



YOU COUNT, GET COUNTED

GHANA 2021 POPULATION AND HOUSING CENSUS

GENERAL REPORT VOLUME 3N

STRUCTURES



The AFRICA We Want



**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 3N**

**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.

For the first time, the PHC collected data on all structures regardless of use, making it possible to compile detailed statistics on structures in the country. These data are useful for the implementation of policies, such as settlement planning and adequate housing, which require detailed geospatial data on structures.

The 2021 PHC General Report Volume 3N, which is on Structures, presents statistics on the number, type, level of completion and usage of structures. The statistics are 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. The statistics on structures, their type (e.g., storey building, terrace, kiosk), usage (residential and/or non-residential), and their level of completion will help monitor adherence to the Ghana National Spatial Development Framework (2015-2035) at various levels. The disaggregated statistics will also guide the implementation of the Land Use and Spatial Planning Act (2016) policy, whose objectives include sustainable development of land and human settlements through decentralised planning.

Further, the report will aid the Ministry of Works and Housing and the relevant private sector stakeholders, in the implementation of the National Housing Policy (2015). This report thus provides timely data for evidence-based planning and assessment of community needs for the implementation of the several policies meant to ensure persons in Ghana have access to adequate housing with prudent use of land.

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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 3N: BACKGROUND INFORMATION

Shelter, a basic human need, is recognised as one of the development indicators and featured prominently in the global agenda at the Earth Summit in 1992. Agenda 21, the global framework developed at the Summit, called for the provision of adequate shelter for all and the improvement of human settlement management. The call has been reiterated in the Sustainable Development Goal (SDG) 11, which seeks to ensure inclusive and sustainable urbanisation, safe and resilient habitat. Furthermore, Agenda 2030 (*The World We Want*) enjoins all major groups and relevant stakeholders, to report on their contribution to access to adequate, safe, and affordable housing and basic services and upgrade slums. The African Union's Agenda 2063 also underscores the need for countries to plan for modern, affordable, and liveable habitats, and quality basic services.

Ghana's Coordinated Programme of Economic and Social Development Policies (2017-2024) responds to these calls with policy interventions aimed at promoting sustainable, spatially integrated, balanced, and orderly development of human settlements, and providing adequate, safe, secure, quality, and affordable social housing and private housing solutions. The Ghana Shared Growth and Development Agenda (GSGDA 11, 2014-2017) had earlier drawn attention to the need for increased access to safe, adequate, and affordable housing and shelter.

The country is currently facing rapid urbanisation at a rate which is undermining the capacity of government and local authorities to effectively manage the physical growth of urban areas and provide essential services. Results from the 2010 PHC indicated that about 70 percent of total housing stock was provided by individual households through self-built or self-managed housing schemes. The UN-Habitat also estimates the housing deficit of the country to be approximately 1.7 million units as of 2015, with a substantial segment of the population living in sub-standard houses and other unsuitable structures, such as kiosks.

For the purpose of monitoring the achievement of the global, regional and national goals, the 2021 PHC collected information on all structures with respect to type, level of completion, occupancy status, use, and availability of different types of toilet facilities. In addition, information on structures such as metal containers, wooden structures, and kiosks, were captured at the national and sub-national levels. These data are to inform the planning and development of human settlement programmes and policies and provide information for monitoring living and housing conditions, establishing the building density for urban planning, and identifying current housing needs of the population.

This report presents information on stock and type of structures, level of completion and use for residential purposes. It is based on responses to questions in the listing form as defined under Section 1.10.1. The concept of structure in the 2021 PHC was broadened to include uncompleted buildings from window level whether roofed or not in contrast to that of the 2010 PHC which limited the concept to only structures with roofing.

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

3. DEFINITION OF CONCEPTS

3.1. Structure

Structure refers to a separate and independent building or an enclosure that is completed or uncompleted (window level and above), residential or non-residential, occupied or unoccupied and movable or immovable.

3.2. Listing

This is the process of assigning unique serial numbers to identify every structure in each Enumeration Area (EA), the smallest geographical area with a well-defined boundary and features for the purposes of data collection in the Census.

3.3. Level of Completion

This refers to the stage of construction of the structure. This is categorised as fully completed, completely roofed but uncompleted, partly roofed, roofing level with improvised roof, lintel level with improvised roof, roofing level without roof, window level and concrete/metal pillar level.

3.4. Conventional Structures

This refers to buildings constructed from cement blocks, concrete, landcrete, burnt bricks or mud, categorised as single building (detached) house, one storey (detached), two storey (detached), multiple storey (detached), single building (semi-detached), one storey (semi-detached), two storey (semi-detached), multiple storey (semi-detached) and terrace.

3.5. Residential Structures

These are structures being used or intended to be used for residential purposes.

3.6. Single Building (Detached)

It is a structure with only one floor level that stands alone and completely separated from any other structure.

3.7. One-storey (Detached)

This refers to a structure with one floor level on top of the ground floor, which stands alone and completely separated from any other structure.

3.8. Two-storey (Detached)

It refers to a structure with two floor levels on top of the ground floor, which stands alone and completely separated from any other structure.

3.9. Multiple-storey (Detached)

It is a structure with three or more floor levels on top of the ground floor which stands alone and completely separated from any other structure.

3.10. Semi-detached

It refers to a single structure of only one floor level that is attached to another single structure with the adjoining structure usually having a common dividing wall that extends from the ground to the roof, with or without a fence wall.

3.11. One-storey (Semi-Detached)

It refers to a structure with one floor level on top of a ground floor that is attached to another single structure with the adjoining structure usually having a common dividing wall that extends from ground to the roof, with or without a fence wall.

3.12. Two-storey (Semi- Detached)

It is a structure with two floor levels on top of the ground floor that is attached to another single structure with the adjoining structure usually having a common dividing wall that extends from ground to the roof, with or without a fence wall.

3.13. Multiple-storey (Semi- Detached)

This refers to a structure with three or more floor levels on top of the ground floor that is attached to another single structure with the adjoining structure usually having a common dividing wall that extends from ground to the roof, with or without a fence wall.

3.14. Terrace

It is a structure which is part of a row of similar structures that are joined together by their side walls.

3.15. Non-conventional structure

This is a structure constructed with metal, wood, poly-plastics, reed and other makeshift materials, which is normally not expected for residential purposes, but may be used as such; and they include metal containers, wooden structures and kiosks.

3.16. Metal Container

This refers to an independent makeshift structure or an enclosure built of metal sheet/material and used for residential or other purposes.

3.17. Wooden Structure

It is a makeshift structure built of wood with an unmovable or permanent foundation.

3.18. Kiosk/Poly-kiosk

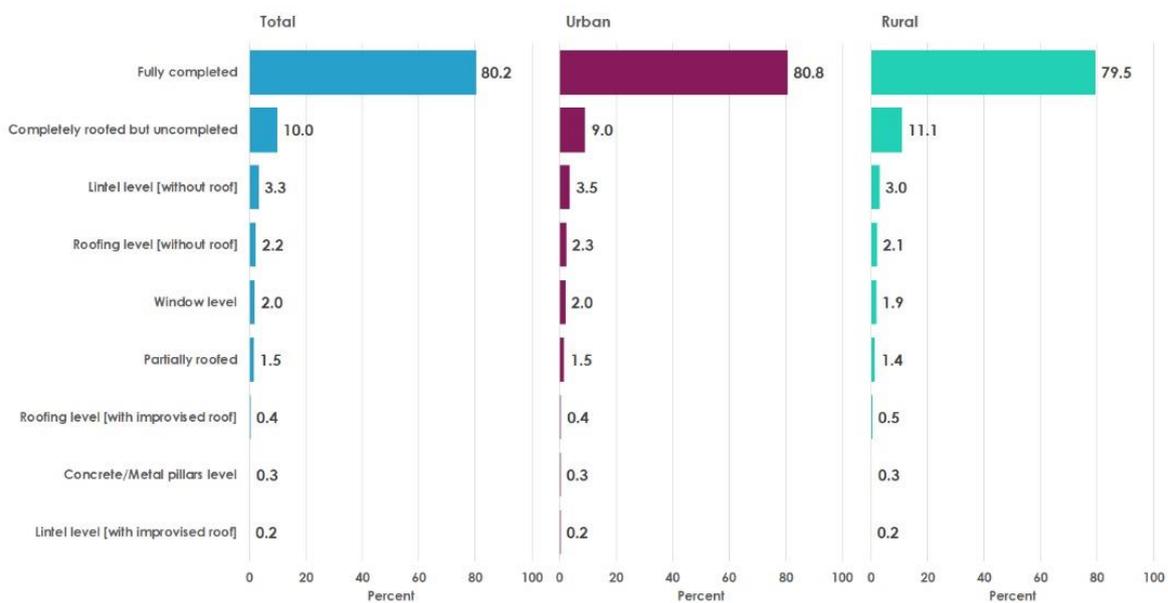
It is an enclosed movable structure, usually made of wood, poly-plastic, etc., and used for residential or other purposes.

4. HIGHLIGHTS OF RESULTS

Of the 10,659,542 structures at various levels of completion, 8,545,049 (80.2%) are fully completed, an additional 1,065,387 (10.0%) are completely roofed but not completed and 223,739 (2.1%) have some form of roofing.

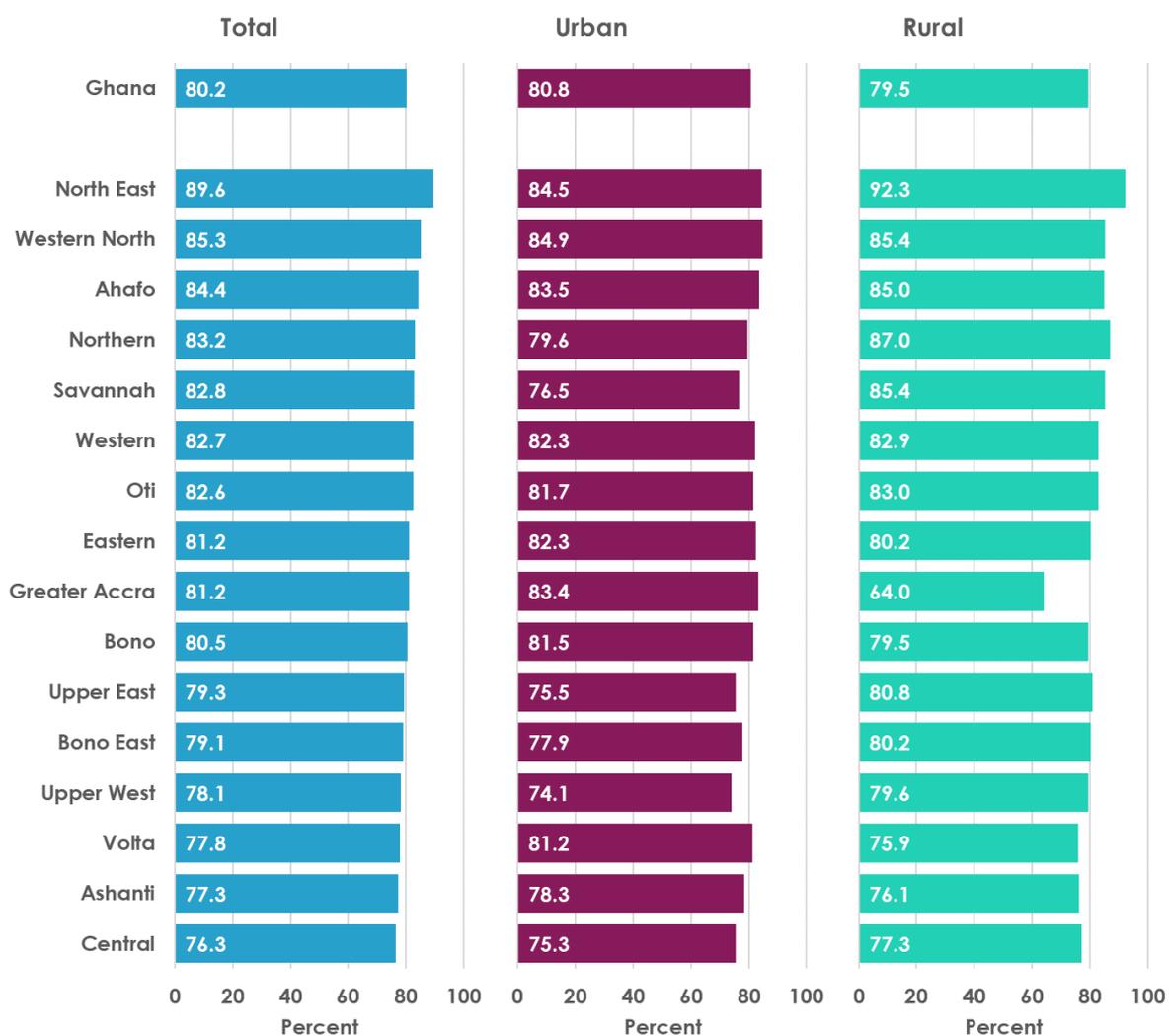
The proportions of structures at various levels of completion are almost equal in urban and rural areas.

FIGURE 4.1: LEVEL OF COMPLETION OF STRUCTURES BY TYPE OF LOCALITY



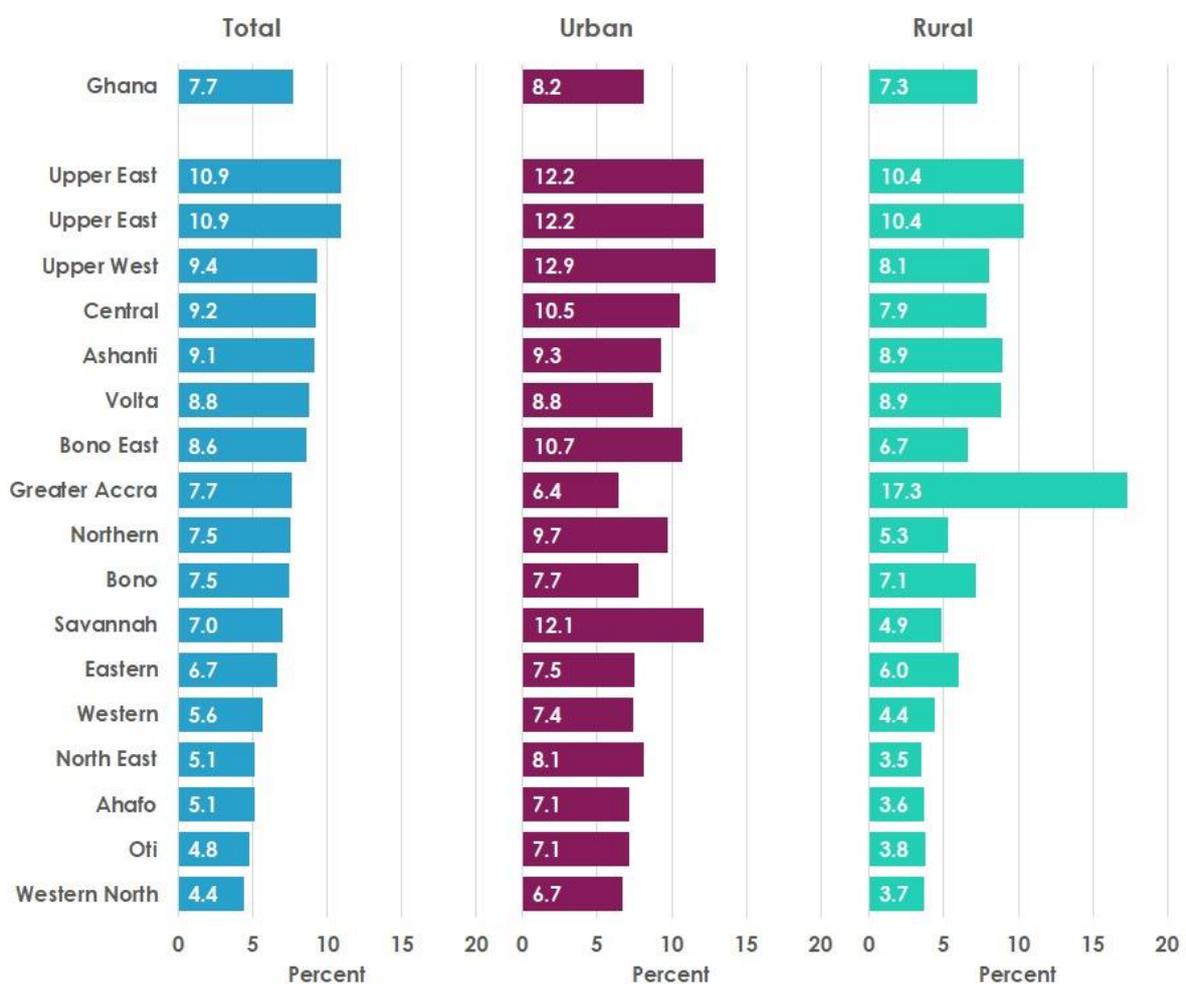
The proportions of fully completed structures vary from 76.3 percent in Central Region to 89.6 percent in North East Region. In urban areas, Upper West (74.1%) has the lowest proportion of fully completed structures and Western North (84.9%) the highest, while rural areas have wide disparities ranging from 64.0 percent in Greater Accra to 92.3 percent in North East.

FIGURE 4.2: PROPORTION OF FULLY COMPLETED STRUCTURES BY TYPE OF LOCALITY AND REGION



About 8 percent (825,367) of structures are uncompleted and without roof. The highest proportion (Upper East, 10.9%) is more than twice the lowest (Western North, 4.4%). In all regions, the proportions are higher in urban than rural areas except for Volta Region where they are about the same, and Greater Accra Region where rural (17.3%) is more than twice as high as that of rural (6.4%).

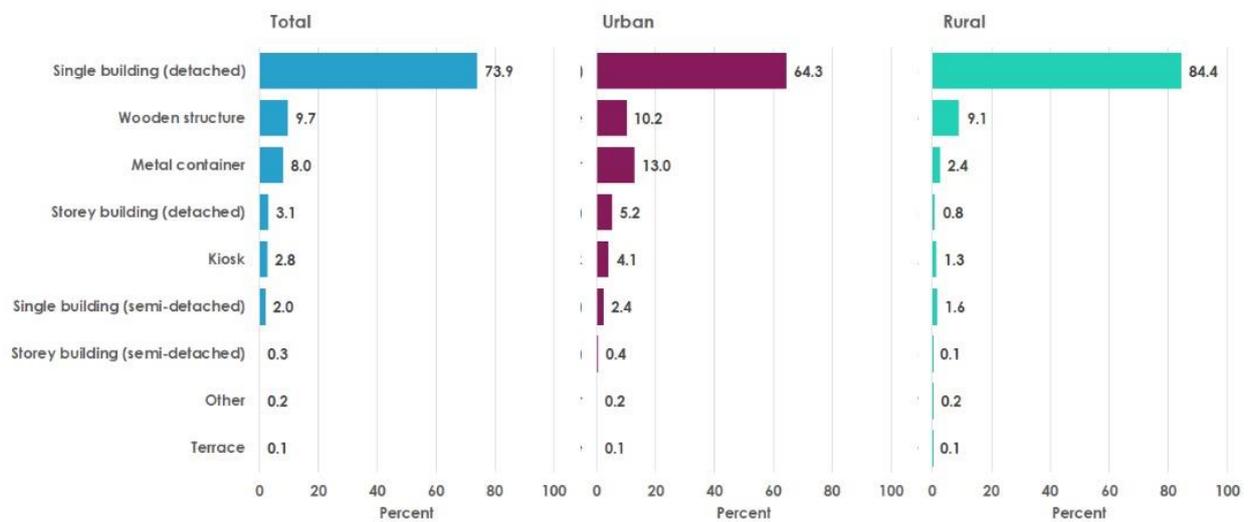
FIGURE 4.3: PROPORTION OF STRUCTURES THAT ARE UNCOMPLETED AND WITHOUT ROOFING BY TYPE OF LOCALITY AND REGION



About three-quarters (73.9%) of roofed structures are single detached, and the proportion is higher in rural (84.4%) than in urban (64.3%) areas.

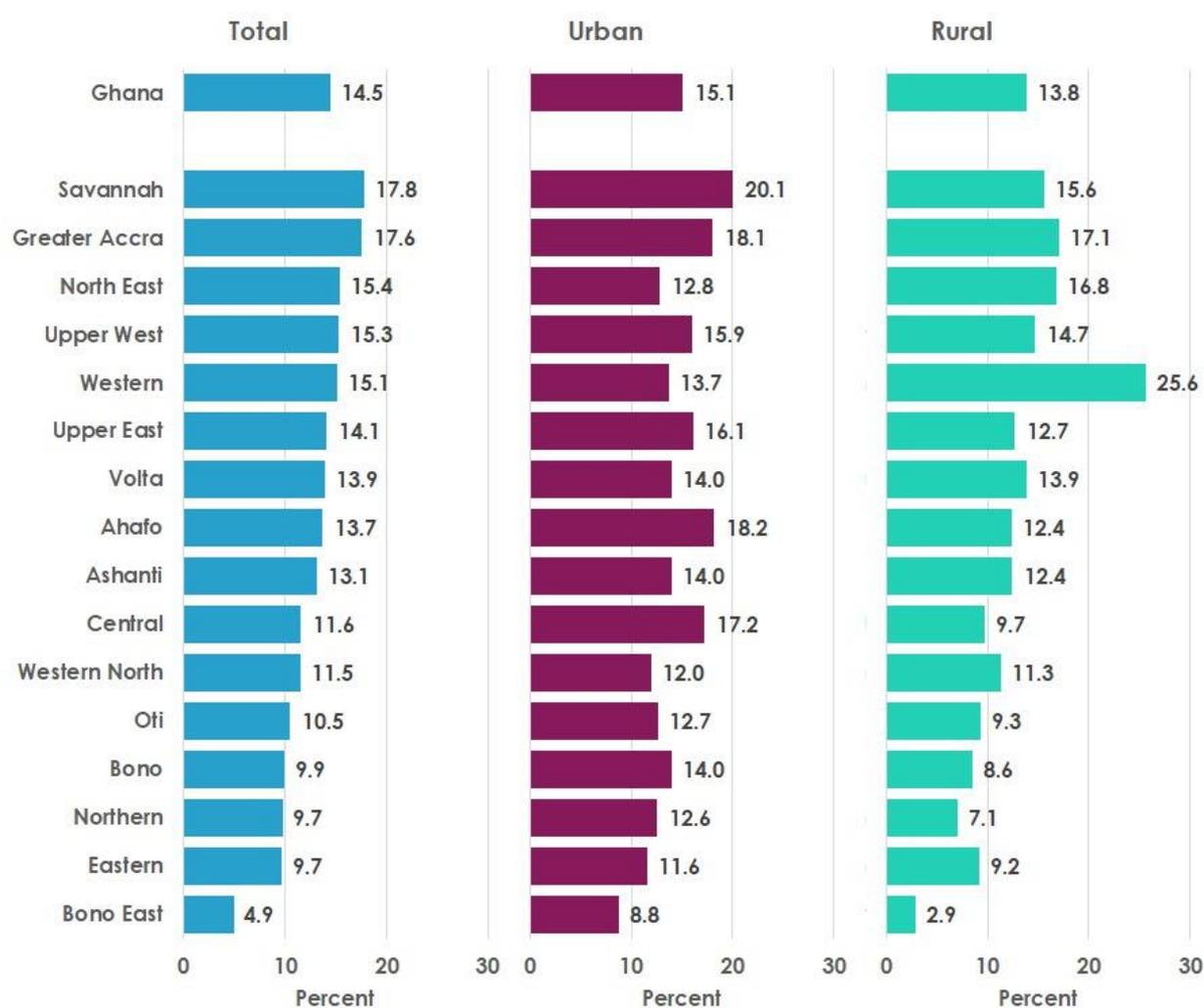
One in five (20.4%) roofed structures are metal containers, wooden structures and kiosks, and they are more of an urban (27.3%) than rural (12.8%) phenomenon.

FIGURE 4.4: ROOFED STRUCTURES BY TYPE AND TYPE OF LOCALITY



About 15 percent of all residential structures are not fully completed but have some form of roofing, and there is a marginal difference between urban (15.1%) and rural (13.8%) areas. The proportion ranges from 4.9 percent in Bono East Region to 17.8 percent in Savannah Region and 17.6 percent in Greater Accra Region.

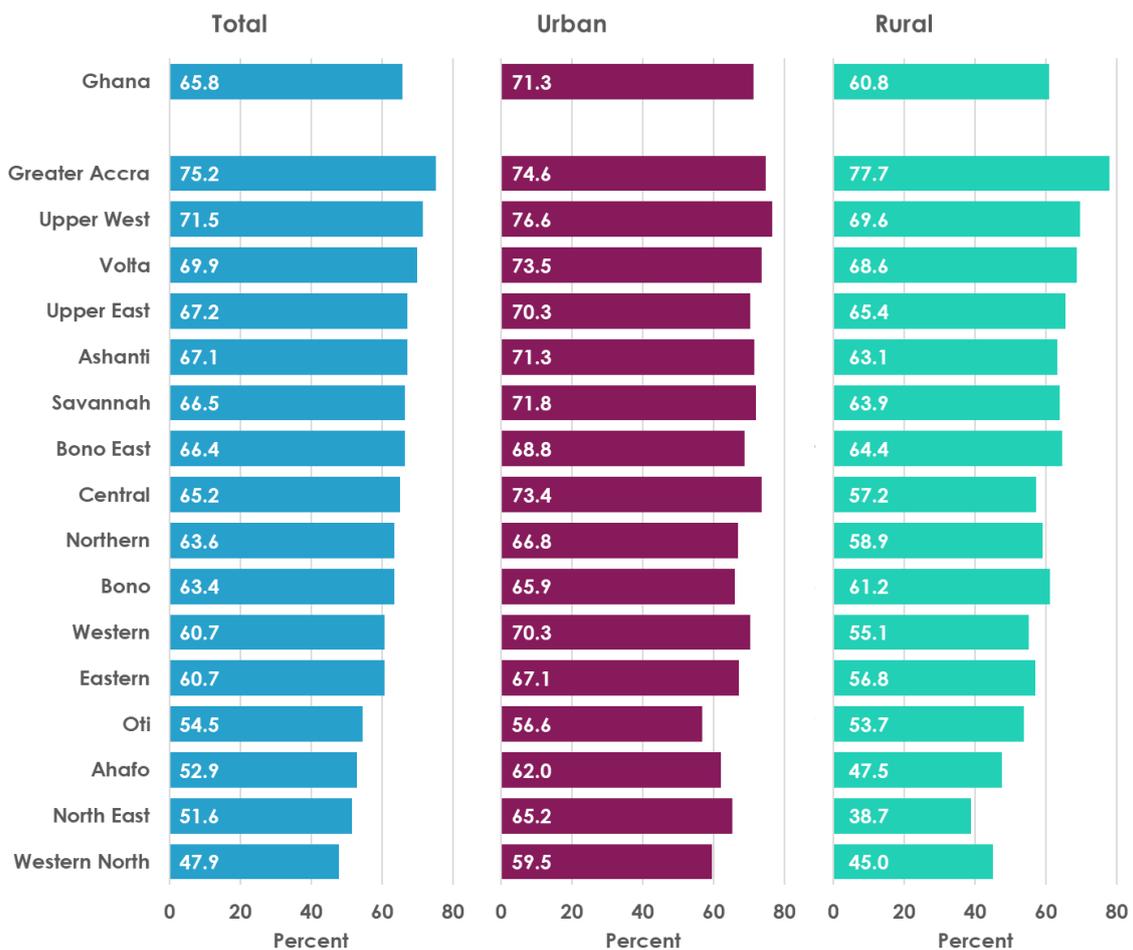
FIGURE 4.5: PROPORTION OF RESIDENTIAL STRUCTURES WITH SOME FORM OF ROOFING BUT NOT FULLY COMPLETED BY TYPE OF LOCALITY AND REGION



Two-thirds (65.8%) of not fully completed structures with some form of roofing are used for residential purposes, and the proportion is higher in urban (71.3%) than rural (60.8%) areas. Among the regions, the proportions are highest in Greater Accra (75.2%) and Upper West (71.5%) regions and lowest in Western North Region (47.9%).

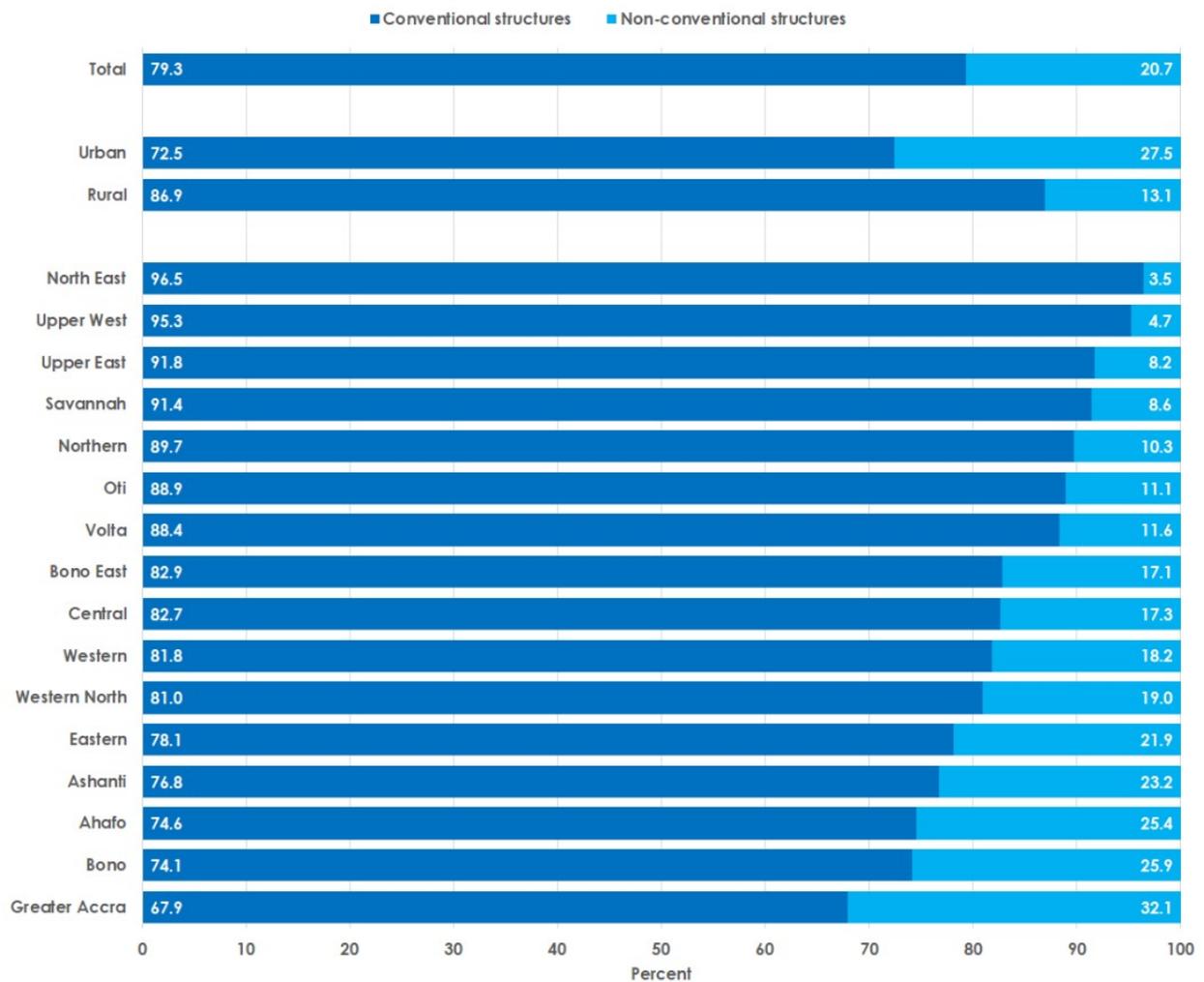
Majority of not fully completed structures with some form of roofing are used for residential purposes in urban areas in all regions, ranging from 56.6 percent in Oti Region to 76.6 percent in Upper West Region. Similarly, in rural areas, the proportions are above 50 percent in all regions apart from three regions (North East, 38.7%; Western North, 45.0%; and Ahafo, 47.5%).

FIGURE 4.6: PROPORTION OF NOT FULLY COMPLETED STRUCTURES WITH SOME FORM OF ROOFING USED FOR RESIDENTIAL PURPOSES BY TYPE OF LOCALITY AND REGION



Proportion of non-conventional structures (metal containers, wooden structures, and kiosks) are 20 percent or higher in five regions and less than 10 percent in four.

FIGURE 4.7: CONVENTIONAL AND NON-CONVENTIONAL STRUCTURES BY TYPE OF LOCALITY AND BY REGION

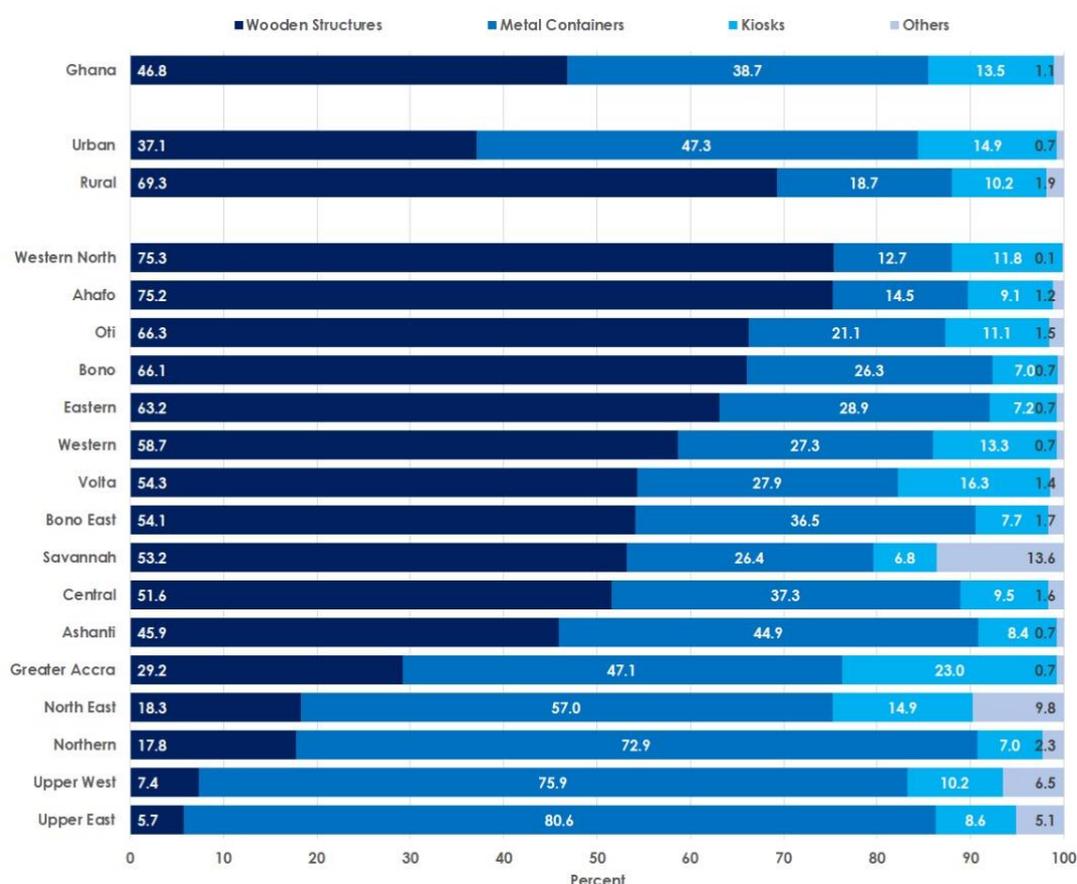


Nearly half (46.8%) of all non-conventional structures are wooden and almost 40 percent are metal containers. In urban areas, metal containers dominate (47.3%) while in rural areas it is wooden structures (69.3%).

In 10 regions, wooden structures constitute more than 50 percent of non-conventional structures, while in three regions, metal containers make up more than 70 percent. Greater Accra (23.0%) and Volta (16.3%) regions have the highest proportions of kiosks among non-conventional structures.

Proportion of metal containers among non-conventional structures in Upper East Region (80.6%) is over six times that in Western North (12.7%) and in Western North (75.3%) the proportion of wooden structures is 13 times that of Upper East (5.7%).

FIGURE 4.8: NON-CONVENTIONAL STRUCTURES BY TYPE, TYPE OF LOCALITY AND BY REGION

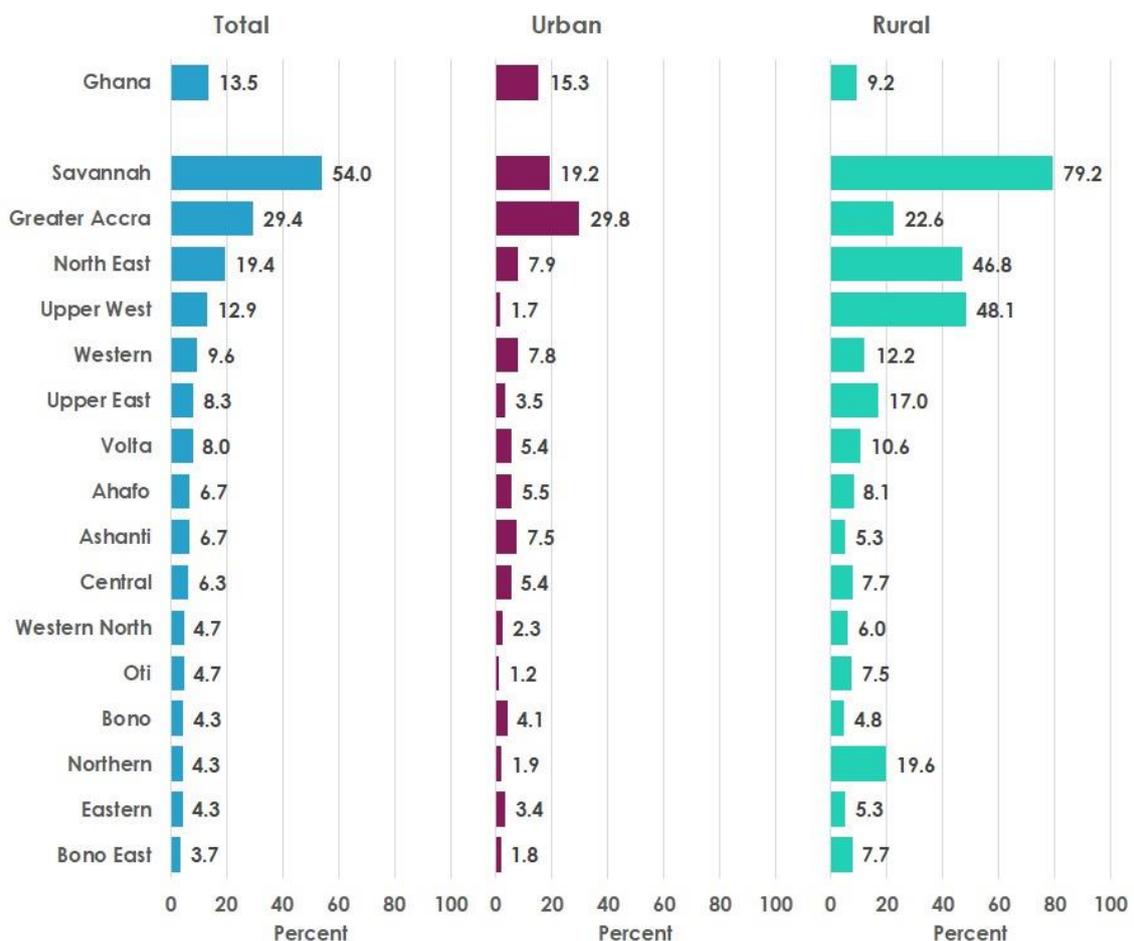


About 14 percent of non-conventional structures (metal containers, wooden structures and kiosks) are used for residential purposes and is higher in urban (15.3%) than rural (9.2%) areas at the national level and in only Greater Accra and Ashanti regions.

In rural areas in Savannah(79.2%), North East (46.8%), and Upper West (48.1%), almost 50 percent or more of non-conventional structures are used for residential purposes.

Three in 10 non-conventional structures in Greater Accra and two in 10 in Savannah regions are used for residential purposes.

FIGURE 4.9: PROPORTION OF NON-CONVENTIONAL STRUCTURES USED FOR RESIDENTIAL PURPOSES BY TYPE OF LOCALITY AND REGION



Six in 10 (59.0%) non-conventional structures used for residential purposes are wooden and about three in 10 (28.4%) are kiosks. In both rural (65.4%) and urban (57.3%) areas, wooden structures dominate as residential structures.

In 12 regions, wooden structures constitute more than 50 percent of non-conventional structures used for residential purposes, while in Greater Accra, kiosks constitute 41.1 percent.

In four regions (Upper East, Upper West, North East and Northern), structures made of other materials such as reed, straw, thatch and rubber sheets are predominant among non-conventional structures used for residential purposes.

FIGURE 4.10: NON-CONVENTIONAL RESIDENTIAL STRUCTURES BY TYPE, TYPE OF LOCALITY AND BY REGION



5. MAIN TABLES

TABLE 5.1: LEVEL OF COMPLETION OF STRUCTURES BY TYPE OF LOCALITY AND REGION

Level of Completion	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	10,659,542	100.0	815,943	1,106,042	2,062,098	691,636	1,183,056	1,794,034	428,250	218,662	421,759	392,932	249,176	439,741	178,878	133,004	303,140	241,191
Fully completed	8,545,049	80.2	674,559	843,797	1,673,624	537,916	960,364	1,386,778	365,207	184,525	339,676	310,755	205,831	366,065	148,038	119,188	240,355	188,371
Completely roofed but uncompleted	1,065,387	10.0	81,731	127,526	181,109	73,609	121,090	207,402	39,304	19,604	44,367	41,566	27,448	33,387	15,093	5,209	20,969	25,973
Partially roofed	155,940	1.5	9,187	25,704	34,562	15,133	16,180	24,562	2,929	1,967	3,639	4,585	2,453	3,523	1,714	1,072	6,294	2,436
Roofing level [with improvised roof]	45,859	0.4	3,079	4,763	9,118	2,488	4,396	7,757	1,440	1,106	1,875	1,513	1,152	2,644	1,079	535	1,711	1,203
Lintel level [with improvised roof]	21,940	0.2	1,329	2,257	5,430	1,498	2,217	3,706	499	295	755	639	397	934	419	173	797	595
Roofing level [without roof]	237,695	2.2	10,101	25,701	43,959	23,071	19,586	35,409	4,164	2,742	8,834	10,798	4,266	18,075	5,919	3,449	13,581	8,040
Lintel level [without roof]	347,266	3.3	21,195	43,710	65,659	22,176	34,949	76,324	8,374	4,893	14,244	14,063	4,798	10,037	3,819	2,125	12,028	8,872
Window level	209,489	2.0	12,493	29,244	42,120	14,359	20,111	45,537	5,450	2,926	7,409	8,129	2,200	4,151	2,411	1,078	6,647	5,224
Concrete/Metal pillars level	30,917	0.3	2,269	3,340	6,517	1,386	4,163	6,559	883	604	960	884	631	925	386	175	758	477
Urban																		
Total	5,615,340	100.0	344,290	556,976	1,821,875	249,791	532,561	949,667	103,521	91,234	227,503	190,362	74,711	222,838	52,850	46,083	86,284	64,794
Fully completed	4,536,214	80.8	283,333	419,590	1,519,868	202,741	438,349	743,893	87,881	76,205	185,322	148,235	61,003	177,318	40,433	38,919	65,135	47,989
Completely roofed but uncompleted	503,061	9.0	28,543	60,464	145,764	18,524	45,302	99,369	7,599	7,257	21,798	18,738	7,456	20,107	4,854	2,642	7,494	7,150
Partially roofed	84,704	1.5	5,131	15,138	27,139	5,304	6,633	12,545	775	858	1,705	2,120	555	2,128	688	521	2,486	978
Roofing level [with improvised roof]	20,902	0.4	1,115	2,039	7,763	807	1,445	3,461	202	282	688	555	256	1,148	337	181	430	193
Lintel level [with improvised roof]	12,009	0.2	709	1,164	4,594	538	990	2,003	108	114	382	315	108	426	122	71	253	112
Roofing level [without roof]	130,604	2.3	5,309	14,602	33,354	8,261	10,033	19,350	1,461	1,572	4,993	6,427	1,707	12,143	3,093	1,604	3,851	2,844
Lintel level [without roof]	196,679	3.5	11,979	25,569	48,574	8,201	18,060	41,504	3,189	2,971	8,052	8,735	2,304	6,639	2,039	1,404	4,078	3,381

Level of Completion	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
Window level	112,924	2.0	7,016	16,593	29,257	4,859	9,763	23,854	2,053	1,709	3,918	4,768	1,014	2,322	1,102	623	2,206	1,867
Concrete/Metal pillars level	18,243	0.3	1,155	1,817	5,562	556	1,986	3,688	253	266	645	469	308	607	182	118	351	280
Rural																		
Total	5,044,202	100.0	471,653	549,066	240,223	441,845	650,495	844,367	324,729	127,428	194,256	202,570	174,465	216,903	126,028	86,921	216,856	176,397
Fully completed	4,008,835	79.5	391,226	424,207	153,756	335,175	522,015	642,885	277,326	108,320	154,354	162,520	144,828	188,747	107,605	80,269	175,220	140,382
Completely roofed but uncompleted	562,326	11.1	53,188	67,062	35,345	55,085	75,788	108,033	31,705	12,347	22,569	22,828	19,992	13,280	10,239	2,567	13,475	18,823
Partially roofed	71,236	1.4	4,056	10,566	7,423	9,829	9,547	12,017	2,154	1,109	1,934	2,465	1,898	1,395	1,026	551	3,808	1,458
Roofing level [with improvised roof]	24,957	0.5	1,964	2,724	1,355	1,681	2,951	4,296	1,238	824	1,187	958	896	1,496	742	354	1,281	1,010
Lintel level [with improvised roof]	9,931	0.2	620	1,093	836	960	1,227	1,703	391	181	373	324	289	508	297	102	544	483
Roofing level [without roof]	107,091	2.1	4,792	11,099	10,605	14,810	9,553	16,059	2,703	1,170	3,841	4,371	2,559	5,932	2,826	1,845	9,730	5,196
Lintel level [without roof]	150,587	3.0	9,216	18,141	17,085	13,975	16,889	34,820	5,185	1,922	6,192	5,328	2,494	3,398	1,780	721	7,950	5,491
Window level	96,565	1.9	5,477	12,651	12,863	9,500	10,348	21,683	3,397	1,217	3,491	3,361	1,186	1,829	1,309	455	4,441	3,357
Concrete/Metal pillars level	12,674	0.3	1,114	1,523	955	830	2,177	2,871	630	338	315	415	323	318	204	57	407	197

TABLE 5.2: TYPE OF STRUCTURE BY TYPE OF LOCALITY AND REGION

Type of structure	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	9,834,175	100.0	769,885	1,004,047	1,903,843	630,644	1,104,247	1,630,205	409,379	207,497	390,312	359,058	237,281	406,553	166,343	126,177	270,126	218,578
Single building (Detached)	7,266,117	73.9	589,228	780,803	1,074,750	541,956	823,284	1,148,203	324,438	150,949	278,166	291,403	207,909	355,027	148,240	119,720	237,145	194,896
One-storey (Detached)	259,625	2.6	20,794	20,906	134,013	5,158	14,282	52,091	1,425	941	3,930	1,518	493	1,372	368	173	1,344	817
Two-storey (Detached)	34,287	0.3	2,860	2,499	16,631	615	1,944	7,485	186	138	629	334	57	346	82	23	251	207
Multiple-storey (Detached)	11,252	0.1	735	644	5,836	246	463	2,314	57	56	179	90	22	231	62	39	158	120
Single building (Semi-detached)	198,869	2.0	14,239	22,732	46,554	8,521	20,617	34,477	5,132	2,444	5,829	3,809	2,459	7,216	2,933	1,667	8,514	11,726
One-storey (Semi-Detached)	18,845	0.2	1,358	1,272	10,251	296	983	3,533	125	64	253	121	34	142	43	33	156	181
Two-storey (Semi-Detached)	3,497	0.0	317	232	1,545	79	186	840	21	11	75	34	11	33	17	11	45	40
Multiple-storey (Semi-Detached)	2,853	0.0	161	170	1,174	63	309	539	25	23	55	51	13	75	40	10	45	100
Terrace	7,542	0.1	404	878	2,166	289	493	1,769	143	69	134	132	43	299	275	77	234	137
Metal Container	785,986	8.0	38,123	64,851	287,726	20,503	69,845	170,314	9,908	7,638	26,548	22,464	5,526	30,483	3,770	2,523	17,910	7,854
Wooden Structure	950,057	9.7	82,029	89,714	178,165	39,865	152,628	173,977	58,607	39,733	66,774	33,293	17,385	7,449	7,597	808	1,270	763
Kiosk	273,372	2.8	18,624	16,494	140,637	11,999	17,462	31,855	9,205	4,820	7,064	4,758	2,923	2,920	977	660	1,913	1,061
Other	21,873	0.2	1,013	2,852	4,395	1,054	1,751	2,808	107	611	676	1,051	406	960	1,939	433	1,141	676
Urban																		
Total	5,156,890	100.0	318,831	498,395	1,705,128	227,914	492,719	861,271	96,565	84,716	209,895	169,963	69,378	201,127	46,434	42,334	75,798	56,422
Single building (Detached)	3,317,774	64.3	204,884	353,482	920,067	181,265	336,980	543,965	66,453	54,804	135,059	124,728	56,458	159,176	39,159	38,286	57,301	45,707
One-storey (Detached)	227,519	4.4	17,962	17,826	125,614	3,374	10,487	43,136	803	685	3,357	1,301	255	972	269	115	808	555
Two-storey (Detached)	30,684	0.6	2,545	2,218	15,646	447	1,510	6,551	128	86	544	302	39	298	53	8	164	145
Multiple-storey (Detached)	9,877	0.2	588	541	5,599	166	348	2,028	29	21	148	62	10	200	11	8	64	54
Single building (Semi-detached)	124,777	2.4	8,547	13,528	43,108	4,838	11,880	21,537	2,223	1,157	3,916	2,399	1,010	4,070	871	733	2,981	1,979
One-storey (Semi-Detached)	16,565	0.3	1,163	1,062	9,865	196	710	2,856	67	49	207	89	14	98	18	15	98	58

Type of structure	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	
Two-storey (Semi-Detached)	3,036	0.1	267	188	1,473	59	140	717	11	4	63	28	6	26	7	2	27	18	
Multiple-storey (Semi-Detached)	2,219	0.0	129	133	1,121	44	177	409	14	11	39	32	2	58	9	4	14	23	
Terrace	4,325	0.1	184	264	1,891	118	282	1,127	41	31	59	47	20	70	37	48	79	27	
Metal Container	671,743	13.0	30,299	53,796	272,663	14,889	52,754	136,306	5,994	6,020	22,386	19,203	4,282	28,825	2,910	2,305	12,409	6,702	
Wooden Structure	526,724	10.2	40,615	43,346	168,829	15,238	66,775	82,825	17,656	19,058	39,148	18,495	5,846	4,697	2,354	391	918	533	
Kiosk	211,263	4.1	11,308	10,892	135,515	6,927	9,940	18,265	3,132	2,522	4,601	2,724	1,381	2,092	463	339	654	508	
Other	10,384	0.2	340	1,119	3,737	353	736	1,549	14	268	368	553	55	545	273	80	281	113	
Rural																			
Total	4,677,285	100.0	451,054	505,652	198,715	402,730	611,528	768,934	312,814	122,781	180,417	189,095	167,903	205,426	119,909	83,843	194,328	162,156	
Single building (Detached)	3,948,343	84.4	384,344	427,321	154,683	360,691	486,304	604,238	257,985	96,145	143,107	166,675	151,451	195,851	109,081	81,434	179,844	149,189	
One-storey (Detached)	32,106	0.7	2,832	3,080	8,399	1,784	3,795	8,955	622	256	573	217	238	400	99	58	536	262	
Two-storey (Detached)	3,603	0.1	315	281	985	168	434	934	58	52	85	32	18	48	29	15	87	62	
Multiple-storey (Detached)	1,375	0.0	147	103	237	80	115	286	28	35	31	28	12	31	51	31	94	66	
Single building (Semi-detached)	74,092	1.6	5,692	9,204	3,446	3,683	8,737	12,940	2,909	1,287	1,913	1,410	1,449	3,146	2,062	934	5,533	9,747	
One-storey (Semi-Detached)	2,280	0.0	195	210	386	100	273	677	58	15	46	32	20	44	25	18	58	123	
Two-storey (Semi-Detached)	461	0.0	50	44	72	20	46	123	10	7	12	6	5	7	10	9	18	22	
Multiple-storey (Semi-Detached)	634	0.0	32	37	53	19	132	130	11	12	16	19	11	17	31	6	31	77	
Terrace	3,217	0.1	220	614	275	171	211	642	102	38	75	85	23	229	238	29	155	110	
Metal Container	114,243	2.4	7,824	11,055	15,063	5,614	17,091	34,008	3,914	1,618	4,162	3,261	1,244	1,658	860	218	5,501	1,152	
Wooden Structure	423,333	9.1	41,414	46,368	9,336	24,627	85,853	91,152	40,951	20,675	27,626	14,798	11,539	2,752	5,243	417	352	230	
Kiosk	62,109	1.3	7,316	5,602	5,122	5,072	7,522	13,590	6,073	2,298	2,463	2,034	1,542	828	514	321	1,259	553	
Other	11,489	0.2	673	1,733	658	701	1,015	1,259	93	343	308	498	351	415	1,666	353	860	563	

TABLE 5.3: TYPE OF STRUCTURE BY REGION AND TYPE OF LOCALITY

Region/Type of Locality	Total	Number					Total	Percent				
		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others
All Locality Types												
Total	9,834,175	7,802,887	785,986	950,057	273,372	21,873	100.0	79.3	8.0	9.7	2.8	0.2
Western	769,885	630,096	38,123	82,029	18,624	1,013	100.0	81.8	5.0	10.7	2.4	0.1
Central	1,004,047	830,136	64,851	89,714	16,494	2,852	100.0	82.7	6.5	8.9	1.6	0.3
Greater Accra	1,903,843	1,292,920	287,726	178,165	140,637	4,395	100.0	67.9	15.1	9.4	7.4	0.2
Volta	630,644	557,223	20,503	39,865	11,999	1,054	100.0	88.4	3.3	6.3	1.9	0.2
Eastern	1,104,247	862,561	69,845	152,628	17,462	1,751	100.0	78.1	6.3	13.8	1.6	0.2
Ashanti	1,630,205	1,251,251	170,314	173,977	31,855	2,808	100.0	76.8	10.4	10.7	2.0	0.2
Western North	409,379	331,552	9,908	58,607	9,205	107	100.0	81.0	2.4	14.3	2.2	0.0
Ahafo	207,497	154,695	7,638	39,733	4,820	611	100.0	74.6	3.7	19.1	2.3	0.3
Bono	390,312	289,250	26,548	66,774	7,064	676	100.0	74.1	6.8	17.1	1.8	0.2
Bono East	359,058	297,492	22,464	33,293	4,758	1,051	100.0	82.9	6.3	9.3	1.3	0.3
Oti	237,281	211,041	5,526	17,385	2,923	406	100.0	88.9	2.3	7.3	1.2	0.2
Northern	406,553	364,741	30,483	7,449	2,920	960	100.0	89.7	7.5	1.8	0.7	0.2
Savannah	166,343	152,060	3,770	7,597	977	1,939	100.0	91.4	2.3	4.6	0.6	1.2
North East	126,177	121,753	2,523	808	660	433	100.0	96.5	2.0	0.6	0.5	0.3
Upper East	270,126	247,892	17,910	1,270	1,913	1,141	100.0	91.8	6.6	0.5	0.7	0.4
Upper West	218,578	208,224	7,854	763	1,061	676	100.0	95.3	3.6	0.3	0.5	0.3
Urban												
Total	5,156,890	3,736,776	671,743	526,724	211,263	10,384	100	72.5	13.0	10.2	4.1	0.2
Western	318,831	236,269	30,299	40,615	11,308	340	100	74.1	9.5	12.7	3.5	0.1
Central	498,395	389,242	53,796	43,346	10,892	1,119	100	78.1	10.8	8.7	2.2	0.2
Greater Accra	1,705,128	1,124,384	272,663	168,829	135,515	3,737	100	65.9	16.0	9.9	7.9	0.2
Volta	227,914	190,507	14,889	15,238	6,927	353	100	83.6	6.5	6.7	3.0	0.2
Eastern	492,719	362,514	52,754	66,775	9,940	736	100	73.6	10.7	13.6	2.0	0.1
Ashanti	861,271	622,326	136,306	82,825	18,265	1,549	100	72.3	15.8	9.6	2.1	0.2
Western North	96,565	69,769	5,994	17,656	3,132	14	100	72.3	6.2	18.3	3.2	0.0

Region/Type of Locality	Total	Number					Total	Percent				
		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others
Ahafo	84,716	56,848	6,020	19,058	2,522	268	100	67.1	7.1	22.5	3.0	0.3
Bono	209,895	143,392	22,386	39,148	4,601	368	100	68.3	10.7	18.7	2.2	0.2
Bono East	169,963	128,988	19,203	18,495	2,724	553	100	75.9	11.3	10.9	1.6	0.3
Oti	69,378	57,814	4,282	5,846	1,381	55	100	83.3	6.2	8.4	2.0	0.1
Northern	201,127	164,968	28,825	4,697	2,092	545	100	82.0	14.3	2.3	1.0	0.3
Savannah	46,434	40,434	2,910	2,354	463	273	100	87.1	6.3	5.1	1.0	0.6
North East	42,334	39,219	2,305	391	339	80	100	92.6	5.4	0.9	0.8	0.2
Upper East	75,798	61,536	12,409	918	654	281	100	81.2	16.4	1.2	0.9	0.4
Upper West	56,422	48,566	6,702	533	508	113	100	86.1	11.9	0.9	0.9	0.2
Rural												
Total	4,677,285	4,066,111	114,243	423,333	62,109	11,489	100	86.9	2.4	9.1	1.3	0.2
Western	451,054	393,827	7,824	41,414	7,316	673	100	87.3	1.7	9.2	1.6	0.1
Central	505,652	440,894	11,055	46,368	5,602	1,733	100	87.2	2.2	9.2	1.1	0.3
Greater Accra	198,715	168,536	15,063	9,336	5,122	658	100	84.8	7.6	4.7	2.6	0.3
Volta	402,730	366,716	5,614	24,627	5,072	701	100	91.1	1.4	6.1	1.3	0.2
Eastern	611,528	500,047	17,091	85,853	7,522	1,015	100	81.8	2.8	14.0	1.2	0.2
Ashanti	768,934	628,925	34,008	91,152	13,590	1,259	100	81.8	4.4	11.9	1.8	0.2
Western North	312,814	261,783	3,914	40,951	6,073	93	100	83.7	1.3	13.1	1.9	0.0
Ahafo	122,781	97,847	1,618	20,675	2,298	343	100	79.7	1.3	16.8	1.9	0.3
Bono	180,417	145,858	4,162	27,626	2,463	308	100	80.8	2.3	15.3	1.4	0.2
Bono East	189,095	168,504	3,261	14,798	2,034	498	100	89.1	1.7	7.8	1.1	0.3
Oti	167,903	153,227	1,244	11,539	1,542	351	100	91.3	0.7	6.9	0.9	0.2
Northern	205,426	199,773	1,658	2,752	828	415	100	97.2	0.8	1.3	0.4	0.2
Savannah	119,909	111,626	860	5,243	514	1,666	100	93.1	0.7	4.4	0.4	1.4
North East	83,843	82,534	218	417	321	353	100	98.4	0.3	0.5	0.4	0.4
Upper East	194,328	186,356	5,501	352	1,259	860	100	95.9	2.8	0.2	0.6	0.4
Upper West	162,156	159,658	1,152	230	553	563	100	98.5	0.7	0.1	0.3	0.3

Note: Conventional structures comprise buildings constructed from cement blocks, concrete, landcrete, burnt bricks or mud

TABLE 5.4: RESIDENTIAL STRUCTURE BY REGION, TYPE OF LOCALITY AND TYPE OF STRUCTURE

Region/Type of Locality	Total	Number					Total	Percent				
		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others
All locality Types												
Total	5,862,890	5,588,721	15,445	161,666	77,747	19,311	100.0	95.3	0.3	2.8	1.3	0.3
Western	442,815	429,445	613	11,136	669	952	100.0	97.0	0.1	2.5	0.2	0.2
Central	587,600	576,670	870	7,643	503	1,914	100.0	98.1	0.1	1.3	0.1	0.3
Greater Accra	1,144,373	964,666	9,516	93,181	73,846	3,164	100.0	84.3	0.8	8.1	6.5	0.3
Volta	420,757	414,919	386	4,624	209	619	100.0	98.6	0.1	1.1	0.0	0.1
Eastern	628,324	617,987	869	8,236	375	857	100.0	98.4	0.1	1.3	0.1	0.1
Ashanti	929,298	904,007	1,864	20,522	1,352	1,553	100.0	97.3	0.2	2.2	0.1	0.2
Western North	217,549	213,888	169	3,224	200	68	100.0	98.3	0.1	1.5	0.1	0.0
Ahafo	115,615	112,057	191	2,696	124	547	100.0	96.9	0.2	2.3	0.1	0.5
Bono	209,809	205,420	286	3,481	153	469	100.0	97.9	0.1	1.7	0.1	0.2
Bono East	227,371	225,076	137	1,232	77	849	100.0	99.0	0.1	0.5	0.0	0.4
Oti	148,942	147,708	32	803	53	346	100.0	99.2	0.0	0.5	0.0	0.2
Northern	264,615	262,815	158	306	79	1,257	100.0	99.3	0.1	0.1	0.0	0.5
Savannah	122,434	114,724	175	4,389	57	3,089	100.0	93.7	0.1	3.6	0.0	2.5
North East	73,065	72,205	11	96	6	747	100.0	98.8	0.0	0.1	0.0	1.0
Upper East	172,545	170,695	97	35	25	1,693	100.0	98.9	0.1	0.0	0.0	1.0
Upper West	157,778	156,439	71	62	19	1,187	100.0	99.2	0.0	0.0	0.0	0.8
Urban												
Total	2,925,173	2,707,189	12,546	124,905	74,181	6,352	100.0	92.5	0.4	4.3	2.5	0.2
Western	178,036	171,629	404	5,412	392	199	100.0	96.4	0.2	3.0	0.2	0.1
Central	288,426	282,489	645	4,330	323	639	100.0	97.9	0.2	1.5	0.1	0.2
Greater Accra	1,007,775	834,894	8,821	89,530	71,904	2,626	100.0	82.8	0.9	8.9	7.1	0.3
Volta	144,242	142,228	205	1,604	102	103	100.0	98.6	0.1	1.1	0.1	0.1
Eastern	261,464	257,053	515	3,379	181	336	100.0	98.3	0.2	1.3	0.1	0.1
Ashanti	463,387	445,494	1,319	14,978	1,009	587	100.0	96.1	0.3	3.2	0.2	0.1
Western North	44,617	44,000	60	534	23	0	100.0	98.6	0.1	1.2	0.1	0.0

Region/Type of Locality	Total	Number					Total	Percent					
		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others		Conventional Structures	Metal Containers	Wooden Structures	Kiosks	Others	
Ahafo	41,697	40,163	57	1,365	34	78	100.0	96.3	0.1	3.3	0.1	0.2	
Bono	101,597	98,882	159	2,295	101	160	100.0	97.3	0.2	2.3	0.1	0.2	
Bono East	92,716	91,997	91	374	27	227	100.0	99.2	0.1	0.4	0.0	0.2	
Oti	39,543	39,403	14	85	11	30	100.0	99.6	0.0	0.2	0.0	0.1	
Northern	126,608	125,918	132	70	51	437	100.0	99.5	0.1	0.1	0.0	0.3	
Savannah	30,857	29,708	51	921	8	169	100.0	96.3	0.2	3.0	0.0	0.5	
North East	25,219	24,972	4	4	1	238	100.0	99.0	0.0	0.0	0.0	0.9	
Upper East	43,480	42,987	49	12	8	424	100.0	98.9	0.1	0.0	0.0	1.0	
Upper West	35,509	35,372	20	12	6	99	100.0	99.6	0.1	0.0	0.0	0.3	
Rural													
Total	2,937,717	2,881,532	2,899	36,761	3,566	12,959	100.0	98.1	0.1	1.3	0.1	0.4	
Western	264,779	257,816	209	5,724	277	753	100.0	97.4	0.1	2.2	0.1	0.3	
Central	299,174	294,181	225	3,313	180	1,275	100.0	98.3	0.1	1.1	0.1	0.4	
Greater Accra	136,598	129,772	695	3,651	1,942	538	100.0	95.0	0.5	2.7	1.4	0.4	
Volta	276,515	272,691	181	3,020	107	516	100.0	98.6	0.1	1.1	0.0	0.2	
Eastern	366,860	360,934	354	4,857	194	521	100.0	98.4	0.1	1.3	0.1	0.1	
Ashanti	465,911	458,513	545	5,544	343	966	100.0	98.4	0.1	1.2	0.1	0.2	
Western North	172,932	169,888	109	2,690	177	68	100.0	98.2	0.1	1.6	0.1	0.0	
Ahafo	73,918	71,894	134	1,331	90	469	100.0	97.3	0.2	1.8	0.1	0.6	
Bono	108,212	106,538	127	1,186	52	309	100.0	98.5	0.1	1.1	0.0	0.3	
Bono East	134,655	133,079	46	858	50	622	100.0	98.8	0.0	0.6	0.0	0.5	
Oti	109,399	108,305	18	718	42	316	100.0	99.0	0.0	0.7	0.0	0.3	
Northern	138,007	136,897	26	236	28	820	100.0	99.2	0.0	0.2	0.0	0.6	
Savannah	91,577	85,016	124	3,468	49	2,920	100.0	92.8	0.1	3.8	0.1	3.2	
North East	47,846	47,233	7	92	5	509	100.0	98.7	0.0	0.2	0.0	1.1	
Upper East	129,065	127,708	48	23	17	1,269	100.0	98.9	0.0	0.0	0.0	1.0	
Upper West	122,269	121,067	51	50	13	1,088	100.0	99.0	0.0	0.0	0.0	0.9	

Note: Conventional structures comprise buildings constructed from cement blocks, concrete, landcrete, burnt bricks or mud

TABLE 5.5: LEVEL OF COMPLETION OF RESIDENTIAL STRUCTURES BY TYPE OF LOCALITY AND REGION

Level of Completion	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	5,862,890	100.0	442,815	587,600	1,144,373	420,757	628,324	929,298	217,549	115,615	209,809	227,371	148,942	264,615	122,434	73,065	172,545	157,778
Fully completed	5,014,054	85.5	384,928	483,140	971,193	355,894	540,954	765,973	196,403	103,464	177,681	195,307	131,808	238,879	110,267	69,455	152,544	136,164
Completely roofed but uncompleted	710,649	12.1	50,092	83,596	138,224	50,946	75,702	142,106	19,429	10,715	29,020	27,886	15,295	22,162	10,125	2,678	13,840	18,833
Partially roofed	104,632	1.8	5,656	18,036	25,733	11,526	8,736	15,988	1,064	987	1,928	2,968	1,177	2,198	1,146	726	5,015	1,748
Roofing level [with improvised roof]	21,571	0.4	1,340	1,764	5,691	1,541	1,832	3,271	437	308	766	833	476	1,049	674	157	754	678
Lintel level [with improvised roof]	11,984	0.2	799	1,064	3,532	850	1,100	1,960	216	141	414	377	186	327	222	49	392	355
Urban Total																		
Total	2,925,173	100.0	178,036	288,426	1,007,775	144,242	261,464	463,387	44,617	41,697	101,597	92,716	39,543	126,608	30,857	25,219	43,480	35,509
Fully completed	2,482,712	84.9	153,093	230,574	869,547	125,727	224,984	379,671	39,446	36,415	85,409	77,775	34,802	110,693	26,550	22,991	35,983	29,052
Completely roofed but uncompleted	363,930	12.4	20,385	44,814	110,761	13,431	31,362	72,519	4,701	4,575	14,796	12,964	4,322	13,626	3,458	1,705	5,068	5,443
Partially roofed	60,126	2.1	3,552	11,410	19,753	4,194	3,830	8,461	309	530	896	1,542	266	1,533	503	415	2,110	822
Roofing level [with improvised roof]	11,259	0.4	543	986	4,758	530	719	1,629	106	106	295	262	102	574	260	81	192	116
Lintel level [with improvised roof]	7,146	0.2	463	642	2,956	360	569	1,107	55	71	201	173	51	182	86	27	127	76
Rural																		
Total	2,937,717	100.0	264,779	299,174	136,598	276,515	366,860	465,911	172,932	73,918	108,212	134,655	109,399	138,007	91,577	47,846	129,065	122,269
Fully completed	2,531,342	86.2	231,835	252,566	101,646	230,167	315,970	386,302	156,957	67,049	92,272	117,532	97,006	128,186	83,717	46,464	116,561	107,112
Completely roofed but uncompleted	346,719	11.8	29,707	38,782	27,463	37,515	44,340	69,587	14,728	6,140	14,224	14,922	10,973	8,536	6,667	973	8,772	13,390
Partially roofed	44,506	1.5	2,104	6,626	5,980	7,332	4,906	7,527	755	457	1,032	1,426	911	665	643	311	2,905	926
Roofing level [with improvised roof]	10,312	0.4	797	778	933	1,011	1,113	1,642	331	202	471	571	374	475	414	76	562	562
Lintel level [with improvised roof]	4,838	0.2	336	422	576	490	531	853	161	70	213	204	135	145	136	22	265	279

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