated at the place where they had spent the Census Night. The questionnaire was also used to collect the following household information: emigration; socio-demographic characteristics (sex, age, place of birth and enumeration, survival status of parents, literacy and education; economic activities; difficulty in performing activities; ownership and usage of information, technology and communication facilities; fertility; mortality; housing characteristics and conditions and sanitation.

1.10.3. PHC 1B

The PHC 1B questionnaire was used to collect data from persons in stable institutions comprising boarding houses, hostels and prisons who were present on Census Night. Other information that was captured with this instrument are socio-demographic characteristics, literacy and education, economic activities, difficulty in performing activities; ownership and usage of information, technology and communication facilities; fertility; mortality; housing characteristics and conditions and sanitation.

1.10.4. PHC 1C

The PHC 1C questionnaire was used to collect data from persons in “unstable” institutions such as hospitals and prayer camps who were present at these places on Census Night. The instrument was used to capture only the socio-demographic characteristics of individuals.

1.10.5. PHC 1D

The PHC 1D questionnaire was used to collect data from the floating population. This constitutes persons who were found at airports, seaports, lorry stations and similar locations waiting for or embarking on long-distance travel, as well as outdoor sleepers on Census Night. The instrument captured the socio-demographic information of individuals.

1.10.6. PHC 1E

All persons who spent the Census Night at hotels, motels and guest houses were enumerated using the PHC 1E. The content of the questionnaire was similar to that of the PHC 1D.

1.10.7. PHC 1F

The PHC 1F questionnaire was administered to diplomats in the country.

1.11. IT Operations

The 2021 PHC, being an E-Census, its execution demanded the full deployment of IT software, devices and accessories at all stages of the process among which were: census mapping, development of instruments, recruitment and training, asset management, data transmission and storage, data quality management, data processing and release, and monitoring. Tablets were procured and the Computer Assisted Personal Interview (CAPI) application was developed. Basic IT activities such as testing of the tablets and all the corresponding accessories were performed to ensure that the specifications conformed to the expected standards. In addition, three other tasks were conducted. These were tablet provisioning, asset retrieval and inventory.

1.11.1. Tablets Provisioning

The provisioning of all the tablets for the 2021 PHC involved the uploading of all required content materials for the Census onto the tablets. The contents were the instruments and other related documents such as the Field Officer's Manual, Supervisory Area (SA) and Enumeration Area (EA) maps, reference materials, etc. The team adopted four steps to provision the tablets. The first step was to prepare the tablets. This involved the acquisition of tablets and taking inventory of all tablets acquired. The second step was to pre-provision the tablets. This involved the basic configuration (e.g., resetting of dates, time, etc.) of the tablets, matching each tablet with the specification required and validating their functionality. The third step was the provisioning of the tablets. The final step was the post-provisioning. This involved labelling, preparing and distributing the tablets to specific regions and districts.

1.11.2. Assets Retrieval

After enumeration was completed, all the assets, particularly, the tablets and accessories were retrieved from the field officers at the district and regional levels. Checks were conducted to ensure that all the tablets, with the specific labels that were distributed are retrieved.

1.11.3. Stock-taking and Reconciliation

The inventory of the assets that were retrieved was conducted at the Secretariat of GSS. A series of activities were conducted: the team checked the functionality of each of the tablets; backed up all data to secure the data on an external storage device and local server; stored the tablets according to the regions and districts based on the distribution plan; reset the tablets to original status; and developed an inventory report.

1.12. Census Mapping

The 2021 PHC utilised both analogue and interactive maps to determine, identify, locate and relate with supervisory area (SA) and enumeration area (EA) localities, geographical boundaries and other notable landmarks. The production of the various maps entailed the following: preparation; recruitment and training; deployment of teams; development of maps; monitoring; re-demarcation; and administrative activities and finalisation.

1.12.1. Preparation

The GIS workstream in charge of mapping assembled all the materials including digital datasets, GPS devices and other logistics that were needed for the exercise. Based on the outcome, the schedule and the personnel to be recruited were also developed and determined accordingly.

1.12.2. Recruitment and Training

About 130 personnel were recruited and trained to conduct the mapping exercise in the country for the 2021 PHC. The personnel were trained purposely to collect data that were used as the basis for the SA and EA mapping.

1.12.3. Deployment of Teams

After the training, the personnel were deployed to the field in teams to collect the data on coordinates and visible features. In all, 50 teams were deployed with each team comprising two or three field officers. A team was assigned to one district at a time. Two main objectives were achieved. Firstly, the existing maps that were used in the 2010 PHC were updated to reflect the changes that had occurred between then and at the time of the exercise. For instance, in the 2010 PHC, there were 120 districts as opposed to 261 districts during the 2021 PHC. Secondly, further segmentations were done in order to arrive at desired EAs for the development of appropriate maps for the 2021 PHC.

1.12.4. Production of Maps

Based on the data collected from the fieldwork, analogue and interactive maps were developed. While the analogue maps provided all the details such as geographical features and landmarks in each district, the interactive maps enabled the field officers to navigate through the boundaries in their assigned EAs, SAs and districts.

1.12.5. Monitoring

A monitoring team was constituted to visit all the districts where GPS coordinate data, other features and landmarks were taken by the field officers. This was done for the purpose of quality assurance. The monitoring team therefore took and downloaded all the GPS coordinates to the GSS Secretariat, and the data were used to validate the ones collected earlier.

1.12.6. Re-Demarcation

During the mapping fieldwork, it was observed that there had been changes in the districts due to rapid structural development, population density, etc., since the 2010 PHC. As such, some of the EAs and SAs within districts were re-demarcated to make the 2021 PHC exercise manageable. In total, 51,913 EAs and 11,199 SAs were identified. The EAs formed the basis for determining the number of field officers required, their deployment as well as the procurement and distribution of logistics.

1.12.7. Administrative Activities

A series of interrelated administrative activities were conducted after the re-demarcation of areas and generation of maps. The first activity was editing. All the EAs that were demarcated in the 2010 PHC were accounted for in the 2021 PHC, and the re-demarcated EAs reviewed to obtain the current total number of EAs. The second activity was coding. Every EA was assigned its unique 10-digit code. The third activity was

the production of the digitised prototype maps. These maps were proofread at the fourth stage. Lastly, the maps were finalised for use by the field officers.

The interactive maps were based on Google features. The 2021 PHC also made use of existing satellite images that showed features and objects on the ground –Building Footprint. The images were captured about two years before the 2021 PHC and were used as a basis for identifying features and objects on the ground.

1.13. Recruitment and Training

Recruitment and training were core to the 2021 PHC. To ensure that the right calibre of field officers were recruited and trained for this important exercise, different approaches were adopted.

1.13.1. Approach to Recruitment

GSS engaged two main categories of officers to implement the 2021 PHC. The first comprised Curriculum Reviewers, National Monitors, Chief Trainers, Deputy Chief Trainers, Master Trainers, National Trainers and Regional Trainers. The second was the engagement of field officers, made up of Supervisors and Enumerators. The approaches employed to select the officers ranged from institutional selection, recommendations and online application processes.

1.13.2. Curriculum Reviewers

The curriculum reviewers, 12 in number, were staff in the various universities across the country, and some selected staff of GSS with expertise in instructional material development, training and assessment. They were purposively selected based on their expertise. They developed and revised all the training documents, including the Field Officer's Manual and the Trainer's Guide; complemented the training of all the field officers by assisting with sessions on presentation skills of the trainees, assessing and selecting them for the 2021 PHC.

1.13.3. Chief Trainers and Deputy Chief Trainers

The Chief Trainers and Deputy Chief Trainers were staff of GSS and MDAs with rich experience in censuses, surveys, and fieldwork. They were purposively selected and trained to train the master trainers. The Chief Trainers and deputies were responsible for the development of the Census instruments and the training of all groups of personnel. Four Chief Trainers and eight Deputy Chief Trainers were engaged for the exercise.

1.13.4. Master Trainers

The Master Trainers comprised persons with postgraduate degrees and considerable experience in teaching and research. To assemble such persons, GSS wrote letters to the various universities to nominate persons to be considered for recruitment and training. A total of 108 Master Trainers were recruited and trained. They were subsequently engaged to train the national trainers.

1.13.5. National Trainers

National trainers were also selected through recommendations from the universities in the country. A request was made by GSS to the universities, particularly, departments with social sciences orientation, to nominate officers to be recruited and trained. In all, 1,896 were recruited and trained and 915 were engaged to train the regional trainers.

1.13.6. Regional Trainers

The regional trainers were made up of persons who had obtained Masters or Bachelor's degrees and had experience in teaching or training. The regional trainers applied through the Enumerator Bureau Recruitment Portal (EBRP), an online portal that was developed by GSS. In all, 8,777 persons were recruited and trained and 5,688 were engaged to train the enumerators at the district level.

1.13.7. Enumerators and Supervisors

The enumerators constituted the last line of the mainstream field officers. Their selection was online-based through the EBRP. However, in areas where the lack of internet connectivity precluded prospective applicants from applying through the Bureau, District Census Officers (DCOs) with the DCICs provided an offline platform which was later input into the EBRP. A total of 206,358 applications were submitted via the EBRP out of which 75,050 were recruited and trained. After the training, 70,352 (59,152 enumerators and 11,200 supervisors) were selected and engaged.

1.13.8. Other Recruitments

GSS also recruited, trained and appointed additional personnel who played supervisory and administrative roles in the statistical districts. They comprised six zonal field coordinators (ZFCs), 32 regional field supervisors (RFS), 499 district field supervisors (DFS) and 272 district census officers (DCOs). Some of the ZFCs and RFS were staff at GSS HQ and regional statisticians. The rest comprised staff and non-staff who applied through EBRP, were screened, selected and appointed.

Other streams of officers were recruited, based on their expertise, to support the 2021 PHC. These were data quality monitors, IT officers, field technical officers and the census administrative officers who constituted the data quality management teams (DQMTs) at the district, regional and national (HQ). Generally, these teams provided data management support to the supervisors and enumerators on the field.

1.13.9. National Data Quality Management Team

At HQ, a national data quality management team (NDQMT) comprising two top-level staff were charged with the responsibility of recruiting, training and liaising with the regional data quality management teams (RDQMTs) and district data quality management teams (DDQMTs).

1.13.10. RDQM and DDQM

The regional data quality monitors (RDQMs) and the district data quality monitors (DDQMs) were recruited through a two-staged online assessment. Potential monitors were expected to possess expertise in computer-based applications including Excel, STATA and CS PRO. In all, 37 RDQMs and 272 DDQMs were employed. Their task was to cross-check for inconsistencies with the aim of ensuring that data collected by the enumerators were of the desired quality. One data monitor was assigned to each statistical district office while at the regional level, five each were assigned to Ashanti, Eastern and Greater Accra regions; three to Central region; two each to Bono, Bono East, Northern, Upper East, Upper West, Volta and Western regions; and one each to Ahafo, North East, Oti, Savannah and Western North.

1.13.11. NIT, RIT and DIT

Other support streams were the information technology (IT) officers at the national (NIT), regional (RIT) and district (DIT) levels. The NIT officers developed the CAPI and resolved any errors which were observed in the application. A total of 34 RIT and 449 DIT officers were recruited and trained. These included one RIT officer assigned to each region and two DIT officers assigned to each district. The DIT officers addressed CAPI and tablet-related challenges at the district level. They referred unresolved challenges to the RIT. There were two DIT officers assigned to each district and one RIT officer assigned to each region.

1.14. Approach to Training

Three main modes of training were adopted at four levels. These were self-learning, virtual and face-to-face training modes. The first two modes were instituted in response to the restrictions that were introduced due to the emergence of the COVID-19 pandemic. The four levels were the training of master, national and regional trainers and finally supervisors and enumerators,

1.14.1. Self-learning

All the training materials such as the Field Officer's Manual, Trainer's Guide, presentation slides and other materials needed to train the applicants were uploaded onto the GSS website. As part of the training processes, applicants downloaded these materials and studied on their own. This was the first level of training that was used to train all the field officers. The chief trainers, master trainers, NDQM and NIT officers were only trained by the 'face-to-face' mode. Three weeks was used for the self-learning mode of training.

1.14.2. Virtual Training

The second stage after the self-learning was virtual training. GSS procured the Google Classroom and Zoom virtual platforms to train the applicants after the self-learning as the second level of training, and used it as the first level of selection of the national and regional trainers. A period of between nine and 15 days was used for this mode of training

and selection. Assessments were conducted at the end of the training and trainees whose results were satisfactory were selected to participate in face-to-face training.

1.14.3. Face-to-Face Training

There were two slots of the face-to-face training. The first was the training of chief trainers, master trainers, NDQM and NIT which took place before the emergence of COVID-19. The second was the final level of training and selection of all other officers, and this was done after the COVID had reduced in intensity. This stage lasted for 10 days and included assessment and final selection. Qualified persons were selected for the specific positions for which they applied.

1.15. Listing of Structures

The structure listing entailed the counting of all structures in the country whether occupied or vacant, and this was conducted within two weeks prior to the Census Night. The first week was used for listing of the structures while the second week was used for mop-up. The structure listing involved three main steps. These were canvassing, assigning serial numbers to structures (chalking) and collecting information on the structure and households (listing).

1.15.1. Canvassing

Canvassing involved both enumerators and supervisors walking through their respective EAs and SAs to familiarise themselves with the areas they were assigned to work in. The exercise had two objectives. The first was to identify and interact with significant persons in the area. The second was for them to move within and around the EAs and communities and identify their boundaries, landmarks indicated on their maps, and the location of structures. During the canvassing, enumerators also planned how to use the serpentine approach for the listing of structures.

1.15.2. Structure Numbering (Chalking)

In this second stage, unique numbers composed of two parts were assigned to every structure in an EA. The first part, the 'stem' — 2021PHC/xxx/ — identified the Census and the EA where the structure is located, and the second, a four-digit serial number assigned consecutively within the EA. This was done to identify every structure for listing and enumeration so as to ensure complete coverage of all structures as well as the persons who dwell in the occupied ones. The numbering, also known as chalking, was done in the serpentine order, and arrows used to indicate the direction to the next numbered structure. Enumerators wrote the serial numbers in conspicuous places which would be visible to other officers and household members, but would not be easily erased.

1.15.3. Listing

Listing of persons in occupied structures followed after the chalking. The exercise entailed the collection of basic information about a structure, its use and the occupants, based on the listing form.

1.16. Enumeration of Persons

The 2021 PHC collected data from different categories of groups of population in the country. All persons irrespective of their nationality were enumerated at the place where they spent the Census Night in the country. They were categorised into two: household and non-household/institutional populations. The household population comprised the persons in 'conventional' households as well as homeless households, and non-household population were categorised as stable and unstable institutional population (group quarters), floating population, persons who spent Census Night at hotels and guesthouses, and diplomats.

1.16.1. Enumeration of Persons in Households

The household population consisted of persons in conventional households and homeless persons. The categories of persons enumerated were usually members of and visitors to the household who spent the Census Night in the household, and workers who, by virtue of their work, were on duty on Census Night, such as security guards/watchmen, medical staff. The homeless population were those who slept on pavements and in make-shift structures. Due to the transient nature of their lives, those who were enumerated were given Certificate of Enumeration in order to avoid omissions and multiple counting.

1.16.2. Enumeration of Persons in Institutions

The institutional population [non-household], also known as group quarters, consisted of two broad categories: stable and unstable populations. The stable population included those in boarding schools and halls/hostels of residence at secondary and tertiary institutions, barracks, and religious communities, while the unstable population comprised persons who boarded at places such as prisons, correctional centres and health facilities. However, staff and their household members who resided in these institutions were enumerated as conventional household members.

Prior to the Census Night, field officers listed all locations of these categories of households and estimated their populations. The purpose was to plan for their enumeration to ensure that they were not omitted. The PHC 1B questionnaire and PHC 1C questionnaire were used to enumerate the stable and unstable populations, respectively. In order to avoid omission or multiple counting, persons who were enumerated were given a Certificate of Enumeration.

1.16.3. Enumeration of Floating Population

Persons identified as "floating" were enumerated using the PHC 1D, on Census Night. Prior to the Census Night, field officers engaged with organisations, institutions, offices and communities that regulate these spaces and planned the enumeration processes. To avoid omissions and multiple counting, all the floating population enumerated were issued with a Certificate of Enumeration. The floating population include those who on Census Night, slept at lorry parks, markets, filling stations, railway stations, in front of stores

and offices, on verandas, pavements, as well as those at seaports, airports, oil rigs, border posts and those who engaged in fishing and hunting and, therefore, could not spend the Census Night in their respective homes.

1.16.4. Enumeration of Persons in Hotels and Guest Houses

Persons who spent the Census Night in hotels and guest houses were enumerated with PHC 1E. Copies of the instrument were printed and deposited with the managers or receptionists of the hotels and guest houses to be filled by these occupants.

1.16.5. Enumeration of Diplomats

Diplomats (officials who represent their respective countries abroad or representatives of international organisations designated as such) were enumerated with PHC 1F. The instrument was printed and submitted to their offices through the Ministry of Foreign Affairs and Regional Integration.

1.17. Data Transmission and Storage

The transmission and storage of data was as important as their production. Dual approaches — horizontal and vertical — were developed for transmission and storage. During the fieldwork, every enumerator transmitted the data collected to their respective supervisors via Bluetooth daily (horizontal approach).

The vertical approach involved the transmission of data onto a GSS central server at the Secretariat. Enumerators, after transmitting the data to the supervisors via Bluetooth, also transmitted the data via the internet to the central server at the GSS Headquarters daily. Supervisors then in turn transmitted the data received from their enumerators via the internet to the central server at GSS Secretariat also on a daily basis. These approaches provided back-up data.

1.18. Data Quality Management

The use of CAPI and tablets was the first data quality control mechanism which allowed for data monitoring during the data collection exercise. To enhance the quality of data from the field, GSS instituted data quality management teams (DQMTs) at the national, regional and district levels to assess the quality of data in near real time.

The DDQMT monitored all the data errors, inconsistencies, missing data and duplicates, and drew the attention of the supervisors to any anomalies found, for further investigation and correction. The DDQMT also undertook spot checks and validation exercises to assure complete and quality data. In addition, there was always one DIT on the field to address IT concerns. The rover system was developed and utilised whereby a DIT met enumerators daily to address their concerns.

At the regional level, the RDQMT resolved all the data-related issues referred to it by the DDQMT. Similarly, at the national level, data-related issues that were escalated by the RDQMT were addressed by the NDQMT.

1.19. Quality Assurance, Monitoring and Evaluation

Quality assurance, monitoring and evaluation were integrated into every aspect of the 2021 PHC. The team for this workstream ensured that all the plans relating to the 2021 PHC were implemented, monitored and evaluated in order to achieve complete coverage and generate quality data. To ensure effective monitoring and evaluation each member of the team was assigned to two work streams as a substantive officer and a support officer to facilitate experience sharing and effective coordination. The team was guided by best practices from the previous PHCs, Ghana Census of Agriculture (GCA), Household-Based Sample Surveys and the Building Footprints from satellite imagery.

Throughout the census processes, all the work plans of the various work streams were reviewed to ensure that they also conform to the schedule. To facilitate information flow during the Census quality assurance and monitoring and valuation, a reporting system was instituted. Firstly, a weekly report was sent to the Census Coordinating Team (CCT) which was part of the weekly meetings of the Monitoring and Evaluation Team. Secondly, a monthly report was also submitted to the CCT. Lastly, quarterly assessment report was also developed and shared with the CCT.

During the preparatory stage, the quality assurance and monitoring and evaluating team sampled all the logistics and materials that were procured to assess the validity and their conformity to specifications. During field data collection, a Call Centre served to daily address concerns from the public to ensure complete coverage. In addition, a profiling framework was developed and used regularly to assess the risk levels of districts, SAs, EAs and localities. This also ensured that both the field officers and the logistics were safe and secured. It also facilitated logistical and security needs and helped in addressing them.

Furthermore, 112 monitors, comprising 95 national monitors and 17 international monitors were deployed to monitor and evaluate the activities of the field officers during the Census. A situation room was set up where data were collated and posted onto a dashboard, and constantly monitored and verified. When necessary, queries were generated and sent to the field for validation and correction.

Following the main enumeration, a Post Enumeration Survey (PES) was conducted to further evaluate the validity and reliability of the data collected during the Census. Similar to the Census, all aspects of the PES were monitored and evaluated for quality assurance purposes. National monitors were also deployed to the field for on-site monitoring.

1.20. Partnership and Collaboration

Census implementation requires partnerships. Therefore, the activities of the 2021 PHC were implemented in collaboration with both local and international partners and stakeholders. The partners and stakeholders supported in diverse ways. Notably, the local partners and stakeholders included the tertiary institutions across the country,

telecommunication companies (Telcos), Jospong Group of companies, Metropolitan/Municipal/District Assemblies (MMDAs), Ministries, Departments and Agencies (MDAs), Ghana Education Service (GES)/Ministry of Education, Ghana Health Service/Ministry of Health, Electoral Commission, religious bodies, schools and communities, security agencies and the media.

1.20.1. Local Partners and Collaborators

1.20.1.1. Tertiary institutions

The public universities across the country supported various stages of the implementation of 2021 PHC by permitting some of their academic staff to be engaged in the Census operations. The institutions also provided lecture rooms and accommodation spaces at subsidised rates for the training of census personnel.

1.20.1.2. Telecommunication companies

Three telecommunication companies (Telcos) – MTN, Vodafone and AirtelTigo – collaborated with GSS and provided an Access Point Name (APN) to enable access to internet services. They also supplied SIM cards and data to GSS at discounted cost. In addition, the three Telcos offered free SMS blasts to aid the publicity activities and MTN offered free call back ring tones

1.20.1.3. Jospong Group of Companies

The Jospong Group of Companies provided vehicles that transported logistics from the Headquarters of GSS to the statistical districts across the country. The Group, through Zoomlion, its waste management consortium, also fumigated all the training centres periodically and provided cleaning services at these centres. In addition, Zoomlion supplied personal protective equipment (PPEs) such as face masks and alcohol-based hand sanitizers to support the Census. The Group also assisted with printing of some of the training materials. These services and supplies were provided at no cost to GSS.

1.20.1.4. IPMC Ghana

IPMC Ghana supported the uploading of all the Census content materials to the 75,000 tablets. The support covered sharing of technical knowledge on how to upload the Census materials with minimal human involvement and the provision of servers with the aim of shortening the duration for the exercise without compromising accuracy.

1.20.1.5. Metropolitan/Municipal/District Assemblies

The MMDAs were key partners to the 2021 PHC. They constituted the District Census Implementation Committee which oversaw the recruitment of field officers and the implementation of the 2021 PHC. The MMDAs also created awareness, sensitised and educated the population in the various localities about the 2021 PHC with the use of mobile education vans and through the assembly members; and provided vehicles, and office and storage spaces for use in the regions and districts during the Census.

1.20.1.6. Ministries, Departments and Agencies

The MDAs played diverse collaborative roles to support the implementation of the 2021 PHC. Specifically, the Ministry of Information through the Information Service Departments at the various districts, the National Commission for Civic Education (NCCE) and other related ministries and departments partnered with GSS to provide publicity, education and advocacy for the Census.

1.20.1.7. Ghana Education Service

The Ghana Education Service (GES) supported the Census at two levels. Firstly, the GES revised the school calendar to accommodate the 2021 PHC training calendar. This was to allow for the training of Census personnel at the premises of selected basic and senior high schools across the country. Secondly, the GES through the schools provided the needed spaces, water, electricity and other logistics such as projectors and furniture for the training of the field officers at no cost to GSS.

1.20.1.8. Ghana Health Service

Through its Metropolitan/Municipal/District Directorates, the Ghana Health Service vaccinated the field officers against COVID-19 prior to the fieldwork.

1.20.1.9. Electoral Commission and West African Examination Council

As partners, the Electoral Commission (EC) and the West African Examination Council (WAEC) supported the Census with vehicles for transportation of materials, logistics and personnel. The EC also made available a number of office spaces at the district level for the 2021 PHC administrative work.

1.20.1.10. Religious bodies and traditional leaders

The churches and mosques in the country collaborated by using the pulpit and minbar respectively, for publicity, education and advocacy before and during the Census. The traditional leaders in all the communities also provided support by using existing local platforms and communication channels for the same purpose. In addition, they assisted the field officers to determine locality boundaries and to canvas difficult to reach communities.

1.20.1.11. Security agencies

The Police, Military and the Fire Service played various roles before, during and after the Census. The Police provided the needed security for the personnel, logistics and materials especially at difficult to reach communities. The Military supported with publicity and advocacy particularly within the security restricted zones, and also provided access to field officers to educate and enumerate persons in such communities. The Fire Service provided the use of the fire tenders for Census Night activities.

1.20.1.12. GCB Bank and Cal Bank

GCB Bank provided an electronic platform that was used for the payment of funds while Cal Bank provided financial assistance to support the printing of some of the training materials.

1.20.1.13. Windy Lodge Hotel

The Windy Lodge Hotel offered financial assistance for the printing of some of the training materials, particularly the Field Officer's Manual and the questionnaires.

1.20.1.14. The media

Every aspect of the 2021 PHC was made known to the general public via the print and electronic media (including social media). Several media channels partnered and collaborated with GSS to create awareness, inform and educate the public widely about the 2021 PHC activities before, during and after the field exercises. They also supported the dissemination of the reports.

1.20.2. International Partners and Collaborators

The Development Partners touted the formulation of a Census Donor's Forum. However, the COVID-19 protocols and restrictions militated against its implementation. Consequently, the following partners bilaterally supported the Census process in various ways:

1.20.2.1. UNFPA

UNFPA is the leading partner in the implementation of PHCs globally and has continued to play a key role in the conduct of Ghana 2021 PHC. Principally, UNFPA deployed a Chief Technical Advisor (CTA) to provide responsive technical assistance and oversight and ensure that every phase of the process is implemented in accordance with the United Nations Principles and Recommendations for the 2020 Round of the World PHCs programme as well as international best practices. UNFPA also provided additional support related to logistics for procurement of some of the tablets, staff capacity building, provision of GIS software and implementation of independent monitoring of the Census.

1.20.2.2. UNECA

UNECA provided technical assistance and staff capacity building in GIS applications, provisioning of the tablets and development and deployment of the enumeration tracking dashboard and Census Activity Tracker.

1.20.2.3. World Bank

The World Bank provided technical assistance and staff training on GIS applications and access to geospatial resources including satellite imagery partially used for the production of EA maps.

1.20.2.4. US Census Bureau

The US Census Bureau supported by providing the needed technical assistance and training on the CAPI development and deployment.

1.20.2.5. ONS-UK/UKAID

UKAID, through ONS, provided strategic support, including the formulation of the Census Business Continuity Plan (BCP) in response to the COVID-19 pandemic and review of various strategic documents. They also supported staff capacity building and compilation of the Preliminary and General Census reports.

1.20.2.6. IOM

IOM supported the production of thematic reports.

1.20.2.7. Statistics Denmark

Statistics Denmark trained staff to develop a statistical data bank where customised data could be generated and analysed.

1.20.2.8. Geo-referenced Infrastructure and Demographic Data for Development (GRID³)

GRID³ supported capacity development in GIS applications and provided technical assistance in the development of various tools for processing geospatial data and creation of hard-to-count (HTC) indices.

2. VOLUME 3K: BACKGROUND INFORMATION

The driving force behind the Sustainable Development Goals (SDGs) is the call for the adoption of programmes to ensure access to all basic services which help to promote human dignity and the attainment of human rights. SDG Goal 11, for instance, draws attention to the need to provide universal access to safe, inclusive, and accessible green and public spaces, particularly for women and children, older persons and persons with disabilities. At least three of the nine targets of Goal 11 focus on the need to enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management, including adequate, safe and affordable housing and basic services. In furtherance of the SDGs' framework, the Members of African Union for Housing Finance adopted a 5-Point Plan (2015) for African Governments to address the challenges facing access to affordable housing, including financing.

In Ghana, decent and affordable housing remains a major challenge in both urban and rural areas. Housing shortage in urban areas has led to some households using makeshift structures such as metal containers and kiosks as sleeping places or sleeping in the open, and for the rural areas, the challenge has been inadequately and poorly constructed structures. Governments have embarked on housing policies and programmes over the years. For instance, the Coordinated Programme of Economic and Social Development Policies (2017-2024) has a component which aims at promoting sustainable, spatially integrated, balanced, and orderly development of human settlements, and providing adequate, safe, secure, quality and affordable social and private housing.

In the 2021 Population and Housing Census, data were collected on structures, housing conditions and facilities within the structures and in the community. The data provide the basis for planning, monitoring, and evaluating housing conditions and needs of the population within the context of the Sustainable Development Goals. They also allow for the assessment of housing stock, determination of housing deficit and appraisal of the quality of housing conditions.

This report presents information on housing stock, types of dwelling (occupied and unoccupied) units, main construction materials, tenure and holding arrangement, ownership type, number of rooms, sources of lighting and cooking fuel, cooking and bathing spaces at the national and regional levels.

This report presents information on housing stock, occupied and vacant housing units, types of dwelling units, main construction materials, tenure and holding arrangement, ownership type, number of rooms, sources of lighting and cooking fuel, cooking and bathing spaces at the national and regional levels and by type of locality. It is based on responses obtained from households as defined under Section 1.10.2, and excludes homeless households.

The next sections deal with the definition of concepts, highlights of findings with charts and detailed results presented in tables.

3. DEFINITION OF CONCEPTS

3.1. Structure

Structure is defined as a separate and independent building or an enclosure. The 2021 PHC classified structures as completed or uncompleted, occupied or unoccupied, movable or fixed, and residential or non-residential.

3.2. Residential Structure

Residential structure refers to a structure used or intended to be used for dwelling, living or as a sleeping place by an individual, households or groups of people.

3.3. Non-residential Structure

It is a structure used for or intended to be used for commercial, industrial, institutional, public gatherings or other purposes and not occupied as a dwelling place.

3.4. Housing Unit

Housing unit refers to a structure used solely or partly for residential purpose and could be occupied or intended for habitation by one or more households.

3.5. Dwelling Unit

It refers to one or more rooms in a housing unit occupied by a household. The dwelling unit could be the entire structure or part of a structure, occupied or vacant.

3.6. Occupancy Status

This refers to a dwelling unit within a residential structure whether occupied or vacant. The dwelling unit is classified into occupied dwelling unit, secondary housing unit and vacant dwelling unit.

3.7. Secondary Housing Unit

It is a structure occupied by some members of a household in addition to the main structure in which the household dwells.

3.8. Owner-occupied

This refers to a dwelling unit owned by a member of the household currently living in it.

3.9. Roofing Material

This refers to the main or predominant material used for the covering of the dwelling unit.

3.10. Floor Material

Floor material refers to the main or predominant construction material used for the ground space of the dwelling unit or the living quarters.

3.11. Tenure/Holding Arrangement

This refers to the arrangement under which the household occupies the dwelling unit, namely Owner-occupied, renting, rent-free, perching, squatting or care-taking.

3.12. Ownership Type

Ownership type refers to the individual or legal entity with the right of possession of the dwelling unit being used by the household, namely, estate developer, family, relative not a household member, other private individual, private employer/agency, public/government, and others.

3.13. Rooms Occupied

This refers to the number of rooms a household uses, which constitute the dwelling unit, including living rooms, sleeping rooms, bedrooms, dining rooms, but excluding bathrooms, toilets and kitchens.

3.14. Sleeping Rooms

This refers to the number of rooms in the dwelling unit available to the household for sleeping.

3.15. Lighting

Lighting refers to the main and secondary sources of light used by the household in the dwelling unit.

3.16. Cooking Fuel

This refers to the main and secondary sources of fuel such as wood, LPG, electricity, charcoal, and animal waste predominantly used by the household for the preparation of meals.

3.17. Cooking Space (Kitchen)

This refers to a designated place where the household prepares meals or some other space set aside for cooking.

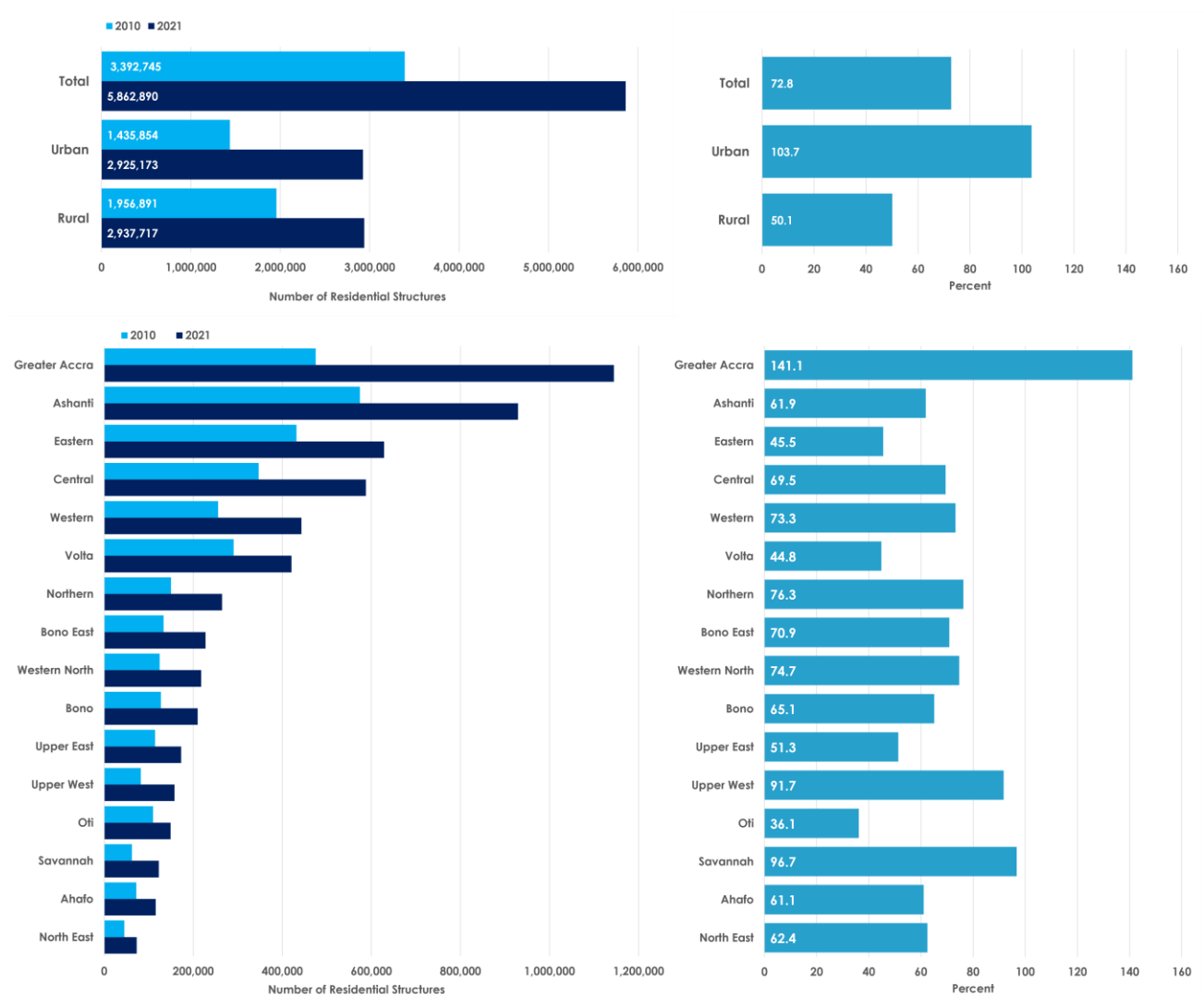
3.18. Wall Material

This refers to the main or predominant construction material such as brick, concrete, mud, and wood, used for the walls of the dwelling unit or the living quarters

4. HIGHLIGHTS OF RESULTS

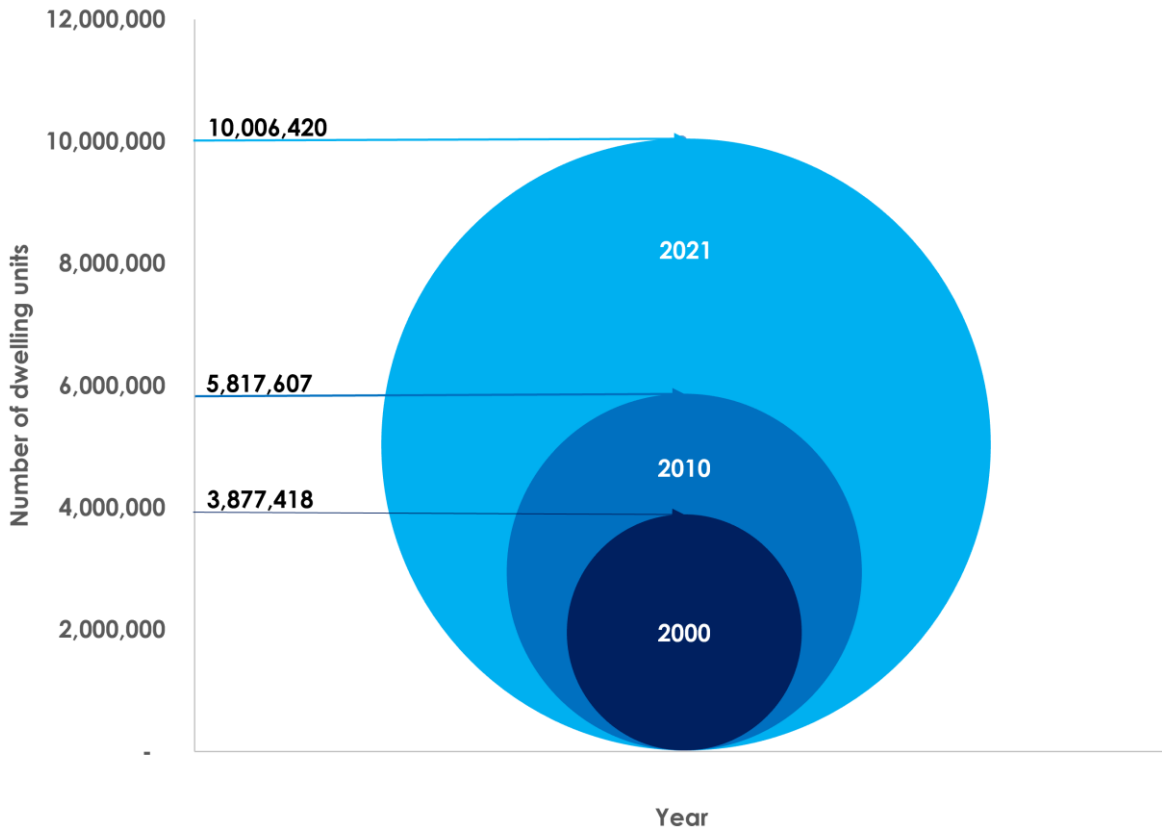
Residential structures increased in the last decade by 72.8 percent (from 3,392,745 in 2010 to 5,862,890 in 2021) with variations by type of locality and region.

FIGURE 4.1: NUMBER OF RESIDENTIAL STRUCTURES AND PERCENTAGE CHANGE BY TYPE OF LOCALITY AND REGION, 2010-2021



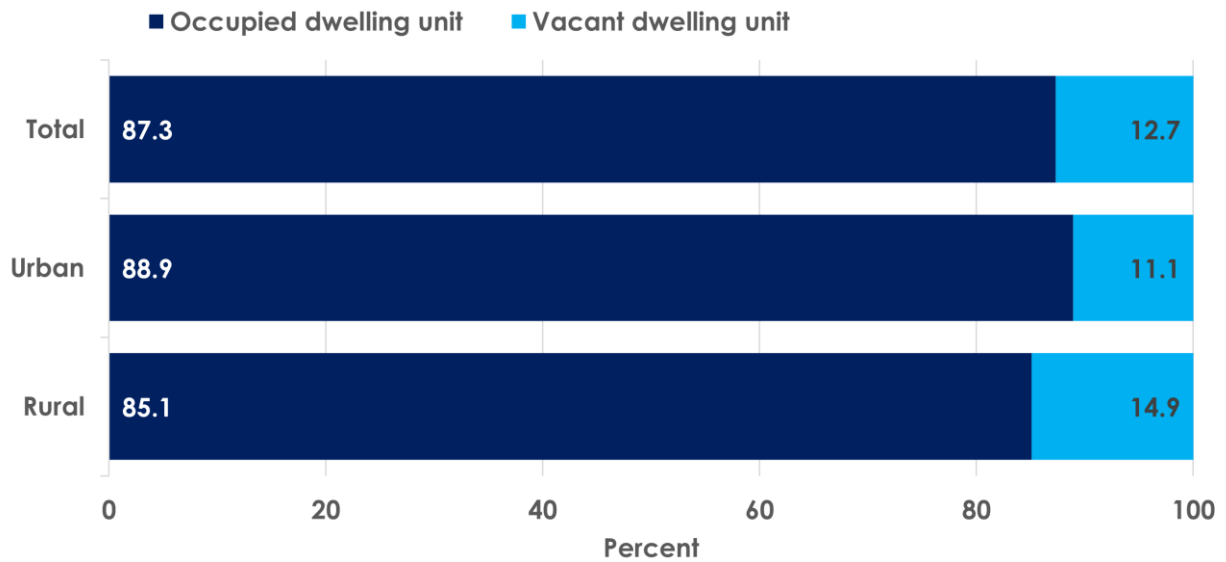
The number of dwelling units increased nearly three-fold (2.6) since the first Population and Housing Census in 2000.

FIGURE 4.2: NUMBER OF DWELLING UNITS, 2000-2021



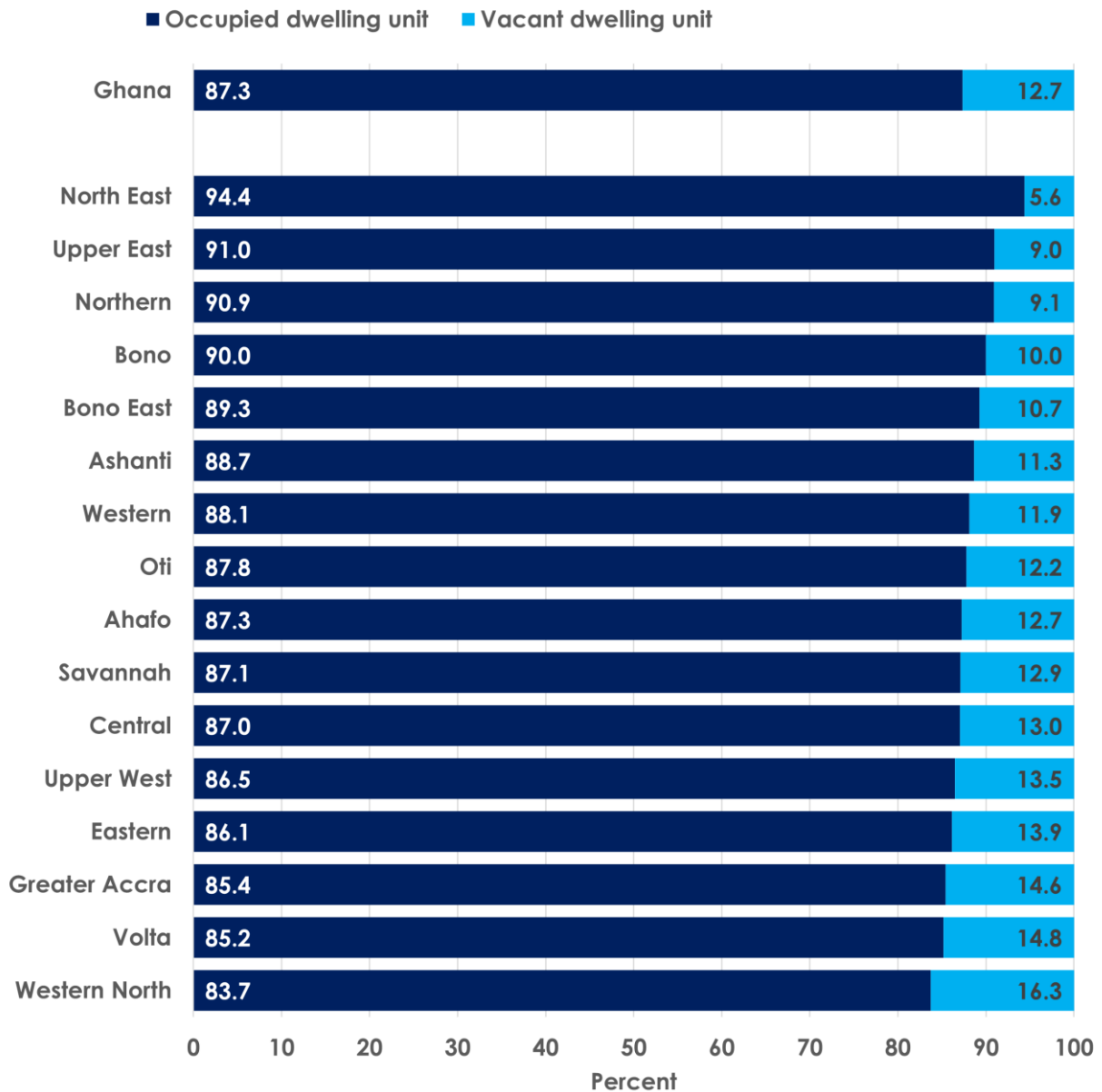
Vacant dwelling units constitute 12.7 percent of all dwelling units, and is more prevalent in rural (14.9%) than urban (11.1%) areas.

FIGURE 4.3: OCCUPANCY STATUS OF DWELLING UNITS BY TYPE OF LOCALITY



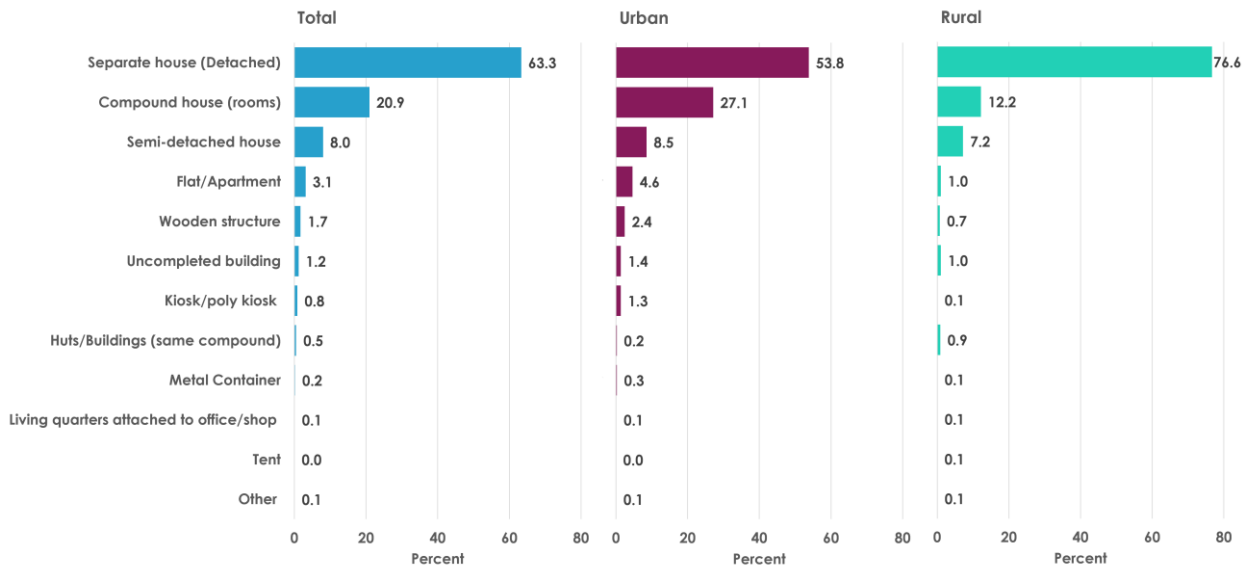
Proportion of vacant dwelling units is highest in Western North Region (16.3%), followed closely by Volta Region (14.8%) and Greater Accra Region (14.6%).

FIGURE 4.4: OCCUPANCY STATUS OF DWELLING UNITS BY REGION



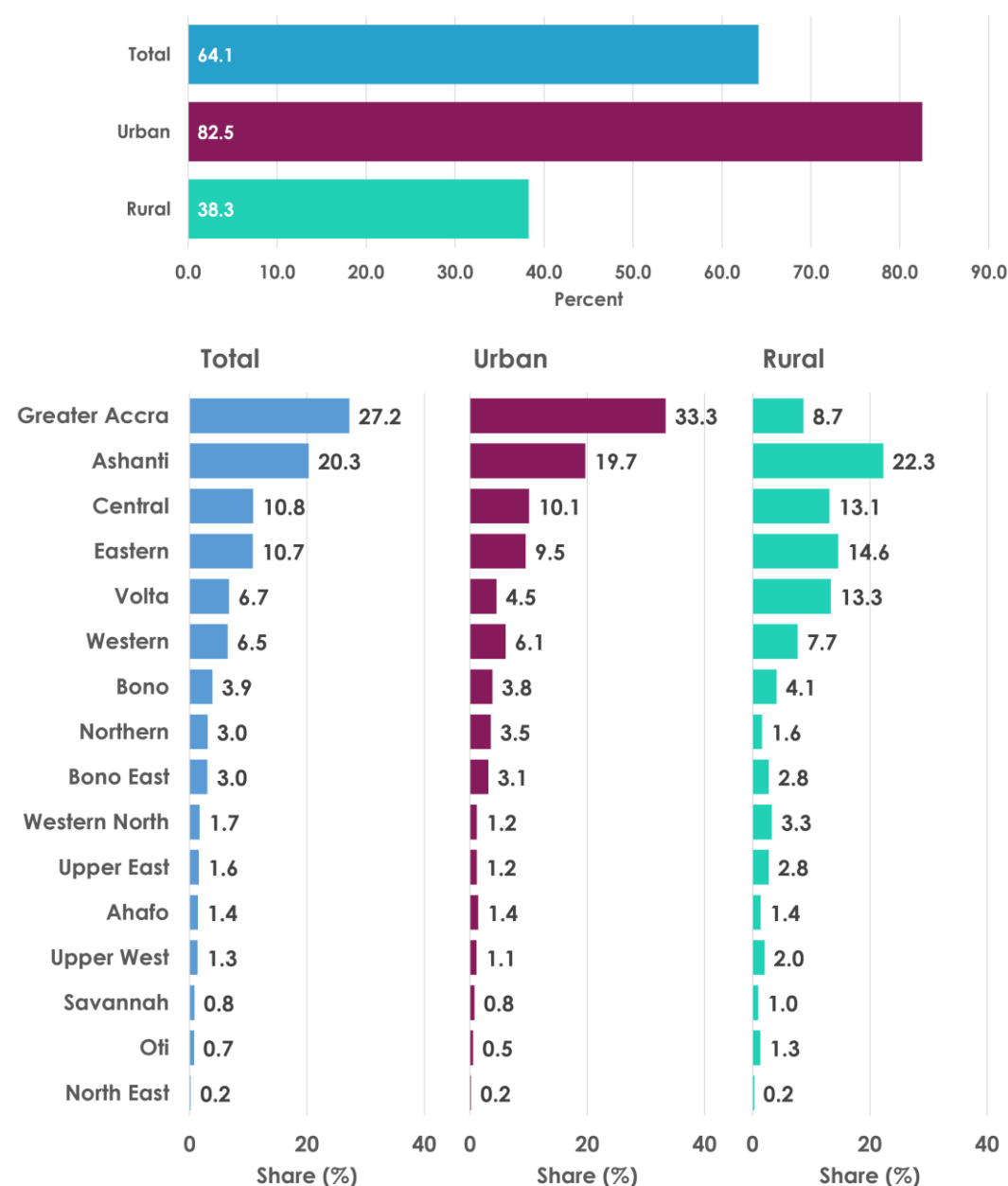
The most prevalent types of dwelling unit in the country are separate house (detached) (63.3%) and compound house (20.9%). Separate house (detached) is however more predominant in rural (76.6%) than urban (53.8%) areas.

FIGURE 4.5: TYPE OF DWELLING UNITS BY TYPE OF LOCALITY



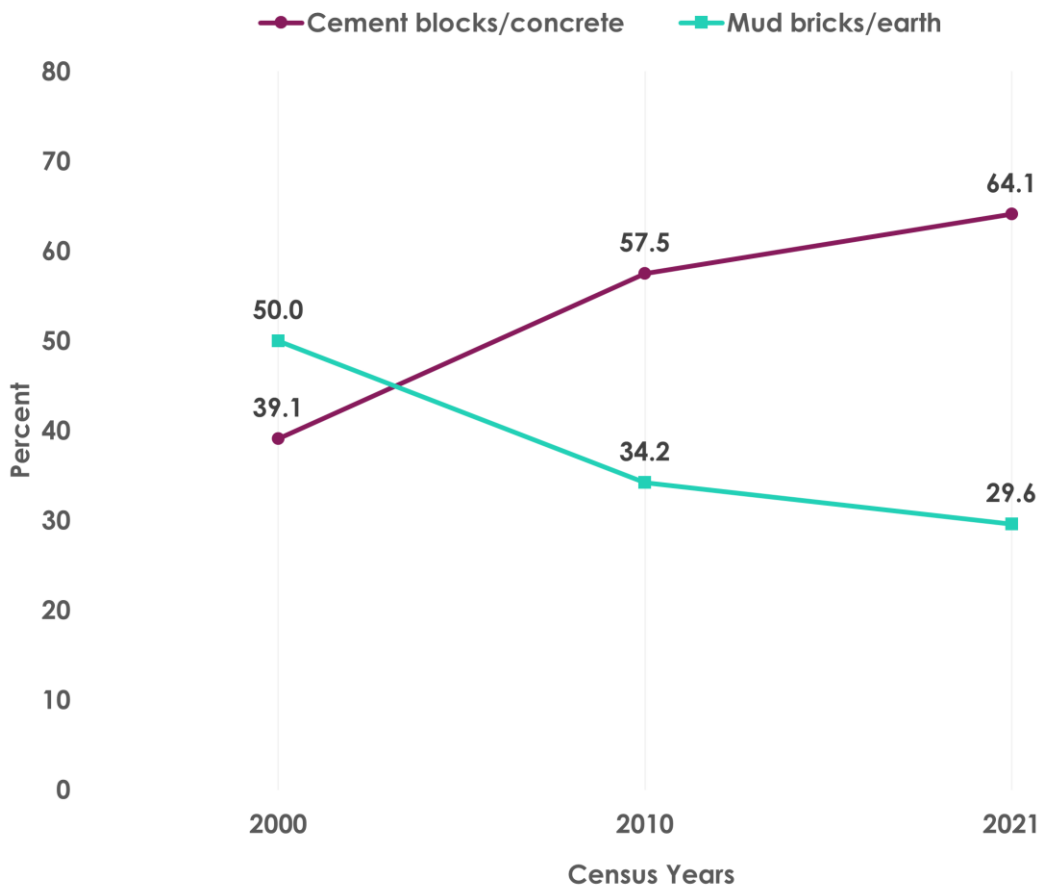
Nationally, 64.1 percent of dwelling units have cement blocks or concrete as the main construction material for outer walls, with Greater Accra and Ashanti regions accounting for close to half (47.5%) of these dwelling units, and an urban representation of 82.5 percent.

FIGURE 4.6: CEMENT BLOCKS/CONCRETE AS MAIN CONSTRUCTION MATERIAL FOR OUTER WALLS OF DWELLING UNITS BY TYPE OF LOCALITY AND REGION



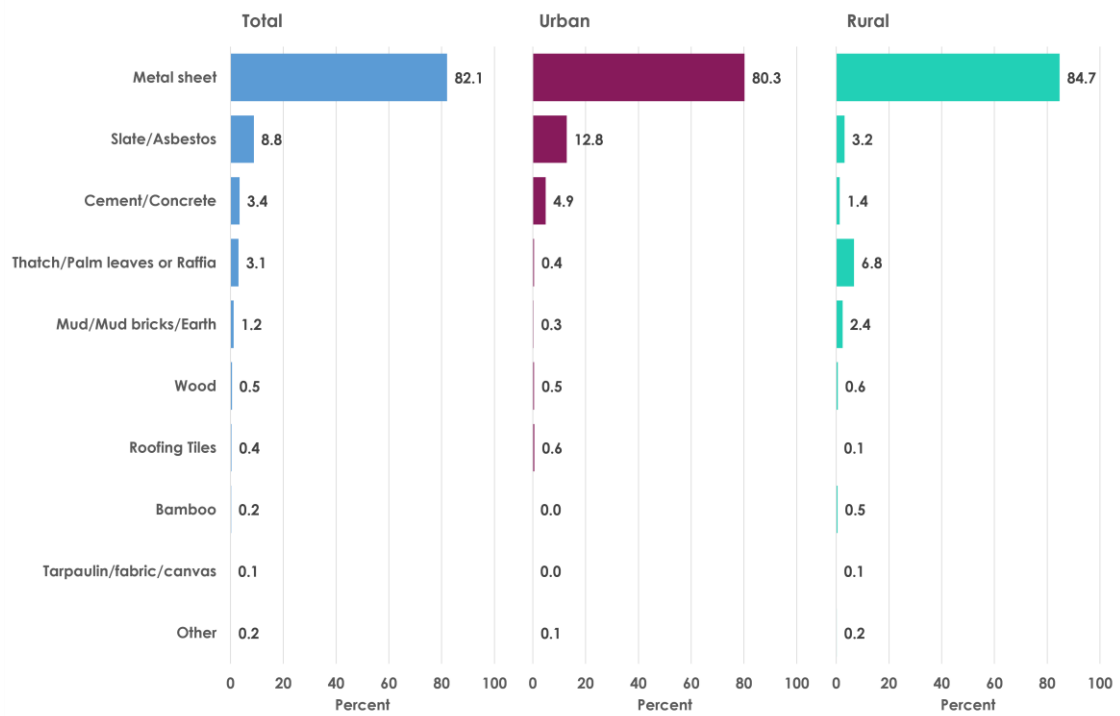
Use of cement blocks/concrete for outer wall of dwelling units increased steadily from 39.1 percent in 2000 to 57.5 percent in 2010 and 64.1 percent in 2021. In contrast, the use of mud bricks/earth declined over the same period (50.0% in 2000; 34.2% in 2010 and 29.6 in 2021).

FIGURE 4.7: PROPORTION OF DWELLING UNITS WITH CEMENT BLOCKS/CONCRETE AND MUD BRICKS/EARTH AS OUTER WALLS, 2000-2021



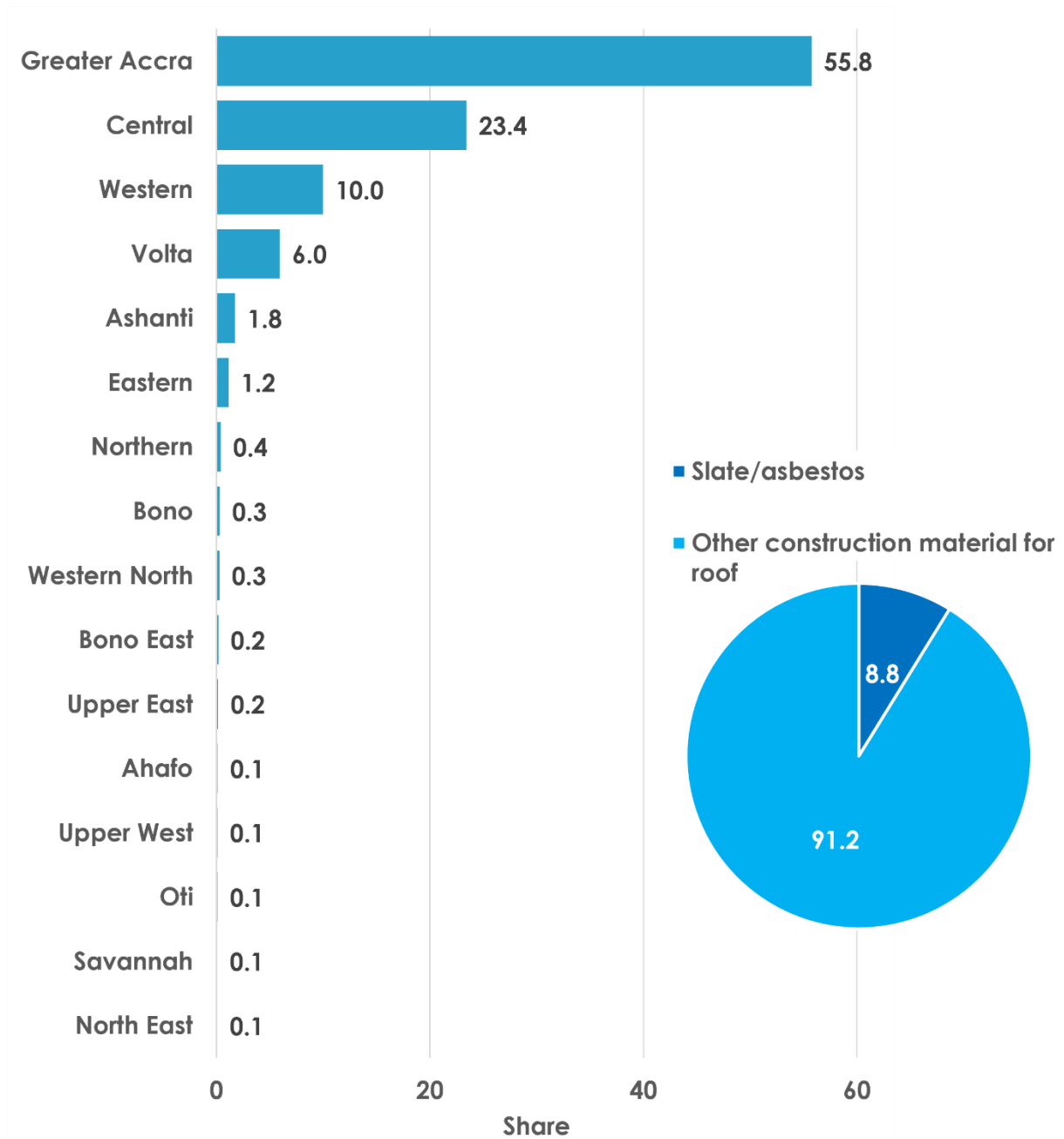
Eight out of every 10 dwelling units have metal sheet as main roofing material, and it is slightly higher in rural (84.7%) than in urban (80.3%) areas.

FIGURE 4.8: TYPE OF ROOFING MATERIAL FOR DWELLING UNITS BY TYPE OF LOCALITY



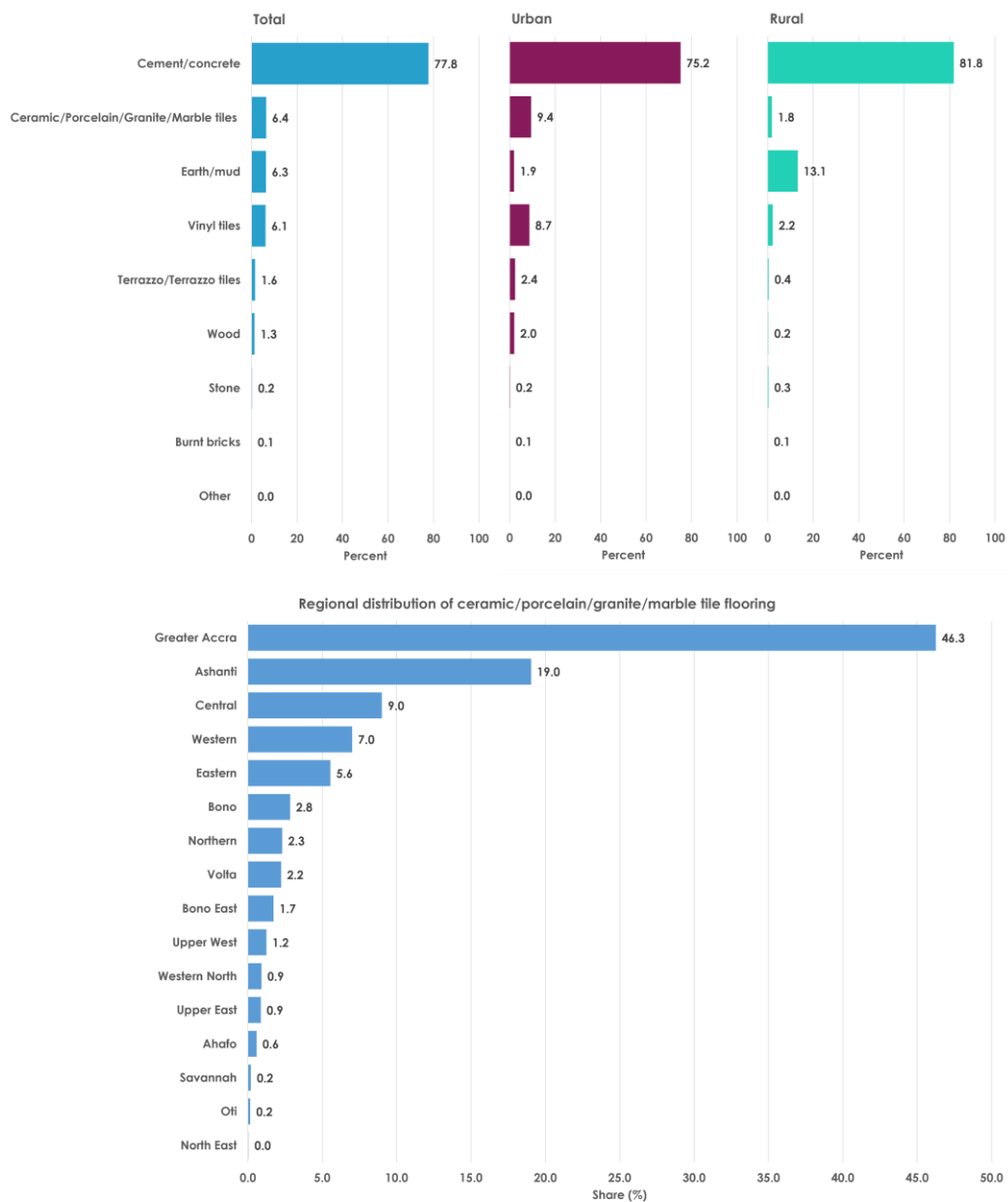
Of the 10,006,420 dwelling units, 883,258 (8.8%) have slate/asbestos roofing and 95.1 percent of them are in the four regions along the coast (Greater Accra, Central, Western and Volta).

FIGURE 4.9: PROPORTION OF DWELLING UNITS WITH SLATE/ASBESTOS BY REGION



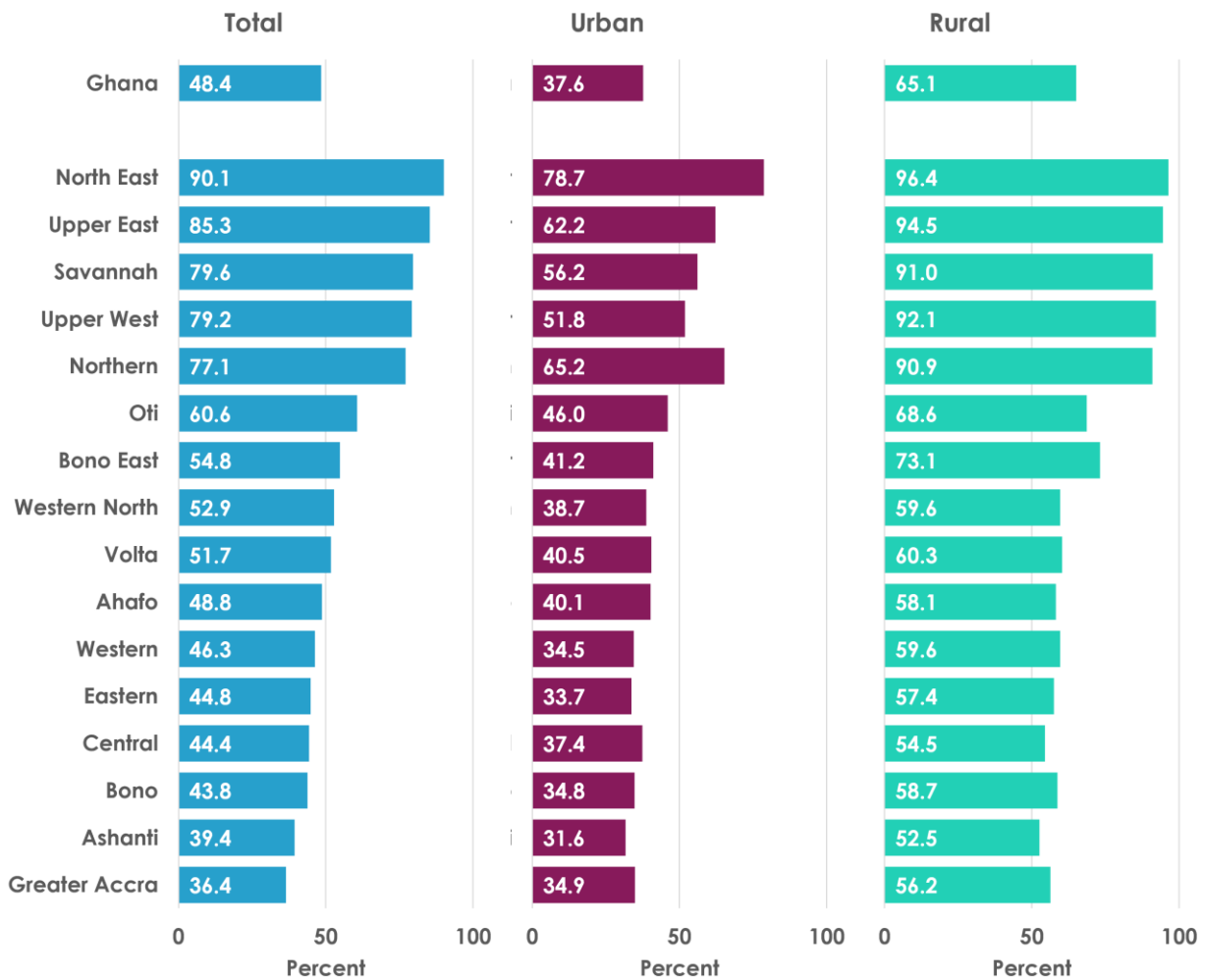
Cement or concrete is the dominant material for floors of dwelling units for both rural (81.8%) and urban (75.2%) areas. About six percent (6.4%) of floors of dwelling units are made up of ceramic/porcelain/granite/marble tiles and it is mainly used in Greater Accra (46.3%) and Ashanti (19.0%) regions, accounting for almost two-thirds.

FIGURE 4.10: MAIN CONSTRUCTION MATERIAL FOR FLOOR OF DWELLING UNITS BY TYPE OF LOCALITY



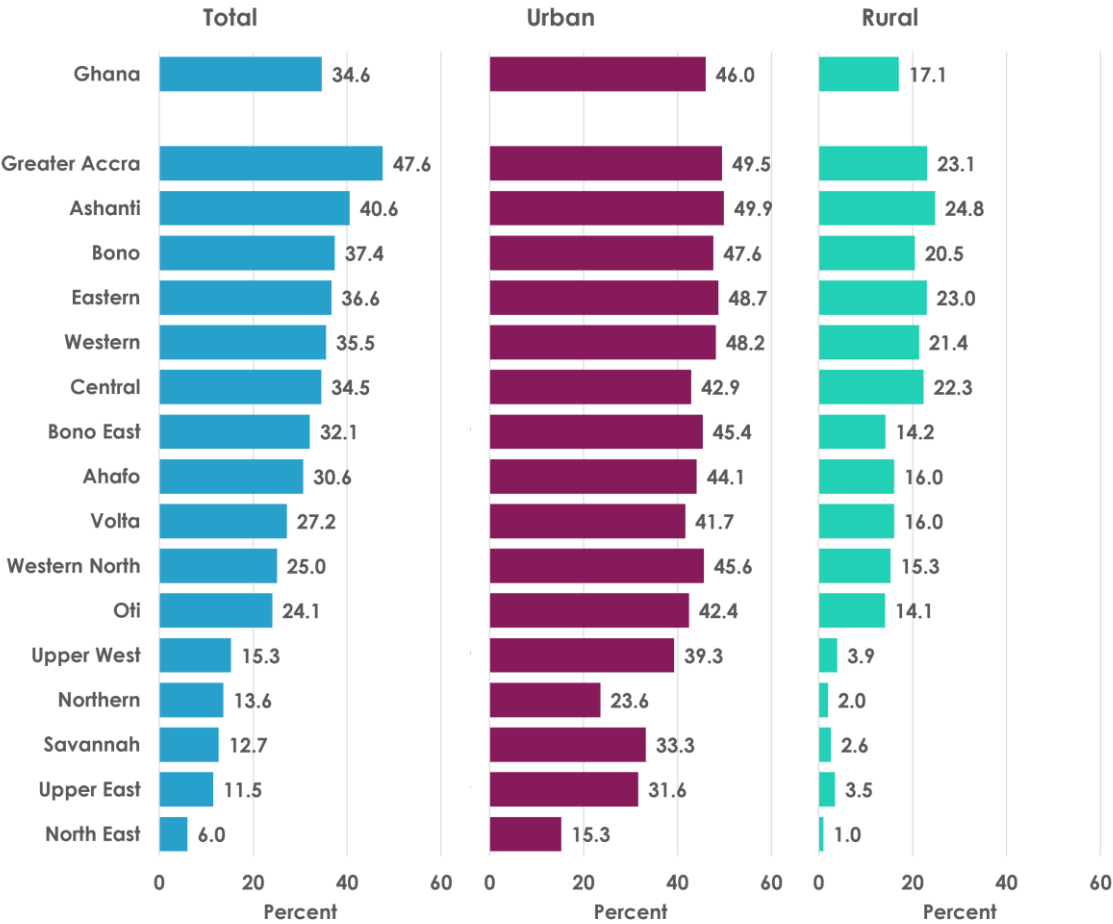
About half (48.4%) of households live in owner occupied dwelling units with North East Region (90.1%) recording the highest proportion and Greater Accra Region (36.4%) the lowest, and form the majority in rural areas.

FIGURE 4.11: OWNER-OCCUPIED DWELLING UNITS BY TYPE OF LOCALITY AND REGION



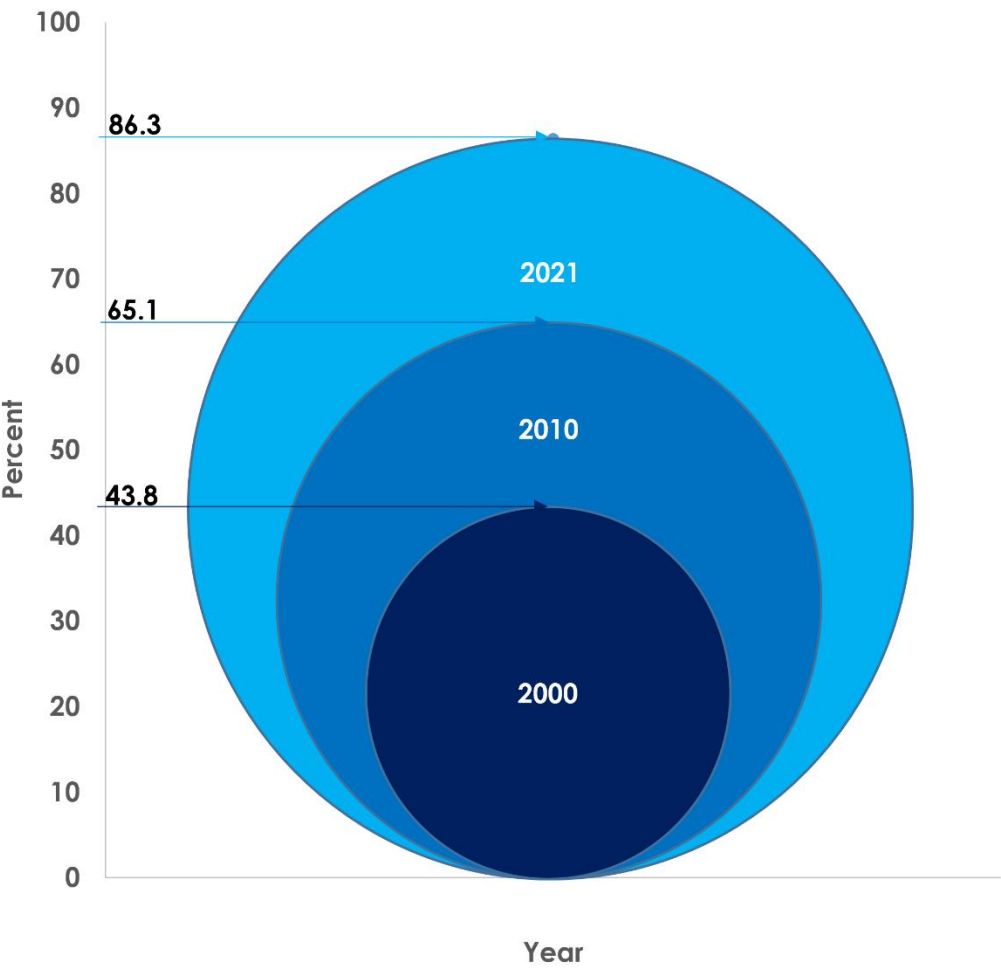
A third (34.6%) of households occupy rented dwelling units (urban, 46.0%; rural, 17.1%) with Greater Accra (47.6%) and Ashanti (40.6%) regions having the highest proportions.

FIGURE 4.12: RENTED DWELLING UNITS BY TYPE OF LOCALITY AND REGION



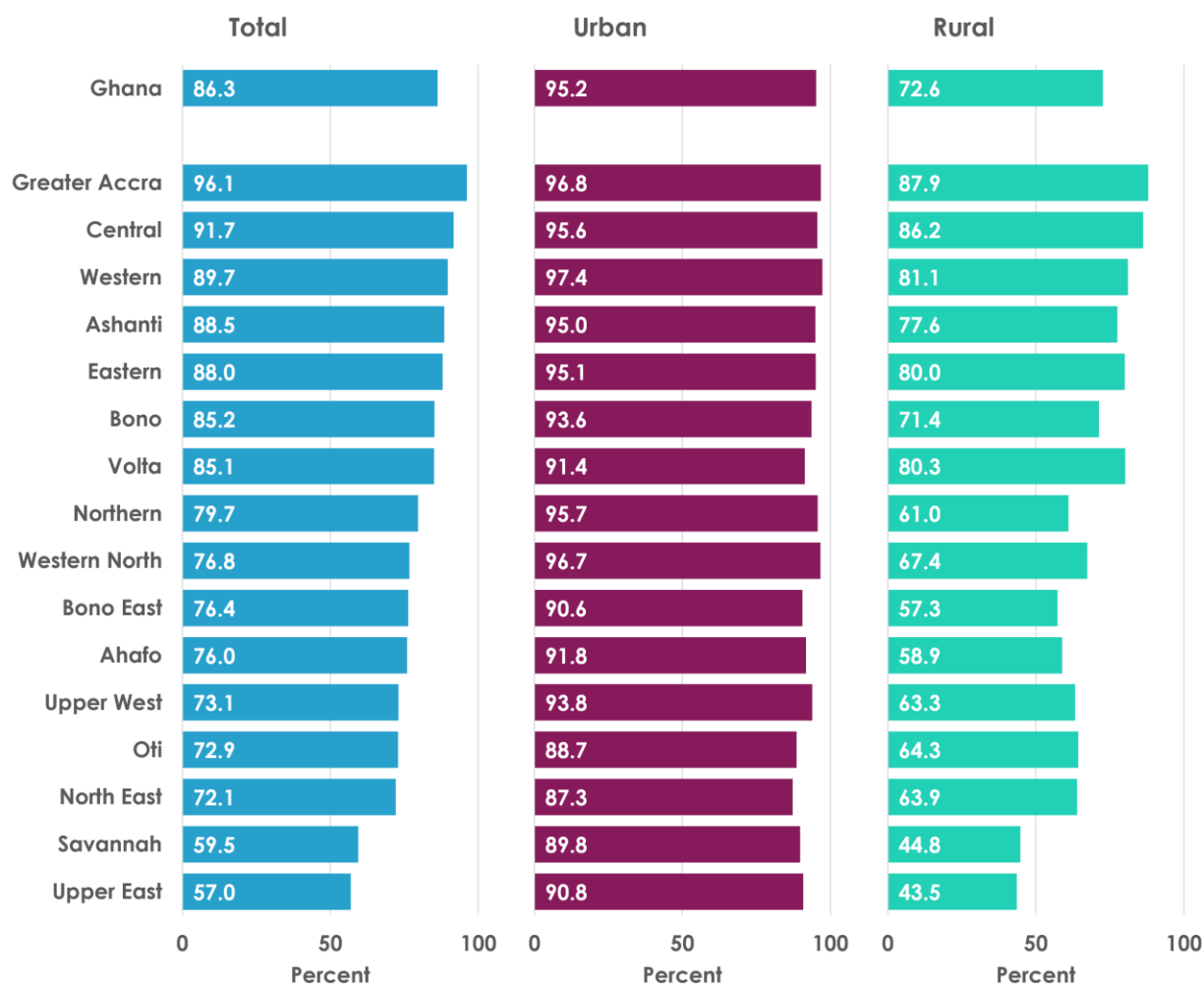
The proportion of households that use electricity as the main source of lighting doubled in the last two decades from 43.8 percent in 2000 to 86.3 percent in 2021.

FIGURE 4.13: ELECTRICITY AS MAIN SOURCE OF LIGHTING, 2000-2021



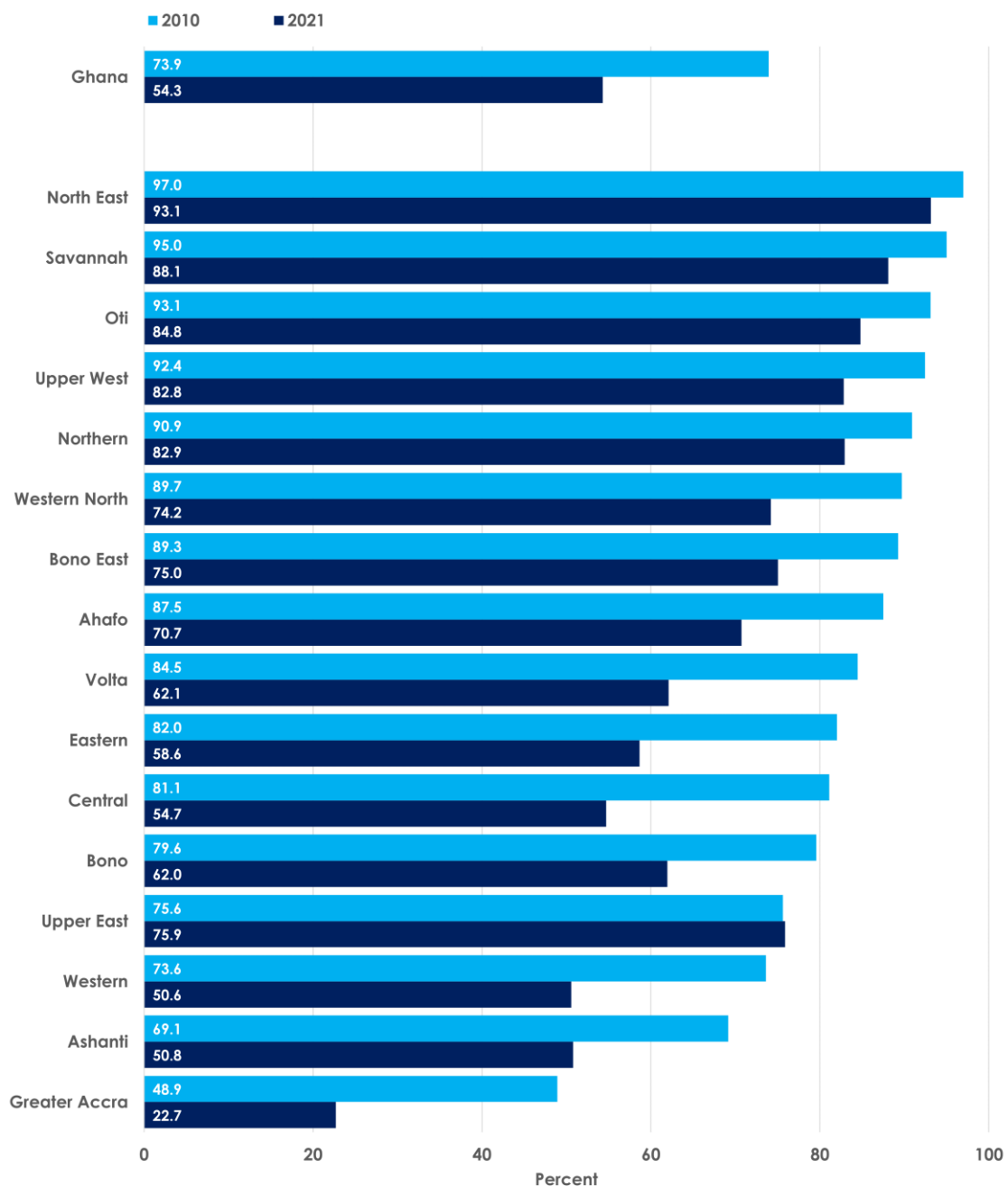
Use of electricity as main source of lighting varies markedly among regions, with the highest in Greater Accra Region (96.1%) and the lowest in North East Region (57.0%); and between urban (95.2%) and rural (72.6%) areas.

FIGURE 4.14: USE OF ELECTRICITY AS MAIN SOURCE OF LIGHTING BY TYPE OF LOCALITY AND REGION



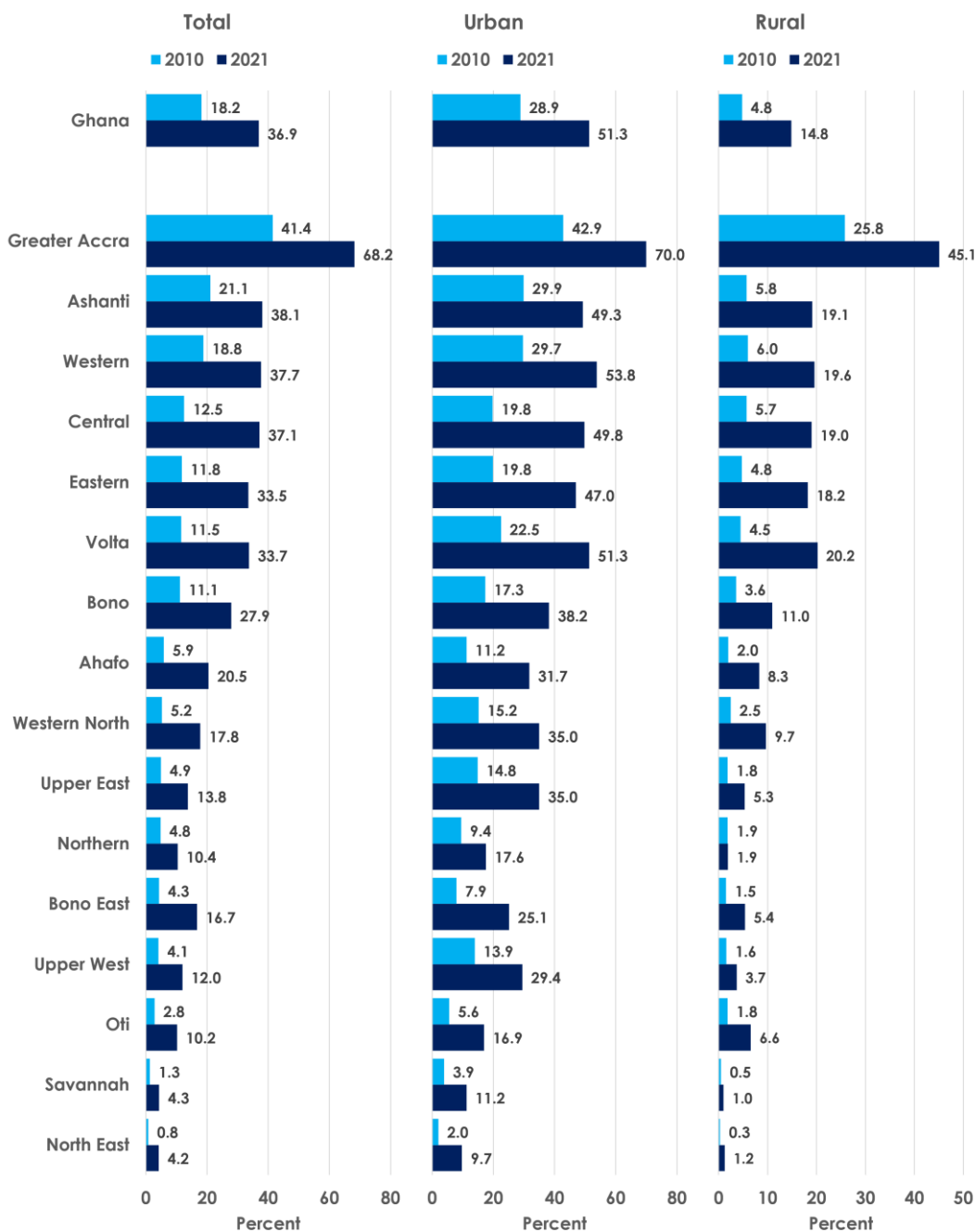
Although use of wood or charcoal as the main source of cooking fuel has declined over the last decade (from 73.9 percent in 2010), more than half (54.3%) of households, and in 11 regions, more than six in every ten households, still use wood or charcoal.

FIGURE 4.15: USE OF WOOD AND CHARCOAL AS THE MAIN SOURCE OF COOKING FUEL BY REGION, 2010-2021



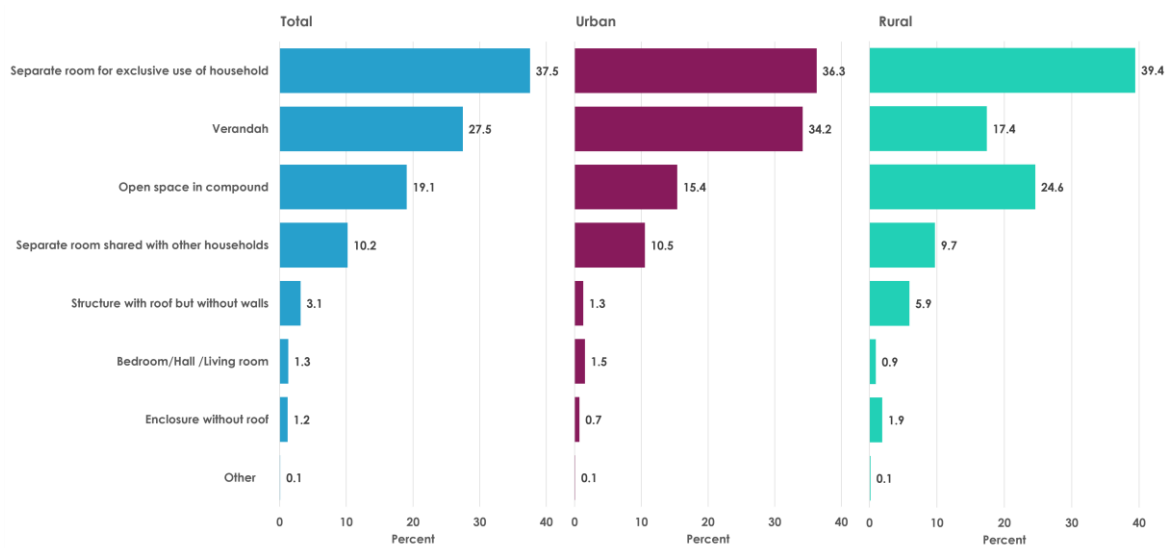
Gas (LPG) as main source of cooking fuel increased from 18.2 percent in 2010 to 36.9 percent in 2021: it is substantially lower in rural areas (14.8%) than urban areas (51.3%); highest in Greater Accra Region (68.2%) and lowest in North East Region (4.2%).

FIGURE 4.16: GAS (LPG) AS THE MAIN SOURCE OF COOKING FUEL BY REGION, 2010-2021



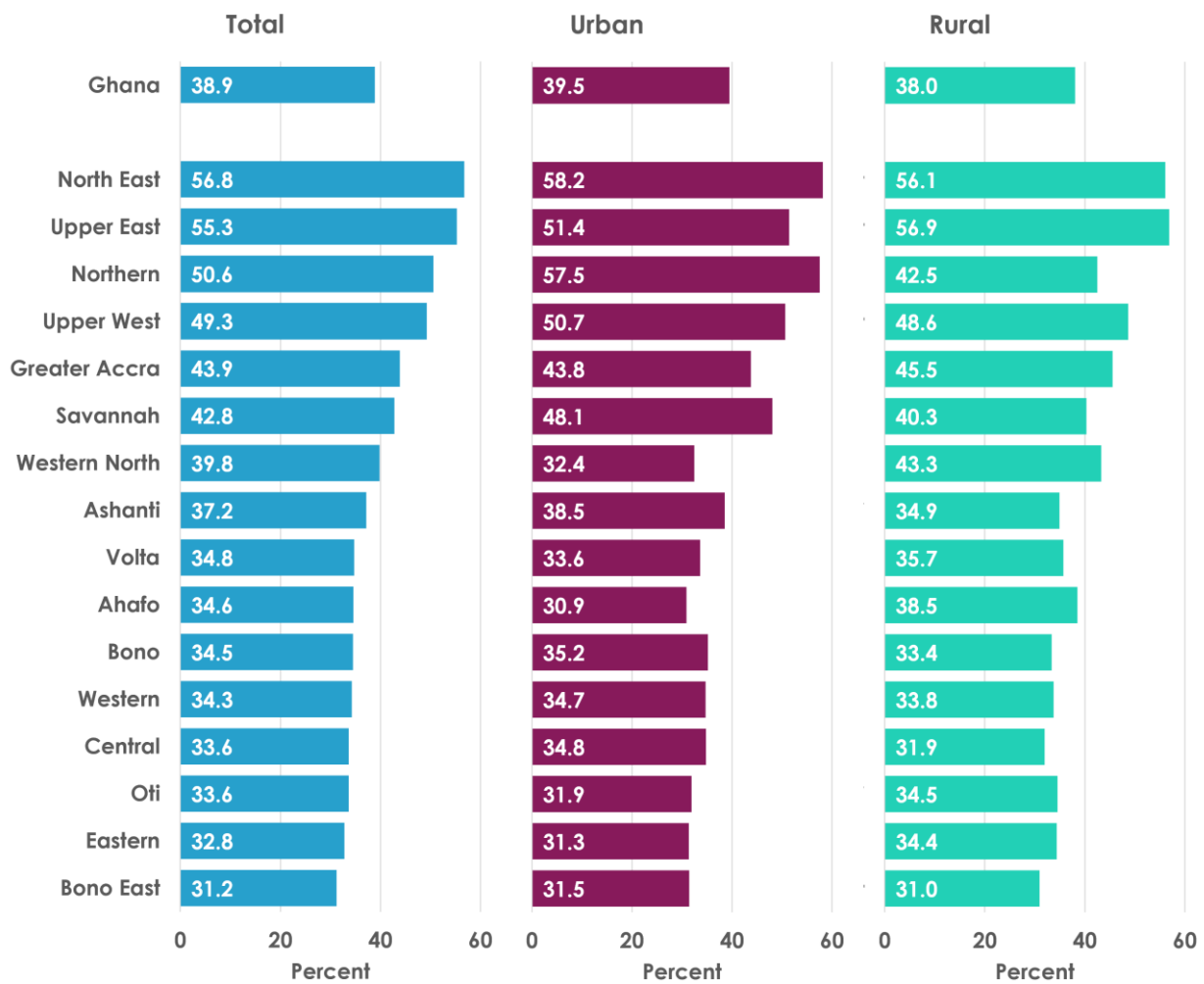
Majority of households live in dwelling units that do not have separate room exclusively for cooking. Only 37.5 percent of households have a separate room exclusively for cooking, with slightly higher proportion for rural (39.4%) than urban (36.3%) areas.

FIGURE 4.17: COOKING SPACE OF HOUSEHOLDS IN DWELLING UNITS BY TYPE OF LOCALITY



Just four in ten (38.9%) households have own bathroom for exclusive use and only three of the 16 regions have more than half of their households with own bathrooms for exclusive use (Northern, 50.6%; Upper East, 55.3% and North East, 56.8%).

FIGURE 4.18: OWN BATHROOM FOR EXCLUSIVE USE BY TYPE OF LOCALITY AND REGION



5. MAIN TABLES

TABLE 5.1: STOCK OF RESIDENTIAL STRUCTURES (HOUSES), HOUSEHOLDS BY REGION AND TYPE OF LOCALITY

Region	Total population	Total household population	Number of households	Household size	Number of residential structures			Urban share of residential structures	Percent distribution Residential Structures	Number of residential structures 2010	Percent increase in residential structures over 2010
					Total	Urban	Rural				
Total	30,832,019	30,079,802	8,365,174	3.6	5,862,890	2,925,173	2,937,717	49.9	100.0	3,392,745	72.8
Western	2,060,585	2,022,816	621,349	3.3	442,815	178,036	264,779	40.2	7.6	255,555	73.3
Central	2,859,821	2,771,486	838,493	3.3	587,600	288,426	299,174	49.1	10.0	346,699	69.5
Greater Accra	5,455,692	5,384,268	1,702,160	3.2	1,144,373	1,007,775	136,598	88.1	19.5	474,621	141.1
Volta	1,659,040	1,600,939	491,373	3.3	420,757	144,242	276,515	34.3	7.2	290,557	44.8
Eastern	2,925,653	2,820,760	881,328	3.2	628,324	261,464	366,860	41.6	10.7	431,697	45.5
Ashanti	5,440,463	5,247,870	1,523,101	3.4	929,298	463,387	465,911	49.9	15.9	574,066	61.9
Western North	880,921	869,756	240,086	3.6	217,549	44,617	172,932	20.5	3.7	124,549	74.7
Ahafo	564,668	549,089	152,801	3.6	115,615	41,697	73,918	36.1	2.0	71,783	61.1
Bono	1,208,649	1,174,830	317,994	3.7	209,809	101,597	108,212	48.4	3.6	127,107	65.1
Bono East	1,203,400	1,184,634	288,725	4.1	227,371	92,716	134,655	40.8	3.9	133,077	70.9
Oti	747,248	732,747	174,031	4.2	148,942	39,543	109,399	26.5	2.5	109,396	36.1
Northern	2,310,939	2,275,197	437,934	5.2	264,615	126,608	138,007	47.8	4.5	150,103	76.3
Savannah	653,266	646,781	133,114	4.9	122,434	30,857	91,577	25.2	2.1	62,229	96.7
North East	658,946	651,083	108,088	6.0	73,065	25,219	47,846	34.5	1.2	44,979	62.4
Upper East	1,301,226	1,272,072	264,404	4.8	172,545	43,480	129,065	25.2	2.9	114,034	51.3
Upper West	901,502	875,474	190,193	4.6	157,778	35,509	122,269	22.5	2.7	82,293	91.7

TABLE 5.2: TYPE OF RESIDENCE AND TYPE OF DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Type of Residence/Type of Dwelling	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality Types																		
Type of Residence																		
Total	10,006,420	100.0	742,284	1,000,899	2,052,727	623,240	1,087,857	1,776,804	308,989	184,689	366,698	351,094	217,995	490,157	165,211	116,150	292,847	228,779
Occupied Dwelling unit	8,356,966	83.5	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
Secondary Housing unit	383,610	3.8	33,414	33,282	55,039	39,863	56,349	53,675	18,806	8,475	12,208	24,896	17,420	7,756	10,885	1,569	2,198	7,775
Vacant Dwelling unit	1,265,844	12.7	88,083	129,738	299,314	92,286	150,670	201,285	50,235	23,524	36,626	37,692	26,651	44,613	21,281	6,528	26,403	30,915
Type of Dwelling																		
Total	10,006,420	100.0	742,284	1,000,899	2,052,727	623,240	1,087,857	1,776,804	308,989	184,689	366,698	351,094	217,995	490,157	165,211	116,150	292,847	228,779
Separate house (Detached)	6,334,147	63.3	526,018	661,616	989,611	485,555	760,676	1,092,786	246,951	134,791	264,371	260,061	173,727	239,775	113,312	57,360	177,403	150,134
Semi-detached house	799,952	8.0	60,143	77,637	166,582	32,431	81,619	143,574	24,016	15,094	24,285	24,882	17,127	39,227	16,856	9,096	34,397	32,986
Flat/Apartment	313,032	3.1	34,403	28,081	100,085	4,091	17,235	94,569	3,280	2,968	8,387	5,009	764	7,156	1,693	564	2,872	1,875
Compound house (rooms)	2,095,033	20.9	100,701	211,545	552,136	89,809	205,084	380,634	28,993	25,864	58,718	53,552	23,631	189,918	21,879	46,067	68,397	38,105
Huts/Buildings (same compound)	48,879	0.5	1,441	1,471	3,311	2,326	2,384	4,293	1,033	726	1,237	2,580	682	9,731	5,615	2,480	7,269	2,300
Tent	2,340	0.0	531	60	76	40	93	341	72	3	99	10	7	11	559	0	25	413
Metal Container	18,345	0.2	702	1,035	11,238	410	959	2,258	132	401	304	156	63	233	159	19	169	107
Kiosk/poly kiosk	81,592	0.8	616	538	77,202	239	454	1,595	173	113	378	85	54	31	53	9	40	12
Wooden structure	172,685	1.7	10,188	7,376	108,234	2,835	6,587	24,227	2,238	2,501	3,415	780	545	196	3,474	17	21	51
Living quarters attached to office/shop	11,464	0.1	758	969	4,062	495	804	2,254	159	231	425	248	139	282	122	65	227	224
Uncompleted building	121,165	1.2	6,375	9,719	37,687	4,666	11,468	29,452	1,835	1,813	4,900	3,508	1,046	3,190	1,065	380	1,810	2,251
Other	7,786	0.1	408	852	2,503	343	494	821	107	184	179	223	210	407	424	93	217	321
Urban																		
Type of residence																		
Total	5,849,554	100.0	371,138	568,872	1,873,741	255,244	548,873	1,070,492	87,272	88,280	217,476	184,667	71,084	264,672	51,792	41,963	83,919	70,069
Occupied Dwelling unit	5,068,903	86.7	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
Secondary Housing unit	133,803	2.3	9,577	11,370	45,426	10,521	18,791	17,245	2,959	1,831	2,763	3,770	2,987	3,171	1,591	291	505	1,005
Vacant Dwelling unit	646,848	11.1	33,401	63,813	253,079	31,384	62,390	97,159	7,189	7,011	17,010	15,489	6,824	25,386	6,671	3,525	8,390	8,127

Type of Residence/Type of Dwelling	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Type of dwelling																		
Total	5,849,554	100.0	371,138	568,872	1,873,741	255,244	548,873	1,070,492	87,272	88,280	217,476	184,667	71,084	264,672	51,792	41,963	83,919	70,069
Separate house (Detached)	3,147,980	53.8	214,796	333,530	857,039	170,654	330,147	569,637	57,118	56,364	145,313	119,183	51,897	115,766	30,783	16,944	39,227	39,582
Semi-detached house	499,721	8.5	37,842	47,420	156,105	17,450	47,693	91,407	10,201	7,857	15,252	15,566	6,965	19,768	6,367	3,713	8,437	7,678
Flat/Apartment	271,818	4.6	30,080	22,197	96,368	2,896	13,969	80,314	1,805	2,300	7,065	4,459	425	5,744	868	343	1,759	1,226
Compound house (rooms)	1,587,336	27.1	77,418	151,896	533,286	59,370	145,564	284,694	16,826	19,063	43,564	42,274	11,033	118,195	11,359	20,128	32,428	20,238
Huts/Buildings (same compound)	13,296	0.2	632	753	2,571	849	810	1,778	98	102	352	528	80	2,391	580	460	1,063	249
Tent	253	0.0	11	26	63	4	5	112	1	1	0	0	0	2	26	0	2	0
Metal Container	15,118	0.3	475	813	10,464	197	581	1,685	47	89	206	100	42	197	86	14	81	41
Kiosk/poly kiosk	78,016	1.3	388	375	75,349	133	256	1,227	49	37	109	35	16	16	8	6	8	4
Wooden structure	143,261	2.4	5,374	4,384	104,954	912	2,916	19,403	430	1,192	2,208	294	71	92	1,012	5	6	8
Living quarters attached to office/shop	8,431	0.1	492	598	3,844	279	450	1,693	51	153	311	137	73	137	39	21	96	57
Uncompleted building	79,721	1.4	3,390	6,384	31,609	2,319	6,315	17,925	609	1,020	3,022	1,966	407	2,188	612	306	730	919
Other	4,603	0.1	240	496	2,089	181	167	617	37	102	74	125	75	176	52	23	82	67
Rural																		
Type of residence																		
Total	4,156,866	100.0	371,146	432,027	178,986	367,996	538,984	706,312	221,717	96,409	149,222	166,427	146,911	225,485	113,419	74,187	208,928	158,710
Occupied Dwelling unit	3,288,063	79.1	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
Secondary Housing unit	249,807	6.0	23,837	21,912	9,613	29,342	37,558	36,430	15,847	6,644	9,445	21,126	14,433	4,585	9,294	1,278	1,693	6,770
Vacant Dwelling unit	618,996	14.9	54,682	65,925	46,235	60,902	88,280	104,126	43,046	16,513	19,616	22,203	19,827	19,227	14,610	3,003	18,013	22,788
Type of dwelling																		
Total	4,156,866	100.0	371,146	432,027	178,986	367,996	538,984	706,312	221,717	96,409	149,222	166,427	146,911	225,485	113,419	74,187	208,928	158,710
Separate house (Detached)	3,186,167	76.6	311,222	328,086	132,572	314,901	430,529	523,149	189,833	78,427	119,058	140,878	121,830	124,009	82,529	40,416	138,176	110,552
Semi-detached house	300,231	7.2	22,301	30,217	10,477	14,981	33,926	52,167	13,815	7,237	9,033	9,316	10,162	19,459	10,489	5,383	25,960	25,308
Flat/Apartment	41,214	1.0	4,323	5,884	3,717	1,195	3,266	14,255	1,475	668	1,322	550	339	1,412	825	221	1,113	649
Compound house (rooms)	507,697	12.2	23,283	59,649	18,850	30,439	59,520	95,940	12,167	6,801	15,154	11,278	12,598	71,723	10,520	25,939	35,969	17,867
Huts/Buildings (same compound)	35,583	0.9	809	718	740	1,477	1,574	2,515	935	624	885	2,052	602	7,340	5,035	2,020	6,206	2,051
Tent	2,087	0.1	520	34	13	36	88	229	71	2	99	10	7	9	533	0	23	413
Metal Container	3,227	0.1	227	222	774	213	378	573	85	312	98	56	21	36	73	5	88	66
Kiosk/poly kiosk	3,576	0.1	228	163	1,853	106	198	368	124	76	269	50	38	15	45	3	32	8

Type of Residence/Type of Dwelling	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Wooden structure	29,424	0.7	4,814	2,992	3,280	1,923	3,671	4,824	1,808	1,309	1,207	486	474	104	2,462	12	15	43
Living quarters attached to office/shop	3,033	0.1	266	371	218	216	354	561	108	78	114	111	66	145	83	44	131	167
Uncompleted building	41,444	1.0	2,985	3,335	6,078	2,347	5,153	11,527	1,226	793	1,878	1,542	639	1,002	453	74	1,080	1,332
Other	3,183	0.1	168	356	414	162	327	204	70	82	105	98	135	231	372	70	135	254

TABLE 5.3: MAIN CONSTRUCTION MATERIAL FOR OUTER WALL OF DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Main Construction Material-Outer wall	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All Locality Type																		
Outer wall																		
Total	10,006,420	100.0	742,284	1,000,899	2,052,727	623,240	1,087,857	1,776,804	308,989	184,689	366,698	351,094	217,995	490,157	165,211	116,150	292,847	228,779
Mud bricks/earth	2,963,599	29.6	277,643	266,216	51,227	169,246	353,680	392,636	184,076	83,623	97,447	141,433	164,001	268,497	92,502	98,218	187,900	135,254
Wood	324,339	3.2	19,688	11,530	212,581	4,945	12,398	33,979	5,921	4,507	5,494	1,587	1,365	1,768	6,699	592	843	442
Metal sheet / slate/asbestos	64,900	0.6	3,837	4,940	23,080	3,425	5,343	9,795	1,129	1,269	1,940	1,699	728	3,182	1,120	926	1,496	991
Stone	14,248	0.1	805	522	5,757	2,341	1,348	1,479	57	70	263	150	94	935	76	216	79	56
Burnt bricks	45,373	0.5	3,404	5,587	3,718	2,394	5,234	8,343	2,574	1,301	5,725	1,689	864	1,558	895	254	513	1,320
Cement blocks/concrete	6,416,312	64.1	414,560	695,778	1,746,763	430,444	689,490	1,303,878	109,823	89,203	248,604	194,496	47,185	195,438	51,488	13,091	99,458	86,613
Landcrete	118,357	1.2	7,575	14,288	6,869	2,844	18,771	24,706	4,975	4,369	6,320	6,498	2,519	13,639	1,626	573	1,726	1,059
Bamboo	5,262	0.1	1,814	460	377	684	327	564	179	105	97	107	78	212	100	52	20	86
Palm leaves/thatch (grass) /Raffia	45,272	0.5	11,879	1,078	1,201	6,526	866	588	144	146	290	3,215	1,088	4,545	8,527	2,163	665	2,351
Tarpaulin/ fabric/ canvas	5,428	0.1	853	150	259	160	227	511	87	24	430	136	35	140	1,909	11	38	458
Other	3,330	0.0	226	350	895	231	173	325	24	72	88	84	38	243	269	54	109	149
Urban																		
Total	5,849,554	100.0	371,138	568,872	1,873,741	255,244	548,873	1,070,492	87,272	88,280	217,476	184,667	71,084	264,672	51,792	41,963	83,919	70,069
Mud bricks/earth	620,764	10.6	59,500	61,916	20,363	27,144	73,754	73,518	26,007	15,498	22,584	29,081	42,865	82,652	12,901	31,404	26,802	14,775
Wood	261,168	4.5	8,779	6,639	206,209	1,716	4,924	24,230	1,074	1,912	2,955	535	199	486	1,195	101	150	64
Metal sheet / slate/asbestos	45,576	0.8	2,249	3,418	21,297	1,708	3,036	6,637	390	624	1,269	1,032	320	1,976	340	441	472	367
Stone	11,201	0.2	632	408	5,582	1,512	956	1,136	31	36	167	102	73	382	21	118	33	12
Burnt bricks	20,608	0.4	1,292	2,038	3,335	771	2,300	3,105	778	607	3,463	907	388	756	406	107	132	223
Cement blocks/concrete	4,826,046	82.5	292,520	487,439	1,609,065	218,677	457,212	949,363	57,862	67,647	183,720	150,378	26,382	170,212	36,346	9,218	55,704	54,301
Landcrete	52,802	0.9	3,001	6,196	6,130	709	6,469	11,799	1,108	1,904	3,188	2,425	815	7,701	295	283	575	204
Bamboo	1,661	0.0	735	150	298	141	70	182	10	13	19	11	10	15	1	2	2	2
Palm leaves/thatch (grass) /Raffia	7,275	0.1	2,276	391	450	2,757	79	158	6	13	51	155	26	346	216	234	2	115
Tarpaulin/ fabric/ canvas	666	0.0	35	58	223	36	19	184	4	3	11	11	2	16	58	2	3	1
Other	1,787	0.0	119	219	789	73	54	180	2	23	49	30	4	130	13	53	44	5

Main Construction Material-Outer wall	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Rural																		
Total	4,156,866	100.0	371,146	432,027	178,986	367,996	538,984	706,312	221,717	96,409	149,222	166,427	146,911	225,485	113,419	74,187	208,928	158,710
Mud bricks/earth	2,342,835	56.4	218,143	204,300	30,864	142,102	279,926	319,118	158,069	68,125	74,863	112,352	121,136	185,845	79,601	66,814	161,098	120,479
Wood	63,171	1.5	10,909	4,891	6,372	3,229	7,474	9,749	4,847	2,595	2,539	1,052	1,166	1,282	5,504	491	693	378
Metal sheet / slate/asbestos	19,324	0.5	1,588	1,522	1,783	1,717	2,307	3,158	739	645	671	667	408	1,206	780	485	1,024	624
Stone	3,047	0.1	173	114	175	829	392	343	26	34	96	48	21	553	55	98	46	44
Burnt bricks	24,765	0.6	2,112	3,549	383	1,623	2,934	5,238	1,796	694	2,262	782	476	802	489	147	381	1,097
Cement blocks/concrete	1,590,266	38.3	122,040	208,339	137,698	211,767	232,278	354,515	51,961	21,556	64,884	44,118	20,803	25,226	15,142	3,873	43,754	32,312
Landcrete	65,555	1.6	4,574	8,092	739	2,135	12,302	12,907	3,867	2,465	3,132	4,073	1,704	5,938	1,331	290	1,151	855
Bamboo	3,601	0.1	1,079	310	79	543	257	382	169	92	78	96	68	197	99	50	18	84
Palm leaves/thatch (grass) /Raffia	37,997	0.9	9,603	687	751	3,769	787	430	138	133	239	3,060	1,062	4,199	8,311	1,929	663	2,236
Tarpaulin/ fabric/ canvas	4,762	0.1	818	92	36	124	208	327	83	21	419	125	33	124	1,851	9	35	457
Other	1,543	0.0	107	131	106	158	119	145	22	49	39	54	34	113	256	1	65	144

TABLE 5.4: MAIN CONSTRUCTION MATERIAL FOR ROOF OF DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Main Construction material	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All Locality Type																		
Total	10,006,420	100.0	742,284	1,000,899	2,052,727	623,240	1,087,857	1,776,804	308,989	184,689	366,698	351,094	217,995	490,157	165,211	116,150	292,847	228,779
Mud/Mud bricks/Earth	116,414	1.2	6,467	4,489	1,705	2,892	7,694	8,863	5,187	2,969	2,760	6,794	4,559	18,381	9,335	8,244	15,785	10,290
Wood	54,147	0.5	2,115	2,003	11,021	715	3,451	9,846	1,219	923	1,222	1,544	604	7,651	3,148	2,313	4,168	2,204
Metal sheet	8,217,006	82.1	573,481	745,666	1,395,682	511,339	1,019,959	1,632,849	292,170	171,420	333,878	283,529	196,163	400,438	110,589	91,071	257,392	201,380
Slate/Asbestos	883,258	8.8	88,309	206,873	492,429	52,631	10,168	15,551	2,491	1,183	2,969	1,677	959	3,710	846	832	1,505	1,125
Cement/Concrete	343,956	3.4	44,784	29,803	112,864	14,906	22,749	73,875	3,436	4,198	10,270	7,405	1,396	7,763	2,345	531	4,479	3,152
Roofing Tiles	40,487	0.4	1,614	2,292	24,641	1,588	2,049	4,757	112	446	563	397	40	895	210	54	413	416
Bamboo	22,613	0.2	7,626	2,444	248	287	1,146	4,419	1,886	814	946	1,014	332	358	288	431	183	191
Thatch/Palm leaves or Raffia	306,545	3.1	15,996	5,860	10,399	37,961	19,631	24,424	2,352	2,451	13,013	47,860	13,616	49,663	33,987	12,575	7,950	8,807
Tarpaulin/fabric/canvas	5,844	0.1	1,009	219	222	90	121	500	77	36	150	21	36	12	2,920	0	133	298
Other	16,150	0.2	883	1,250	3,516	831	889	1,720	59	249	927	853	290	1,286	1,543	99	839	916
Urban																		
Total	5,849,554	100.0	371,138	568,872	1,873,741	255,244	548,873	1,070,492	87,272	88,280	217,476	184,667	71,084	264,672	51,792	41,963	83,919	70,069
Mud/Mud bricks/Earth	16,018	0.3	986	1,048	750	437	1,108	1,264	415	436	428	609	997	3,292	658	2,018	1,119	453
Wood	28,870	0.5	986	1,303	10,608	271	1,874	6,515	244	383	467	510	75	3,111	493	518	950	562
Metal sheet	4,695,473	80.3	260,981	379,057	1,257,282	208,292	522,069	984,160	83,281	82,823	204,868	174,278	68,458	242,670	45,974	36,778	78,422	66,080
Slate/Asbestos	751,538	12.8	63,358	159,759	470,373	33,027	5,331	11,255	1,349	356	2,126	744	309	2,193	228	277	491	362
Cement/Concrete	286,848	4.9	39,526	23,568	105,763	8,261	15,650	60,941	1,801	3,508	8,381	5,901	752	6,399	1,747	410	2,257	1,983
Roofing Tiles	34,564	0.6	1,328	1,681	23,391	413	1,669	3,909	52	326	367	290	15	662	116	19	166	160
Bamboo	2,097	0.0	812	219	119	70	75	270	59	74	71	88	11	64	30	112	16	7
Thatch/Palm leaves or Raffia	25,867	0.4	2,647	1,458	2,303	4,071	663	1,075	58	267	583	1,898	403	5,731	2,314	1,808	276	312
Tarpaulin/fabric/canvas	620	0.0	56	60	195	18	7	157	1	5	1	0	5	1	112	0	2	0
Other	7,659	0.1	458	719	2,957	384	427	946	12	102	184	349	59	549	120	23	220	150
Rural																		
Total	4,156,866	100.0	371,146	432,027	178,986	367,996	538,984	706,312	221,717	96,409	149,222	166,427	146,911	225,485	113,419	74,187	208,928	158,710
Mud/Mud bricks/Earth	100,396	2.4	5,481	3,441	955	2,455	6,586	7,599	4,772	2,533	2,332	6,185	3,562	15,089	8,677	6,226	14,666	9,837
Wood	25,277	0.6	1,129	700	413	444	1,577	3,331	975	540	755	1,034	529	4,540	2,655	1,795	3,218	1,642

Main Construction material	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Metal sheet	3,521,533	84.7	312,500	366,609	138,400	303,047	497,890	648,689	208,889	88,597	129,010	109,251	127,705	157,768	64,615	54,293	178,970	135,300
Slate/Asbestos	131,720	3.2	24,951	47,114	22,056	19,604	4,837	4,296	1,142	827	843	933	650	1,517	618	555	1,014	763
Cement/Concrete	57,108	1.4	5,258	6,235	7,101	6,645	7,099	12,934	1,635	690	1,889	1,504	644	1,364	598	121	2,222	1,169
Roofing Tiles	5,923	0.1	286	611	1,250	1,175	380	848	60	120	196	107	25	233	94	35	247	256
Bamboo	20,516	0.5	6,814	2,225	129	217	1,071	4,149	1,827	740	875	926	321	294	258	319	167	184
Thatch/Palm leaves or Raffia	280,678	6.8	13,349	4,402	8,096	33,890	18,968	23,349	2,294	2,184	12,430	45,962	13,213	43,932	31,673	10,767	7,674	8,495
Tarpaulin/fabric/canvas	5,224	0.1	953	159	27	72	114	343	76	31	149	21	31	11	2,808	0	131	298
Other	8,491	0.2	425	531	559	447	462	774	47	147	743	504	231	737	1,423	76	619	766

TABLE 5.5: MAIN CONSTRUCTION MATERIAL FOR FLOOR OF DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Main Construction Material-Floor	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality type																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
Earth/mud	530,232	6.3	31,276	23,637	21,906	29,287	57,532	74,471	34,707	16,799	24,275	29,671	19,292	51,532	26,499	23,352	33,508	32,488
Cement/concrete	6,501,053	77.8	495,942	706,320	1,094,681	435,725	745,737	1,172,660	189,583	125,758	252,306	233,326	151,691	352,724	101,027	83,226	218,897	141,450
Stone	18,632	0.2	1,219	900	2,561	402	1,703	3,860	603	753	860	570	264	2,119	944	471	1,125	278
Burnt bricks	7,114	0.1	304	450	1,794	221	488	1,526	182	187	313	204	115	557	195	65	225	288
Wood	110,931	1.3	2,731	1,822	93,725	452	1,427	7,137	526	439	671	290	101	712	450	164	106	178
Vinyl tiles	513,420	6.1	41,110	46,686	181,638	10,409	36,467	119,310	8,014	4,781	21,006	13,396	1,328	14,909	2,269	417	4,558	7,122
Ceramic/Porcelain/Granite/Marble tiles	538,796	6.4	37,778	48,554	249,244	12,033	29,913	102,605	4,943	3,132	15,287	9,300	849	12,449	1,086	248	4,664	6,711
Terrazzo/Terrazzo tiles	134,437	1.6	10,280	9,340	52,209	2,487	7,461	40,067	1,362	807	3,092	1,678	261	2,532	451	66	977	1,367
Other	2,351	0.0	147	170	616	75	110	208	28	34	54	71	23	254	124	44	186	207
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
Earth/mud	98,267	1.9	3,254	7,063	17,356	4,318	8,969	20,118	773	3,486	4,057	3,662	2,751	11,085	1,154	4,985	3,881	1,355
Cement/concrete	3,810,393	75.2	248,656	395,977	1,001,184	190,811	398,742	705,705	67,314	68,308	159,652	140,399	56,834	195,786	38,940	32,421	63,033	46,631
Stone	9,531	0.2	671	571	2,481	218	1,047	1,791	226	266	606	132	122	1,010	104	122	110	54
Burnt bricks	4,286	0.1	163	265	1,701	99	273	865	71	98	206	90	79	174	75	15	66	46
Wood	103,860	2.0	1,642	1,465	91,601	265	921	6,453	138	311	462	113	20	320	55	28	29	37
Vinyl tiles	440,581	8.7	33,676	38,520	172,559	7,069	28,203	97,257	4,775	3,760	16,921	11,776	831	13,529	1,940	325	3,426	6,014
Ceramic/Porcelain/Granite/Marble tiles	478,214	9.4	31,161	41,756	237,218	8,772	23,281	86,859	3,114	2,591	13,033	7,706	438	11,793	896	168	3,654	5,774
Terrazzo/Terrazzo tiles	122,508	2.4	8,893	7,974	50,550	1,753	6,226	36,908	710	599	2,737	1,486	191	2,286	342	55	783	1,015
Other	1,263	0.0	44	98	586	34	30	132	3	19	29	44	7	132	24	28	42	11
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
Earth/mud	431,965	13.1	28,022	16,574	4,550	24,969	48,563	54,353	33,934	13,313	20,218	26,009	16,541	40,447	25,345	18,367	29,627	31,133
Cement/concrete	2,690,660	81.8	247,286	310,343	93,497	244,914	346,995	466,955	122,269	57,450	92,654	92,927	94,857	156,938	62,087	50,805	155,864	94,819
Stone	9,101	0.3	548	329	80	184	656	2,069	377	487	254	438	142	1,109	840	349	1,015	224
Burnt bricks	2,828	0.1	141	185	93	122	215	661	111	89	107	114	36	383	120	50	159	242

Main Construction Material-Floor	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Wood	7,071	0.2	1,089	357	2,124	187	506	684	388	128	209	177	81	392	395	136	77	141
Vinyl tiles	72,839	2.2	7,434	8,166	9,079	3,340	8,264	22,053	3,239	1,021	4,085	1,620	497	1,380	329	92	1,132	1,108
Ceramic/Porcelain/Granite/Marble tiles	60,582	1.8	6,617	6,798	12,026	3,261	6,632	15,746	1,829	541	2,254	1,594	411	656	190	80	1,010	937
Terrazzo/Terrazzo tiles	11,929	0.4	1,387	1,366	1,659	734	1,235	3,159	652	208	355	192	70	246	109	11	194	352
Other	1,088	0.0	103	72	30	41	80	76	25	15	25	27	16	122	100	16	144	196

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.6: TENURE OR HOLDING ARRANGEMENT OF DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Tenure/Holding Arrangement	All regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality Types																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
Owner-occupied	4,047,751	48.4	287,659	371,892	618,892	253,893	395,043	599,666	126,883	74,454	139,200	158,105	105,439	337,341	105,897	97,398	225,477	150,512
Renting	2,893,675	34.6	220,528	288,864	808,202	133,407	322,811	617,461	60,100	46,795	118,755	92,499	41,881	59,660	16,838	6,504	30,320	29,050
Rent-free	1,234,928	14.8	103,271	161,746	214,013	92,164	147,737	271,793	43,255	25,508	54,292	34,567	23,674	34,392	8,643	3,408	7,255	9,210
Perching	31,793	0.4	2,306	2,602	7,597	2,178	1,916	4,390	871	470	1,082	980	1,016	4,380	869	448	440	248
Squatting	13,655	0.2	501	552	7,879	416	577	2,029	146	140	293	157	134	463	81	90	124	73
Caretaker	132,084	1.6	6,294	11,914	41,145	8,756	12,451	26,203	8,613	5,240	4,118	2,088	1,704	1,303	677	186	521	871
Other	3,080	0.0	228	309	646	277	303	302	80	83	124	110	76	249	40	19	109	125
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
Owner-occupied	1,907,645	37.6	113,224	184,414	549,656	86,419	157,800	302,591	29,850	31,874	68,725	68,102	28,185	154,050	24,451	30,032	46,702	31,570
Renting	2,332,793	46.0	158,043	211,948	779,741	88,862	227,878	477,225	35,178	35,045	94,150	75,042	26,005	55,702	14,483	5,819	23,722	23,950
Rent-free	726,229	14.3	52,830	87,836	194,798	34,872	75,745	158,553	11,430	11,667	32,594	20,873	6,526	23,385	4,193	2,063	3,951	4,913
Perching	16,635	0.3	1,020	1,400	6,983	527	844	2,472	194	163	404	328	178	1,638	96	88	224	76
Squatting	10,986	0.2	317	415	7,468	168	355	1,489	19	45	155	94	53	279	25	28	52	24
Caretaker	72,734	1.4	2,611	7,499	36,007	2,357	4,928	13,555	420	593	1,602	891	303	958	260	103	299	348
Other	1,881	0.0	115	177	583	134	142	203	33	51	73	78	23	103	22	14	74	56
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
Owner-occupied	2,140,106	65.1	174,435	187,478	69,236	167,474	237,243	297,075	97,033	42,580	70,475	90,003	77,254	183,291	81,446	67,366	178,775	118,942
Renting	560,882	17.1	62,485	76,916	28,461	44,545	94,933	140,236	24,922	11,750	24,605	17,457	15,876	3,958	2,355	685	6,598	5,100
Rent-free	508,699	15.5	50,441	73,910	19,215	57,292	71,992	113,240	31,825	13,841	21,698	13,694	17,148	11,007	4,450	1,345	3,304	4,297
Perching	15,158	0.5	1,286	1,202	614	1,651	1,072	1,918	677	307	678	652	838	2,742	773	360	216	172
Squatting	2,669	0.1	184	137	411	248	222	540	127	95	138	63	81	184	56	62	72	49
Caretaker	59,350	1.8	3,683	4,415	5,138	6,399	7,523	12,648	8,193	4,647	2,516	1,197	1,401	345	417	83	222	523
Other	1,199	0.0	113	132	63	143	161	99	47	32	51	32	53	146	18	5	35	69

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.7: OWNERSHIP OF DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Ownership type	All regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality Types																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
Owner-occupied	4,047,751	48.4	287,659	371,892	618,892	253,893	395,043	599,666	126,883	74,454	139,200	158,105	105,439	337,341	105,897	97,398	225,477	150,512
Estate developer	26,105	0.3	1,454	1,658	9,019	769	2,404	5,341	523	502	940	850	205	989	374	150	503	424
Family property	1,243,048	14.9	92,465	150,973	245,756	92,182	149,713	280,959	30,042	22,489	54,932	33,570	21,501	41,244	8,086	3,485	7,006	8,645
Relative not household member	182,930	2.2	13,335	23,510	30,762	13,720	17,401	43,096	7,321	3,857	8,105	6,943	4,370	4,468	1,922	706	1,796	1,618
Other private individual	2,400,565	28.7	181,572	250,993	680,948	108,773	269,083	502,897	57,348	39,590	97,390	76,340	35,759	40,149	12,472	4,385	21,197	21,669
Private employer	261,515	3.1	24,353	22,443	66,999	11,461	25,935	55,928	12,347	7,364	9,741	7,375	2,902	6,162	1,665	784	3,038	3,018
Other private agency	61,181	0.7	5,562	5,033	14,461	3,570	6,253	12,068	1,932	1,414	2,548	2,495	1,140	2,035	774	289	948	659
Public/Government	114,573	1.4	13,000	9,193	26,452	5,948	13,489	18,863	2,595	2,180	4,150	2,080	2,084	4,776	1,664	808	3,958	3,333
Other	19,298	0.2	1,387	2,184	5,085	775	1,517	3,026	957	840	858	748	524	624	191	48	323	211
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
Owner-occupied	1,907,645	37.6	113,224	184,414	549,656	86,419	157,800	302,591	29,850	31,874	68,725	68,102	28,185	154,050	24,451	30,032	46,702	31,570
Estate developer	21,916	0.4	1,026	1,470	8,451	505	1,706	4,521	327	342	778	619	127	857	285	142	390	370
Family property	824,963	16.3	54,249	89,707	232,684	39,183	85,760	187,084	11,136	14,064	37,297	21,950	6,606	29,420	3,805	2,143	4,586	5,289
Relative not household member	102,661	2.0	5,476	11,294	27,122	3,310	8,886	25,309	2,064	1,834	4,663	4,279	1,449	2,955	1,201	576	1,331	912
Other private individual	1,882,879	37.1	124,751	180,410	651,090	70,992	183,044	374,587	28,878	26,080	74,129	60,949	21,126	37,698	10,646	3,914	16,549	18,036
Private employer	184,424	3.6	14,150	16,079	62,827	6,744	16,146	37,733	2,391	2,849	6,395	5,689	1,667	5,555	1,346	633	2,050	2,170
Other private agency	46,224	0.9	3,919	3,346	13,767	2,194	3,995	8,600	1,077	747	1,873	2,020	747	1,814	634	251	713	527
Public/Government	85,038	1.7	10,517	5,731	24,731	3,872	9,374	13,877	1,173	1,196	3,182	1,231	1,075	3,275	1,011	434	2,434	1,925
Other	13,153	0.3	848	1,238	4,908	120	981	1,786	228	452	661	569	291	491	151	22	269	138
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
Owner-occupied	2,140,106	65.1	174,435	187,478	69,236	167,474	237,243	297,075	97,033	42,580	70,475	90,003	77,254	183,291	81,446	67,366	178,775	118,942
Estate developer	4,189	0.1	428	188	568	264	698	820	196	160	162	231	78	132	89	8	113	54
Family property	418,085	12.7	38,216	61,266	13,072	52,999	63,953	93,875	18,906	8,425	17,635	11,620	14,895	11,824	4,281	1,342	2,420	3,356
Relative not household member	80,269	2.4	7,859	12,216	3,640	10,410	8,515	17,787	5,257	2,023	3,442	2,664	2,921	1,513	721	130	465	706
Other private individual	517,686	15.7	56,821	70,583	29,858	37,781	86,039	128,310	28,470	13,510	23,261	15,391	14,633	2,451	1,826	471	4,648	3,633

Ownership type	All regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Private employer	77,091	2.3	10,203	6,364	4,172	4,717	9,789	18,195	9,956	4,515	3,346	1,686	1,235	607	319	151	988	848
Other private agency	14,957	0.5	1,643	1,687	694	1,376	2,258	3,468	855	667	675	475	393	221	140	38	235	132
Public/Government	29,535	0.9	2,483	3,462	1,721	2,076	4,115	4,986	1,422	984	968	849	1,009	1,501	653	374	1,524	1,408
Other	6,145	0.2	539	946	177	655	536	1,240	729	388	197	179	233	133	40	26	54	73

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.8: NUMBER OF ROOMS IN DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Number of rooms Occupied	All regions		Regions															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality Types																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
One room	4,038,938	48.3	360,712	472,350	775,852	193,261	451,809	893,077	121,685	83,856	168,396	148,814	67,184	126,879	49,573	17,507	49,266	58,717
Two rooms	2,003,414	24.0	138,228	193,085	504,117	165,765	228,144	271,996	57,807	33,273	62,088	62,989	45,701	90,296	31,478	15,662	58,402	44,383
Three rooms	967,527	11.6	64,185	81,130	188,991	66,534	96,168	139,455	31,715	16,834	35,057	33,639	26,545	65,402	20,647	15,551	53,935	31,739
Four rooms	511,123	6.1	28,479	40,818	97,829	30,782	47,614	78,730	12,224	7,420	18,782	17,509	13,760	39,434	10,472	13,007	34,916	19,347
Five rooms	324,544	3.9	14,022	22,090	59,045	15,702	25,411	54,931	6,819	4,384	13,509	10,563	7,804	32,887	7,617	12,459	23,773	13,528
Six rooms	200,820	2.4	7,414	12,467	33,645	9,631	14,414	34,111	4,176	2,591	8,448	6,323	5,295	22,877	4,976	9,814	15,682	8,956
Seven rooms	97,861	1.2	2,984	5,432	14,680	3,664	6,254	16,552	1,722	1,305	3,857	2,989	2,381	14,580	2,496	6,587	7,822	4,556
Eight rooms	73,879	0.9	2,063	4,061	10,632	2,597	4,375	12,292	1,306	1,022	2,726	2,111	1,821	11,813	1,994	5,154	6,641	3,271
Nine rooms and above	138,860	1.7	2,700	6,446	13,583	3,155	6,649	20,700	2,494	2,005	5,001	3,569	3,433	33,620	3,792	12,312	13,809	5,592
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
One room	2,619,210	51.7	194,695	276,048	723,494	86,393	242,254	584,384	47,524	50,951	116,507	97,603	28,560	89,859	20,171	8,445	23,920	28,402
Two rooms	1,214,280	24.0	70,429	118,534	468,597	74,423	125,022	157,100	12,536	12,398	33,065	29,482	14,471	51,948	9,115	5,363	16,753	15,044
Three rooms	514,183	10.1	30,972	45,846	171,754	25,556	45,226	79,243	6,929	6,369	18,376	15,471	7,782	31,132	5,755	4,910	11,394	7,468
Four rooms	277,031	5.5	15,342	24,212	89,466	12,302	24,100	46,970	3,609	3,418	10,259	8,806	4,153	16,688	2,714	4,168	6,922	3,902
Five rooms	178,909	3.5	7,963	13,116	54,536	6,584	13,661	34,827	2,394	2,196	7,990	5,849	2,365	13,722	2,011	4,081	5,076	2,538
Six rooms	107,859	2.1	4,324	7,306	31,116	4,002	7,883	22,038	1,629	1,394	4,902	3,455	1,599	8,900	1,244	3,189	3,498	1,380
Seven rooms	50,993	1.0	1,695	3,030	13,614	1,532	3,378	10,692	733	752	2,207	1,584	747	5,802	697	1,947	1,893	690
Eight rooms	37,844	0.7	1,204	2,305	9,931	1,119	2,427	7,829	548	585	1,516	1,096	590	4,352	589	1,631	1,633	489
Nine rooms and above	68,594	1.4	1,536	3,292	12,728	1,428	3,741	13,005	1,222	1,375	2,881	2,062	1,006	13,712	1,234	4,413	3,935	1,024
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
One room	1,419,728	43.2	166,017	196,302	52,358	106,868	209,555	308,693	74,161	32,905	51,889	51,211	38,624	37,020	29,402	9,062	25,346	30,315
Two rooms	789,134	24.0	67,799	74,551	35,520	91,342	103,122	114,896	45,271	20,875	29,023	33,507	31,230	38,348	22,363	10,299	41,649	29,339
Three rooms	453,344	13.8	33,213	35,284	17,237	40,978	50,942	60,212	24,786	10,465	16,681	18,168	18,763	34,270	14,892	10,641	42,541	24,271
Four rooms	234,092	7.1	13,137	16,606	8,363	18,480	23,514	31,760	8,615	4,002	8,523	8,703	9,607	22,746	7,758	8,839	27,994	15,445
Five rooms	145,635	4.4	6,059	8,974	4,509	9,118	11,750	20,104	4,425	2,188	5,519	4,714	5,439	19,165	5,606	8,378	18,697	10,990

Number of rooms Occupied	All regions		Regions															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Six rooms	92,961	2.8	3,090	5,161	2,529	5,629	6,531	12,073	2,547	1,197	3,546	2,868	3,696	13,977	3,732	6,625	12,184	7,576
Seven rooms	46,868	1.4	1,289	2,402	1,066	2,132	2,876	5,860	989	553	1,650	1,405	1,634	8,778	1,799	4,640	5,929	3,866
Eight rooms	36,035	1.1	859	1,756	701	1,478	1,948	4,463	758	437	1,210	1,015	1,231	7,461	1,405	3,523	5,008	2,782
Nine rooms and above	70,266	2.1	1,164	3,154	855	1,727	2,908	7,695	1,272	630	2,120	1,507	2,427	19,908	2,558	7,899	9,874	4,568

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.9: NUMBER OF SLEEPING ROOMS IN DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Number of Sleeping Rooms	All regions		Regions															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality Types																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
One room	5,293,288	63.3	441,852	593,377	1,163,039	315,921	591,876	1,051,476	151,906	99,535	198,004	176,444	94,960	160,787	62,953	25,714	80,128	85,316
Two rooms	1,714,361	20.5	113,596	155,121	333,697	117,335	184,542	260,356	51,820	30,769	61,786	61,018	41,665	108,330	34,451	27,117	81,344	51,414
Three rooms	705,692	8.4	40,469	52,298	112,954	35,962	62,266	107,379	20,849	12,268	28,551	26,947	19,214	68,490	17,276	21,678	51,521	27,570
Four rooms	323,921	3.9	14,964	20,927	53,812	13,139	24,320	50,387	7,794	4,853	13,758	12,264	8,826	37,421	8,196	14,414	25,673	13,173
Five rooms	152,491	1.8	5,580	8,388	20,780	4,690	9,637	25,175	3,564	2,343	7,278	5,790	4,264	23,374	4,641	8,537	12,141	6,309
Six rooms	73,532	0.9	2,357	3,743	7,881	2,177	4,039	12,526	1,799	1,084	3,799	2,819	2,271	13,210	2,413	4,375	5,953	3,086
Seven rooms	33,050	0.4	797	1,451	2,734	768	1,652	5,156	807	632	1,628	1,266	1,052	7,805	1,196	2,253	2,622	1,231
Eight rooms	22,647	0.3	558	1,084	1,632	508	1,050	3,610	563	459	1,149	817	675	5,549	755	1,504	1,847	887
Nine rooms and above	37,984	0.5	614	1,490	1,845	591	1,456	5,779	846	747	1,911	1,141	997	12,822	1,164	2,461	3,017	1,103
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
One room	3,424,170	67.6	237,738	350,727	1,087,037	143,147	320,334	679,597	53,949	56,798	132,624	110,460	37,083	109,646	24,251	11,535	32,400	36,844
Two rooms	947,162	18.7	56,592	90,996	304,005	47,054	94,557	150,084	11,907	11,684	32,723	29,032	12,615	53,832	9,617	8,563	19,973	13,928
Three rooms	360,320	7.1	20,336	30,079	102,264	13,797	30,244	61,868	5,535	5,220	15,222	12,962	5,850	29,683	4,742	6,671	10,477	5,370
Four rooms	171,075	3.4	8,138	12,534	49,644	5,484	12,578	31,062	2,617	2,457	7,742	6,386	2,720	15,235	2,079	4,490	5,481	2,428
Five rooms	80,312	1.6	3,029	4,920	19,245	2,024	5,299	16,242	1,388	1,283	4,412	3,218	1,395	9,904	1,236	2,804	2,813	1,100
Six rooms	37,686	0.7	1,284	2,165	7,278	977	2,268	8,122	699	664	2,202	1,469	747	5,524	684	1,510	1,563	530
Seven rooms	16,370	0.3	418	826	2,536	318	901	3,126	375	399	952	674	355	3,437	313	836	683	221
Eight rooms	11,315	0.2	304	574	1,509	220	636	2,202	236	305	625	430	220	2,444	233	637	561	179
Nine rooms and above	20,493	0.4	321	868	1,718	318	875	3,785	418	628	1,201	777	288	6,410	375	1,101	1,073	337
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
One room	1,869,118	56.8	204,114	242,650	76,002	172,774	271,542	371,879	97,957	42,737	65,380	65,984	57,877	51,141	38,702	14,179	47,728	48,472
Two rooms	767,199	23.3	57,004	64,125	29,692	70,281	89,985	110,272	39,913	19,085	29,063	31,986	29,050	54,498	24,834	18,554	61,371	37,486
Three rooms	345,372	10.5	20,133	22,219	10,690	22,165	32,022	45,511	15,314	7,048	13,329	13,985	13,364	38,807	12,534	15,007	41,044	22,200
Four rooms	152,846	4.6	6,826	8,393	4,168	7,655	11,742	19,325	5,177	2,396	6,016	5,878	6,106	22,186	6,117	9,924	20,192	10,745
Five rooms	72,179	2.2	2,551	3,468	1,535	2,666	4,338	8,933	2,176	1,060	2,866	2,572	2,869	13,470	3,405	5,733	9,328	5,209

Number of Sleeping Rooms	All regions		Regions															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Six rooms	35,846	1.1	1,073	1,578	603	1,200	1,771	4,404	1,100	420	1,597	1,350	1,524	7,686	1,729	2,865	4,390	2,556
Seven rooms	16,680	0.5	379	625	198	450	751	2,030	432	233	676	592	697	4,368	883	1,417	1,939	1,010
Eight rooms	11,332	0.3	254	510	123	288	414	1,408	327	154	524	387	455	3,105	522	867	1,286	708
Nine rooms and above	17,491	0.5	293	622	127	273	581	1,994	428	119	710	364	709	6,412	789	1,360	1,944	766

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.10: MAIN SOURCE OF LIGHTING FOR THE DWELLING UNIT BY TYPE OF LOCALITY AND REGION

Main source of lighting	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality types																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
Electricity	7,212,541	86.3	556,908	768,682	1,632,980	418,009	775,479	1,346,622	184,255	116,044	270,815	220,407	126,759	348,962	79,158	77,951	150,537	138,973
Electricity (mains)	6,986,328	83.6	531,695	740,336	1,591,182	410,927	753,826	1,313,746	177,269	110,330	262,896	214,288	122,518	333,362	73,157	73,960	143,618	133,218
Electricity (community-based Grid)	197,497	2.4	21,249	27,123	40,674	6,584	19,136	27,518	5,655	4,686	7,153	4,514	2,502	13,783	4,096	2,541	6,050	4,233
Electricity (private generator)	4,674	0.1	1,079	264	281	78	355	928	45	64	88	69	78	141	1,089	13	67	35
Electricity (solar panel/invertor)	23,515	0.3	2,793	933	790	402	2,141	4,383	1,266	946	667	1,530	1,657	1,588	797	1,431	727	1,464
Electricity (wind energy)	527	0.0	92	26	53	18	21	47	20	18	11	6	4	88	19	6	75	23
Kerosene lamp	24,042	0.3	645	1,914	1,258	8,304	2,313	818	453	321	252	251	647	3,548	887	406	1,761	264
Gas lamp	1,437	0.0	93	71	85	101	135	180	95	47	45	109	60	148	113	25	90	40
Solar lamp	133,498	1.6	13,259	4,231	2,548	1,739	13,578	21,060	11,776	6,454	4,883	9,850	7,397	12,262	11,275	3,844	4,113	5,229
Candle	6,306	0.1	427	760	1,340	690	624	634	181	110	185	163	123	367	253	86	255	108
Flashlight/Torchlight	856,037	10.2	43,960	51,709	39,534	54,785	76,569	131,105	40,556	26,619	35,280	50,430	35,944	66,446	38,654	23,416	98,990	42,040
Other	694	0.0	22	63	99	29	82	85	20	25	25	28	17	27	16	1	43	112
None	122,411	1.5	5,473	10,449	20,530	7,434	12,058	21,340	2,612	3,070	6,379	7,268	2,977	6,028	2,689	2,324	8,457	3,323
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
Electricity	4,824,349	95.2	319,573	471,891	1,524,704	195,094	444,861	907,844	74,569	72,903	185,057	149,862	54,333	225,928	39,099	33,297	68,149	57,185
Electricity (mains)	4,698,135	92.7	305,934	456,693	1,486,921	191,883	435,580	889,505	72,546	69,510	180,584	146,712	53,111	217,689	37,279	32,005	66,498	55,685
Electricity (community-based Grid)	123,007	2.4	13,502	15,024	37,082	3,114	8,984	17,682	2,001	3,336	4,338	3,026	1,094	8,059	1,772	1,125	1,571	1,297
Electricity (private generator)	1,034	0.0	68	73	219	24	146	279	3	11	15	22	11	130	3	8	15	7
Electricity (solar panel/invertor)	2,003	0.0	60	85	433	63	140	348	15	37	115	99	116	42	39	156	62	193
Electricity (wind energy)	170	0.0	9	16	49	10	11	30	4	9	5	3	1	8	6	3	3	3
Kerosene lamp	6,172	0.1	225	872	726	2,308	731	269	12	34	92	60	47	414	37	130	200	15
Gas lamp	253	0.0	8	22	61	26	20	34	3	4	12	16	5	19	6	5	5	7
Solar lamp	9,595	0.2	223	362	1,619	360	674	1,423	111	386	869	717	402	764	493	335	377	480
Candle	3,482	0.1	173	471	1,238	404	327	353	27	41	87	78	35	124	66	16	26	16

Main source of lighting	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Flashlight/Torchlight	163,417	3.2	5,542	14,485	28,807	12,572	15,786	34,260	1,826	4,576	8,693	10,942	5,368	6,859	2,956	3,345	4,798	2,602
Other	225	0.0	8	12	84	13	29	24	1	8	5	10	2	7	0	0	6	16
None	61,410	1.2	2,408	5,574	17,997	2,562	5,264	11,881	575	1,486	2,888	3,723	1,081	2,000	873	1,019	1,463	616
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
Electricity	2,388,192	72.6	237,335	296,791	108,276	222,915	330,618	438,778	109,686	43,141	85,758	70,545	72,426	123,034	40,059	44,654	82,388	81,788
Electricity (mains)	2,288,193	69.6	225,761	283,643	104,261	219,044	318,246	424,241	104,723	40,820	82,312	67,576	69,407	115,673	35,878	41,955	77,120	77,533
Electricity (community-based Grid)	74,490	2.3	7,747	12,099	3,592	3,470	10,152	9,836	3,654	1,350	2,815	1,488	1,408	5,724	2,324	1,416	4,479	2,936
Electricity (private generator)	3,640	0.1	1,011	191	62	54	209	649	42	53	73	47	67	11	1,086	5	52	28
Electricity (solar panel/invertor)	21,512	0.7	2,733	848	357	339	2,001	4,035	1,251	909	552	1,431	1,541	1,546	758	1,275	665	1,271
Electricity (wind energy)	357	0.0	83	10	4	8	10	17	16	9	6	3	3	80	13	3	72	20
Kerosene lamp	17,870	0.5	420	1,042	532	5,996	1,582	549	441	287	160	191	600	3,134	850	276	1,561	249
Gas lamp	1,184	0.0	85	49	24	75	115	146	92	43	33	93	55	129	107	20	85	33
Solar lamp	123,903	3.8	13,036	3,869	929	1,379	12,904	19,637	11,665	6,068	4,014	9,133	6,995	11,498	10,782	3,509	3,736	4,749
Candle	2,824	0.1	254	289	102	286	297	281	154	69	98	85	88	243	187	70	229	92
Flashlight/Torchlight	692,620	21.1	38,418	37,224	10,727	42,213	60,783	96,845	38,730	22,043	26,587	39,488	30,576	59,587	35,698	20,071	94,192	39,438
Other	469	0.0	14	51	15	16	53	61	19	17	20	18	15	20	16	1	37	96
None	61,001	1.9	3,065	4,875	2,533	4,872	6,794	9,459	2,037	1,584	3,491	3,545	1,896	4,028	1,816	1,305	6,994	2,707

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.11: MAIN SOURCE OF COOKING FUEL USED BY HOUSEHOLDS BY TYPE OF LOCALITY AND REGION

Main source of cooking fuel	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality types																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
None	661,844	7.9	68,717	64,761	140,709	19,124	64,243	158,757	18,141	12,857	30,469	22,818	8,238	24,587	9,615	2,480	7,088	9,240
Wood	2,594,937	31.1	186,438	218,835	36,216	163,840	282,771	356,872	143,400	79,069	141,686	138,749	109,925	278,929	91,769	89,764	159,442	117,232
LPG	3,086,324	36.9	234,023	311,238	1,157,759	165,592	295,140	579,078	42,713	31,282	88,699	48,228	17,780	45,379	5,768	4,579	36,339	22,727
Bio Gas	991	0.0	70	144	294	21	54	200	13	9	7	28	3	61	6	2	78	1
Electricity	32,478	0.4	2,691	1,858	10,116	366	3,055	7,681	604	327	1,051	341	153	3,166	241	195	255	378
Kerosene	11,279	0.1	782	1,138	3,057	784	1,314	1,698	247	155	397	362	184	549	147	95	237	133
Charcoal	1,942,771	23.2	127,558	239,318	349,266	141,057	233,782	416,047	34,646	28,904	55,242	77,728	37,579	84,153	25,421	10,854	41,005	40,211
Crop residue	20,528	0.2	85	245	186	187	120	329	16	12	40	70	22	101	18	56	18,998	43
Saw dust	1,727	0.0	136	74	92	39	65	106	66	11	104	95	8	677	14	2	186	52
Animal waste	689	0.0	10	9	22	6	17	31	1	2	6	5	2	34	20	11	505	8
Cooking gel	2,948	0.0	246	206	529	60	244	1,003	92	55	147	61	19	123	20	13	74	56
Other	450	0.0	31	53	128	15	33	42	9	7	16	21	11	29	6	2	39	8
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
None	455,114	9.0	35,793	38,075	133,483	8,906	37,919	106,994	7,825	8,657	20,531	16,063	3,692	21,876	4,764	1,678	4,450	4,408
Wood	557,870	11.0	28,535	45,655	13,417	23,110	58,628	69,037	21,060	22,381	54,730	43,140	23,344	91,644	14,858	23,612	16,566	8,153
LPG	2,598,709	51.3	176,646	245,766	1,102,235	109,498	219,750	470,931	26,982	25,194	75,503	41,600	10,364	41,477	4,874	3,712	26,237	17,940
Bio Gas	751	0.0	42	118	249	15	33	131	7	7	4	27	2	44	5	1	65	1
Electricity	26,255	0.5	1,865	1,297	9,585	252	2,171	6,068	297	219	822	254	100	2,621	148	140	138	278
Kerosene	8,081	0.2	510	805	2,830	344	790	1,127	141	90	334	276	117	369	82	61	118	87
Charcoal	1,416,620	27.9	84,574	161,592	312,544	71,115	148,126	300,753	20,709	22,834	45,553	63,841	23,618	77,268	18,772	8,925	26,418	29,978
Crop residue	1,817	0.0	42	159	158	46	82	168	8	10	29	63	13	53	13	5	948	20
Saw dust	1,225	0.0	33	36	86	29	52	86	46	5	78	83	5	628	4	2	9	43
Animal waste	104	0.0	4	5	19	1	9	21	1	0	3	1	1	14	3	1	21	0
Cooking gel	2,054	0.0	95	144	506	19	113	745	47	35	102	45	13	98	7	9	49	27

Main source of cooking fuel	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Other	303	0.0	21	37	124	4	19	27	1	6	14	15	4	23	0	1	5	2
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
None	206,730	6.3	32,924	26,686	7,226	10,218	26,324	51,763	10,316	4,200	9,938	6,755	4,546	2,711	4,851	802	2,638	4,832
Wood	2,037,067	62.0	157,903	173,180	22,799	140,730	224,143	287,835	122,340	56,688	86,956	95,609	86,581	187,285	76,911	66,152	142,876	109,079
LPG	487,615	14.8	57,377	65,472	55,524	56,094	75,390	108,147	15,731	6,088	13,196	6,628	7,416	3,902	894	867	10,102	4,787
Bio Gas	240	0.0	28	26	45	6	21	69	6	2	3	1	1	17	1	1	13	0
Electricity	6,223	0.2	826	561	531	114	884	1,613	307	108	229	87	53	545	93	55	117	100
Kerosene	3,198	0.1	272	333	227	440	524	571	106	65	63	86	67	180	65	34	119	46
Charcoal	526,151	16.0	42,984	77,726	36,722	69,942	85,656	115,294	13,937	6,070	9,689	13,887	13,961	6,885	6,649	1,929	14,587	10,233
Crop residue	18,711	0.6	43	86	28	141	38	161	8	2	11	7	9	48	5	51	18,050	23
Saw dust	502	0.0	103	38	6	10	13	20	20	6	26	12	3	49	10	0	177	9
Animal waste	585	0.0	6	4	3	5	8	10	0	2	3	4	1	20	17	10	484	8
Cooking gel	894	0.0	151	62	23	41	131	258	45	20	45	16	6	25	13	4	25	29
Other	147	0.0	10	16	4	11	14	15	8	1	2	6	7	6	6	1	34	6

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.12: COOKING SPACE USED BY HOUSEHOLDS BY TYPE OF LOCALITY AND REGION

Cooking space	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All Locality Types																		
Total	7,695,122	100.0	552,070	773,118	1,557,665	471,967	816,595	1,363,087	221,807	139,833	287,395	265,688	165,686	413,201	123,430	105,573	257,158	180,849
Separate room for exclusive use of household	2,888,520	37.5	236,404	285,799	670,629	167,174	300,846	483,406	102,188	50,913	98,697	55,187	58,939	99,613	29,027	51,708	133,456	64,534
Separate room shared with other households	784,529	10.2	69,174	69,944	92,678	27,939	97,895	230,128	25,559	21,398	39,367	21,133	15,054	34,344	7,271	11,636	11,810	9,199
Enclosure without roof	91,506	1.2	5,091	6,334	9,804	5,593	8,564	12,805	2,280	2,023	3,581	3,110	1,919	3,744	1,775	4,847	18,103	1,933
Structure with roof but without walls	241,647	3.1	17,632	23,688	10,466	43,112	37,535	37,499	11,706	8,005	9,666	13,695	16,613	3,583	4,163	970	2,495	819
Bedroom/Hall /Living room	99,790	1.3	4,351	11,325	29,579	32,353	7,277	5,960	592	385	892	717	2,338	1,762	324	335	658	942
Verandah	2,114,154	27.5	162,464	243,172	525,985	102,665	259,760	407,705	47,972	30,726	66,605	70,287	30,189	60,039	18,021	9,430	35,795	43,339
Open space in compound	1,467,276	19.1	56,465	131,569	217,309	92,709	103,683	184,441	31,345	26,111	68,218	101,243	40,235	209,977	62,776	26,640	54,659	59,896
Other	7,700	0.1	489	1,287	1,215	422	1,035	1,143	165	272	369	316	399	139	73	7	182	187
Urban																		
Total	4,613,789	100.0	292,367	455,614	1,441,753	204,433	429,773	849,094	69,299	70,781	177,172	149,345	57,581	214,239	38,766	36,469	70,574	56,529
Separate room for exclusive use of household	1,673,785	36.3	114,308	156,538	620,367	72,940	147,171	292,930	24,084	20,825	59,104	30,589	16,034	52,512	7,541	15,922	28,344	14,576
Separate room shared with other households	485,371	10.5	35,988	39,736	87,592	15,466	61,449	149,516	10,307	13,375	26,413	13,487	4,837	14,571	1,896	4,055	3,889	2,794
Enclosure without roof	33,355	0.7	2,008	2,997	8,651	1,923	2,907	5,231	417	661	1,646	1,295	485	1,501	420	1,422	1,565	226
Structure with roof but without walls	59,149	1.3	4,652	7,359	6,897	8,377	7,853	8,517	1,504	1,761	3,644	3,114	2,671	1,516	389	300	453	142
Bedroom/Hall /Living room	70,828	1.5	3,005	8,194	27,388	18,557	4,828	4,313	230	241	601	466	881	1,122	148	190	329	335
Verandah	1,578,006	34.2	101,566	170,267	492,819	52,497	163,419	299,746	25,430	23,105	53,350	55,260	17,660	53,233	11,257	6,328	24,021	28,048
Open space in compound	709,663	15.4	30,540	69,997	196,957	34,552	41,787	88,306	7,289	10,685	32,201	44,998	14,956	89,719	17,083	8,251	11,949	10,393
Other	3,632	0.1	300	526	1,082	121	359	535	38	128	213	136	57	65	32	1	24	15
Rural																		
Total	3,081,333	100.0	259,703	317,504	115,912	267,534	386,822	513,993	152,508	69,052	110,223	116,343	108,105	198,962	84,664	69,104	186,584	124,320
Separate room for exclusive use of household	1,214,735	39.4	122,096	129,261	50,262	94,234	153,675	190,476	78,104	30,088	39,593	24,598	42,905	47,101	21,486	35,786	105,112	49,958
Separate room shared with other households	299,158	9.7	33,186	30,208	5,086	12,473	36,446	80,612	15,252	8,023	12,954	7,646	10,217	19,773	5,375	7,581	7,921	6,405
Enclosure without roof	58,151	1.9	3,083	3,337	1,153	3,670	5,657	7,574	1,863	1,362	1,935	1,815	1,434	2,243	1,355	3,425	16,538	1,707
Structure with roof but without walls	182,498	5.9	12,980	16,329	3,569	34,735	29,682	28,982	10,202	6,244	6,022	10,581	13,942	2,067	3,774	670	2,042	677

Cooking space	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Bedroom/Hall /Living room	28,962	0.9	1,346	3,131	2,191	13,796	2,449	1,647	362	144	291	251	1,457	640	176	145	329	607
Verandah	536,148	17.4	60,898	72,905	33,166	50,168	96,341	107,959	22,542	7,621	13,255	15,027	12,529	6,806	6,764	3,102	11,774	15,291
Open space in compound	757,613	24.6	25,925	61,572	20,352	58,157	61,896	96,135	24,056	15,426	36,017	56,245	25,279	120,258	45,693	18,389	42,710	49,503
Other	4,068	0.1	189	761	133	301	676	608	127	144	156	180	342	74	41	6	158	172

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

TABLE 5.13: BATHING FACILITIES USED BY HOUSEHOLDS BY TYPE OF LOCALITY AND REGION

Bathing Facilities	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
All locality Types																		
Total	8,356,966	100.0	620,787	837,879	1,698,374	491,091	880,838	1,521,844	239,948	152,690	317,864	288,506	173,924	437,788	133,045	108,053	264,246	190,089
Own bathroom for exclusive use by household	3,251,437	38.9	212,796	281,798	745,264	170,826	288,643	565,819	95,490	52,774	109,696	90,146	58,479	221,488	56,983	61,371	146,162	93,702
Shared separate bathroom in same house	2,863,657	34.3	221,732	307,546	519,388	136,412	342,515	650,466	82,836	57,349	126,304	98,092	51,714	124,197	30,298	26,785	46,642	41,381
Bathroom in another house	192,833	2.3	30,466	37,138	19,123	10,476	17,904	29,532	10,258	3,474	7,324	12,133	7,234	2,203	2,759	272	726	1,811
Open space around house	539,248	6.5	36,086	40,971	73,638	33,378	58,386	88,768	21,765	13,263	25,847	35,998	12,032	22,431	20,034	6,240	29,324	21,087
Private open cubicle	532,531	6.4	35,176	53,506	78,350	61,806	67,927	75,128	14,579	12,434	20,040	20,696	17,424	20,084	9,783	6,003	24,421	15,174
Shared open cubicle	771,526	9.2	68,726	103,272	167,853	75,198	100,050	95,882	13,157	12,428	26,228	27,114	25,172	21,926	6,086	5,081	12,717	10,636
Public bath house	187,291	2.2	12,792	11,129	93,214	1,564	3,165	14,923	1,383	732	2,151	2,759	911	24,576	6,072	2,144	3,894	5,882
In/hear river, pond, lake, dam, etc.	12,346	0.1	2,702	1,623	697	799	1,586	599	191	40	83	1,153	714	678	922	139	195	225
Other	6,097	0.1	311	896	847	632	662	727	289	196	191	415	244	205	108	18	165	191
Urban																		
Total	5,068,903	100.0	328,160	493,689	1,575,236	213,339	467,692	956,088	77,124	79,438	197,703	165,408	61,273	236,115	43,530	38,147	75,024	60,937
Own bathroom for exclusive use by household	2,000,875	39.5	114,010	171,938	689,221	71,666	146,529	368,468	25,019	24,552	69,587	52,032	19,564	135,729	20,934	22,186	38,568	30,872
Shared separate bathroom in same house	1,979,563	39.1	136,837	198,092	495,570	78,501	228,258	452,812	40,575	39,488	91,437	70,301	23,158	59,839	13,277	9,923	22,548	18,947
Bathroom in another house	66,916	1.3	10,774	11,758	16,423	1,967	5,074	8,686	1,406	864	2,524	3,595	1,956	722	498	131	209	329
Open space around house	208,799	4.1	13,690	19,672	62,503	8,790	17,780	35,941	3,013	4,510	9,626	12,458	1,979	6,744	2,717	1,456	4,385	3,535
Private open cubicle	205,719	4.1	11,234	23,693	65,064	16,925	19,691	24,560	2,265	3,190	7,562	8,288	4,037	9,816	2,279	1,527	3,184	2,404
Shared open cubicle	454,571	9.0	33,133	59,845	152,927	34,410	47,849	52,861	4,356	6,349	15,573	16,640	10,204	9,592	1,611	1,602	4,279	3,340
Public bath house	147,612	2.9	7,785	7,672	92,650	784	2,100	12,339	431	401	1,288	1,836	261	13,401	2,123	1,288	1,807	1,446
In/hear river, pond, lake, dam, etc.	2,322	0.0	521	690	263	102	220	68	17	7	8	97	49	175	61	23	10	11
Other	2,526	0.0	176	329	615	194	191	353	42	77	98	161	65	97	30	11	34	53
Rural																		
Total	3,288,063	100.0	292,627	344,190	123,138	277,752	413,146	565,756	162,824	73,252	120,161	123,098	112,651	201,673	89,515	69,906	189,222	129,152
Own bathroom for exclusive use by household	1,250,562	38.0	98,786	109,860	56,043	99,160	142,114	197,351	70,471	28,222	40,109	38,114	38,915	85,759	36,049	39,185	107,594	62,830

Bathing Facilities	All Regions		Region															
	Number	Percent	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Western North	Ahafo	Bono	Bono East	Oti	Northern	Savannah	North East	Upper East	Upper West
Shared separate bathroom in same house	884,094	26.9	84,895	109,454	23,818	57,911	114,257	197,654	42,261	17,861	34,867	27,791	28,556	64,358	17,021	16,862	24,094	22,434
Bathroom in another house	125,917	3.8	19,692	25,380	2,700	8,509	12,830	20,846	8,852	2,610	4,800	8,538	5,278	1,481	2,261	141	517	1,482
Open space around house	330,449	10.0	22,396	21,299	11,135	24,588	40,606	52,827	18,752	8,753	16,221	23,540	10,053	15,687	17,317	4,784	24,939	17,552
Private open cubicle	326,812	9.9	23,942	29,813	13,286	44,881	48,236	50,568	12,314	9,244	12,478	12,408	13,387	10,268	7,504	4,476	21,237	12,770
Shared open cubicle	316,955	9.6	35,593	43,427	14,926	40,788	52,201	43,021	8,801	6,079	10,655	10,474	14,968	12,334	4,475	3,479	8,438	7,296
Public bath house	39,679	1.2	5,007	3,457	564	780	1,065	2,584	952	331	863	923	650	11,175	3,949	856	2,087	4,436
In/near river, pond, lake, dam, etc.	10,024	0.3	2,181	933	434	697	1,366	531	174	33	75	1,056	665	503	861	116	185	214
Other	3,571	0.1	135	567	232	438	471	374	247	119	93	254	179	108	78	7	131	138

Note: The numbers presented in this table exclude secondary housing and vacant dwelling units.

LIST OF CONTRIBUTORS

Name and Contact	Email	Institution	Role
Prof. Samuel K. Annim	samuel.annim@statsghana.gov.gh	Ghana Statistical Service	Government Statistician and Chief Census Officer
Dr. Faustina Frempong-Ainguah	faustina.frempong-anguah@statsghana.gov.gh	Ghana Statistical Service	Deputy Government Statistician and Deputy Chief Census Officer
Dr. Grace Bediako	grace.bediako822@gmail.com	Ghana Statistical Service	Subject Matter Specialist, Demography
Dr. Collins Opiyo	opiyo@unfpa.org	UNFPA	Chief Technical Advisor (CTA)
Dr. Pearl Kyei	pkyei@ug.edu.gh	University of Ghana	Technical Advisor
Mr. Owusu Kagya	kagya.owusu@statsghana.gov.gh	Ghana Statistical Service	Chief Census Methodologist
Mrs. Jacqueline Anum	jacqueline.anum@statsghana.gov.gh	Ghana Statistical Service	Chief Data Analyst
Mrs. Samilia Mintah	samilia.mintah@statsghana.gov.gh	Ghana Statistical Service	Deputy Chief Data Analyst
Mrs. Abena Osei-Akoto	abena.osei-akoto@statsghana.gov.gh	Ghana Statistical Service	Census Methodologist
Mr. Godwin Odei Gyebi	godwin.gyebi@statsghana.gov.gh	Ghana Statistical Service	Subject Matter Specialist, Demography
Dr. Peter Takyi Peprah	peter.peprah@statsghana.gov.gh	Ghana Statistical Service	Census Methodologist and Report Writing
Ms. Sarah Woode	sarah.woode@statsghana.gov.gh	Ghana Statistical Service	Subject Matter Specialist, Demography
Mr. Moses Ansah	moses.ansah@statsghana.gov.gh	Ghana Statistical Service	Subject Matter Specialist, Demography
Prof. John K. Anarfi	jkanarfi@ug.edu.gh	University of Ghana	Subject Matter Specialist, Demography

Name and Contact	Email	Institution	Role
Prof. Kofi Awusabo-Asare	k.awusabo-asare@ucc.edu.gh	University of Cape Coast	Subject Matter Specialist, Demography
Prof. Stephen O. Kwankye	skwankye@ug.edu.gh	University of Ghana	Subject Matter Specialist, Demography
Prof. Kobina Esia-Donkoh	kesia-donkoh@ucc.edu.gh	University of Cape Coast	Subject Matter Specialist, Demography
Dr. Raymond E. Kofinti	rkofinti@ucc.edu.gh	University of Cape Coast	Data Validation and Report Writing
Ing. Godfred Fiifi Boadi	fiifiboadi@gmail.com	Ministry of Sanitation and Water Resources	Report Formatting and Editing
Mr. Michael Beckoe	michael.beckoe@statsghana.gov.gh	Ghana Statistical Service	Data Validation and Report Writing
Mr. Solomon Owusu-Bempah	solomon.owusu-bempah@statsghana.gov.gh	Ghana Statistical Service	Report Writing
Mr. Eric Nii Amoo	eric.amoo@statsghana.gov.gh	Ghana Statistical Service	Report Writing
Mr. Kwamena Leo Arkafra	ikwamena@statsghana.gov.gh	Ghana Statistical Service	CAPI Expert
Mr. Yaw Misefa	yaw.misefa@statsghana.gov.gh	Ghana Statistical Service	Data Analyst
Mr. Ernest Enyan	enyan.ernest@statsghana.gov.gh	Ghana Statistical Service	Data Analyst
Mr. Ransford Kobina Barths	myrbarths@gmail.com	Ghana Statistical Service	Data Analyst
Ms. Josephine Baako-Amponsah	baakoamponsh@gmail.com	Ghana Statistical Service	Data Analyst
Mr. Simon Tichutab Onilimor	onilchuta@gmail.com	Ghana Statistical Service	Data Analyst
Mr. Appiah Kusi Boateng	kusi.appiah@statsghana.gov.gh	Ghana Statistical Service	Data Analyst
Ms. Anointing Yaa Lartey	annkesh1234@gmail.com	Ghana Statistical Service	Data Analyst
Mr. Selaseh Akaho	selaseh.akaho@stats.gov.gh	Ghana Statistical Service	Data Visualisation
Mr. Emmanuel George Ossei	emmanuel.ossei@statsghana.gov.gh	Ghana Statistical Service	Head, Census Secretariat
Ms. Ruby Ayew	ruby.ayew@statsghana.gov.gh	Ghana Statistical Service	Administrative Staff

Name and Contact	Email	Institution	Role
Mrs. Hellen Ayitevie	hellen.ayitevie@statsghana.gov.gh	Ghana Statistical Service	Office of the Government Statistician
Mr. Felix Adjei	felix.adjei@statsghana.gov.gh	Ghana Statistical Service	Graphic Design
Ms. Nana Akua Agyemang-Badu	nana.akuya2014@gmail.com	Fluent Communication Ltd	Report Editor



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