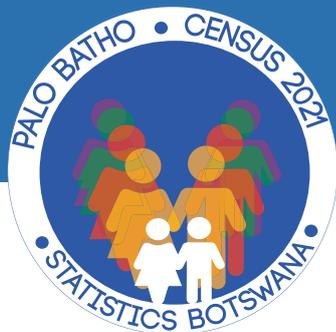


# POPULATION AND HOUSING CENSUS 2022

Administrative and Technical Report  
Version 2



Mpala, Ke Botlhokwa



STATISTICS BOTSWANA



# Population & Housing Census 2022

## Administrative & Technical Report

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# Population & Housing Census 2022

## Administrative & Technical Report

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## 1. PREFACE

The Administrative and Technical Report presents a comprehensive overview of the administrative and technical aspects of the 2022 Population and Housing Census (PHC). It details the meticulous planning, execution, and evaluation processes that underpinned this monumental undertaking.

### 1.1 Content of the Report

The report delves into the key phases of the census, from initial planning and preparations to data collection, processing and dissemination. It provides insight into the methodologies employed, challenges encountered, and innovative solutions to ensure data accuracy and completeness. It offers a detailed analysis of the administrative framework established for the Census including the organisational structure, human resource management, and logistical arrangements, as well as challenges and recommendations to reflect on when planning for the next census. It also explores the technical aspects such as questionnaire design, data management techniques covering data collection and processing methods, and quality control measures.

### 1.2 Reports Planned for the 2022 PHC

Reports that had been released and others still planned to be released for the 2022 census are as follows:

- a. Preliminary Results
- b. Population of Cities, Towns, Villages and Associated Localities
- c. Census Evaluation Report
- d. Consolidated District Census Reports (drafted by the District Census Officers, Census Technical Officers, Census IT Officers)
- e. Administrative and Technical Report
- f. Census Dissemination Report
- g. National Statistical Tables
- h. Census Analytical Report
- i. Guide to Villages of Botswana
- j. Population Atlas
- k. District Monographs
- l. Population Projections

The reports will be released on different dates in the order of appearance from the above list within the financial years 2022/23, 2023/24, and 2024/25.

#### 1.2.1 Preliminary Results

The publication titled “2022 Population Census Preliminary Results” was issued as a Stats Brief in May 2022 and the amended one was released in June 2022. It highlighted the preliminary results of the Census. The report broadly discussed the 2022 provisional figures in comparison with those of 2011 and population projections for the period in reference.

#### 1.2.2 Population of Cities, Towns, Villages and Associated Localities

The report was first released in June 2022 with population of cities, towns and villages. The population of associated localities (to villages) was lumped together with that of the villages as data processing was still ongoing. There were some issues with some localities without a code of the village of association.

The final population of cities, towns, villages and associated localities report was released in December 2022. The report contains the total counts of all localities identified during the census exercise. Associated localities are classified by villages to which they attach allegiance

by economic, social and cultural inclination. The village of association is principally, where the population of the associated locality obtains social amenities such as administrative services, schooling and medical attention, as examples. Users should be cautioned that this allegiance has nothing to do with political or tribal affiliation. Rather, it is purely aligned with government's channels by which socio-economic amenities and administrative services are delivered to the population.

### 1.2.3 Census Evaluation Report

The report is the first of its kind among the series of census reports. It is intended to evaluate the census processes picking up prominent issues that will need attention and/or particular actions accordingly to align with the next census for improved decisions and implementation processes. The 2022 PHC evaluation report is for internal use, and was released in April 2023.

### 1.2.4 Consolidated District Census Report

The Consolidated District Census Report is a compendium of census administrative and technical issues presenting an account of experiences, issues, challenges, interventions and recommendations by the census personnel at the district level. It gives an overall narration which mainly focuses on pre-enumeration preparations for, and at, district and the enumeration exercise. The activities include recruitment, procurement of training venues, training of Supervisors and Enumerators, transport, payments and census enumeration. It provides also an account of the use of technology with regard to functionality of the Computer Assisted Personal Interview (CAPI) system and its linkage with the cartographic software (Smart Census) and IT connectivity.

The district census reports are different reports compiled at district level by the District Census Officers (DCOs), Census Technical Officers (CTOs), Census IT Officers (CITOs), Cartographers, Publicity Officers, Matrons and other support staff at the districts. The census Technical Coordinators (CTCs) led the drafting of the report overseen by the District Commissioners or Deputy District Commissioners.

### 1.2.5 Administrative and Technical Report

As already stated earlier, the Administrative and Technical Report provides a historical track of events of the census implementation programme. It starts from the project inception stage, tracing activities from the planning to implementation and signing off the project after disseminating the main census results.

### 1.2.6 Census Dissemination Report

The Dissemination report entails proceedings of the Census Dissemination Conference and comments made on various papers presented by analysts. The comments are then used to perfect the analytical report.

### 1.2.7 National Statistical Tables Report

The National Statistical Tables Report provides statistics on all the various topics covered in the census exercise. A cross-classification of information is also provided for all variables, by administrative district and sub-district, where necessary.

### 1.2.8 Census Analytical Report

The Census Analytical Report is based on contributions mainly by external analysts from various institutions who are experts in the chosen area of analysis. While there is a wealth of data collected through the census, the Analytical Report focuses on selected topical subjects or topical issues about demographic, environmental and socio-economic variables and spatial distribution of the population. Analysis on other variables is expected, subject to emerging policy needs and research interests.

### 1.2.9 Guide to the Villages of Botswana

This is one of the census series of publications and it has since been produced in all post-independence censuses from the 1971 population and housing census. The data presented in this publication are collected in two phases. The **first phase** is the cartographic exercise which entails fieldwork mapping and dwelling unit listing. Data collected during this period included a list of villages and associated localities such as cattle posts; lands areas; freehold farms, total number of dwellings and facilities in each of the localities. The **second phase** is the main census enumeration.

### 1.2.10 Population Atlas Report

A population census report presents population dynamics in a map form. It is a collection of maps that visually present demographic data gathered from a population census, showcasing the distribution and characteristics of the population across different geographical areas within the country, allowing for analysis of population trends based on location and other factors like age, gender, and socioeconomic status; essentially, it's a visual representation of census data on a map of Botswana.

### 1.2.11 District Monographs

The monographs present a detailed analysis of selected indicators by district. The indicators contained include those that were in the previous monographs (2011) plus additional new ones which were derived from stakeholder needs. Monographs also present a future outlook of the population on;

- a. Population size, composition and distribution
- b. Access to basic services and facilities like water, sanitation, energy sources for cooking, lighting and heating
- c. Labour Force

### 1.2.12 Population Projections 2023 - 2038

This report contains population statistics estimated on the basis of future demographic trends in the country. These population estimates are presented at national, district and village levels.

Lastly, by providing a transparent and informative account of the census process, this administrative and technical report aims to enhance understanding, promoting accountability and serve as a valuable reference for future censuses and statistical endeavours. It underscores the importance of rigorous planning, effective implementation and robust data management in conducting large scale population and housing census.

**This document superceeds the one signed earlier with corrections made on pages 9(1.2.8); 12 (2.2.12) and 13 (2.2.23 and 2.3)**

I hope this document will be useful as a guide to the 2030 round of censuses and thus improve the preparatory activities, among which critical include the cartographic exercise, census structures, use of digital technology software, timing of the pilot exercise and the main census taking, determining the personnel cadres for enumeration, type and mode of transport for different terrains.



**Dr. Lucky Mokgatlhe**  
**ACTING STATISTICIAN GENERAL**  
**August 2025**

## 2. ACKNOWLEDGEMENTS

### 2.1 Census Committees

I wish to acknowledge the role of various structures, especially the following census committees:

**2.1.1.** Census Senior Management Committee (CSMC) – Chaired by SG.

**2.1.2.** Census Standing Committee (CSC) – Chaired by NCC.

**2.1.3.** Census Technical Advisory Committee (CTAC) – Chaired by SG.

**2.1.4.** District Census Committees (DCC) – Chaired by DC or DDC.

My appreciation is extended to members of the above-mentioned committees for overall direction regarding implementation of the census. Membership to the first two committees (CSMC and CSC) was drawn from Statistics Botswana officers. Membership to the CTAC comprised officers from government ministries, parastatals and non-governmental organisations. Lastly, membership to DCC was drawn from the district, mainly composing of, DCOs, district CITO and district Matrons, drawn from various district authorities consisting of Office of the District Commissioner, Tribal Administration Office, Council Secretary's Office and Land Board Office. In addition, there were sub committees drawn from these committees to focus on specific needs; such as Transport, Recruitment and Publicity.

### 2.2 Ministries, Departments and Agencies, Development Partners, and Civil Societies

I wish to profoundly commend government ministries, departments and agencies, development partners and civil societies as follows:

**2.2.1** Ministry of Finance (MOF) for budget guidance amid strained government revenue streams due to challenges presented by COVID-19 pandemic. Regardless of COVID-19 the MOF relentlessly provided the finances required for the census project throughout all stages and the entire period of execution of the 2022 census. Notwithstanding the financial support, the MOF also supported and monitored closely the census operations from launching the project by the Minister of Finance up to completion of enumeration activities and beyond. Farther, MOF had an input in mobilisation of transport through her Ministry's other State Owned Enterprises (SOEs).

**2.2.2** The UNFPA Botswana for the full partnership in the 2022 population and Housing Census. As a profoundly committed development partner on population matters, the UNFPA undertook to support the project technically by sponsoring Census Office staff in attending training workshops on the conduct of digital census and bench-marking trips for capacity building. In the same spirit the UNFPA sponsored the project development workshops where the Census Project Document was the central document for discussion and drafting, as well as, its printing. Further, the UNFPA purchased 100 tablets towards the required number for the census enumeration.

After enumeration UNFPA jointly sponsored with Statistics Botswana the census evaluation workshops by covering the costs of conference facilities, including food and accommodation for all District Census Officers (DCOs), District IT Officers (CITOs) and drivers. Additionally, it provided support in the data analysis by covering the costs of reviewing abstracts, census manuscripts and analysing some of the papers, particularly those about population policies including provision of consultancy to oversee and ensure the quality of the manuscripts. Over and above, the agency contributed more on the cost of the census dissemination conference. Finally, the agency sponsored two officers to attend the evaluation of 2020 round of censuses as well as contribution to the e-handbook towards the 2030 round of censuses.

- 2.2.3** The United Nations Development Programme (UNDP) contributed in sponsoring the data evaluation workshop, jointly with UNFPA, they sponsored the review of census manuscripts workshops, and analysis of some economic papers.
- 2.2.4** District Commissioners, who through their oversight and/or otherwise delegated oversight to Deputy District Commissioners, for having played a very crucial role in providing direction and resource mobilization for the census in their respective districts of jurisdiction, and also, for perennially providing a pool from which the District Census Officers, District IT Officers and Matrons were drawn.
- 2.2.5** District Council Authorities for partnering with the District Administration to avail human resources and transport and facilities to augment those at the District Commissioners' Offices.
- 2.2.6** Land Boards through providing human resources, transport and facilities to augment those from the District Commissioners' Offices, as well as, provision of base maps used in the census cartographic exercise and verification of district maps.
- 2.2.7** Central Transport Organization– CTO for providing census vehicles through the District Commissioners' Offices for the census, as well as partnering with Statistics Botswana to host fuel for government vehicles (P4 Million). This gesture is also extended to the private and public sectors for provision of transport when needed.
- 2.2.8** Tribal Authorities, through the willing cooperation and support by Chiefs, Heads of villages and wards, and other community leaders for providing platforms for addressing Kgotla meetings to sensitize and educate their people on the importance of participation in the census.
- 2.2.9** Department of Information and Broadcasting for assisting in the planning and implementation of the publicity and education campaign of the census, and providing a platform for TV and Radio presentations and discussions about the census. The participation of the private Y-TV Botswana for purposes of publicising the census cannot be overemphasised.
- 2.2.10** Department of Printing and Publishing Services through the Daily News, the private media companies through private newspapers, online media based news for providing spaces in their platforms for disseminating messages and information about the census.
- 2.2.11** Department of Police and other village and/or district security platforms for providing the necessary safety and security measures for the field staff and availed the police force and security services respectively whenever there was a need.
- 2.2.12** Botswana Defence Force (BDF) for availing BDF personnel as Supervisors and Enumerators in the army barracks and camps, and further taking part during mop ups to enumerate private households.
- 2.2.13** Department of Information Technology (DIT) for providing IT personnel through the District Commissioners' Offices.
- 2.2.14** Attorney General's Chambers for their role in preparing Census Regulations and other legal instruments.
- 2.2.15** The private sector in the aviation industry for providing air transport to enumerate the Delta Census District.

- 2.2.16 Private radio stations (Duma FM, Gabz FM and Yarona FM), both government public and commercial radios (RB1 and RB2) for staging interviews in their studios, and airing informative and educative messages about the census.
- 2.2.17 Members of the public and the civil society for their cooperation in providing the information required.
- 2.2.18 All District Census Officers, Census Technical Officers and Census IT Officers, who coordinated and guided the exercise at various districts in different roles as assigned them.
- 2.2.19 All Census Cartographers who provided the maps and related services for the census.
- 2.2.20 All District and Statistics Botswana Matrons for overseeing domestic issues and providing Health and Safety care on site at the training venues.
- 2.2.21 All Publicity Officers, Procurement Officers, Recruitment and Paying Officers for providing the various expert roles assigned them for implementation of the census enumeration stage.
- 2.2.22 All the Enumerators and Supervisors who worked tirelessly to collect the information required.
- 2.2.23 All drivers, who tirelessly transported census personnel and material to all parts of the country
- 2.2.24 All connectivity service providers at large for their support and cooperation in ensuring availability of network country wide.
- 2.2.25 The support of all other various government and non-governmental agencies that contributed to the census in one way or the other is gratefully appreciated.

### 2.3 Statistics Botswana Staff

Last but not least, I wish to commend all Statistics Botswana leadership, Management and staff for their guidance, advice and participation in the field operations during the entire exercise; from planning stages to execution and closure of the 2022 PHC project. The census project could not have been successfully conducted without your passionate and committed participation, and that is highly appreciated.



---

**Phetogo Zambezi**  
**NATIONAL CENSUS COORDINATOR**  
August 2025

### 3. BACKGROUND

Historically, census taking is a global practice which started in ancient times initially for tax and military purposes. It is recorded in history that a population count was taken in Babylonia before 3800 B.C., followed by that in China in 3000 B.C. In Botswana, the first census was conducted in 1904, with 17 April as the census night. This Census was held as part of the programme of Census of British South Africa within the then, the three High Commission Territories of Bechuanaland, Basutoland and Swaziland. The census was also conducted in the colony of South Africans.

#### 3.1 The 1904 Census

The Bechuanaland Protectorate was a very large country and was sparsely inhabited. In 1904, the country was full of endemic and epidemic diseases. Bechuanaland Protectorate was made up of Tribal Reserves, Crown lands, etc.

The literacy level of the people was very low. In view of the poor communication between the people and the administrators, the people were full of fear and suspicion of the administrators. The administrators knew little or nothing about the way of life of the people. The authorities therefore, decided that legislation that enforces participation in the census by way of fines for defaulters would only complicate matters and arouse more fear and suspicion. Further, this may have resulted in people giving untrue answers to census questions and thereby, having poor quality data. On this basis the Census of 1904 was made voluntary and not compulsory.

The census of 1904 covered the reserves only and estimates were made for other areas. Enumeration was carried out by Chiefs and Headmen. The information collected during the census was on total numbers, sex, adults and children. Other information also collected was on the number of wagons, cattle, horses, donkeys, sheep goats owned by households.

#### 3.2 The 1911 Census

The second census was carried out in 1911 as part of decennial census programme of the British Empire. The information sought in the Bechuanaland Census was restricted to number of people, sex and broad age group and whether the person is an adult or a child.

#### 3.3 The 1921 Census

The Bechuanaland Protectorate took part in the 1921 Census of the British Empire, with plans coordinated from Pretoria. The Bechuanaland authorities again insisted on a simpler questionnaire for the African Population. Administrative difficulties were as great as ever. The forms for Ngamiland were sent by a trader's wagon on a month-long journey from Serowe to Maun. In some parts of the country, the forms did not arrive on time. The census was heavily criticized for providing minimum information.

#### 3.4 The 1936 Census

There was no census in 1931 because of the worldwide recession. The next census was in May 1936. The 1936 census was also heavily criticized of being inaccurate. For example, the Basarwa population of the Ghanzi District entered on a single line was estimated at 7,000 males, and 3,000 females, indicating an increase of nearly 500 percent. Such an increase needed no comment to justify because it could not be accurate. Further, a comparison of the 1921 figures with the 1936 count suggested that the very large increases recorded were a result of under-enumeration in the 1921 Census.

### 3.5 The 1946 Census

One other census was conducted in 1946, and was the most ambitious. No less than 49 questions were asked and a large number of tables were published. The census work was coordinated from Pretoria and the Union Bureau of Census and Statistics carried out the analysis. The work on the tabulations was not finished in time for preparations for the 1951 census to begin. Thus the 1951 census was postponed to 1956.

### 3.6 The 1956 Census

The 1956 census was conducted on a sample basis using tax registers as a frame. For purposes of this census, a household was defined as comprising of any person whose name appeared in a tax register together with his dependents or household associates of that person, whose names did not appear in a tax register. In effect, this meant that the African households in the country comprised every male aged 18 years or more, together with his family if any, and a number of widows together with their dependents if any. These registers were, however, reported to have been deficient.

The processing of the census data took a very long time (beyond seven years) and the results were never published. The main consideration from this Government's point of view was whether the results of the 1956 Census would now, if printed, be of any practical use or not. Seven years had elapsed since the census, and so severe a time lag that had deprived the data of its quality and usefulness. Even if otherwise the data was accurate it was largely obsolete.

### 3.7 The 1964 Census

In the advent of Independence, the 1964 census, the seventh in the series, was mainly intended for the delimitation exercise to delimitate political constituencies and council wards in order to prepare for elections. It was the first census conducted on a house to house campaign even though still, like the previous census, it was not preceded by a cartographic exercise to map the entire country and ensure complete coverage.

### 3.8 The 1971, 1981, 1991, 2001, 2011 and 2022 Censuses

The post-independence censuses (from 1971) were a continual improvement on the one conducted in 1964. A major improvement to note is that starting in 1981, censuses had attempted to cover the entire country with cartographic exercises preceding the enumeration. This ensured coverage of all communities including even the then nomadic people who lived in vast and sparsely populated areas. Before independence only estimates were provided for vast and sparsely population parts of the country. Further, more topics were covered responding to indicators required for national, regional and international development frameworks. For example, the 2001 Population and Housing Census was the first to be part of the SADC Census Project 2000. The aim of this project was an initiative to harmonize all census-taking activities and collect information on similar topics in the region as a harmonization process to facilitate comparability between Member States.

## 4. INTRODUCTION

The Botswana 2022 Population and Housing Census was conducted under the auspices of the United Nations' 2020 Round of Population and Housing Censuses (RPHC). The period of the census round was between the years 2015 and 2024. The 2020 round of censuses was being implemented in a changing context marked by widespread adoption of new technologies across the world with increasing demand for disaggregated data for implementation of SDGs, capacity and funding challenges in many national statistics offices.

A census is among the most complex and massive exercises a nation can undertake. It requires mapping the entire country, mobilizing and training a large cadre of Enumerators and Supervisors, public advocacy, canvassing all households, processing vast amounts of data with quality assurance, and analyzing and disseminating results. By definition, a population and housing census is an enumeration of the total population of a country, which provides data on numbers of people, their spatial distribution, sex and age structure, their living conditions and key socioeconomic characteristics. Such data are critical to national and sub-national development planning, tracking progress towards the Sustainable Development Goals (SDGs), the needed distribution of infrastructure and social welfare investments, election planning and market analysis. The central role of the census within national data ecosystems will endure for the foreseeable future, despite recent advances in national registry systems.

As Botswana joined the race to adopt technology, the 2022 Population and Housing Census came with a major shift in that it was the first digital census that Botswana has ever conducted.

## 5. DEFINITION OF A CENSUS

A census is defined as the way of counting human population with a procedure of systematically obtaining and recording information on demographic, social, economic, and environmental characteristics, pertaining to all persons in the geographic boundaries of a country at a specified time, excluding no one.

- Systematic procedure refers to enumeration process.
- Geographic boundaries refers total coverage of all places of human habitation.
- All persons refers to citizens, non-citizens and citizens abroad.
- Excluding no one means all-inclusiveness, leaving nobody uncounted.

Census is the primary source of benchmark information on the size, distribution, composition, migration, fertility, mortality, marital status, and other socio-economic characteristics, such as; economic activity, unemployment, access to social amenities, e.g. education, health, electricity, roads and communication infrastructures. Therefore, census provides universal baseline information for evidence based decision making, planning, policy and programme formulation, as well as monitoring and evaluation of the Government policies and programmes aimed at improving living standards of the people. Evidence based decision making is a universally recognised model of efficient management of economic and social affairs of a country and overall effective governance of societies. Generation of relevant, accurate and timely baseline information at aggregated and disaggregated levels at all areas and small population groups, is the central foundation and basis for providing evidence data for proper planning.

The objectives of conducting the 2022 Population and Housing Census is to count all persons;

citizens, non-citizens, visitors, babies, elderly, etc. living in Botswana, including Batswana who are outside the country at the time. Every persons who spent the night with the household during the census night in residential dwellings and institutional dwellings (hospitals, hostels, hotels and lodges, etc.) is counted irrespective of their citizenship, residence status and whether or not they are usual members of the household. Batswana outside the country visiting or schooling or working abroad, with intention to return, are enumerated with the households to which they belong while in Botswana. Those who are in diplomatic missions abroad are enumerated separately as different households where they are stationed.

Information from census has a wide range of use, among which include:

- Provision of data on demographic characteristics of the population
- Provision of baseline data for derivation of socio-economic and demographic indicators
- Formulation of development policies and programmes
- Guides private sector business enterprising with market sizes based on population numbers.
- Constituency delimitation

The conduct of a census in Botswana is a constitutional obligation. The Constitution requires that a Delimitation Commission meet after a comprehensive national population census has been conducted, to demarcate parliamentary seats and council wards for political representation. Thus, census provides the commission with the information it needs for the exercise. Further, planners, researchers, administrators and professionals usually take advantage of the census and add on questions of interest to the census questionnaire.

A population census is the biggest and most complex statistical operation a nation can ever undertake and as such requires extensive preparations of which, key considerations include human capital, financial resources, and technological aspects. Being an enormous national exercise a census involves many Ministries, Departments and Agencies (MDAs), civil societies, development partners and indeed every individual person in the country. It is expensive and quite involving as its implementation takes several years of preparations before the actual count, and a significant period of data processing, analysis and dissemination of the results. Unfortunately, the expenditures that are easy to quantify are those that are incurred by the census organization and its affiliated agencies. It is not possible to cost the time that the households and individuals avail to the census takers.

The process of taking a census may be classified into three broad stages:

**a) Pre-Enumeration Phase**

The pre-enumeration phase is the preparatory stage during which a number of issues are considered including the scope of the census; the budget; the design of the census questionnaires and manuals; digital systems, implementation schedule and field operations guidelines; sensitization and involvement of stakeholders, as well as formation of district census structures. The pre-enumeration phase also includes the cartographic (mapping) exercise, the aim of which, is to produce detailed up-to-date Enumeration Area (EA) maps of the entire country.

**b) Enumeration Phase**

The enumeration phase is the data collection stage, where census Enumerators canvass dwellings in all localities of the country to conduct interviews and complete census questionnaires for all households and institutions.

**c) Post Enumeration Phase**

This phase involves data processing (editing and coding), data analysis and dissemination of the results, as well as archiving of the census instruments and data. Other important activities that are integral part of this phase include the census evaluation and release of the operational reports, viz. Consolidated District Census Report, Census Evaluation Report, and the Administrative and Technical Report.

## 6. LEGAL FRAMEWORK

Legal Provisions for conducting a census is cited in Statistics Botswana, Statistics Act and Census Act as referenced in the Constitution of Botswana. The relevant citations and reference are stated below.

### 6.1 Statistics Act of 2009 (Cap 17:01)

- Subsection 19 (3) and (4)
- Census resources to be obtained from Ministries, Departments and Agencies (MDAs), and authority over the personnel so deployed for purposes of conducting census.

Below is the relevant extract as stated in **subsection 4 (e), 19(3) and 19(4)** of the Statistics Act, 2009.

#### Subsection 4(e)

“Conduct the population and housing census every ten (10) years and any other censuses such as agricultural, business censuses and surveys as the Board may determine.”

#### Subsection 19(3)

“To enable Statistics Botswana to undertake population and housing census, agricultural census, and household surveys, the Ministries responsible for local government, agriculture, transport and communications and for education and skills development, respectively, shall provide Statistics Botswana with personnel, facilities, transport and paying allowances to officers as is necessary.”

**NOTE:** At the time of drafting the Statistics Act of 2009 Local Government Ministry as mentioned in the Act was referring to the Ministry under which the Offices of the District Commissioner and Councils were housed.

#### Subsection 19(4)

“Officers appointed under subsection (3) shall exercise such functions and duties as may be specified by Statistics Botswana, in accordance with the provisions of this Act and the Census Act, and shall not be subject to the direction or control of any person or authority other than Statistics Botswana in performance of the functions and duties under this Act and the Census Act.”

### 6.2 Census Act of 1904 (Cap 17:02)

- Section 2 of the Census Act, 1904
  - o Minister to cause census to be conducted and authorizing or appointing any person to conduct census in districts. This is where the District Commissioners become the authority of census in their respective districts.

Below is the relevant extract as stated in Section 2 of the Census Act, 1904.

“It shall be lawful for the Minister to cause to be taken within Botswana at such times as he (or she) may appoint by order published in the Gazette and to appoint fit and proper persons to be called census officers for the purpose of conducting the census within such districts as he may assign to them.”

### 6.3 The Constitution of Botswana Sections 64 and 65-Conduct of Census

The Constitution (indirectly) provides for a population and housing census to be conducted at an interval of between five (5) and 10 years, for purposes of constructing political constituencies and council wards. This is found in Section 64(1) and (2) (b), and Section 65(3) as shown in the extract below.

#### Section 64. Delimitation Commission

Below is an extract from Section 64 of the Constitution.

- 1) The Judicial Service Commission shall, not later than 1st March, 1969, and thereafter at intervals of not less than five nor more than 10 years, appoint a Delimitation Commission consisting of a Chairman and not more than four other members.
- 2) Notwithstanding the provisions of subsection (1) of this section, at any time when;
  - a) Parliament has made provision altering the number of seats of Elected Members in the National Assembly; or
  - b) A comprehensive national population census is held in Botswana, the Judicial Service Commission shall, as soon as practicable thereafter, appoint a Delimitation Commission.
- 3) The Chairman of a Delimitation Commission shall be selected from among persons who hold or have held high judicial office.

#### Section 65. Report of Commission

Below is an extract from Section 65 of the Constitution.

- (1) Whenever a Delimitation Commission has been appointed the Commission shall as soon as practicable submit to the President a report which shall state whether any alteration is necessary to the boundaries of the constituencies in order to give effect to subsection (2) of this section or in consequence of any alteration in the number of seats of Elected Members in the National Assembly and where any alteration is necessary shall include a list of the constituencies delimited by the Commission and a description of the boundaries of those constituencies.
- (2) The boundaries of each constituency shall be such that the number of inhabitants thereof is as nearly equal to the population quota as is reasonably practicable provided that the number of inhabitants of a constituency may be greater or less than the population quota in order to take account of natural community of interest, means of communication, geographical features, density of population, and the boundaries of Tribal Territories and administrative districts.
- (3) In this section “population quota” means the number obtained by dividing the number of inhabitants of Botswana (as ascertained by reference to the latest comprehensive national population census in Botswana) by the number of constituencies into which Botswana is divided under section 63 of this Constitution.

- (4) The President shall as soon as practicable after the submission of the report of the Delimitation Commission, by Proclamation published in the Gazette, declare the boundaries of the constituencies as delimited by the Commission.

## 7. CENSUS MONTH IN BOTSWANA

**August is the Census Month in Botswana:** Traditionally, Botswana censuses have been conducted in the month of August since independence. The August month is the beginning of the season of autumn. The reason preferring August is that autumn has the most suitable weather for census because of the following:

- i. Off season for most arable agricultural activities. For that reason most people for whom arable farming is the main economic activity will be at home in the village.
- ii. The weather is most suitable and friendly only in **August**. It is not too cold or too hot to walk around between dwellings.
- iii. No rains and/or floods to disturb movement of Enumerators and census officials.
- iv. Schools are closed from last week or third week of August and accordingly, with the old calendar before COVID-19, boarding school facilities become available for use as training centres for census Enumerators, preceded by refresher training of trainers. Supervisors would have been trained during the first school holidays of the calendar year.
- v. Teachers as the most trained professionals to impart knowledge become available for use as trainers of census field staff.
- vi. Schools are everywhere, and teachers also become available to be engaged as Supervisors and Enumerators at their places of duty, thereby, minimizing the cost of subsistence allowance, transport, and having to provide camping equipment.

### 7.1 Moving the Census Month Forward From August to March 2022

As much as COVID 19 had disrupted the census undertaking, moving the month forward to March from August in 2022 gravely affected the census taking activities. Normally, there is a grace period of a year between the pilot census and main census. This is meant to allow for review of instruments and any corrections to be made either administrative, technical or in the systems, including cartographic exercise, to take place. This time around, time was limited as it was only three (3) months rendering review and reconciliation of processes almost impossible, leading to disruptions in the needed review process. In addition, procurement processes were compromised in securing and delivery of some items, such as materials, supplies and equipment. Modest training venues were difficult to find, leading to hiked price rates, as well as slow start of fieldwork, and hence prolonged data collection.

## 8. SETTING UP OF THE CENSUS OFFICE

Historically, Statistics Botswana has been setting up the Census Office on ad hoc basis for the conduct of censuses, and close it after the project is completed and signed off following the analysis and dissemination thereof, of the main results. This has persisted since 1971 when the first census after independence was conducted. In the past censuses (before the 2022 PHC) the cartographic exercise has been part of the Census Office and therefore, the inception of the Office has always been such that the cartographic exercise lasted for three (3) years to be done and completed in preparing for the main census enumeration exercise. The cartographic exercise involves mapping the entire country for two (2) full years, while the third year was reserved for cartographic mopping up. The cartographic mop-up exercise entails cartographic inspection and updating the information about the feedback from the inspection. Further, it involves revisiting areas of expected growth to update the mapping information, especially in urban and greater areas where construction is expected to be continuously taking place. Cartographic mapping updates also use information from the pilot census exercise which usually provides observed challenges needing to be addressed before the main census enumeration.

The establishment of the Census Office for the 2022 PHC was done in February 2019 with a nucleus staff headed by National Census Coordinator (NCC) placed at tier 4 (Manager Level) of the Statistics Botswana's Organizational Structure. Previously the NCC had been placed at Tier 2 which is the Deputy Statistician General (DSG) level. The NCC's level was later reviewed and placed at DSG level in November 2020.

The re-organization of the Census Office also returned the responsibilities of ordinarily attached to Directorate of Corporate Services, Directorate of Standards, Methods and Information Systems (DSMIS) and Directorate of Stakeholders Relations to the coordination and oversight by the Director of Corporate Services (DCS), Director of Standards Methods and Information Systems (DSMIS) and Director of Stakeholders Relations (DSR), respectively. The DCS became directly responsible for census HR and Admin Logistics (transport and Recruitment), Procurement and IT Connectivity and related activities. The DSR became directly responsible for census Publicity, Information, Education and Communication (IEC) and advocacy. The Directorate of Standards, Methods and Information Systems (DSMIS) retained the responsibility of census mapping exercise during its inception but also reported to NCC. The respective staff that was seconded to Census Office remained under the NCC administratively while for guidance and supervision were under the DCS and DSR as stated already.

The below organizational structures (Chart 1 and Chart 2) are the respective Census Office Nucleus Structures at the inception of the Office in February 2019 and after the re-organisation of the Office in November 2020.

Chart 1: The Census Nucleus Office at inception in February 2019.

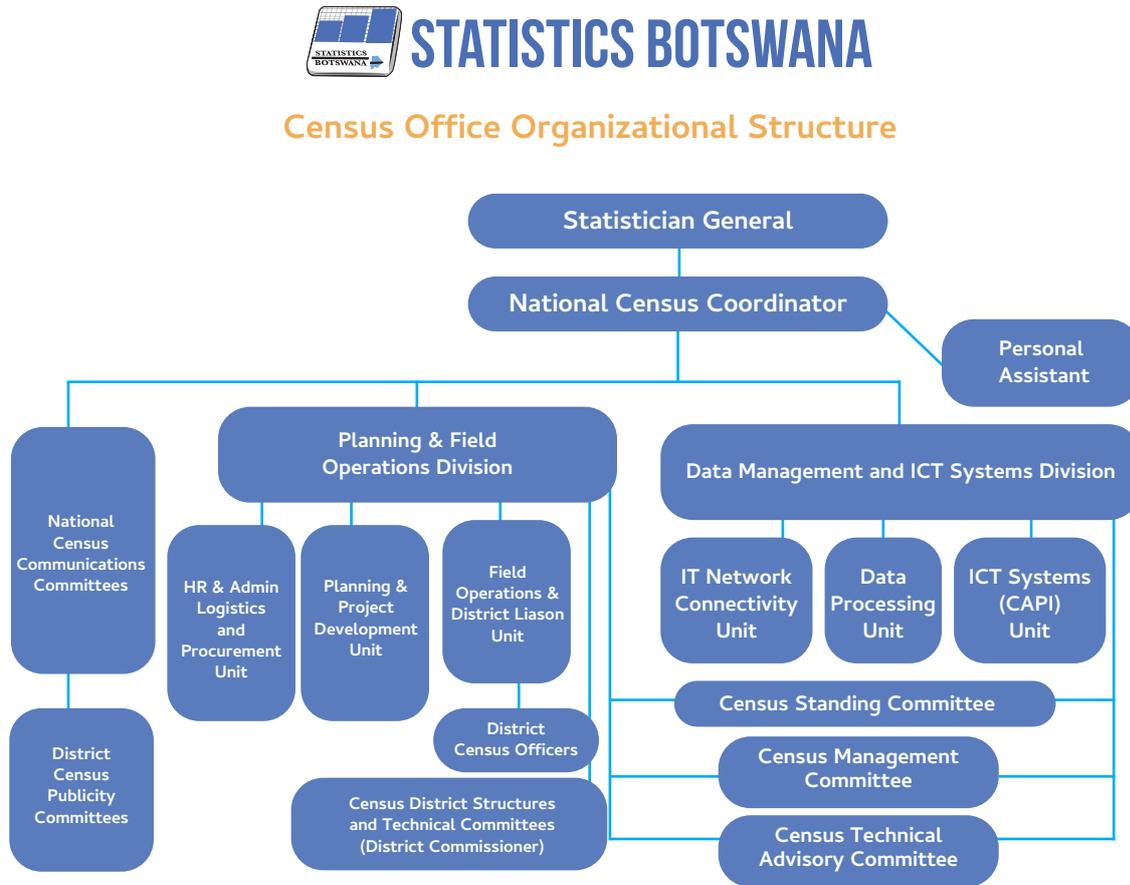


Chart 2: The Census Nucleus Office after reorganization in November 2020.

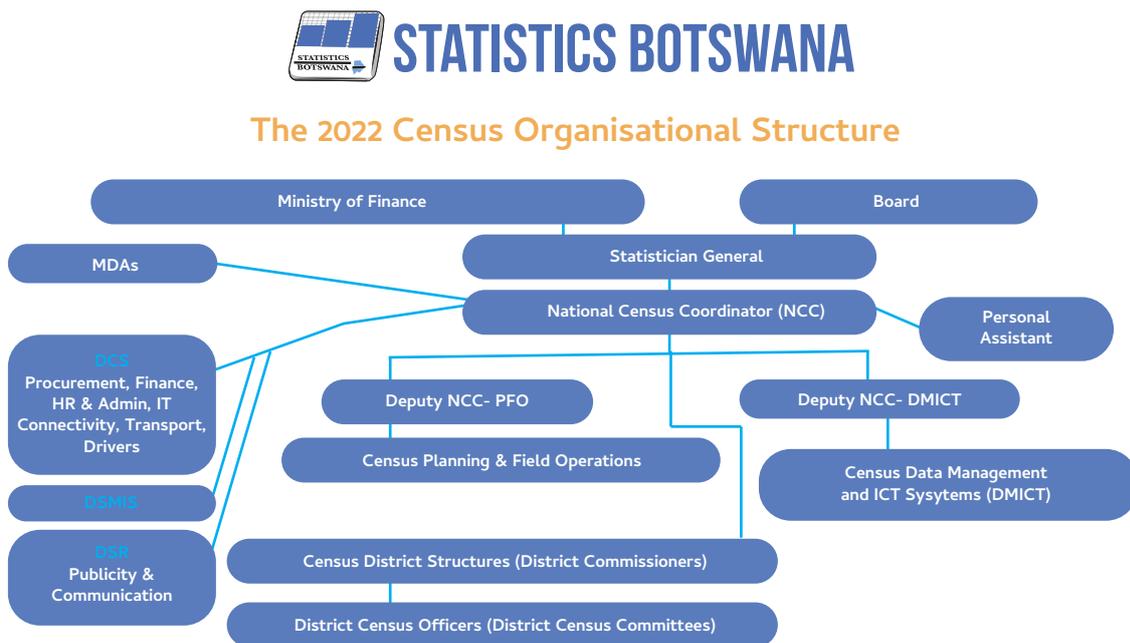


Chart 2 structure is the one that took to the census enumeration after the original one was revised in November 2020.

The previous structure (before revision) was basically the same except that the new one raised the NCC's level to DSG and the two divisional functions of the **Planning and Field Operations (PFO)**, and **Data Management and ICT (DMICT)** to be headed at **Director level** by Deputy **National Census Coordinators (DNCCs)** and introduced the Assistant National Census Coordinators (ANCC), respectively, to be headed at the Manager's level.

The remuneration of staff seconded to Census Office was effected up to ANCC level to allow closure of gaps and be made at par with the broad organizational structure. However, there are still gaps to be closed in terms of remuneration particularly when the NCC is employed within the Organisation at a lower level than the DSG.

The job responsibilities of the NCC has traditionally been put at the Deputy Statistician General (DSG) level. The NCC included overseeing the cartographic exercise to ensure proper guidance and supervision so as the output provides basis for the conduct of the census more importantly. Additionally, the exercise should produce baseline cartographic information such as sampling frame for other statistical operations during the intercensal period. Thus, the NCC position was at DSG level with due cognizance of the amount of work involved in terms of the authority and accountability levels attached to the job. The coordination of all census structures in Statistics Botswana, the Government Ministries, Departments and Agencies, as well as the District structures through the Offices of the District Commissioner constitute a massive national responsibilities spanning over a period of at least four (4) years. Consequently, it would be in order to consider putting the NCC position at the DSG level going forward to the 2031 Census and beyond.

## 8.1 Challenges and Recommendations

### Challenges

- a) The seconded staff to Census Office, particularly those lower than the position of Assistant National Census Coordinator (ANCC) complained that they were not given any allowances to bridge the gap between them and their supervisors. Initially one of the reasons of the secondment to the census nucleus Office was to align it with the current Statistics Botswana organisational structure, thereby any changes made should be aligned to the core, else should be defined well before the office is erected.
- b) There was a reason to hold the NCC position at DSG level. However, remuneration for the position was not at par with the position, which was somewhat not fair to the officer responsible considering the responsibility that is bestowed and the job content that is so intensive.

### Recommendations

- a) It is recommended that, the formation of the Census Nucleus Office should be carefully looked into such that decisions with budgetary implications should be factored in. For example remuneration for the NCC appointed should not be below the DSG position within the Statistics Botswana structure in future.
- b) In terms of other staff members within the Census Office due consideration should be made to close gaps, or rather due consultations be made to avoid disgruntlements or queries. This is important to ensure smooth running of the Census Office.

The job responsibilities of the Census Office under the two divisional functions and those of the DCS and DSR as done in liaison with the Census Office, were as stated below for both the structures. This includes the activities that were under the Directorate of Corporate Services (DCS) and Directorate of Stakeholders Relations (DSR) after the reorganization of the Census Office in November 2020.

**Table 1: Divisional Job Responsibilities for Planning and Field Operation (PFO) and Data Management and ICT (DMICT) of the Census Office**

Planning and Field Operations	Data Management and ICT
<ul style="list-style-type: none"> <li>• Liaison with MDAs and Development Partners</li> <li>• Determination of field resources district-by-district based on EA numbers (personnel, transport, census uniform/attire, etc.)</li> <li>• Field logistics and allocation schedules               <ul style="list-style-type: none"> <li>◊ Timing of the census (including pilot exercise)</li> <li>◊ Enumeration period</li> <li>◊ Field operations</li> <li>◊ Supervisors</li> <li>◊ Enumerators</li> <li>◊ Transport (SB and Districts)</li> <li>◊ Fuelling arrangements at peculiar areas</li> <li>◊ Training venues</li> <li>◊ Training guidelines</li> <li>◊ Training schedules (workshops) of all census cadres</li> <li>◊ Interview times of the day</li> </ul> </li> <li>• Field operation designs and logistics guidelines on interview and knockoff times, standard/commuted overtime, camping, quality control, etc.) Determination of Census month</li> <li>• Milestone Activity Schedule – chronological sequence of events and dates</li> <li>• <b>District Coordination and Communication</b> on all census matters, including               <ul style="list-style-type: none"> <li>◊ payment schedules,</li> <li>◊ census personnel and operations,</li> <li>◊ Recruitment of Supervisors and Enumerators</li> <li>◊ Enumeration exercise</li> </ul> </li> <li>• Sensitization of district census personnel on operations and payments schedules</li> <li>• Drafting of Publicity content material</li> <li>• Speech drafting</li> <li>• COVID-19 vaccination</li> <li>• Budget preparation and reviews</li> <li>• Liaison with MFED for budget preparations and project memorandums</li> </ul>	<ul style="list-style-type: none"> <li>• Census Literature Review – UN Recommended census core and non-core topics (international)</li> <li>• SADC Harmonization Topics</li> <li>• Development Frameworks Indicators – NDP11, V2036, SDGs 2030, etc.</li> <li>• Census Topics</li> <li>• Stakeholders Consultations – on census topics</li> <li>• Tabulation Plan – for preliminary results</li> <li>• Technology adoption (CSPRO CAPI)</li> <li>• IT Connectivity Infrastructure Framework</li> <li>• Tablet specifications</li> <li>• Questionnaire Development</li> <li>• Enumerators manual</li> <li>• Guide to Census</li> <li>• Data Processing Programme</li> <li>• Produce Edit Specifications</li> <li>• Develop Online edit program</li> <li>• Training and testing processes on questions' flow</li> <li>• Liaison with Cartography on CAPI System Maps</li> <li>• MB Tile Packages</li> <li>• PDF Maps</li> <li>• Coding Scheme</li> <li>• Coding manual</li> <li>• Training of coders</li> <li>• Coordination of Coding processes</li> <li>• CAPI Software CSPRO</li> <li>• CAPI hardware – servers, tablets, power banks</li> <li>• CAPI system development</li> <li>• Configuration of CAPI System to tablets</li> <li>• CAPI Dash Boards</li> <li>• Data security – technological equipment and software</li> <li>• Data exchange and transmission among field staff</li> <li>• Data transmission to headquarters</li> <li>• Quality Assurance</li> <li>• Validation programme &amp; Cross-tabs</li> <li>• Tabulation programme for preliminary results</li> </ul>

Planning and Field Operations	Data Management and ICT
<ul style="list-style-type: none"> <li>• Cab-Information Note</li> <li>• Disbursement of funds to district</li> <li>• Management of census funds in SB and at districts – expenditure tracking and reporting</li> <li>• Determination of remuneration rates (honorariums for district census officials, overtime rates for enumerators and supervisors, etc.)</li> <li>• Procurement and storage space determination</li> <li>• Packaging (enumeration materials to districts, training materials, CTOs materials, PPEs, etc.)</li> <li>• Coordinating issuing and accountability controls of the census merchandises to ensure equity and no shortage for census enumeration.</li> <li>• Coordinate the design of census attire and materials by DSR</li> <li>• Procurement plan/schedules (ITTs and RFQs development, delivery time from suppliers and to districts)</li> <li>• Facilitate procurement of goods and services               <ul style="list-style-type: none"> <li>◊ Tablets and accessories</li> <li>◊ Connectivity equipment, software, etc.</li> <li>◊ Communication equipment and software</li> <li>◊ Enumeration materials (stickers, stationery, etc.)</li> <li>◊ Census Uniform/Attire (golf T-shirts, round neck t-shirts, aprons,, caps and hats)</li> <li>◊ COVID-19 PPEs</li> <li>◊ Camping equipment</li> <li>◊ Car stickers</li> <li>◊ Publicity materials</li> <li>◊ Drums for fuel dumps</li> <li>◊ Procurement of training venues</li> <li>◊ Procurement of district transport for enumeration</li> <li>◊ Procurement of transport for SB staff</li> <li>◊ Training of census officials and field staff</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Tabulation programme for main census data analysis</li> <li>• Data Analysis and Dissemination of the main results</li> <li>• Preliminary Report</li> <li>• Population of Cities, Towns, Villages and Localities Associated to Villages</li> <li>• Thematic analysis of census data-engaging stakeholders</li> <li>• Dissemination of Census Analytical Report</li> </ul>

Directorate of Corporate Services	Directorate of Stakeholders Relations
<p><b>Through liaison with the Census Office DCS would be responsible for the following:</b></p> <ul style="list-style-type: none"> <li>• Procurement Processes (obtain numbers and items from PFO)</li> <li>• ITTs development</li> <li>• Implementation of tendering processes</li> <li>• Servers from Headquarters</li> <li>• Storage Space for ICT Equipment</li> <li>• Census Financial controls, disbursements, etc.</li> <li>• Liaison with MFED on Financials Matters</li> <li>• Payments of allowances (Supervisors, Enumerators, and contract drivers, taxi and private vehicle owners), overtime and honorariums, etc.</li> <li>• Recruitment Guidelines for Supervisors and Enumerators</li> <li>• Feeding processes at training</li> <li>• Procurement of training facilities and lodging arrangements</li> <li>• Security at training centres</li> <li>• COVID19 and Health &amp; Safety matters at training Centres</li> <li>• IT connectivity at training centres</li> <li>• Transport –Government vehicles</li> <li>• Guidelines on Government vehicles sourcing</li> <li>• Liaison with Ministry of Transport and Communication on census vehicles and fueling</li> <li>• Coordination of vehicles sourcing at districts</li> <li>• Coordination of Government vehicle fueling at districts</li> <li>• Hire Company Vehicles for CTOs</li> <li>• Hired Individually owned vehicles for enumeration</li> <li>• SB staff own vehicles</li> <li>• Guidelines on company, private individual vehicles and SB own vehicles sourcing and usage</li> </ul>	<p><b>Through liaison with the Census Office DRC would be responsible for the following:</b></p> <ul style="list-style-type: none"> <li>• Publicity Strategy</li> <li>• Advocacy for Census</li> <li>• Census publicity events</li> <li>• Participation in national events for census publicity</li> <li>• Census Logo</li> <li>• Census Slogan</li> <li>• Census Song</li> <li>• Radio and TV Jingle</li> <li>• Advertorials</li> <li>• Census Launch</li> <li>• Focused media discussions – radios, TVs</li> <li>• Web page – within SB page</li> <li>• Intranet page</li> <li>• Social media – Facebook, WhatsApp, etc.</li> <li>• Press Conferences</li> <li>• Public Notice for the media</li> </ul>

**Post Enumeration activities of the Census Office were planned as follows:**

- Coding continuation in office after enumeration
- Release of Preliminary results
- Dissemination of Preliminary Results
- Data processing
- Validation
- Basic tables
- Coordination of Data Analytical Reports by stakeholders
- Compilation of census reports
- Dissemination of census results
- Compilation and consolidation of Census Technical Officers (CTOs), District Census Officers (DCOs), Census Technical Officers (CTOs) Report
- Project Assessment Report and production of Census Evaluation Report highlighting the following:
  - ◊ Experiences
  - ◊ Observations
  - ◊ Issues
  - ◊ Challenges
  - ◊ Solutions
  - ◊ Lessons learned
  - ◊ Conclusions
  - ◊ Recommendations
- Production of Administrative and Technical Report
  - ◊ This is an account of the census implementation from inception to pilot, Cartography Mapping Exercise, census enumeration, preliminary results, data processing and validation, data analysis and production of analytical report, dissemination of the main census results, data security,

The following are implemented by the Directorate of Socio-Demographic Statistics (DSDS) and Directorate of Standards, Methods and Information Systems (DSMIS) after census dissemination

- Construction of a Sampling Frame (DSMIS)
- Production of Population Atlas (DSMIS)
- Production of Guide to Villages of Botswana (DSMIS)
- Production of Statistical Tables (DSDS)
- Production of Census Dissemination Report (DSDS)
- Production of Census Analytical Report (DSDS)
- Production of Monographs (DSDS)
- Projections (DSDS)

## 9. CENSUS COMMITTEES AND THEIR ROLES

There were four (4) main census committees at Statistics Botswana and one (1) at every district. The committees are stated below and their chairmanships and major roles.

### 9.1 Census Senior Management Committee (CSMC)

**Chaired by Statistician General (SG).**

The committee was responsible for facilitating consolidation of thoughts, issues and decisions arrived at as a common ground for discussion with external stakeholders in other platforms. Such as the Census Technical Advisory Committee. Membership of the CSMC was the members of the Executive at tier 1, 2 and 3 and Managers at tier 4 in the organizational structure of Statistics Botswana.

### 9.2 Census Technical Advisory Committee (CTAC)

**Chaired by Statistician General (SG).**

The committee was responsible for input into the questionnaire by way of census topics and topical issues, information required to monitor key indicators for national, regional and international development frameworks. The CTAC drew membership from the stakeholders of Statistics Botswana, which includes, the Ministries, Departments and Agencies (MDAs) as listed in Table 2 on the next two pages below.

### 9.3 Census Standing Committee (CSC)

**Chaired by National Census Coordinator (NCC).**

The CSC is a working committee within the Census Office and the secretariat to CSMC and CTAC. With the leadership of the NCC the CSC is responsible for overseeing the work of the Census Office at the drafting stage of the instruments (Paper Assisted Personal Interview (PAPI) and (CAPI) questionnaires and, operational guidelines), adherence to schedules/targets, operational resources mobilization, and ensuring timely conduct of the census and overall data quality. The CSC draws membership from Managers and Senior Statistician levels, which are at tiers 4 and 5 respectively.

### 9.4 National Census Communication Committee (NCCC)

**Chaired by a senior person in the Government Communication Departments.**

The committee is responsible to oversee the development of communication, publicity and advocacy strategies, publicity materials and other communication collateral including public releases. It ensures implementation of the communication, publicity and advocacy programme at a national level, and coordinates national workshops, seminars, public meetings, and other events/activities for purposes of informing the general public about the census undertaking, and mobilizing participation. Membership to the NCCC is drawn from Directorate of Stakeholders Relation (DSR) in Statistics Botswana and relevant government departments and agencies responsible for media and communication.

Finally, the committee guides the development and implementation of districts specific publicity strategies. Secretarial services to the committee is provided by the Division of Communication, Dissemination and Documentation (CDD) of Statistics Botswana's Directorate of Stakeholders Relation (DSR).

### 9.5 District Census Committees (DCC)

Chaired by District Commissioner (DC) or Deputy District Commissioner (DDC).

The committee oversees implementation of the census programme in the districts. It advises the DCs and DDCs, guides and provides technical support to the DCOs on resources mobilization, administrative and operational issues, challenges and resolutions as pertains to census activities, as well as, facilitation of census publicity and education among the population, with due cognizance of peculiarities in the districts. Peculiarities include among others, difficult terrain, special groups/communities needing peculiar arrangement to reach them. Members are chosen from strategic government departments and institutions in the district i.e. Information and Broadcasting Services, Central Transport Organization, Botswana Police, Council, Land Board, Tribal Administration, District Extension Offices, etc. The membership of the District Census Committee usually is a replica of the District Development Committee. The DCOs provide secretarial services to the District Census Committee (DCC).

## 10. ORGANISATIONAL FRAMEWORK

Based on the above stated excerpts from the legal instruments, the legal framework for the organizational structure of the census can be seen as follows:

### 10.1 Statistician General (SG)

The Principal Investigator responsible to Government for the conduct of the census is the Statistician General (SG). The National Census Coordinator (NCC), appointed by the SG, is responsible for overall oversight of the census project implementation at the Districts and in liaison with the broad spectrum of partners and stakeholders across the country. Further, the SG appoints Census Technical Officers (CTOs) and Census IT Officers (CITOs) for the NCC to assign them districts for training and enumeration, as well as, other different implementation activities from time to time throughout the period of the census programme. The SG also appointed Census Technical Coordinators (CTCs) to be responsible for a number of districts (not more than 3) and report directly to NCC and accountable for CTOs.

### 10.2 District Commissioners (DCs)

The District Commissioners (DCs) are the District Census Coordinators (DCCs) and hence, are Census Returning Officers in their respective areas of authority. To this end, it is the DC's responsibility to involve and fully engage their counterparts in Council Authority, and other government institutions such as the Tribal Administration, Land Board and extension offices.

As guided by the National Census Coordinator, the District Commissioners appoint the District Census Officers (DCOs), and District Census IT Officers (CITOs) to be responsible for the continual implementation of the census technical, administrative and management issues, and execution of the census programme during the peak times. These district officials work collaboratively with Census Technical Officers from Statistics Botswana under the leadership of the District Commissioner to deliver the census mandate at district level.

Some of the core activities undertaken by the District Census Officers include dissemination of census information to communities; community mobilization and stakeholder engagement within the districts; design, packaging and delivering census information to special groups in the communities, recruitment of census field workers; and logistical arrangements for census activities such as securing training facilities, procurement of transport and enumeration. Furthermore, the District Census Officers ensured that every locality/village in their district is enumerated; and they compiled census programme reports for submission to the census authority, Statistics Botswana.

The CITO's at the districts focused on ICT issues such as internet connectivity, handling of ICT gadgets and equipment, and troubleshooting.

Following from the foregoing legal provisions for the conduct of censuses, the table below shows the Ministries, Departments and Agencies (MDAs) that are to provide various resources for the census.

**Table 2: Ministries, Departments and Agencies (MDAs) that Provide Resources for the Census**

SR	MINISTRY	RESOURCES TO BE PROVIDED	RESOURCE REQUIREMENT AND USE	COMMENT
1	Ministry of Finance	Parent Ministry of Statistics Botswana.	To facilitate funds transfer to districts.	Not specified in the Act but it is by default as SB's parent Ministry
2	Ministry of Presidential Affairs, Governance and Public Administration	District Commissioners (DCs) as census authority in the district and returning officers under this Ministry.	Census Implementation	Not specified in the Act but it is by default as it is the Ministry under which falls District Administration.
3	Ministry of Transport and Communications	Government vehicles	Transport to be provide by the Government.	Specified in the Act for provision of Government vehicles (BX) for census transport. <b>(Statistics Act, 2009; section 19(3) and 19(4))</b>
4	Ministry of Basic Education	Teachers	Teachers, to be census trainers, supervisors and enumerators, as possible.	<b>(Statistics Act, 2009; section 19(3) and 19(4), as well as, Census Act, 1904; Section 2)</b>
5	Ministry of Local Government and Rural Development	Involvement of Council personnel and vehicles to augment those within the District Administration.	The Councils staff members to be part of the pool from which the District Census Officers will be nominated.	Specified in the Act for District Administrations, Councils and Tribal Administrations. <b>(Statistics Act, 2009; section 19(3) and 19(4), as well as, Census Act, 1904; Section 2)</b>
6	Ministry of Transport and Communications	Government vehicles	Transport to be provide by the Government.	Specified in the Act for provision of Government vehicles (BX) for census transport. <b>(Statistics Act, 2009; section 19(3) and 19(4))</b>

SR	MINISTRY	RESOURCES TO BE PROVIDED	RESOURCE REQUIREMENT AND USE	COMMENT
7	Ministry of Land Management, Water and Sanitation Services (Land Boards)	Involvement of Land Board personnel and vehicles to augment those within the District Administration.		Not specified in the Act but it is by default as it is the Ministry under which falls District Administration.

## 11. DISTRICT CENSUS STRUCTURES

Sensitization of the districts took place in March 2019, involving the National Census Coordinator (NCC) taking a round trip (3 weeks) to address the District Commissioners (DCs) with their deputies. Also included in the addressees were Heads of the Councils, Land Boards and Chiefs as Heads of Tribal Administrations, and their respective deputies. The purpose of the sensitization of the district authorities was to lay the foundation for the 2022 Population and Housing Census (PHC) with a view to establish the census district structures and district census personnel; being appointing District Census Officers (DCOs), Census IT Officers (CITOs), Matrons and district census committees.

The existing District Development Committee (DDC) chaired by the District Commissioner and its extension Sub District Development Committee, as well as Census Publicity Committee were the main structures of the census in the districts.

The District Commissioners appointed District Census Officers (DCOs) from the DC's Office, Councils, Land Boards, Tribal Administrations, and from the extension offices such as District Agricultural Offices (DAOs), etc. The DCOs were the usual census cadre for all censuses ever conducted since 1971. The DCOs were responsible for coordination of all census implementation activities in the district, including drafting the district census budget.

As the 2022 PHC was digital it was characterized by use of ICT gadgets/equipment and internet connectivity. For this reason Census IT Officers (CITOs) were appointed as another cadre in the districts. Matrons were third and last cadre appointed to be responsible for health and safety Issue as per the dictates of COVID 19 protocols as well as welfare of trainee Supervisors and Enumerators at the training centres. It is worth to note that the Matron assignments were performed jointly with Matrons nominated from Statistics Botswana (**Appendices 2 and 5**).

## 12. FUNDING

The 2022 Population and Housing Census was a government-funded initiative in Botswana, with technical support from development partners. From the onset of the project, the United Nations Fund for Population Activities (UNFPA) provided technical support up to and including the thematic analysis and dissemination conference. Additional technical support was received from the United Nations Development Fund (UNDP) focusing on the thematic analysis phase of the project.

The original estimated cost (TEC) for the PHC, as submitted to the 11th National Development Plan (NDP11), was **P369 million**. However, the approved Project Memorandum (PM) was revised and this figure came to **P455 million**. The onset of the COVID-19 pandemic in March 2020 necessitated further budget adjustments to accommodate pandemic mitigation measures as well as implications of bringing the census enumeration backward from August to March 2022. As a result, the project's final TEC increased to **P455 million**, reflecting a variation of P86 million due to COVID-19-related expenses.

The additional funds were allocated to cover essential items such as personal protective equipment (PPE), sanitizers, specialized camping equipment, private training facilities expenses, procurement of tablets and related accessories, lodging allowances, transport and COVID-19-compliant materials, as well as arrangements for census workshops in totality. Moreover, the increased number of vehicles required to maintain social distancing during census operations, use of private training facilities and lodging expenses, including prolonged enumeration exercise for the main census, contributed to the higher budget.

#### **a. Census Expenditure**

In terms of total budget, an amount, of **P455.0 Million** was approved in tranches, thus, 77-07 at **P12.3 Million**; 78-09 at **P44.1 Million**; 79-06 at **P87.7 Million**; 79-22 at **P185.9 Million**; 79-23 at **P113.2 Million**; and 80-22 at **P11.8 Million**

As at November 2022 expenditure stood at **P443.2 Million** which was spent on preliminary preparations for the census including among others; development of instruments, bench marking, procurement of tablets, equipment, merchandises, training, and payments of Enumerators and Supervisors for the conduct of the Pilot Census and Main Census. The latter budget amounting to **P11.8 Million** was reserved for data processing activities; Census Evaluation Workshops; Thematic Data Analysis; Dissemination of the Census Results; Census Publications; Population Projections, construction of Sampling Frame and any other related activity.

The Census Office worked out a portion of the **P455.0 Million** based on the budget allocation to districts according to their sizes. The size of the census district was determined by the number of EAs delineated or projected. For the pilot census the determination of the amount was derived from the sample of EAs selected.

The main components of the district budget included the following:

- i. Conference facilities; this covered training of Enumerators and workshop meals and lodging.
- ii. Personnel emoluments; this covered census allowances, honorariums and overtime.
- iii. Transport; this covered fuel and vehicle maintenance and repairs.
- iv. COVID-19 requirements; this covered PPEs, sanitizers, masks, etc.

### 13. HONORARIUMS, OVERTIME AND CENSUS ALLOWANCES

Like in the previous censuses there was an arrangement to pay honorariums to the census district personnel appointed by the District Commissioners (DCs) to coordinate/implement census activities in the district on behalf of the DC. Appointees were District Census Officers (DCOs), Census IT Officers (CITOs) and Matrons. The appointees were responsible for the technical or administrative operations of the census project in their respective districts. The technical and administrative work involved planning, budgeting, recruitment, and administration of census activities. Further, the District Commissioners, as overseers of the project became the District Census Coordinators. The Deputy District Commissioners (DDCs) therefore, by default became Deputy Census Coordinators in their respective districts. There were other personnel that participated in the project as support staff by virtue of their employment in the public service. These included those who ordinarily are among the cadres of as supplies officers, administration/paying officers, transport officers, etc. Still as part of the district census personnel, there were also Supervisors and Enumerators whom, were recruited from open market and engaged during the census enumeration. The responsibilities of Enumerators was to interview all households in all dwellings within the Enumeration Area (EA) of assignment. The Supervisors were assigned a team of four (4) or five (5) Enumerators to supervise during enumeration.

The DCOs, CITOs and Matrons were eligible for a census honorarium which was set to vary at different rates by seniority regard to the responsibilities bestowed upon them for the census project. Support staff members within the DC's Office and those who were assigned from other government departments and institutions were not appointed and therefore, were not eligible for honorarium payment. However, they were paid overtime and subsistence allowance as accrued during the course of their participation in the census activities. In the same vein all district officials who went on census trips were paid either imprest or subsistence allowance at the prevailing government rates in their respective departments and institutions.

The census honorariums for DCOs, CITOs, Matrons, DDCs and DCs were taxable. This was clarified after due engagement with the Botswana Unified Revenue Services (BURS) which guided and provided information to the effect that honorariums are taxable. The BURS explained that an honorarium is considered as an extra income according to taxation system.

For the Supervisors and Enumerators a census allowance was set at varying rates respectively, commensurate with the level of responsibilities. Thus, Supervisors' census allowance was a little higher than the Enumerators' (Table 3). The allowance was at fixed daily rates capped to include overtime. Supervisors and Enumerators deployed to areas away from their usual place of residence were eligible for subsistence allowance at government rate. The usual place of residence refers to the locality which the Supervisor or Enumerator indicated as their residence and applied for placement at, at the time of application for engagement in the census.

Other allowances introduced were lodging, supper and transport. Note that lodging and supper allowances were paid to eligible persons while transport allowance was given to all trainee enumerators. To some extent, payment of lodging and supper allowances to eligible Enumerators and their implementation contributed to riots during training of Enumerators as well as negatively affecting the enumeration phase. This was due to varying implementation standards.

Table 3 shows honorariums and census allowances as set by Statistics Botswana and implemented by District Commissioners at various districts.

Table 3: Census Honorarium and Census Allowances

Cadre	Payments (Pula)				
	During Training and Enumeration		During Training		
	Honorarium	Census Allowance	Lodging	Supper	Transport
District Commissioner	480	-	-	-	-
District Census Officer	460	-	-	-	-
Census IT Officer	440	-	-	-	-
Matron	440	-	-	-	-
Enumerator	-	360	300	50	50
Supervisor	-	420	-	-	-

### 13.1 Challenges and Recommendations

#### Challenges

- There were challenges with the GABS system (Government payment system) in some districts such that payment of allowances were delayed. In this regard payment of allowances, largely census Allowances to Enumerators and Supervisors was done by Statistics Botswana.
- Due to delays referred to in item a) above, some prospective Enumerators boycotted writing tests.
- Additionally, and given that there were lodging and supper allowances paid to eligible participants, most participants also felt eligible, thus causing divisions among participants, riots and cases. There were four (4) census districts affected by riots during writing of tests, thus, Gaborone, Lobatse, Jwaneng and Kweneng East. While this is the case, some were later allowed to write tests on request.
- With all these issues, participants took issues to politicians and there was a political interference which might have contributed to 'go slows' observed in the census operations.

#### Recommendations

- Statistics Botswana has to secure better ways to pay participating officers, Enumerators and Supervisors their allowances on time. Even though government officers were not complaining, their payments were also delayed thus increasing expenditure since the financial year of government will end up closing while they are not paid. In such instances Statistics Botswana will be expected to budget for them in the next financial year.
- The month of August should be retained to reduce on the census expenditure. More expenses were caused by the use of hotels and lodges as training centres as compared to the use of government institutions during closure periods because they are cheap, albeit the use of technology and availability of network during training. Furthermore, Statistics Botswana should consider engagement of teachers because of their maturity to handle and sustain census operations.
- Even if the same conditions prevail, caution should be exercised to ensure the eligibility of allowances is well stated during adverts so that it doesn't come as a shock to participants during implementation.

## 14. CENSUS CARTOGRAPHIC EXERCISE

### 14.1 Introduction

The census mapping exercise is a major pre-enumeration activity that is carried out 22 months prior to census enumeration according to the United Nations recommendations on census mapping. It is carried out to satisfy the objectives of the census by ensuring that every person in the country is counted with minimal possibilities for over-enumeration or under-enumeration.

### 14.2 Objectives

The cartographic exercise was conducted to satisfy the following objectives:-

- a. To up-date and correct the 2011 Population and Housing Census maps by listing all localities by ecological type, all dwellings (malwapa) and recording the number of persons residing in those dwellings.
- b. To delineate new enumeration areas for the main census enumeration.
- c. To collect information for estimating resources required for the main census such as enumerators, supervisors, drivers, vehicles as well as to determine enumerator's workloads at enumeration time.
- d. To collect information that would form part of the input for one of the most useful publications, "Guide to the Villages of Botswana" and the construction of the sampling frame for subsequent statistical exercises.

### 14.3 Geomedia Smart Census Application

The 2022 Census mapping exercise was the first of its kind to be conducted digitally. This followed a decision taken by the organization to explore modern census mapping technologies for fieldwork operations as a basis to conducting a digital census. Geo-space International (PTY) Ltd, a South African based company specializing in census mapping was contracted to provide technical assistance and implement Geo-Media Smart-Client application for the entire project aiming at improving the quality of cartographic fieldwork and census results.

### 14.4 Pilot Mapping Exercise

The pilot mapping exercise was undertaken in Ngwaketse West from 29 October 2018 to 20 January 2019. The main objective of the exercise was to pilot Geomedia Smart Census application functionality and other fieldwork logistics before implementing the new technology in the main fieldwork.

### 14.5 Main Fieldwork

The main fieldwork started on the 6 March 2019 and was completed as planned on the 30 April 2021. There were 10 mapping teams with each comprising of four (4) mappers, a Supervisor and 2 Drivers, making a complement of 70 fieldwork personnel. These were deployed to various parts of the country to carry out the mapping exercise. In total the project employed 72 temporary officers inclusive of an IT Officer and an Accounts Clerk.

## 14.6 Delineation Of Enumeration Areas

Data collected during the mapping exercise was quality checked in the field by fieldwork supervisors before being synchronized to central data repository at the head office. . The data was further checked for quality and cleaned by Cartographers and GIS Specialists in the office in preparation for the delineation of enumeration areas. The delineation of enumeration areas was done using Geomedia Smart Census (M.app Enterprise module) according to the set EA criteria based on ecological classifications. For the 2022 Census, a total of 6781 enumeration areas were delineated while 1511 supervision area maps were created in addition to 28 district maps.

Table 4 below presents number of delineated EAs and Supervision Areas for the main census enumeration.

The Enumeration Areas (EAs) and Supervision Areas (SAs) delineated across the entire country by census districts are shown in Table 4 below.

**Table 4: Delineated Enumeration Areas and Supervision Areas - 2022 PHC**

No.	Census District Code	Census District Name	Sub-District / Admin Authority	Supervision Area Delineated	EA Delineated
1	1	Gaborone	Gaborone	134	605
2	2	Francistown	Francistown	64	294
3	3	Lobatse	Lobatse	17	69
4	4	Selebi-Phikwe	Selebi - Phikwe	28	124
5	5	Orapa	Orapa	7	30
6	6	Jwaneng	Jwaneng	14	65
7	7	Sowa	Sowa	4	16
8	10	Ngwaketse	Kanye Admin Authority and Moshupa Sub District	80	360
9	11	Barolong	Good Hope Sub District	35	157
10	12	Ngwaketse West	Mabutsane Sub District	16	75
11	20	South East	South East South and South East North Subs	65	292
12	30	Kweneng East	Molepolole-Lentsweletau Sub District and Mogoditshane -Thamaga Sub District	212	955
13	31	Kweneng West	Letlhakeng Sub District	40	181
14	40	Kgatleng	Kgatleng	71	322

Table 4 Cont.: Delineated Enumeration Areas and Supervision Areas - 2022 PHC

No.	Census District Code	Census District Name	Sub-District / Admin Authority	Supervision Area Delineated	EA Delineated
15	50	Central Serowe-Palapye	Serowe Admin Authority and Palapye Sub District	143	641
16	51	Central Mahalapye	Mahalapye Sub District	78	354
17	52	Central Bobonong	Bobirwa Sub District	57	257
18	53	Central Boteti	Letlhakane Sub District	53	237
19	54	Central Tutume	Tutume Sub District and Tonota Sub District	120	541
20	60	North East	North East	51	227
21	70	Ngamiland East	Maun Admin Authority	62	277
22	71	Ngamiland West	Okavango Sub District	53	237
23	72	Chobe	Chobe	22	104
24	73	Delta	Part of Maun Admin Authority	2	9
25	80	Ghanzi	Ghanzi Admin Authority and Charles Hill Sub District	39	175
26	81	CKGR	Part of Ghanzi Admin Authority	2	2
27	90	Kgalagadi South	Tsabong Admin Authority	26	106
28	91	Kgalagadi North	Hukuntsi Sub District	16	69
	<b>TOTAL</b>			<b>1,511</b>	<b>6,781</b>

#### 14.7 Data Preparation for Census Enumeration

The organization took a decision to implement CSPro CAPI for 2022 Population and Housing Census enumeration, therefore there was a need to prepare data from the mapping exercise for the pilot census and main census enumeration. The pilot census was conducted from 18<sup>th</sup>-31<sup>st</sup> October 2021 mainly to test all the tools and planning logistics for the main census. Census Cartographers and GIS Specialists prepared geographical datasets and created MB tiles for all the 106 EAs selected for the pilot, offered training in basic map reading skills and also participated as Supervisors and Census Technical Officers during the pilot census and the main census enumeration exercises respectively.

#### 14.8 Primary Deliverables

The primary deliverables from the project included among others, the development of a comprehensive geospatial database with a mosaic contiguous EAs that have clean attribute information covering the entire country without any gaps or overlaps and the creation of the Dwelling Unit Frame (DUF) for all the building structures in the country. The database was used to produce updated maps of the districts, villages, EAs and SAs required for census enumeration. The project also yielded MB Tiles, geographical datasets, Cartography Strategy Document and locality coding list.

## 14.9 Challenges And Recommendations

### Challenges

- a. The project had challenges that emanated from COVID-19 pandemic as all the COVID-19 protocols had to be observed during the fieldwork operations. Towards the completion of the project, there were incidents of unprecedented soaring infection rates across the population leading to its suspension.
- b. Other challenges included poor internet connectivity, system errors and failures, high data transmission costs, harsh weather conditions, wild animals, poachers and vehicle breakdowns due to bad terrain.

### Recommendations

- a. The preparations for the cartographic work for the 2031 census, must be done on time.
- b. SB should continue the implementation of modern census mapping technologies in cartographic fieldwork projects for censuses. These have the ability to reduce costs by shortening the duration of the fieldwork and improve the quality of results.
- c. With regard to fuelling arrangements, all filling stations in the country should be included and fuelling points for Statistics Botswana fleet and fuel cards should be checked regularly for expire dates
- d. Fuel payments should be made on time to avoid destruction of fieldwork operations
- e. Highly qualified drivers to be engaged during the fieldwork to minimize vehicle accidents and hence reduce maintenance costs
- f. Intensify publicity of the cartographic fieldwork and engage relevant stakeholders such as Farmer's Associations to ease access to private holdings. District Commissioners should also be extensively involved.
- g. Mobile Device Management (MDM) software to be available during the configuration of tablets for fieldwork operations
- h. Mappers should be trained on both application use and its behaviour as it is key to fieldwork progress, i.e. they should understand basic operations of the application to avoid time lost while awaiting for IT support.
- i. Adequate IT personnel is required to support fieldwork mapping teams, as it was difficult for one IT Officer to assist three mapping teams during the pilot
- j. The size of the local application database need to be increased or automatically grow as more data is captured
- k. The Windows based M.App Enterprise application be re-evaluated to minimize the errors that arise before the project rollout.
- l. All materials and equipment and related resources including an update coverage area map for all three mobile networks for the project to be procured well on time.

- m. During enumeration, completion rate was calculated on the basis of dwellings completed instead of households. It is therefore recommended that the mapping exercise collects information on both number of dwellings and number of households for this purpose.

## 15. INSTRUMENTS DEVELOPMENT

The design of instruments started with the review of the 2011 Census questionnaire. The review covered consideration of topics which were in the 2011 census and based on concurrently emerging topical issues, new topics were added and a list of proposed topics for the 2022 Population and Housing Census was developed. A set of questions deriving from topical issues was made into a draft household questionnaire for the 2022 PHC. The list of topics and draft household questionnaire formed the basis on which stakeholders' consultations started in April 2019, and culminated in the stakeholder's consultation workshop held in July 2019. The workshop involved all the Ministries, Departments and Agencies (MDAs), development partners and civil society.

Several instruments were designed; viz. the CAPI questionnaires for enumeration and PAPI questionnaires for reference during training and enumeration. The questionnaires included the Household and Institutional Questionnaires. The CAPI system had the Enumeration Area (EA) cartographic information uploaded in it. The information contained the Dwelling Units (DUs) coordinate points and the EA boundaries. Reference manuals were drafted to facilitate training and enumeration. These were Enumerator's Manual, Supervisor's Manual and CAPI Manual.

The table below depicts census topics categorized by the ones carried forward as they were in the 2011 PHC, those modified, and those which were new.

**Table 5: Topics for the 2022 Population and Housing Census**

### Legend

#### Notes as Key for the highlighted

	Carried forward topics/question from 2011 PHC
	Modified/Revised topics/question from the 2011 PHC
	New topics/question in 2022 PHC

SR	TOPIC	REASON FOR INCLUSION
1	<b>First Census Question:</b> List names of all usual members of the household (present or temporarily absent) include visitors who spent the night.	The question has been expanded to include usual members temporarily absent. This provides a count of the population for a better distribution of the resident population for long term planning and service delivery purposes at sub-national geographic levels. It offers better information for planning and policy purposes on the demand for services, households, families and internal migration.
2	<b>Place of Usual Residence</b>	Follow up of the above categorizing members of the household by usual members present, absent and visitors.
3	<b>Relationship</b>	The topic is important in determining living patterns of the people and household status. It can also help in the measure of household relations such as shared care of children (co-parenting, joint custody etc.), dependency ratio. Data on relationship also provide a measure of the effects of housing situation, particularly in urban areas where non-related persons may live together in one household.

SR	TOPIC	REASON FOR INCLUSION
4	<b>Sex and Age</b>	<p>Gender issues require information on female and male headed households. The sex composition and age distribution are important factors for the continuity of a population. Data on sex and age are important in planning schools, hospitals, provision of social amenities etc. as well as providing a measure of population potential. One indicator worth mentioning is the proportion of the aged population in measuring the improvement in health and social facilities in terms of life expectancy.</p> <p>Age is also one of the most important questions in a census as most of demographic characteristics like education, labour, marital status etc. are collected in respect of different ages. It is also worth noting that age and sex form the basis of any cross-tabulation analysis of census data with respect to other demographic characteristics. For the 2021 census, date of birth will be collected as it is presumed to be more accurate in determining the age.</p>
5	<b>Citizenship</b>	<p>It is necessary to determine the number and characteristics (education, profession etc.) of foreigners in the country hence questions on citizenship in conjunction with education and occupation will capture such information. The data can further be categorized by citizenship acquisition status and duration of stay.</p> <p>Citizenship can be acquired by birth, naturalization or by any other means depending on a particular country's legislation. It is very important to collect data on citizenship in a census because it distinguishes citizens of a particular country from foreign citizens.</p>
6	<b>Acquisition of citizenship</b>	Further breakdown of citizenship status by birth, naturalization or other forms to understand its composition.
7	<b>Year or period of arrival</b>	Duration of residence establishes the length of stay of international migrants residing in the country.
8	<b>Place of Birth</b>	The topic seeks to measure internal migration for persons born in the country, the concept of place of birth usually refers to the geographic place where the mother of the individual resided at the time of the person's birth.
9	<b>Place of Usual Living</b>	In planning for the provision of social amenities, infrastructural facilities and health facilities, information on usual place of residence is needed. The question on past residence is meant to trace migration patterns and in conjunction with other questions, give insight into the motives for such movements.
10	<b>Parental Survivorship</b>	It is another variable that is used extensively, particularly in determining orphan-hood among children aged less than 18 years and the indirect estimation of adult mortality. Hence, it is important to collect such information during the census.
11	<b>Births &amp; National Registration</b>	It checks the completeness of the civil and vital registration in the country.

SR	TOPIC	REASON FOR INCLUSION
12	Childhood Language spoken	The data will assist in understanding language change and the effect of government initiatives, such as primary school mother language speaking programmes. This can assist Local authorities to use language information to determine what languages to provide services in.
	Ethnicity	Data on ethnicity provide information on the diversity of a population and can serve to identify subgroups of a population. The data allows for study of demographic trends, employment practices and opportunities, income distributions, educational levels, migration patterns and trends, family composition and structure, social support networks, and health conditions of a population and thus informs research and guide in policy development.
13	Educational Attainment:	The Ministry of Education and Skills Development is interested in ascertaining literacy rates as well as drop-out rates hence questions on educational level. Wider coverage of educational institutions afforded by the census will enable collection of enrolment rates in tertiary institutions.
14	Field of Education:	Questions on field of education provide information on area of specialization, levels and skills obtained. Such information is required to guide training programmes in order to provide knowledge and skills that are required in the market to drive the economy of Botswana.
15	Religion:	Religion plays a significant role in the moral building of the society. The extent of religious allegiance countrywide will be of major importance in community development regarding gender issues and behavioural practice.
16	Marital Status:	Analysis marital status will shed more light on the levels of divorce rates compared with marriage rates and other types of relationships. Based on the census data further researches will be made to guide policies and programmes accordingly.
17	Age and date at, and duration of, first marriage  Age of mother at birth of first child born alive	The questions would widen the knowledge on the spatial distribution of extent of early childbearing and marriage.
18	Economic Activity:	Questions on economic activity are intended to capture the proportion of the total population who are economically active and types of activities they are engaged in. The economically active refers to those who have supplied labour for production of goods or services for use by others or for own use. The employed (working for pay or profit) and a fraction of the unemployed who are actively looking and are available for work are considered in the measurement of employed and unemployment rates. In conjunction with age and sex, such information is of particular importance in deriving age and sex-specific activity rates.

SR	TOPIC	REASON FOR INCLUSION
19	Participation in own-use production of goods	<p>For own final use is a production where the intended destination of the output is mainly for final use by the producer, consumption by household members. This provides the number of persons engaged in this form of work which was previously included as employment.</p> <p>Production of goods for own final use (from agriculture, such as, fishing, hunting and gathering water, firewood and other household goods) represents an important component of the livelihood of a part of the population'. This information is important for bench marking purposes to enable integration of the population census with the agricultural census.</p>
20	Occupation:	Questions on occupation captures information on the type of economic activities taking place and professions. These are aligned with educational attainment to indicate skills and where there are shortages to guide educational planning processes.
21	Industry:	The industry identifies the main product or services provided by the establishment or the work unit in which a person is employed. Information on industry is needed to provide the basis to determine sector specific entrepreneurship and manufacturing patterns in the economy.
22	Institutional sector of employment	Data collected through this question would inform stakeholders and policy makers on how the employment is distributed through various sectors.
23	Land Ownership	Land is regarded as one of the assets that contributes to the households' wealth. The ownership of land at individual level makes it easier to show wealth disparities within various levels such as gender, age etc. Individual rights to the land is also established and the type of land owned exclusively or jointly. The ownership is not only on agricultural land but also other uses (business and residential).
24	Fertility and Child Survival:	<p>Fertility data are of particular importance to health planners in terms of birth rates, evaluation of maternal health care and birth control interventions. Data on child survival will be disaggregated by sex and analysis of which will shed light on such demographic variables as life expectancy and child mortality, among others.</p> <p>A question on Age of mother at birth of first child born alive improves understanding of the spatial distribution of the extent of early childbearing that surveys cannot provide.</p>
25	Ownership, Use or Access of ICT by Individual or Household	The growing need to use of Information and Communication Technology can never be over emphasized in today's era. The data collected on ICT will determine the availability as well as use of technology, thereby informing policy planners and service providers to enhance service delivery. The data would also allow impact assessment on individuals and households who use ICT.

SR	TOPIC	REASON FOR INCLUSION
25a	Individual use of transport	This question is intended to identify the mode of transport of individuals within a household. It is meant to determine growth of transport needs in the country.
26	Disability _ Set of six Questions on difficulties (SSF)	Adopted the Washington Group (WG) short set of questions on the Six domains of functioning, which are, Walking; Seeing; Hearing; Cognition; Self-Care and Communication for use in the national censuses and surveys which produce internationally comparable data on disability.
27	Citizens outside Botswana during the period of enumeration:	Captures information on Botswana citizens who are absent from Botswana at the time of the census. Of particular importance for planning purposes is to ascertain their characteristics, reasons for absence, duration as well as their current country of residence. In making population projections, one important component of population change is migration. Data on absentees compared with data on citizenship are used in deriving a measure of international migration.
28	Date of birth of last child born alive	It's recommended that an estimate of the number of live births during the 12 months immediately preceding the census date be derived from Date of birth of last child born alive as is more accurate. The information estimates current age-specific fertility rates and other fertility measures at both national and sub national levels.
29	Death Registration	The data can be used to check the country's vital registration completeness with a view to continuously improve.
	Burials in the last 12 months	A follow up question to guard against double counting deaths.
	Cause of Death	The data distinguish deaths due to other causes from those that are pregnancy related.
	Maternal Mortality	Maternal mortality is an important global health issue. Its inclusion should make it possible to derive some useful information about major trends in mortality that are otherwise difficult to obtain in surveys. Reducing maternal mortality as well as achieving universal access to reproductive health is anticipated by many countries.
	Agriculture and land acquisition	In view of the next Agriculture Census, data to be obtained from the 2022 PHC on household livestock ownership and agricultural activity, their locations as well as the method of land acquisition will form the basis of the sampling frame and benchmark data for agricultural surveys. The topic is important in providing information needed to Compute Multi-Dimensional Poverty Index (MPI), which is currently gathering momentum, and could in the future replace Income poverty because it includes variables that can be collected in a cost efficient manner, and the resultant MPI helps Governments to prioritize interventions to reduce poverty.
30	System of Land tenure	This measures households with secure tenure (fixed period state grant, certificate of rights) not limited to just whether land is rented, purchased or self-built.
31	Household Cash Activities:	Information on household cash activities provides insight into household income levels and how those which have no cash earners sustain a living.

SR	TOPIC	REASON FOR INCLUSION
32	<b>Type of Housing Unit:</b>	<p>Information on the type of housing unit that the household occupies and the mode of acquisition is required in the formulation and evaluation of housing policies. Tenure of housing unit provides information on land acquisition, home ownership and extent of rented homes, institutional housing.</p> <p>The number of rooms available to the household indicates adequacy or lack of shelter as well as health issues that may arise from over crowdedness. The material of construction of the housing structures is important as it indicates the quality of the housing structure and its durability. Of particular importance to health planners are data on sanitation issues such as source of water, toilet facilities and mode of refuse disposal.</p>
33	<b>Drinking water – main source of</b>	Data on water for the household as a basic service, particularly where there is considerable difference between sources of water for general household use and for drinking is important information to inform on risks to exposure to unsafe water.
	<b>Bathing facilities and availability of Kitchen</b>	The data provides information on safely managed sanitation facilities for hand washing on premises with soap and water. These are some of the Water Sanitation and Hygiene (WASH) basic services which will help and also guide in health policy formulation.
	<b>Principal Source of Energy for Lighting, Cooking, Heating Space and Heating water</b>	Environmentalists are concerned about the linkages between household solid fuel use, indoor air pollution, deforestation and soil erosion, and greenhouse gas emissions. The type of fuel used in cooking becomes an important predictors of exposure to indoor air pollution. The extent of pollution exposed to the household members and the environment resulted in need for collecting data on fuel to help in determining whether or not there is a shift in other forms of fuel use and accordingly guide policies and programmes, for safe use of clean fuels that are environmentally friendly.
34	<b>Heating and Alternative Source (cooking) of Energy used.</b>	Measures the population with primary reliance on clean fuels and technology.
35	<b>Ownership of Durables:</b>	Ownership of durables is an important factor in measuring livelihood. Durables such as motor vehicles and other forms of transportation have become a necessity in modern societies, as are household items such as fridges and sewing machines, to name a few. These items are increasingly becoming important, as are shelter, clothing and food. All these are used to measure poverty levels. Households without all or some of the household durables are considered as poor. Information on these items is used by Government in guiding policies and programmes on poverty reduction.

SR	TOPIC	REASON FOR INCLUSION
36	ICT Equipment, ownership, use or access by household.	There currently exists no baseline data for ICT indicators to guide estimates from surveys as production of ICT statistics is new in Botswana. Proportion of households with a computer and proportion of households with access to internet are part of the indicators needed to produce the ICT Development Index which measures the level and impact of ICT in countries over time.
37	Nutrition	This question determines nutritional status of households and indirectly measures or contributes to determining household poverty levels.

## 16. PUBLICITY

Publicity is one of the main functions that provided an important role to educate the public about the census. Designing strategies and materials with which to reach out to communities is done through various media channels and other platforms for census education, publicity and communication. This chapter covers strategies for census publicity and activities derived and implemented thereof.

### 16.1 Publicity strategies

A 2022 Population and Housing Census publicity strategy was produced as one of the project inception documents. The strategy was anchored on the census publicity programme and facilitation of national coverage of census messaging through print media, electronic broadcasting (radio and TV), social media digital platforms and outdoor crowd pulling events. Districts Census Publicity Committees coordinated and implemented census publicity interventions as guided by SB, and where necessary by prevailing conditions at the district level. Key activities included stakeholder engagement, advocacy, community mobilization, media engagement and placement of census messaging and outdoor publicity activities. Districts received backstopping from Statistics Botswana publicity officers.

Statistics Botswana made arrangements with the Departments of Information Services and Broadcasting Services for reduced costs of advertising as well as daily coverage of census related news and advertising on Daily News, Radio Botswana, RB II, Botswana Television and their social media platforms. A significant amount of this coverage was at no cost.

Towards the conduct of the 2022 PHC, SB deployed publicity officers to facilitate and support focused publicity in communities across all the districts. This happened through the district census publicity committees already established as per the Census Publicity Guidelines provided to districts. The committees held weekly meetings to plan and review progress. However, some district publicity committees were less effective than others. These were challenged with issues of transport and the fact that the officers were not appointed and thus, could not be released to be full time on the census.

### 16.2 Stakeholder engagement

Written Communication was distributed to all villages including – Village Development Committees, Village Extension Teams, Ministers Fraternal, Non-Governmental Organizations, Farmers Associations/Committees, and the Business Community. Presentations were made at Special District Development Committees (DDC) and Full Council Meetings. District Commissioners consulted Dikgosi in all villages within their districts. Some districts also conducted targeted door to door community mobilization.

### 16.3 Branding

Census merchandise and attire were branded with the 2022 PHC Logo encrypted with the slogan “**Mpala, Ke Botlhokwa**”. The census vehicles at Statistics Botswana were branded with the census Logo and all other vehicles involved in the census at districts had car stickers on the doors as part of the merchandise. All training sites were branded with AO posters, Marching Banners, X-Banners and tear-drop banners.

### 16.4 Activation

Activations were done across census districts. The activities included motorcades, walks and mall activations events. The activations successfully attracted media attention and the general public.

Effective media engagement and timely response to media inquiries was done to address issues as they emerged during project implementation. This allowed the project to progress and be completed in spite of challenges encountered. The extensive activity on the media space made the census publicity highly visible.

### 16.5 Coverage

Some ministries, for example, Ministry of Education and Skills Development (MOBE) covered census on its Weekly Bulletins. Other coverage platforms included official opening of census workshops, including the separate trainings of Supervisors and Enumerators, as well as, through article/story writing and photo/videography done nationally across districts. Interviews of leaders at national, district and community level were captured through photographs and videos across districts and broadcasted on TV and social media. All the districts enjoyed coverage from local media, especially from government media. Unpaid for Newspaper, Radio and Television interviews and news coverage were achieved nationally and within districts. Additionally, paid advertising on these same media channels was done. Social media was buzzing with census information. Media houses utilized social media platforms to amplify the census publicity campaign. The publicity campaign itself was strategically implemented across social media platforms utilizing various marketing tactics and gimmicks. Districts also ran census publicity campaigns on their social media platforms. Outdoor media platforms such as electronic billboards, posters and street pole advertisements were utilized to raise awareness and mobilize public participation during census taking.

### 16.6 Publicity Material and information dissemination

Publicity Materials were widely distributed in villages, farms, boreholes, hot spot areas, tuck-shops, malls, workplaces, public institutions and other public areas at all districts. Some districts translated the Fliers (Setswana & English) into Braille to sensitize People Living with Disabilities (PLWDs). Some districts translated some Information, Education and Communication (IEC) material to local languages, for example, Sesubiya in the Chobe District.

Posters, Fliers and brochures were made and delivered to all the districts through the District Census Officers (DCOs) at the District Commissioners’ Offices for ease of coordination. The materials were packaged for different districts according to distribution plan that took into account EA sizes in each district. It was the district committee members who distributed materials through public places and disseminated census information through Kgotla meetings and other local platforms to inform the public about the census dates and how to participate in it at household level.

## 17. IMPACT OF COVID-19 PANDEMIC ON THE CENSUS PROGRAMME OF ACTIVITIES

The census programme with schedule of activities was developed based on the general expectation and trajectory of the census project as it would be rolled out from 2019 to 2021. However with the advent of COVID-19 pandemic in March 2020 the implementation slowed down and due to high surges of COVID-19 infection the census was postponed from 2021 to 2022. The global restriction of movement of the people by lock downs, curfews and social distancing affected the progress of the project. The first significant impact was the indefinite halting of the partnership of Statistics Botswana with the US Census Bureau (USCB) on the development of the data entry system (CAPI questionnaire). This was so because the technical support provided by USCB's consultants being physically visiting SB was suspended indefinitely in February 2020. The USCB consultants were recalled to USA indefinitely.

In Botswana COVID-19 adherence protocols resulted in meetings and workshops suspended for extended period. Working at home was initially challenged due the fact that there had been no provision of internet at home for census team. In recognizing the need to continue with implementation of the census programme a decision was taken to provide Census Office team with internet at home and was implemented mid 2021 going into the pilot exercise.

The process of questionnaire and CAPI system development resumed in earnest. The technical support by the USCB was also resumed and was received remotely. The process continued despite challenges presented by the fact that the USCB's support was not designed to be remotely provided. The SB system developers (Programmers) were able to carry on without any more technical support from the USCB; going into the pilot census and revising the CAPI system thereafter to its completion, for the main census.

Following the abating of COVID-19 infection rate and deaths and restoration of normality thereof most of the planned dates had shifted. On this note, the table below presents the major milestone activities as originally planned and the eventual dates of actual implementation. The purpose of the table is to show the major milestones that should be considered at the planning stage, and how they were affected by COVID-19 pandemic. The dates are just historical information to depict the planned and actual dates.

Table 6: Milestone Activity Plan and Implementation Dates

SR.	Milestone	Planned Date		Actual Completion Date		Comment
		Date From	Date To	Date From	Date To	
1	Prepare Project Memorandum	Feb-19	Feb-19	Feb-19	Feb-19	
2	Setting up Census Office and nucleus staff	Feb-19	Apr-19	Feb-19	Apr-19	
3	Sensitization of district authorities	Mar-19	May-19	Mar-19	May-20	
4	Review of 2011 PHC recommendations, adopt and formulate strategies for 2021 PHC	Mar-19	May-19	Mar-19	May-19	
5	Cartographic Exercise fieldwork	Mar-19	Apr-21	Mar-19	Apr-21	
6	Census Project Document	Apr-19	Jun-19	Apr-19	Jul-19	
7	Determine logistics numbers of staff and other resources such as; field personnel, transport, equipment, training centres	Apr-21	Apr-21	Sep-21	Jan-22	
8	Procurement for census enumeration (attire, materials, ICT Equipment including tablets and related accessories, e.t.c.)	Dec-20	Apr-21	Dec-21	Feb-22	Revised to accommodate constraints caused by COVID-19, including postponement and bringing forward of census date.
9	Instrument Development (Questionnaire PAPI development and manuals development, and pre-test).	May-19	Apr-21	May-21	Jan-22	Continuous and finalized only when going the field.
10	Appointment of district census officers (DCOs, CITO and Matrons) and establishment of district structures	Jun-19	Sep-19	Jun-19	Dec-21	Continuously replaced due to transfers and exit (retirements, separation, etc.)
11	Stakeholders consultative workshop on topics	Jul-19	Jul-19	Jul-19	Jul-19	
12	Cab Info Note	Jul-19	Sep-19	Jan-22	Jan-22	
13	Gazette questionnaire	Jan-20	Mar-20	Feb-22	Feb-22	
14	Formation and inaugural committee meetings (CSC, CSMC, CTAC)	Sep-19	Feb-20	Sep-19	Feb-20	
15	CAPI System Development and system piloting.	Jul-19	Apr-20	Oct-20	Jul-21	
16	Pilot census	20-Aug-21	31-Aug-21	22-Oct-21	31-Oct-21	
17	Census Launch	Apr-20	May-20	8-Feb-22	8-Feb-22	
18	Review of instruments (PAPI and CAPI) and finalization for the main census, after pilot.	Oct-20	Apr-21	Dec-21	Feb-22	
19	Finalize tabulation program	Sep-20	Oct-20	Mar-23	Apr-23	

Table 6: Milestone Activity Plan and Implementation Dates (continued)

SR.	Milestone	Planned Date		Actual Completion Date		Comment
		Date From	Date To	Date From	Date To	
20	Finalize edit specs and program	Jul-20	Apr-21	Feb-22	Mar-23	
21	Determine logistics numbers of staff and other resources such as; field personnel, transport, equipment, training centres	Apr-21	Apr-21	Sep-21	Jan-22	
22	Recruitment of supervisors and enumerators for main census	May-20	Jun-20	Jan-22	Jan-22	
23	Training of Census Officials (DCOs and CTOs and CITO)	Jan-21	Feb-21	Jan-22	Jan 2022-	
24	Package and dispatch field materials, deployment, inspections	Apr-21	May-21	Feb-22	Mar-22	
25	Training of Trainers and Supervisors for the main census.	Apr-21	Apr-21	Feb-22	Feb-22	
26	Training of Enumerators for the main census	Jul-21	Aug-21	1-Mar-22	14-Mar-22	
27	Familiarization Tour	Jul-21	Jul-21	25-Feb-22	27-Feb-22	
28	Census enumeration	1-Aug-21	29-Aug-21	18-Mar-22	26-Apr-22	Initially enumeration was scheduled for 18 to 31 March 2022, but due to unpredictable challenges there was extension of enumeration from 1 to 4 April and two mop exercises from 6 to 13 April and 21 to 26 April 2022 respectively.
29	Data Processing and validation	Sep-21	Dec-21	May-22	Dec-23	
30	Preliminary results report	Dec-21	Jan-22	10-May-22	10-May-22	
31	Population of cities, towns and villages			Jun-2022	Jun-2022	
32	Population of cities, towns, villages and associated localities Report	Oct-21	Dec-21	Jun-22	Dec-22	
33	Census Evaluation Report	Oct-22	Nov-22	Dec-22	Apr-23	Delayed by late conduct of evaluation workshops due to financial constraint.
34	Consolidated District Census Reports	Apr-22	Jun-22	Jun-22	Aug-22	
35	Administrative and Technical Report	Nov-22	Dec-22	Feb-23	Mar-25	

Table 6: Milestone Activity Plan and Implementation Dates (continued)

SR.	Milestone	Planned Date		Actual Completion Date		Comment
		Date From	Date To	Date From	Date To	
36	Data Analysis (engaging stakeholder analysts)	Oct-2021-	Jan-22	Apr-23	May-24	These dates covers a workshop for potential analysts held on 25-26 April 2023; calling for abstracts, sharing of data, review of abstracts and manuscripts and feedback processes
37	Dissemination of main census results	Feb-22	Mar-22	Jun-24	Jun-24	The actual dissemination date is 11 <sup>th</sup> - 12 <sup>th</sup> 2024.

## 18. PILOT CENSUS

The pilot census is a stage of the conduct of census during which the census processes and operations, as well as, the main instruments (questionnaire and manuals) and other processes are subjected to a test. With the digital census that Statistics Botswana had geared up to implement, it was apparent for the main instruments and operation processes to be piloted and these included PAPI questionnaire and CAPI system for validity or acceptability, the cartographic exercise information about the coordinates for navigation and locating the Enumeration Area (EA) and Dwelling Units (DUs) within the EA. The exercise also involved testing the use of CAPI system functionality during enumeration to exchange interview returns (completed households and DUs) between the Supervisor and Enumerator as well as the Census Technical Officers panel. It also piloted functionality of internet during training, enumeration and repository of the data to the servers located at the headquarters. The pilot exercise was to check and confirm training facilities, training processes, and enumeration periods. It confirmed the suitability and appropriateness of the timing of the census with regard to whether or not it is the season during which the population is settled.

A census should be conducted at the time of the year during which the population has least movement and migration is low. The need to conduct census when the population is settled and migratory movement is minimal is to ensure maximum coverage and least chances of missed or double counted persons. Further, the exercise involves checking and confirming personnel resource earmarked to be Supervisors and Enumerators in terms of their qualifications and availability, as well as, the number and type of vehicles that will be required by census districts for different terrains and settlement patterns. It also piloted adequacy of other resources such as IT officers both in Statistics Botswana and at district level.

It is worth noting that, this time around, Supervisors were some of the staff of Statistics Botswana particularly Statisticians as opposed to temporary officers usually hired for this purpose such that all staff of SB, particularly Statisticians are Census Technical Officers. This created a problem because it denied some Statisticians, particularly newly recruited ones (were many) to gain experience as CTOs prior to the main census enumeration processes. This is something that should not be overlooked during the 2030 round of censuses.

Following the postponement of the census enumeration from August 2021 to August 2022 due to COVID-19 that restricted movement of the people, the pilot census was also postponed from August 2020 to August 2021 and was later conducted in October 2021, from 22 to 31. The training of Enumerators took place from 8 to 19 October 2021. It is worth noting that, conventionally, the pilot exercise would have been conducted in August 2020 and the census in August 2021. The shift from August to October was due to spiraling infection of COVID-19 pandemic on the population. The surges in infection rate had been presenting an upward trend and unpredictable patterns since July 2021. Thus, the shift was necessary to avoid the risk of Enumerators contracting the virus and/or spreading it in the population during enumeration.

One hundred and six (106) Enumeration Areas (EAs) were selected across all census districts for the pilot exercise, which is 2.0 percent of the total EAs delineated.

As the COVID-19 pandemic was highly prevalence and infection rates soaring from early 2021 a decision was taken to vaccinate against COVID-19 all people participating in the census project either as an official, support staff or Supervisor or Enumerator. This was based on that census operations are interactive by nature and so, it was necessary to protect the population and census staff from either spreading or contracting the virus during training sessions and enumeration.

## 19. PROCUREMENT

Procurement of materials and equipment for the Pilot Census exercise was not problematic though it was done during the middle of COVID 19 scourge probably because of small quantities for smaller number of field staff needed. However, and following announcement in December 2021 that census should be conducted in March 2022 not in August 2022 as planned to the avoidance of constitutional violation, procurement processes were done under compressed time frame. It was inevitably done hastily that it resulted in compromised processes and late delivery of some enumeration equipment and materials. The review of the budget started after the pilot census evaluation in November 2021, therefore the lengthy budget approval processes, aggravated the already compromised procurement situation, making it even more difficult to follow normal procurement processes.

Additionally, the end of the Government financial year (mid-March), which is the normal pausing of financial transactions, also affected procurement processes because there was no disbursement of funds in Government or Statistics Botswana during the period. Hence, funds were not readily available for procurement processes to start timeously.

Purchase requisitions and tendering processes started in January for delivery in February and March 2022. Some of the items were delivered a bit late, in the middle of enumeration, particularly the uniform, some bags and other IT accessories. The speedy procurement and late delivery of tablets compromised some quality checks and this resulted in some tablets not functioning to expected standards and there by affecting configuration and functionality of the CAPI and connectivity systems. Moreover, late delivery of merchandises, particularly census uniform, presented identity challenges and hence, refusals in some cases, for Enumerators at the beginning of enumeration.

On the positive side, most items were delivered before enumeration. Worth mentioning is the tablets and ICT accessories which were bought off shelves and availed in February while training of Supervisors was ongoing. The tablets which were procured in the normal way were delivered in March 2022, while enumeration exercise was ongoing.

## 20. RECRUITMENT

The qualifications required for census Supervisors and Enumerators were any Degree and any Diploma respectively. The qualifications were enhanced from the pilot exercise where Diploma and Form 5 leavers were required as Supervisors and Enumerators respectively. The pilot census qualifications was a continuation from the previous census (2011 PHC) and inter-census household surveys, with a view to review for the main census if necessary. The experience from the pilot census suggested that the qualifications needed to be raised. This stemmed from observation of the Form 5 leavers who lacked understanding of concepts and contexts of the questions as derived from the census topics. Additionally, the field staff had some limited astute of ICT technology pertaining to use of the CAPI system.

**Qualifications:**

<b>Supervisor:</b>	Degree
<b>Enumerator:</b>	Diploma

Based on the foregoing the qualifications were enhanced such that the main census would require at least a Degree for supervisory position and at least a Diploma for Enumerator position.

Although qualifications were set to degree and diploma for Supervisors and Enumerators respectively, there was shortage of Degree/Diploma holders in some rural districts. In such cases, efforts were to recruit from the neighbouring districts. This however still did not bear fruits as qualified personnel was still in short supply in the neighbouring districts. In the end, Diploma, Certificate holders and Form fives were engaged to fill in the gaps as Supervisors and Enumerators respectively. In some areas Affirmative Action was applied.

Statistics Botswana drafted the adverts and job profiles of prospective Supervisors and Enumerators for customization by districts. Flexibility in varying qualifications was allowed to address district specific peculiar circumstances such as language barrier and other community situations. For example, in the CKGR and Ranyane settlements the Enumerators had to be members of the respective communities by birth regardless of the current usual place of residence. Model adverts with the job profile spelling out responsibilities, working times in the day and fitness for the job were provided to districts from Statistics Botswana.

Another condition on the advert was that applicants were required to indicate a locality where they would want to be placed and that locality should be where they usually live or having some other accommodation of some sort. There was no subsistence allowance planned to be provided, neither was there arrangement to provide camping equipment.

In some expectedly isolated cases subsistence allowance was paid to particularly Supervisors and Enumerators, whom, in some instances would have a wide supervision where they would not be expected to be staying at home permanently throughout the entire engagement. Payment of subsistence allowance was also allowed where some Enumerators would be transferred in a case of an illness, shortage or otherwise.

There were challenges of overwhelming applications that resulted in too many applicants to screen and select the required numbers. Some applicants tendered several applications to different districts for purposes of increasing their opportunity for successful consideration and engagement as census Supervisors and Enumerators. This resulted in double offers which in some cases ended up breeding resignations for a preferred district where one would be eligible for subsistence, lodging and/or supper allowances. These resignations created shortages in some districts.

The recruitment challenges were mitigated by district staff working excessive hours to complete screening processes on time, and replacement where there were resignations. In some cases the list of replacement got exhausted though, resulting in shortages. The shortages were resolved by transferring Enumerators from districts that remained with reserves after selection.

Interpreters were recruited for places and specific households where there was a language barrier. Interpreters were not on full time engagement. They were engaged as and when a situation requiring the service arose and paid only for the days on which they did at least one interview. Interpreters were paid an allowance equivalent to the Enumerators'.

In some instances it was difficult to find interpreters on time because the census allowance that was set for them was not attractive. Further it was observed that some interpreters lost the context and/or meaning of some questions, thus, resulting in responses that had incorrect data.

Given the challenges encountered during recruitment, the use of online applications or systems designed to handle large number of applicants together with systems designed to reduce marking workloads after tests are recommended. In addition, a number of interpreters including sign language are needed during training for better understanding of the questionnaire, rather than being called at the time of enumeration.

## 21. TRANSPORT

Transport for census enumeration earmarked government vehicles in the districts. Vehicles were mainly to be drawn from the Offices of the District Commissioner (DC) and other central Government Departments in the district, Council Authorities, Land Boards, etc., including other government institutions such as parastatals. The District Commissioners (DCs) were to cast the net widest across the government institutions to source out transport units for the conduct of census.

Worth noting though is that, there was still shortage of vehicles in the districts and it came unexpectedly towards the beginning of census enumeration. The districts reported that the problem was there partly because there was a significant number of Government vehicles which were not in serviceable condition in some districts and were therefore not ready to be used in the census. This was mainly because of bringing forward census enumeration to the month of March, thus colliding with the end of Government financial year closure, where most votes were depleted.

Among the solutions to transport challenges was that some funds were committed and authorized by Statistics Botswana for repair and service of the vehicles that were to be used in the census enumeration.

Shortage of vehicles still persisted in some districts even after repairs and servicing of broken down government vehicles. To this end, taxis and privately owned 4X4 vehicles were used to augment government vehicles in districts where there was dire shortage, such as, Gaborone, Kweneng East, Serowe-Palapye, Central Mahalapye and Central Tutume, e.t.c (**Table 8**).

The taxis were sourced through consultations and discussions with Taxi Associations. They were engaged on contract basis and were available for the census enumeration. In addition, private vehicles (4x4) were contracted to cover cattle posts and lands EAs. . It is worth noting that guidelines on the use of private vehicles and contracts were prepared for operability purposes.

The taxis and private 4x4 vehicles were paid a flat rate of **P850.00** per day. The rate was determined based on the prevailing inflation rate, fuel prices and average or expected distance to be travelled per day during enumeration, plus an enhancement factor to ensure that the rate is attractive. The taxis were used only in cities, towns and peri-urban areas, while private vehicles (4x4) were contracted to cover cattle posts and lands EAs to transport Enumerators and Supervisors during enumeration, picking them from home in the morning to the Enumeration Areas (EAs) and back in the evening. For security and safety considerations Enumerators were not allowed to walk home or to the assigned EA because they had tablets, which, would otherwise attract thieves/robbers.

The challenge experienced was that, in some instances some taxi drivers would steal away considerable amount of time to transport their normal clients, while leaving an Enumerator or Supervisor stranded until they (taxi driver) returned. This was mitigated by reporting the matter to the Taxi Association which would reprimand the taxi owner accordingly. In some instances some Supervisors were reluctant to use taxis, particularly in cities, thereby giving taxi drivers an opportunity to dodge work where possible.

Transport in Statistics Botswana was a combination of SB fleet, vehicles provided by the Ministry of Finance and hired vehicles. The table below presents transport scenario for SB staff only, who composed of National Census Coordinator, Census Technical Coordinators, Census Technical Officers, Census IT Officers, Publicity Officers and Procurement Officers. These are the people who participated starting with the training of supervisors (TOS), Training of Enumerators (TOE), enumeration and mop-ups.

**Table 7: Statistics Botswana Staff Vehicles for Enumeration - 2022 PHC**

SOURCE	PICK UPS	SEDAN	TOTAL
SB Fleet	45	4	49
Sourced by MOF(including its parastatals)	32	7	39
Hired Fleet	107	22	129
<b>Total</b>	<b>184</b>	<b>33</b>	<b>217</b>

In terms of fueling Government, Council and Land board vehicles, a sum of P4.0 Million was disbursed to Central Transport Organisation (CTO) towards fuel expenses. This was however not enough to the extent that some Council and Land board vehicles were fueled through their offices depots and claimed the funds at the end of the census project.

**Table 8** below presents the number of taxis and private 4x4 vehicles by census districts engaged for the 2022 Population and Housing Census.

**Table 8: Taxis and Private Vehicles Engaged by Districts for 2022 PHC**

SNO	District Code	Census District	Sub District / Admin Authority	Private	Taxi
1	1	Gaborone	Gaborone	-	80
2	12	Ngwaketse West	Mabutsane Sub District	-	3
3	30	Kweneng East	Molepolole-Lentsweletau Sub District	21	81
			Mogoditshane-Thamaga Sub District	29	80
4	31	Kweneng west	Letlhakeng Sub District	0	10
5	50	Central Serowe-Palapye	Serowe Admin Authority	16	18
			Palapye Sub District	46	26
6	51	Central Mahalapye	Mahalapye Sub District	10	32
7	52	Central Bobonong	Bobirwa Sub District	12	21
8	53	Central Boteti	Letlhakane Sub District	10	18
9	54	Central Tutume	Tutume Sub District	0	50
			Tonota Sub District	11	20
10	70	Ngamiland East	Maun Admin Authority	13	0
11	71	Ngamiland West	Okavango Sub District	2	0
<b>Total</b>				<b>170</b>	<b>439</b>
<b>GRAND TOTAL</b>				<b>609</b>	

**Table 9** below shows the estimated number of vehicles that were required by each census district. The vehicle information is derived from the number of Enumerators and Supervisors. Hence, the table also contains information on the number of Enumerators and Supervisors. The information was shared with districts to guide on the number of vehicles required for the enumeration exercise.

### 21.1 Recommendations

- With the prevailed shortage of transport both at Statistics Botswana (SB) and at District level, it is recommended that vehicles are sorted well on time to ensure no disruptions at the start of enumeration. It would be ideal to engage Districts for guidance when planning for transport and related issues because it had shown that some areas like cattle posts and land areas Enumeration Areas do not need shared vehicles.
- Additionally, there has to be a mechanism to evaluate the usage of fuel consumed by vehicles fuelled through CTO. Currently it was not easy to evaluate the extent of help offered by CTO or the usage of petrol paid for by Statistics Botswana.
- SB and Districts should pay attention to the use of taxis and private vehicles and ensure that more controls are put in place to avoid enumeration disruptions.

**Table 9: Census Personnel and Transport; No. of Enumerators, Supervisors, DCOs, Matrons, CITOs and Vehicles for Enumeration by Census District**

SR	District Name	District Code	Sub-District / Admin Authority	EAs	Enumerators	Supervisors	DCOs	Matrons	CITOs	District Vehicles
1	Gaborone	1	Gaborone	605	605	134	4	1	4	143
2	Francistown	2	Francistown	294	294	64	3	1	4	72
3	Lobatse	3	Lobatse	69	69	17	2	1	4	24
4	Selebi Phikwe	4	Selebi Phikwe	124	124	28	2	1	4	35
5	Orapa	5	Orapa	30	30	7	1	1	4	13
6	Jwaneng	6	Jwaneng	65	65	14	1	1	4	20
7	Sowa	7	Sowa	16	16	4	1	1	4	10
8	Ngwaketse	10	Kanye Admin Authority	360	360	80	4	2	8	94
			Moshupa Sub District							
9	Barolong	11	Good Hope Sub District	157	157	35	2	1	4	42
10	Ngwaketse West	12	Mabutsane Sub District	75	75	16	2	1	4	23
11	South East	20	South East South (Ramotswa) Sub District	292	292	65	4	2	8	79
			South East North (Tlokweng) Sub District							
12	Kweneng East	30	Molepolole-Lentsweletau Sub District	955	955	212	5	2	8	227
			Mogoditshane-Thamaga Sub District							
13	Kweneng West	31	Letlhakeng Sub District	181	181	40	3	1	4	48
14	Kgatleng	40	Kgatleng	322	322	71	2	1	4	78
15	Central Serowe-Palapye	50	Serowe Admin Authority	641	641	143	6	2	8	159
			Palapye Admin Authority							
16	Central Mahalapye	51	Mahalapye Sub District	354	354	78	3	1	4	86
17	Central Bobonong	52	Bobirwa Sub District	257	257	57	2	1	4	64

Table 9: Census Personnel and Transport; No. of Enumerators, Supervisors, DCOs, Matrons, CITOes and Vehicles for Enumeration by Census District

SR	District Name	District Code	Sub-District / Admin Authority	EAs	Enumerators	Supervisors	DCOs	Matrons	CITOes	District Vehicles
18	Central Boteti	53	Letlhakane Sub District	237	237	53	4	1	4	62
19	Central Tutume	54	Tutume Sub District	541	541	120	5	2	8	135
			Tonota Sub District							
20	North East	60	North East	227	227	51	2	1	4	58
21	Ngamiland East	70	Maun Admin Authority	277	277	62	4	1	4	71
22	Ngamiland West	71	Okavango Sub District	237	237	53	3	1	4	61
23	Chobe	72	Chobe	104	104	22	1	1	4	28
24	Delta	73	Part of Maun Admin Authority	9	9	2	1	1	4	8
25	Ghanzi	80	Ghanzi admin Authority	175	175	39	5	2	8	54
			Charles Hill Sub District							
26	CKGR	81	Part of Ghanzi Admin Authority	2	2	2		1	4	7
27	Kgalagadi South	90	Tsabong Admin Authority	106	106	26	3	1	4	34
28	Kgalagadi North	91	Hukuntsi Sub District	69	69	16	2	1	4	23
			BDF Personnel			0	0	0		
	<b>TOTAL</b>			<b>6,781</b>	<b>6,781</b>	<b>1,511</b>	<b>77</b>	<b>34</b>	<b>136</b>	<b>1,758</b>

*Note that the number of vehicles estimated were not adequate in almost all the census districts*

## 22. TRAINING VENUES/CENTRES

Training venues were planned to be in district capitals in order to pull resources together and minimize the cost of travel and lodging allowances. It was also for economic benefit to the local communities as expectation was that there would be private facilities concentrated around the district capitals, and could be used as conference facilities. Additionally, local catering and internet providers could benefit from business engagement during the training. Such opportunities could also extend to facilities and business engagement in the catchment areas.

The arrangement was that training venues would be secured by Districts and procured by Statistics Botswana. The venues were hotels, lodges and conference facilities as per the plan. Community halls and any other suitable facilities such as hired tents were also used where necessary.

The class size of up to 100 trainees was set based on the need to adhere to COVID-19 protocols, the number of trainers, and reasonable class size considered appropriate to make training effective.

### 22.1 Challenges and Recommendations

#### Challenges

- a. Suitable facilities were not enough in some districts capitals. This forced for spreading to wider areas within and outside the district, resulting in overstretched training resources such as trainers, transport, equipment, etc. In some cases the facilities were found a bit late. The indiscriminate spread of training venues due to shortage at the district capitals overstretched resources and compromised proper procurement processes such as thorough inspection before acceptance. This resulted in some inadequacy regarding training room capacity, air-conditioning, and internet connectivity.

In overall, all districts managed to secure the training venues within the districts though in some cases they were scattered across and very far apart. In addressing the issues of overstretched resources in the affected districts, some CTOs, CITO, Matrons floated around the venues while sharing vehicles. In some instances the matrons were overwhelmed though, due to working excessive hours over the entire two weeks training period. Additionally, a little more trainers than originally required had to be engaged to fill the gap and ensure effective training.

- b. Configuration of the training venues into the CAPI system was done. This was for purposes of training on CAPI and practical sessions, as well as, facilitation of administering selection test online, would start on time. However, some venues changed because of challenges of capacity, insufficient internet bandwidth or its unavailability, etc. This called for reconfiguration of the new venues in the CAPI system. Time resource was lost in configuration of the training venues which later did not get used. Additional time was made to reconfigure the new venues in the CAPI system. This affected training because, it did not start on time in the affected areas, and hence, the training schedules became congested. Further, configuration of tablets with CAPI for training, including sample files, MB Tiles and Supervision Areas (SAs) was done a little late. Nonetheless, configuration of tablets and venues was completed on time for most districts to start CAPI training as scheduled.

- c. Shortage of charging stations was a challenge during the training of Enumerators. Charging stations that were secured were not enough. However, power banks were bought over the counter and increased in the affected training venues.
- d. Internet connectivity was poor in some districts during training, particularly where the district had not enhanced the bandwidth due to various reasons. In such cases the internet provided could not connect all tablets during training. This affected presentation and demonstration modules of the CAPI system and practice sessions of other system components such as comments to the Enumerator and Supervisor. To address the internet issues, districts increased bandwidth or purchased mobile internet equipment to improve connectivity.

### Recommendations

- a. Issues of connectivity need be addressed well on time to avoid challenges experienced during configuration as well as training. The choice of venues should include the availability of internet and connectivity from the onset of securing venues.
- b. Given the exorbitant cost of private training facilities, Statistics Botswana should ensure that training is done during closure of schools and tertiary institutions to take advantage of cheaper accommodation costs, where internet is available.

## 23. TRAINING

Training of Supervisors was from 9 to 18 February 2022 with refresher of trainers from 19 to 21 February 2022. The training of Enumerators was from 1 to 14 March 2022. Both training of Supervisors and Enumerators were challenged by lack of training materials, which included questionnaires and manuals, and auxiliary forms. Printing delivery was not done on time making it difficult for training processes to be smooth. Photocopies of questionnaires and manuals were used at the Supervisors training but the effort was not that effective at the Enumerators training because of large numbers. The materials were shared on smart phones but not fully helpful since some trainees did not have compatible smart phones.

The Training Programme was fully packed and there was a bit of too much content to impart within a short period of time. As such, neither the training team nor trainees had time to breathe. Both groups got fatigued in the long run.

There was shortage of training equipment such as laptops for CTOs and SB CITO, and in some cases the venues could not provide working projectors. As such, some classrooms did not have laptops and projectors.

There were a few new questions added to the questionnaire towards the departure time to training of Supervisors. These were on nutrition and mode of transport. As a result of this inclusion, there was mismatch of CAPI and PAPI questions in the CAPI training manual and the CAPI system flow of questions. In addition typographical errors were observed in the printed manuals.

Due to cross transfers of trainee Enumerators between districts causing shortages, some trainees arrived late to training and had missed many classes. As a remedy, they were given extra lessons to bring them to speed or at par with others.

After the resignations due to queries about eligibility for lodging allowance had settled some of the trainee Enumerators boycotted the classes and assessment test. This was viewed as still

a continuance of the query about the lodging allowance. The affected districts were Gaborone, Kweneng East (Mogoditshane), Lobatse and Jwaneng.

Supervisors and Enumerators assessment test was disrupted by poor internet connectivity in some venues, and in some cases the administering of the test and release of the results was delayed. This challenge was however experienced only in few districts.

Training was also disrupted by delayed payments of trainer Supervisors as they kept on sneaking out of classes to check progress on payment of their training allowances with the Office of District Commissioner.

Notwithstanding the above, the training still started and went on for the first few days with photocopied training materials, electronically sharing of training documents with trainees and topping up the internet bandwidth where there was a need. Enough printed materials were delivered in the middle of training of Enumerators and dully distributed to all training venues. The training was successfully completed on schedule in all districts.

### 23.1 Recommendations

- a. Statistics Botswana has employed technology in her field operations (CAPI) and therefore training should also be conducted in such a way that less paper is exercised. Participants should be given tablets loaded with all required materials for training purposes.
- b. Training of DCOs, CITO, Supervisors and Enumerators should be done through the use of technology, where trainers are at a central location (e-training). This will improve quality of training as definitions and concepts will be delivered centrally to all participants at the same time, thus reducing variations among participants
- c. SB to continue administering tests online with improved applications to avoid challenges experienced in this round of censuses.

## 24. ENUMERATION

The enumeration stage, being the major process of census taking, statistically provides the best estimation of the totality of the population. It is therefore critical to provide a prologue as a basis for the right perspective and understanding of the processes of enumeration; That is, what it entails in terms of concepts and processes to be followed, what and how it aims to achieve a total good count of the population.

Enumeration is the actual exercise of conducting the census, where people are visited, contacted and counted by interviewing them as households in their residential places. The interview collects information about every person on geospatial, demographic, socio-economic and environmental characteristics of the population.

Thus, enumeration process involves Enumerators strategically visiting dwellings to ensure that people are found at residential address (or home) and interviewed. The concept of residential address is premised on the fact that people live in organized groups as households in Dwelling Units (DUs), where, a household is accommodated in a housing unit within the DU.

Prior to enumeration, guidelines were prepared to guide districts on the census operations including training, recruitment, payments, etc.

### 24.1 Household

A household is defined as a group of persons, related or not, who stay together in an organized manner such that they live under the same **roof** or housing unit, having an arrangement for common provision or financial contributions for food, utility costs and other living requirements, and thus, eating together from the **same pot**. A household can also consist of one person living alone in a housing unit. The housing unit can be alone in the dwelling or with other housing units in the same. Though the definition of a household may sound more like a family it is not necessarily a family because the members need not be related to constitute a household. Further, a family can live together in the same dwelling but still not necessarily be a one household. That is, one family members can constitute one or more households in the same dwelling.

### 24.2 Dwelling unit

A Dwelling Unit (DU) is one or more structures of buildings in which groups of persons live as households. A DU has cooking and toilet facilities as basics. Where there may be no toilet facilities there will always be some arrangement made to use the neighbour's toilet or some other means such as the bush. Dwelling units are usually fenced or walled or something to mark the boundary as an enclosure. Where there is no fence or wall the building structures may still be in close proximity to indicate that they belong to one dwelling.

### 24.3 Housing unit

A housing unit is defined as a unit of structures of buildings or rooms that accommodates a household. Thus, in a DU there may be more than one households and each household having its own housing unit.

### 24.4 Enumeration Processes

Enumeration is a process by which households are visited, contacted in DUs and each interviewed as a single unit. The visits are made at strategic times of the day when people are expected to be home. All persons covered in the interview are those who either have spent the night with the household or are usual members of the household, or both. Members of the household who were temporarily absent as at the night before the visit for various reasons, and have not spent the night with any other household, but otherwise would have spent the night with the household; are considered as having spent the night with the household.

It is statistically acceptable that interviews done with due processes and standards observed, will provide the best data to deliver the best estimates of population. Hence, the potential of a population and housing census to deliver the most correct population is indisputable. Thus, a census done with due processes and standards followed, is the best way to deliver the best estimate of the size, composition and characteristics of the population.

#### 24.4.1 Types of Census Taking

There are two types of census taking methods; being De-Facto and De-Jure. A de-facto census allocates persons to the place where they spent the census night. This means reporting population figures by territorial distribution according to where people spend the night (night-time population). A De-Jure census tallies people according to their usual place of residence regardless of where they spent the census night. By either method, the reported population is by territorial distribution according to where people live. Most countries do both in one census by asking about where the person usually lives and where one was on the census night.

**Census Count:** A census is a process that counts every resident in the country. One of the initial use of the census data is to determine the number of constituency seats in the National Assembly (Parliament) and council ward seats at local levels, for political representation, among others.

## Census Night

A census night (or date) is defined as a fixed reference point for census enumeration starting at midnight of the previous date and ending at midnight of the census night, or a fixed period of moving census nights. For example, if census night is defined as 18 March 2022, the census night becomes the midnight of 17 March to midnight of 18 March. Most countries fix the census night as reference point for the entire period of enumeration. Some countries on the other hand use a moving census night. The ideal situation is to fix census. However, for reasons of forgetfulness of the general population due to long census periods and level of literacy, a moving census night is adopted by some countries. Moving census night is now being abandoned based on the level of development and literacy of the general population. In Botswana, a moving census night is still being used. With the continuous improvement in the level of development a fixed census night may be adopted in the next censuses.

### 24.4.2 Enumeration Period

The census enumeration period is always set to have at least one weekend in the middle. The ideal time of the day for interviewing is when most people are at home and that will be on a weekend day, or in the evening when most people are back from their day-to-day economic activities. Hence, the early and evening hours of the day, as well as, the weekend, have always been used from one census to another in order to maximize contacting people at home and ensuring maximum interview output.

### 24.4.3 Enumeration Times of the Day

Most people in the population engage in day-to-day economic activities to support their livelihoods, and so, they leave home in the morning and return in the afternoon and/or evening, or even late in the night. Census enumeration does not restrict movement of the people but rather, it follows them when they are home to conduct interviews. People continue with their daily business activities while census enumerators visit households in the dwellings and conduct interviews as they find people at home. Thus, the timing of the visits must be determined and appropriately made flexible to be able to find people at home during the day. Where there is no one at home for interview a revisit(s) is scheduled and effected at a strategic time of the day to ensure that the households is eventually contacted and interviewed. The scheduling of the visit(s) is done with due consultation with the neighbours to get information on the time that any member of the household is likely to be home.

Based on the foregoing, census enumeration would always involve some visits being made in the early morning hours and some in the late evening hours of the day. The visits are normally made to a maximum of three (3). Where contact is not possible the number of people staying in a particular household is requested from neighbours where possible. This number will assist in the headcount of the population even though data on demographic and socio-economic characteristics of the people would not be collected.

### 24.4.4 Enumeration Hours for 2022 PHC

For the 2022 Population and Housing Census enumeration time of the day, being travelling and conducting interviews, was set to be from 0630 to 2000 hours, with 30 minutes from 2000 to 2030 hours being rounding up the last interview and for travelling to lodging places. Travelling to lodging places was allowed up to 22:00 hours given that some would be travelling from lands and cattle post areas, as areas of operation but lodging elsewhere in the nearest village or town or where night appointments would have been made. Therefore, a daily five (5) hours of overtime payment (0630 to 2030 hours) was extended to those qualifying according to the prevailing statutes and policies in their terms of employment. This applied to both Statistics Botswana employees and Districts staff who were accordingly engaged by the Office of the District Commissioner.

#### 24.4.5 Mid-morning and Lunch Breaks

Breaking for tea/coffee (30 Minutes) and lunch (1 Hour) during enumeration was allowed and left to the census team to take as flexitime any time between 0630 and 2000 hours in the day. The enumeration teams were guided that the breaks must be taken flexibly but avoid the times that would compromise maximization of interview output.

#### 24.4.6 Revisits

Call-backs, appointments, reviewing the completed interviews, summarizing returns, synchronizing, etc. were part of the enumeration work and were performed between interviews.

**NOTE:** interviewing a household takes place when the Enumerator finds home a senior member of the household who can provide information about all the members. Where the Enumerator could not find such a person member of the household, there will be no interview and therefore no contact has been made. Therefore, a call-back is where an Enumerator fails to make contact with the household and arranges either by appointment to come back to the dwelling to contact the household. Alternatively, the Enumerator can just strategically checking again at a later stage.

#### 24.4.7 Scenarios of Households versus Availability for Interview

The different scenarios and suitability times to contact people at home for interview can generally be categorized as in **Table 10** below.

**Table 10: Scenarios of Households versus Availability for Interview**

SR	Type of Household	Usual Interview Time During the Day
1	People who work normal hours staying with other household members who do household chores at home during the day.  The household members present during the day become respondents.	Day or evening interviews.
2	People who work night shifts; leaving home in the afternoon and coming back in the morning to sleep most of the day. These people are present during the day and can become respondents.	Day interviews.
3	People who are not employed but mostly do household chores during the day.  These are the people who are always present and are normally interviewed during the day.	Day or evening interviews.
4	People who work and stay alone; they leave home in the morning (normal hours) and come back home in the evening.  These are usually contacted after work hours when they are back home.	Evening interviews.
5	People who work irregular hours and may, or may not, be home for interviews at normal hours.  These people can be interviewed by appointment; normally before 0730 in the morning and late evening up to 2000 Hours.	As per appointment. The appointment can be any time between 0630 and 2000 hours.

## 24.5 The 2022 Population and Housing Census Enumeration

The 2022 Population and Housing Census (PHC) was conducted in March-April 2022 following its postponement from August 2021 to August 2022 due to COVID-19 pandemic. The enumeration was scheduled for 18 to 31 March 2022. However, due to compounding effects, main of which were; shortage of Enumerators and transport, configuration issues and heavy rains, the enumeration exercise was extended from 1 to 4 April 2022; and subsequently followed by two (2) mop up exercises from 6 to 13 April and from 21 to 26 April 2022. The first mop-up was across all districts while the second was in Gaborone, Kweneng East, Kgatleng and Serowe-Palapye census districts.

Although the census month in Botswana is August of the census year, the 2022 census date was brought forward from August to March 2022 to avoid violation of the constitutional requirement regarding the appointment of the Delimitation Commission. The Delimitation Commission is appointed to delineate political boundaries. The process is informed and guided by population figures from a fresh comprehensive national population census. While the initial plan and preparations had been set for conducting the census in August 2022, the need to fulfil the constitutional requirement forced the bringing forward of the census date to March 2022. But the month of March being within the peak period of the rainy season and the fact that the government financial year also ends in March, many challenges to the project surfaced. At the time the new census date was announced there was little time remaining for formulation of well thought mitigation measures. Further, the pilot census had just been conducted in October 2021, needing a comprehensive review of instruments, systems including cartographic application and processes as informed by experiences from the pilot exercise.

Key among the challenges were;

- i. The sudden change of census date after the pilot exercise was conducted in October 2021 meant that challenges experienced had to be hastily taken into consideration and appropriate amendments be made on the instruments and processes of census taking. The time to do all these was very limited particularly for the CAPI system because it needed more time for amendments and repetitive testing thereafter;
- ii. **Review of the census budget approval processes:** The budget review and approval processes delayed and thus negatively impacting on other preparatory arrangements, such as disbursement of funds to Statistics Botswana and Districts leading to delayed procurement of needed equipment and material.
- iii. **Unavailability of cheaper training venues:** There was no opportunity of using Government schools and institutions facilities due to misalignment of the census date from public school holidays. These are normally available for use during training of Enumerators because of their lower rates. Hence, there was no other option but to train census Enumerators at private facilities. The private facilities were hotels, lodges, community halls, yellow tents and conference facilities and these were very expensive.
- iv. **Shortage of Training Facilities at District Capitals:** Trainings were planned to be held within census districts capitals. However, training facilities were not readily available in the right numbers and some had to be found outside the districts capitals. In some cases they were found even outside the census districts. Securing training venues outside the districts capitals not only escalated training costs but also increased eligibility of allowances due to Enumerators while introducing other unexpected costs for Supervisors which were not budgeted for.

- v. **The back and forth between Census Office and Cartography Unit with respect to preparation of the Supervisors' area files in terms of the supervision area (SA) size of Enumerators:** The size of the supervision area should have been agreed between the two to avoid delays caused by readjustments. Due to these differences in the already completed SAs, the Cartography Unit had to redo this work to change the size and produce maps for the same, thus impacting on the timely configuration processes of the SAs into the CAPI system and later into the tablets. This was one of the main challenge as there was also back and forth between System Development team and Cartography for proper alignment of SAs. As such some districts started enumeration late, particularly Kweneng East.
- vi. Further, the month of March being within the raining season, during enumeration, there were downpours that ended up having some urban and rural localities inaccessible since the roads were either too wet or submerged in rain water.

These challenges resulted in extension of enumeration and mop-ups enumeration exercise.

- vii. Apart from technical challenges, there were many queries regarding boundaries in some census districts, some of which continued into the preliminary results dissemination and beyond. In addition, some parts of the country had challenges where some communities did not succumb to enumeration despite intervention by Office of the District Commissioner in concerned district.

The enumeration exercise was subjected to technology technology for the first time in the history of censuses. As stated above the census period was initially scheduled for two weeks but spilled over to an extension by four (4) days and, two mop-up exercises of eight (8) days and six (6) days respectively. The enumeration stage of the census was hit by challenges arising from mainly the following:

- i. Training riots instigated by Enumerators querying eligibility criteria for lodging allowance.
- ii. Supervisors and Enumerators queried the decision taken regarding exclusion of overtime eligibility in their work given the period of census engagement and times of interviews during the day spilling outside normal work hours, whereas permanent staff from Statistics Botswana and those engaged by Offices of the District Commissioner, enjoyed the benefit. Their argument was that the reason given that they work flexi time was discriminatory because they worked with drivers as members of the team yet drivers got overtime. They also worked with census officials (CTOs, CITO, and DCOs) who were always with them during enumeration and yet those got overtime. Furthermore, the Supervisors argued that their exclusion from benefiting from lodging allowance extended to trainee Enumerators during training was also unfair, citing that Enumerators benefited more than them even though they (Supervisors) were superiors by job responsibilities.
- iii. The issues regarding non-payment of Enumerators and Supervisors allowances related to training in most districts; eligibility for lodging and overtime allowances also had a negative effect on the enumeration exercise, leading to petitions and the tendency to go slow during enumeration.
- iv. Connectivity also had a negative effect in some areas, where some Subscriber Identity Module Cards (SIMcards) were not helpful.
- v. Transport shortage in some districts at the start of enumeration.
- vi. Shortage of Enumerators in some districts at the start of enumeration.

- vii. Slow start of enumeration due to configuration and connectivity challenges.
- viii. Some Enumerators exhausted provided data bundles within first two days.
- ix. Slow progress due to heavy rains that resulted in floods in most districts in the central and southern parts of the country particularly during extension and mop ups periods.

#### 24.5.1 Start of Census Enumeration

Generally enumeration started at a slow pace due to many factors, among which some are as follows:

- i. Shortage of Enumerators, mostly in Gaborone and Kweneng East comprising the sub districts of Molepolole-Lentsweletau and Mogoditshane-Thamaga. Enumerators were transferred from other districts with surplus to where there were shortages.
- ii. **Shortage of Transport:** Taxis and privately owned vehicles were later engaged to augment Government vehicles in the affected districts as per Table 8 above.
- iii. **Overwhelming Configuration Exercise after Training of Enumerators:** It became evident that in some districts there were not enough Census IT Technical Officers (CITOs) to complete the work timeously. This was a job that required trained CITOs and therefore, no additional personnel could be engaged but only continued with the CITOs already available in the affected districts.
  - a. Technology functionality and configuration delays challenges were experienced, where, not all districts started enumeration on the first day, thus 18 March 2022, some of which the delay was over five (5) days; and also, in some districts not all Enumerators started interviews at the same time. The major problem was delayed pre-processing of cartography data and production of data files (EA files), and the subsequent generation and uploading of DU files to be used for enumeration into the system. As indicated earlier, the back and forth between Census Office and Cartography Unit over the size of the supervision areas, where the exercise had to be redone, compounded by the back and forth between Cartography unit and System Development, also negatively affected configuration exercise timelines. Further, this configuration of tablets processes after training needed more time than anticipated, which included cleaning of the tablets by removing data and maps used during training practicals, compounded to the problem.
 

Ideally, this process is supposed to be completed prior to enumeration. However, it was largely done parallel to enumeration exercise, district by district, resulting in slow start and progress in the actual enumeration exercise in most districts. As a result, the exercise could not be completed as initially planned and hence extension and mop ups to increase coverage.
  - b. Additionally, this meant the team concentrated more on this exercise of cleaning cartographic data, generation and uploading of files to enable commencement of enumeration exercise, rather than attending to normal system glitches realised in the developed panels for Enumerators, Supervisors and Census Technical Officers (CTOs) as well as the dash board. The system also experienced households status colour coding in terms of marking the completeness of the households during interviewing.
  - c. Further, exchange of completed households between the Supervisor and Enumerator and synchronization to the server at headquarters as well as CTOs' monitoring of progress and checking of data were also affected.

### 24.5.2 The CAPI System

The CAPI system was CSPro based. Due to time constraint the system could not be given enough time after training of Enumerators to allow finalization and testing, such as, the Supervisors and Census Technical Officers (CTOs) panels for monitoring progress, re-testing of the system and re-configuration of tablets and incorporation of inputs such as EAs Supervision Area files. Challenges of freezing of some tablets that were due to some device low specifications was also experienced during enumeration. The latter was mainly due to speedy procurement that inevitably comprised the processes of checking, verification and confirming compliance of the products/services to the agreed specifications and standards according to the tender.

There were modules/panels developed for data capturing and monitoring progress at various levels;

- i. Enumerators Module/Panel – Used by Enumerators to collect information. It generally worked well;
- ii. Supervisors panel – Used by Supervisors to check and monitor progress of Enumerators and advise accordingly if need be;
- iii. The CTO panel – Used to monitor Supervisor’s work and also code the data as necessary – Did not work well and hence monitoring was done manually. There was limited time for its finalization.
- iv. The Dashboard - Used to monitor progress at headquarters by leadership of Statistics Botswana- it worked well.

The CAPI system was interfaced with the Smart-Census used in the cartographic mapping exercise through interactive maps. The interfacing was meant to facilitate navigation within the EA boundaries and to find the Dwelling Units (DUs). From the cartographic side interfacing was well achieved. The only challenges experienced were in the Dwelling Units (DUs) where the colour codes were only designed to monitor progress of enumeration at the DU level, and not at the household level. This gave the problem of indicating completed enumeration when only one household was enumerated regardless of whether or not there were more than one households in the DU. This could have been resolved by also pre-listing the households per DU during the mapping exercise. As it was, CAPI did not have any knowledge of the number of households in the DU unless they had been predetermined prior to the start of enumeration. The CAPI system itself had some functionality glitches of technical nature. Most of them pointed to the fact that there was not much time to review the system and conduct repetitive testing as required for CAPI or rather incorporate the comments and recommendations made from the pilot exercise.

Challenges of internet connectivity were experienced in some areas causing glitches in the system. Statistics Botswana provided Enumerators and Supervisors with SIMcards while CTO/ CTOs were given open modems with data bundles to aid synchronization during enumeration where necessary. It was observed that some SIMcards were not registered or loaded with data bundles, and this required testing the of tablets for connectivity which could take two (2) or three (3) days before enumeration to allow for all mobile providers to register or load data.

It is worth noting that full inspection and assessment of the internet should be done to ensure whether it is sufficient or needs to be enhanced. Going forward and in the 2030 round of census, the use of open Wi-Fi modem is recommended for each team to assist synchronization of data in the field, to curb network issues. As such, more routers, modems and SIMcards to be procured for enumeration as a fall back plan. In addition there is a need to collaborate with service providers to reduce on the costs of connectivity and internet.

In overall the technologies used for both cartographic mapping and enumeration worked well to administer the census data collection instruments.

### 24.5.3 Raining Season

There were some days of downpours during enumeration. This made some areas inaccessible and canvassing difficult. Some vehicles were also stuck in some parts of the country in the month of April 2022. Strategies employed involved providing umbrellas to Enumerators and Supervisors, engagement of robust cars where there were downpours, including engagement of the BDF personnel to assist pulling out vehicles stuck in muddy areas, more especially in the Kweneng East district. Most districts were also affected.

In the Delta, most areas were submerged under water, this included area which were not submerged under water previously, and therefore, they required the use of helicopter though they were not initially catered under helicopter airtime. It will therefore be helpful in future, if the entire Delta District be catered for helicopter use in order to ensure complete coverage.

### 24.5.4 Petitions from Supervisors and Enumerators

The census implementers (SB and Districts) received a number of petitions from Supervisors and Enumerators in most districts. It was either they queried non-payment of lodging or supper allowances; non-payment of overtime or slow payments of training allowance. Almost all districts had challenges with payments of allowances which were expected to have been done before enumeration through GABS or administrative processes involved in doing so. All these had a grave impact on the enumeration processes causing a **Go Slow** in almost all districts.

Supervisors and Enumerators were not entitled to overtime. Statistics Botswana had guided District Administrators on the issue but still remained a grey area for contention, thus affecting progress of the enumeration phase of the project.

At the end of the project a number of districts had not yet paid mostly Enumerators allowances from training. Statistics Botswana took a deliberate decision to pay from its offices using digital money platforms, among which were mainly used being **Unayo for Stanbic Bank and e-Wallet for First National Bank (FNB)**. It was a very tedious process given that some Enumerators and Supervisors did not have bank accounts.

### 24.5.5 Payment of Allowances, Overtime and Honorariums

There were challenges experienced with payment of Enumerators and Supervisors allowances, as well as honorariums and overtime of census district officials. These emanated from problems with the GABS system, shortage of PULA cards, and reluctance by some administrators in certain districts to process payments as well as centralization of some Government functions in terms of district officers overtime payments. The SB chipped in to pay census allowances to Supervisors and Enumerators because they were working on temporary basis and thus not much affected by Government financial regulations and payment of tax.

Supervisors and Enumerators were paid allowances of **P460.00** and **P360.00** respectively for every day of engagement in the census enumeration activities except that Supervisors were engaged at the beginning of training of Enumerators and hence their earning started thus far.

In some expectedly isolated cases subsistence allowance was paid to particularly Supervisors, whom, in some instances, would have a wide supervision, where, they would not be expected to be staying at their usual place of residence throughout the entire engagement. Eligibility for Enumerators would be in cases of transfers based on illness or otherwise. The subsistence allowance was the equivalence of Government subsistence allowance, which was **P52.95** per night.

It is worthy to note that there was no overtime payment for Enumerators and Supervisors. This issue also contributed to riots and hence, there was deliberate clandestine slow traction or Go Slow by enumerators and supervisors during the enumeration phase.

While the payments for district officials did not affect the enumeration process in any way, there had been complaints and observation through expenditure on slow payments of overtime, in particular to officers, yet funds were disbursed for this purpose. There is a need to relook into how payments to all those engaged in the census activities could be handled for the next census, which will be conducted in the 2030 round of censuses.

Proper mechanisms should be put in place to avoid delays in their payments due to government payment system protocols. For example use council pay systems for their payments, with liaison with BURS on taxes

It is worth noting that, the best office to handle payments of Enumerators and Supervisors is the District Commissioner's Office. For the 2030 round of census a better and proper structure should be employed to avoid all the challenges including issues of allowances and who to get and who should not get allowances. A holistic approach to all the challenges is necessary for the next population and housing census, as technological advancement continues. For instance, SB could procure cards equivalence to pula cards to be used for paying temporary staff, and a dedicated finance officer be hired to ensure they are credited as and when necessary.

#### 24.5.6 Petitions from the Community over Boundaries

There were a number of issues regarding boundaries between villages raised during enumeration, even beyond. The Issues with boundaries need to be tackled well on time. While some were corrected for convenience of enumeration like villages Tumasera and Seleka, there is still a need to revisit it through the right channels for demarcation of boundaries between them as well as alignment of lands and cattle post areas where possible before preparations for the 2030 round of censuses.

These issues will be more of a concern now that new boundaries have been demarcated and in operation. **Table 11** below shows districts and corresponding issues which were not solved.

**Table 11: Boundary issues and their respective Districts**

DISTRICT	ISSUE
Ngwaketse West	Mis-allocation localities to Moshupa sub- i.e. Sese, Sese lands, Betesankwe, Naledi and Kaduwe (wrongly spelt as Kadoe)
Kgatleng	Residents in the an area called "C-5" were counted under Mabalane village instead of Sikwane village Mokatse settlement to be designated as a village
Tonota Sub	Shongochena-Mpatane enumerated under Chadibe instead of Borolong during 2011 PHC
Mogoditshane-Thamaga	Gabane lands enumerated under Mogoditshane i.e. Diagane, Khudiring and Tsolamosese lands
Central Tutume	Gweta population reduced between 2011 and 2022 PHC Some households under Mathangwane villages were not counted, some homesteads were counted under Semitwe instead of Mathangwane while some enumerated under Makobo Some wards from Changate village have been counted under Nkange village Some lands associated with Sebina has been miss-aligned to Marapong, the query comes from 2001
Central Serowe-Palapye	Dispute relating to the map that was used to enumeration in Mogapinyana village ( this was just before the actual census in 2022) Mogome lands counted under Serowe Admin Authority instead of Palapye sub district

## 25. SAFETY AND SECURITY OF CENSUS PERSONNEL

Districts and Statistics Botswana matrons were appointed mainly to be responsible for health and safety matters at the training workshops. Beyond training, the Offices of the District Commissioner had made arrangements with Botswana Police to monitor the situation particularly in the evening and provide surveillance in hot spot areas in urban areas and large villages as may be decided. Safety of Enumerators was challenged though, in that, in some parts of the urban areas that are prone to crime, particularly in the evening, few Enumerators were attacked and tablets taken.

In mitigating against COVID-19 challenges, strategies were continuously devised and revised to address the problems. Among the strategies were to postpone the census and the pilot exercise; and provision of health and safety measures such as class sizes that adhere to social distancing in training workshops; providing PPEs; holding virtual meetings and compelled vaccination against COVID-19 for census personnel participating in the training workshops and during the enumeration exercise for both pilot and main census. The vaccination was a pre-engagement condition which was put in the advert for Supervisors and Enumerators. The census officials (DCOs, CTCs, CTOs, CITO, Matrons and Drivers) were ensured to have been vaccinated and produced proof.

Conformity with health and safety standards was the responsibility of Statistics Botswana (SB) for guidance and provision of the necessary merchandises (uniform) and appropriate earth colour of the vehicles particularly in areas infested with dangerous wildlife as well as tsetse flies, such as, the CKGR and Delta. The SB was also to provide first Aid Kits to census teams for enumeration. The merchandises and First Aid Kits reached the districts as part of the packs for field teams.

Provision of First Aid Kits during training and enumeration was not a problem but only that the packed contents no longer allowed to include pain killers and other ingestible medications. There were no challenges reported about ensuring adherence to COVID-19 protocols. Face masks and sanitizers were adequately provided and distributed across all the districts.

There were a number of dog attacks and bites during the census enumeration periods and a number of claims made. It is however a wakeup call to ensure that Districts funds cater for such claims in the 2030 round of censuses.

## 26. DATA PROCESSING, ANALYSIS, DISSEMINATION AND ARCHIVING

This chapter covers, data processing, analysis, ICT, dissemination and archiving.

### 26.1 ICT Gadgets Used in Data Collection

For the first time Statistics Botswana employed the use of technology (CAPI) and gadgets in census undertaking. The project necessitated the acquisition of 11,677 tablets, a crucial component for data capturing in the field. To ensure timely delivery and alignment with project objectives, the IT Department provided detailed specifications and quantities to the Procurement Office. The timely procurement of tablets is a critical milestone for the Population and Housing Census.

By adhering to the open bidding process and leveraging the expertise of the IT and Procurement departments, the organization is well-positioned to secure the necessary equipment and achieve its project goals. Statistics Botswana used the following types of gadgets;

- Lenovo Tab M8
- Lenovo Tab M10
- RCT 10 Enkulu
- Ditec and Mecer

**Table 12: Total Number of Tablets, Make and Costs by Supplier**

SNO	SUPPLIER	MAKE	# TABLETS	COST
1	3G Mobile	Lenovo M8	4,500	9,432,846.50
		Lenovo M10	1,200	2,621,052.00
2	Pilot Census	Lenovo M8	100	189,035.00
3	UNFPA	Lenovo M8	100	
4	Goldwing	RCT 10	2,800	4,970,003.64
5	Dichaba Consumers Elex	DITEC	1,276	2,558,418.28
6	Fortified Holdings	Mecer	1,701	2,427,327.00
	<b>TOTAL</b>		<b>11,677</b>	<b>22,198,682.42</b>

Note that the number of tablets increased due to purchases made off shelf to ensure trainings that started in February 2022 to enable the planned start of enumeration on the 18th of March 2022.

## 26.2 Gadgets Specifications and the supporting hardware

The software that are built to operate on Android platform can be deployed on the gadgets. For the 2022 PHC, SB used CSPro (Census and Survey Processing System) software to develop the data collection system which runs on the Android platform.

**Table 13: Tablets, Specifications and General Supporting Hardware**

TABLETS AND THEIR SPECIFICATIONS				SUPPORTING HARDWARE
LENOVO M8	LENOVO M10	RCT 10 EKULU	DITEC	
Android 9 OS	Android 11 OS	Android 9 OS	Android 9 OS	SD cards (64GB,128GB,256GB)
2GB RAM	4GB RAM	2GB RAM	2GB RAM	Covers /Pouch (except RCT)
32GB Physical Storage	64GB Physical storage	32GB Physical storage	64GB Physical storage	External HDD (2TB)
SD card slot	SD card slot	SD card slot	SD card slot	Charging Stations (10 and 60 ports)
8" Display	10" display	10" display	10" display	Power banks (backup for power)
GPS, with A-GPS, GLONASS,BDS	GPS, with A-GPS, GLONASS, BDS	GPS	GPS	Solar panel and battery (CKGR)
Bluetooth	Bluetooth	-	Bluetooth	
Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct, hotspot	Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct, hotspot	(Accessories- headphones, pouch/cover, usb transfer cable)	Wi-Fi 802.11 a/b/g/n(BT4.0)	

### 26.2.1 Procurement Method Selection

Given the substantial quantity and critical nature of the procurement, a thorough evaluation of procurement methods was conducted. Based on Botswana's threshold regulations and statistical analysis, the open bidding method was determined to be the most suitable approach. This method allows for maximum competition and transparency, ensuring the best value for the organization.

### 26.2.2 Tendering Process

In accordance with the selected procurement method, tenders were floated to invite bids from qualified suppliers. The tender documents outlined the project requirements, including technical specifications, delivery timelines, and evaluation criteria. Potential suppliers were required to submit proposals that met or exceeded the specified standards. Due to challenges of bringing the census undertaking month forward to March 2022 as opposed to August, some tendering processes were not followed and some equipments such as tablets and some IT accessories were purchased off shelf to allow other processes to continue.

### 26.2.3 Connectivity at the Field

The SIMcards were bought from three mobile providers in Botswana, The reason being there is no mobile provider that has 100 Percent coverage in the whole country. Sim-cards with varying data loaded for all tablets (E.g. 6GB, 8GB and 10GB) depending on the mobile provider and Open Wi-Fi Modems for connectivity backup in case the SIMcards in the tablets has connectivity issues.

### 26.2.4 Servers at the Head Office for Synchronization

Statistics Botswana is running a virtualized server environment. The servers were created specifically for census project for running their database and Applications. The Operating System was Windows Server 2012(soon to be upgraded). Regular backup was being done.

### 26.2.5 Tracking System

A Mobile Device Management system was also implemented for deploying the census Application and monitoring of the gadgets. It also assisted on what the Supervisor and the Enumerator can modify on the tablet setting. A power-mirror software was also used (Mirroring from the trainer tablet to projector during trainings).

## 26.3 Data Processing

### 26.3.1 Introduction

Data processing is the process of gathering raw data and converting it into useful information. It is often carried out step by step by a team of data scientists, and data engineers within an organisation. The raw data is collected, filtered, sorted, processed, analysed, and archived.

The data processing cycle begins with the data collection. The type of data collected has a significant impact on the outcome generated. As a result, raw data should be acquired from well-defined and accurate sources to ensure that future conclusions are genuine and useful.

In Computer Assisted Personal Interviewing (CAPI), data is captured directly as it is collected. The collected raw data is subjected to various data processing methods. The last step of the

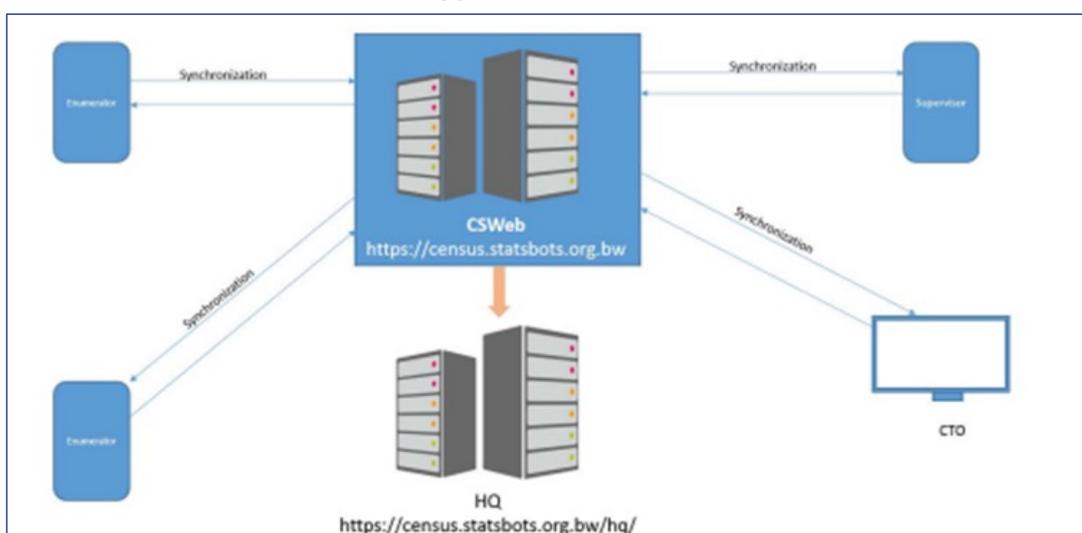
data processing cycle is storage, where data and metadata are stored for further use. It allows for quick access and retrieval of information whenever needed.

### 26.3.2 The 2022 Population and Housing Census Data Processing

There are various forms of data processing, depending on the source of the data and the procedures required by the processing unit to obtain an output. There is no universally applicable method for processing raw data. Batch processing, automated data processing, real-time processing, online processing, time-sharing, electronic data processing, and multiprocessing are some of the several types.

The 2022 Population and Housing Census (PHC), like other large-scale data collection programs, it was faced with data processing issues. This was the first digital census with cartographic mapping (Smart census) interfaced with a data collection tool (CAPI \_ CPro).

#### Architecture of The Census 2022 App

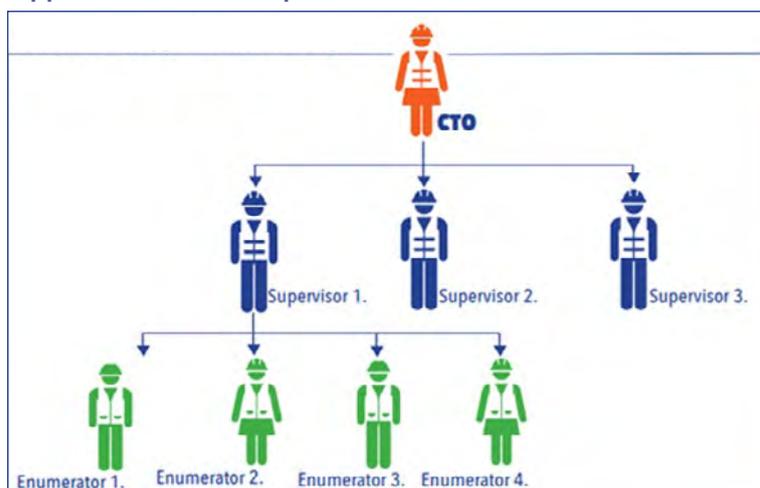


Despite CAPI’s integrated consistency checks, certain errors will slip through, especially if the system does not have adequate time to be developed and tested. Data processing began in preparation for the publication of a number of reports such as Preliminary report, Population of Cities, Towns, Villages, and Associated Localities, etc.

### 26.3.3 Data Quality Checks

Levels of supervision to ensure the quality of data obtained during enumeration.

#### Census 2022 App Staff Relationship



A menu for Supervisors and CTOs was created to monitor and ensure the quality of enumerators' work during the Enumeration process. Additionally, a dashboard was created for management at headquarters to track progress. The full potential of this was not realised due to technical and network issues.

## 26.4 Data Cleaning

### 26.4.1 Localities

The CAPI system was interfaced with the Smart-Census used in the mapping exercise through interactive maps. The interfacing was meant to facilitate navigation within the EA boundaries and to find the Dwelling Units (DUs). The data showed some locality codes with no names, and misalignment of district, EA, villages, and localities up to the dwelling unit level. This exercise started immediately after enumeration.

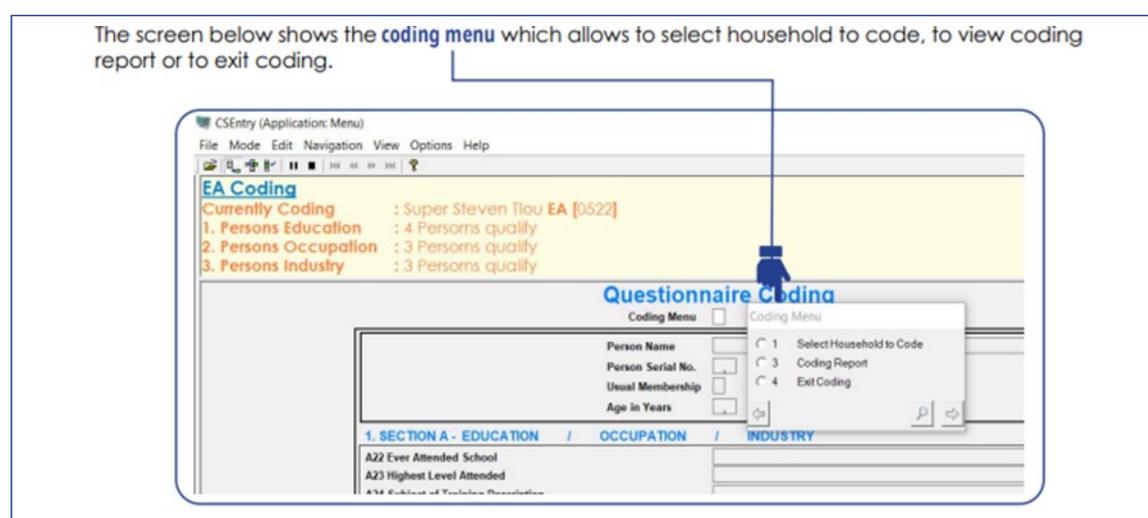
### 26.4.2 Questionnaires

During the data cleaning process, it is crucial to ensure the structural stability of the data. This entails verifying the completeness of questionnaires, accurately labelling variables and responses, and correctly inputting non-response codes. Additionally, it is essential to identify and address invalid entries, including out-of-range values, skip patterns, inconsistent responses, and outliers. Lastly, it is imperative to identify entries requiring batch-editing and/or imputation.

Data profiling involves analysing the data to comprehend its characteristics, the identification of data types, missing values, outliers, errors, and inconsistencies. Correction of these errors and inconsistencies is an integral part of the data-cleaning process. The final phase involves data validation, encompassing the verification of data completeness and accuracy. Errors were profiled on a variable-by-variable basis and, in certain instances, by record. Edit programs were developed utilizing CPro, R, Stata, and SPSS.

Guidelines were established to address these errors, providing a framework for SB staff involved in the editing process. The cleaning process for both localities and questionnaires took longer than anticipated, leading to the engagement of a consultant to collaborate with Data Management and ICT (DMICT) staff to expedite the questionnaire cleansing process. Finally, the 2022 PHC data was shared with analysts and dissemination workshop held on 11 – 12 June 2024.

### 26.4.3 Coding



The coding of responses to descriptive questions regarding industry, occupation, and subject of training commenced in May 2022. Initially, the plan was for the coding process to run concurrently with data collection by Census Technical Officers (CTOs). However, due to technical challenges, it became necessary to initiate the coding process in the office following the completion of fieldwork.

The original projection was for the coding to be finalised within three months following the enumeration, with an estimated 200 coders being deployed. Recognising the resource-intensive nature of this undertaking, including the need for adequate space, computing equipment, and personnel, regrettably, only 60 temporary coders were hired, resulting in an extended timeline for completion. To mitigate this, available Statistics Botswana staff, particularly those who were CTOs (about 70 officers) were engaged to fast track the process. Notably, the coding process exceeded the projected timeframe, necessitating additional validation post-dissemination.

#### 26.4.4 Challenges

- a. Processing large volumes of data can significantly strain computational resources and lead to slower processing speeds.
- b. Data comes in various formats - structured, semi-structured, and unstructured - necessitating the use of adaptable tools and techniques for processing.
- c. Ensuring data quality, encompassing accuracy, completeness, and consistency, is paramount, as data integrity issues can yield inaccurate results.
- d. The ultimate objective is to derive meaningful insights from raw data. Data scientists and analysts must carefully select suitable algorithms and models to extract valuable information.
- e. Additionally, safeguarding sensitive data during processing is essential, and adherence to privacy regulations is imperative for ensuring data privacy and security.
- f. As data processing channels become more intricate, managing dependencies, error handling, and debugging pose increasing challenges.

Addressing the above challenges typically required a combination of domain-specific knowledge, robust tools, and skilled professionals. This emphasizes the need for staff capacity building and development, particularly for personnel in Data Management.

### 26.5 Dissemination and Analysis

#### 26.5.1 Introduction

The analysis planning entailed a tabulation plan, roadmap for thematic analysis - thematic areas topics, report writing schedule (timelines) and release of census products.

#### 26.5.2 Roadmap to Thematic Analysis

##### Phase 1: Stakeholder Engagement and Theme Selection

**Initial Discussions:** Representatives from government ministries, departments, agencies and academic institutions as well as independent individuals were brought together to participate in a series of workshops. These workshops served as a platform for open dialogue and exchange of ideas. The primary objective of these consultations was to pinpoint key areas that would be most beneficial to analyse using census data. These areas were selected with careful

consideration of both national and international goals and the specific research interests of the academic community.

**Analysis of Consultation Outcomes:** Following the completion of the workshops, the insights and recommendations gathered from the discussions were thoroughly analysed. This analysis helped to identify the most relevant and impactful themes and sub-topics for in-depth study. The chosen themes and sub-topics formed the basis for a comprehensive analysis of the census data. This data-driven approach would provide valuable insights and evidence to support policy decisions and research endeavours.

A thematic document was developed which highlighted the following areas for analysis

- a. Population structure by sex and age
- b. Spatial distribution of the population (including urbanization)
- c. Economic characteristics of the population
- d. Fertility trend
- e. Population density
- f. Migration patterns
- g. Marital status and nuptiality
- h. Household and living conditions (including the typology of households)
- i. Population Projections
- j. Men and Women in Botswana
- k. Women and children
- l. Youth Issues
- m. Population with disability
- n. Elderly population
- o. Housing characteristics
- p. Agricultural activities
- q. Availability of ICT, transport and other durable assets
- r. Home based care
- s. Demographic atlas
- t. Population distribution atlas
- u. District monographs
- v. Literacy, Education

### Phase 2: Building Analytical Capacity

**Identification and Recruitment:** A comprehensive database of qualified analysts was created. This database included researchers from both government institutions and universities, ensuring a diverse pool of expertise. The creation of this database aimed to provide a readily accessible resource of individuals capable of conducting the thematic analyses effectively.

The Census Analysis Review Committee (CARC) was formed with a clear mandate outlined in its Terms of Reference (TORs). This committee played a crucial role in overseeing the quality and consistency of the analytical work. The CARC developed a standardized scoring rubric to evaluate the submitted abstracts and reports. This rubric provided a consistent framework for assessing the quality of the analytical work and ensured fairness in the evaluation process.

### Phase 3: Author Guidance and Manuscript Preparation

Detailed guidelines (Appendix 7) were prepared to provide authors with specific instructions on the format and content requirements for both abstracts and subsequent manuscripts. These guidelines addressed key aspects such as data presentation, analytical methods employed, and adherence to established referencing standards.

A call for abstracts was issued, inviting qualified researchers to submit proposals for thematic analyses that aligned with the previously selected themes and topics. The submitted abstracts underwent a thorough review process conducted by the CARC. This review process ensured that the proposed analyses met the established standards of quality and relevance.

#### Phase 4: Report Development and Refinement

**Data Utilization:** Selected authors conducted comprehensive thematic analyses using the census data. These analyses were guided by the approved research proposals and adhered to the chosen methodologies. A total of 85 abstracts were received, and 58 manuscripts have been successfully completed and reviewed. Ideally, the number of abstracts should be equal to the number of manuscripts. However, due to similarities in the submitted abstracts, some were merged to form one manuscript. There was also few dropouts (analysts) due to limited time for drafting manuscripts, hence the difference.

Drafted reports were submitted for peer review by external experts with specialized knowledge in the relevant fields (CARC). In addressing quality assurance, this peer review process served as a crucial mechanism to ensure the quality, rigor, and validity of the analyses and findings.

#### Phase 5: PHC Dissemination conference 11th -12th June 2024

The dissemination conference was held on the 11th -12th June 2024 in Royal Aria Tlokweng Botswana. It was a hybrid conference leveraging on technology. The thematic presentations ran parallel in four rooms. A total of 58 presentations were done in the 2 days. Thematic analysis findings were presented to stakeholders, fostering informed decision-making.

#### Phase 6: Census Reports (Post Dissemination Conference)

The following census products are to be released using census data:

- Dissemination report
- Analytical Report
- 28 District Monographs
- Population Projections
- PHC Statistical Tables
- Guide to Villages Report
- Population Atlas

Reports undergo final editing and graphic design to enhance presentation clarity and accessibility for a wider audience. Finalized reports are disseminated through various channels, including publications, conferences, and online platforms.

## 26.6 Archiving

The primary aim of archiving individual records, such as census questionnaires, is to preserve them for future use by the government, researchers, and other interested parties. This preservation also serves as valuable historical data for the nation, aiding the public in genealogical research. Given that the 2022 Population and Housing Census employed both paper and electronic forms, it was essential to address the archiving needs for both types of materials as detailed below:

### 26.6.1 Census Documentation

The Census documentation include those materials necessary to understand how to properly analyze data from survey, as well as the information necessary to replicate and evaluate survey's results. Included also in the documentation are material clearly describing how the information is constructed and provide the metadata necessary for users to access and manipulate the data.

### 26.6.2 Archiving Process

The hard copy materials needed (list provided below) for the Population and Housing Census were stored in the SB Archiving Room, organized by Census Districts, and distributed accordingly. After the count was completed, the hard copy questionnaires were returned to the SB Archiving Room for safekeeping and to ensure adherence to archiving procedures. The digital questionnaires were initially stored on servers until data processing was complete. Once processing was finished, the data was transferred to the Electronic Documentation and Management System, which archives the raw survey and census data.

### 26.6.3 Types of Census Materials archived

#### Census Questionnaire

- Diplomat's questionnaire
- 2022 PHC household questionnaire
- Questionnaire scenarios for enumerators' practice
- Tertiary Questionnaire
- Hotels Questionnaire
- 2021 Population & Housing Census Manuals
- Enumerators Manual
- Supervisors Manual
- District Census Officers (DCO) Manual
- PAPI, CAPI, and Manuals
- 

#### Publicity Materials

- Publicity strategy document
- Adverts
- Flyers
- Census Calendar
- Posters
- Brochures
- Video clips
- Newspaper clips
- Cartography Publicity Materials
- Pilot Census Materials

#### Other Documents

- Events Calendar
- Branding protocols for the 2021 Census Logo
- Census Logo
- Guide to census

#### Apparel

A sample of each type of promotional item used during the Census was archived, including the T-shirt, jacket, pens, and notebooks.

## 27. DATA SECURITY

### 27.1 Overview

Data security involves implementing various measures to protect data from unauthorized access, breaches, and other security threats. Data security during the 2022 PHC was vital in maintaining the confidentiality, integrity, and availability of census data. A detailed overview of the key aspects of data security throughout the census process is provided below.

Data at rest was secured through the use of antivirus software on endpoint devices. The servers were secured in a server room with physical security measures, including access control and a lockable door to control and monitor access to the server room. Access to the data was secured through the use of usernames and passwords, and the database files were encrypted. To prevent data loss, Statistics Botswana implemented a robust backup system that includes backups to disk and tape. There is also a disaster recovery site at a remote location.

During transit and collection, data was secured through encryption using secure socket layer certificates. The use of usernames and passwords was enforced for access to the data collection application. A mobile device management (MDM) system was implemented for monitoring the tablets and restricting what the Supervisor and Enumerator could modify in the tablet settings. Data was protected from external threats through the use of a next-generation firewall with intrusion detection and prevention enabled. Continuous monitoring of servers to detect and respond to security threats in real-time was implemented through the use of the next-generation firewall and antivirus software.

The data security implementation was guided by Statistics Botswana ICT policies and international best practices for data protection.

### 27.2 Challenges and Recommendations

#### 27.2.1 Challenges

The implementation of data security during the 2022 PHC came with challenges, which are grouped into the following categories:

##### a) Time:

Due to the changes in census dates from the originally planned date of August 2022 back to March 2022, there was insufficient time for the installation of Mobile Device Management (MDM) System on all tablets and a lack of training for Census IT Officers (CITOs) on the operation of the MDM platform for tablet management. This also presented challenges during the distribution of tablets, requiring configuration before issuance, and rendered the initial plans and guidelines insufficient. However, Office of the District Commissioner around Gaborone (Gaborone, South East, Kgatleng and Kweneng East) were requested to provide IT personnel to augment the IT personnel in Statistics Botswana during configuration of tablets.

##### b) Lack of Human Resources:

Due to shortage of IT personnel in the organisation, all the organisation IT personnel were deployed to districts as CITOs, leaving no resources for the monitoring and tracking of tablets in the office, leading to limited visibility of the movement of tablets through the MDM in a central point. This was aggravated by the fact that some procured tablets arrived during training of Enumerators and their allocation and movement management was compromised.

Shortage of personnel to receive and document the devices after enumeration also presented opportunities for tablet theft and/or misrepresentation of delivered tablets. This also presented a data security weakness on the tablets as they contained some data from the field. The other challenge was the late installation of CCTV which was meant to help in the security of the tablets and other related equipment. At the end a significant number of tablets was lost without trace.

**c) Cost:**

The devices used to secure the data come at a very high price; the costs of the MDM, certificates, firewalls, and antivirus software were substantial. A maximum of 8,500 MDM licenses were procured, which were not adequate to cover all the devices.

**d) Accountability of CITO:**

CTOs and COTOs from Statistics Botswana and Offices of the District Commissioner respectively were engaged in the configuration of tablets without training and controls on how to handle them. They were dispatched without recording in the designed dispatch forms. This presented a risk due to limited accountability.

**27.2.2 Recommendations:**

It is recommended that

- a. Adequate internal controls be enforced and guidelines prepared
- b. There should be provision of training for all CITO both from Statistics Botswana and Offices of the District Commissioner on tablet management, monitoring and proper record-keeping
- c. There should be procurement of adequate MDM such that all tablets are recorded in the MDM.
- d. All CITO and field officers (CTOs) should be trained enough to be accountable for monitoring and tracking tablets during enumeration. Additionally, there should be at least one officer should also be assigned dedicated duties for the management of tablets at the head office as part of a command center, ensuring tablets and accessories are distributed efficiently and all records are maintained.
- e. At the end of enumeration, personnel should be available to receive tablets from the field and maintain balances, through cross checking records with what was dispatched to ensure shortages (damages, losses and stolen) are categorically noted at the time of arrival.
- f. There is installation of CCTV at the storage room for all census materials and equipment as part of monitoring movements of both tablets, materials and equipment as well as personnel going in and out of the storeroom.
- g. Logistics Management software be procured to help in records and management of all census materials and equipment

## 28. HIGHLIGHTS OF CENSUS RESULTS

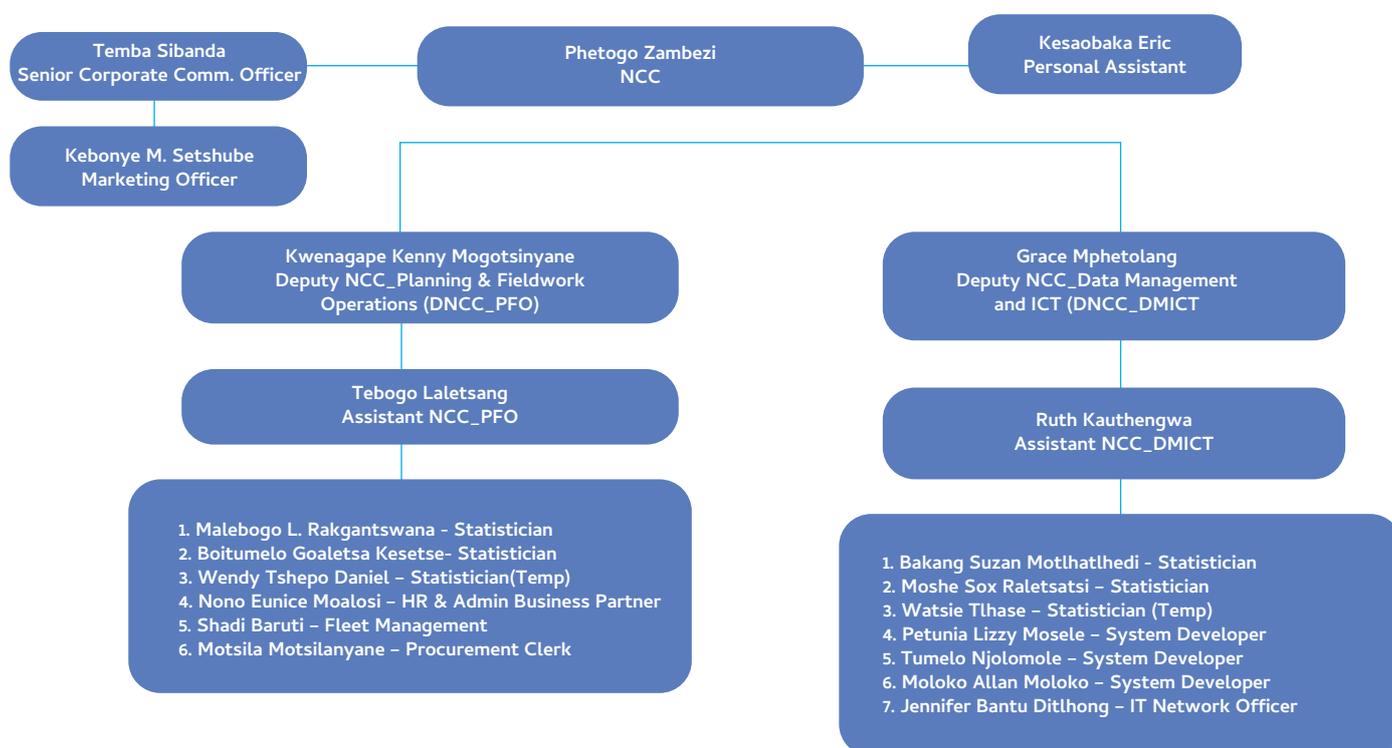
The 2022 Population and Housing Census main results were disseminated in a 2 day conference in June 2024. The following are the highlights in tabular form.

**Table 14: Selected Socio-Demographic Indicators**

Indicators		2001	2011	2022
Population	Total	1,680,863	2,024,904	2,359,609
	Male	813,583	988,957	1,150,615
	Female	867,280	1,035,947	1,208,994
Population by Citizenship	Batswana	1,620,147	1,913,419	2,222,971
	Non Batswana	60,716	111,485	117,356
	Not Stated	-	-	19,282
Batswana outside Country	Total	28,210	23,045	8,863
	Male	16,800	11,786	4,134
	Female	11,410	11,259	4,562
Population Age Structure (%)	Youth (18-35)		32.6	30.0
	The elderly (65+)	5.0	5.1	5.7
Population Distribution (%)	Urban	54.2	64.1	66.5
	Rural	45.8	35.9	33.5
Population Density		2.9	3.5	4.1
Household size		4.2	3.7	3.3
Population Sex Composition (%)	Male	48.3	49.0	48.8
	Female	51.8	51.0	51.2
Sex Ratio (Male per 1000 Females)		93.8	95.5	95.0
Dependency Ratio		71.5	56.7	60.2
Crude Birth Rate		28.9	25.7	24.5
Crude Death Rate		12.4	6.3	6.7
Natural Rate of Increase (%)		1.7	1.9	1.4
Population Growth Rate		2.4	1.9	1.5
General Fertility Rate (per 100 women aged 15-49)		106.9	92.2	90.0
Mean Age at Child Bearing		30.3	27.8	30.4
Total Fertility Rate (birth per woman)		3.3	2.7	2.9
Mortality Rate	Infant	56.0	17.0	27.9
	Child	19.0	27.0	28.0
	Under 5 Mortality	74.0	28.0	22.0
Life Expectancy at Birth (Years)		55.6	68.0	69.0
	Male	52.0	66.0	66.0
	Female	57.4	70.0	71.0
Mean Age (years)	Total	24.8	26.2	28.1
	Male	24.2	25.2	27.2
	Female	25.3	26.8	28.9
Median Age (years)	Total	20.1	23.0	26.0
	Male	19.4	22.0	25.0
	Female	20.8	24.0	26.0
Economically Active		58.2	64.9	71.4

## 29. APPENDICES:

### Appendix 1: Appendix 1: Census Office Staff Compliment



### Appendix 2: Deployment of Census Technical Coordinators (CTCs), Census Technical Officers (CTOs) and Census IT Officers (CITOs) Deployment for Training and Enumeration - 2022 PHC

SR	District Code	Census District	Sub-District / Admin Authority	Census Technical Coordinator	Census Technical Officers	Census IT Officer
1	1	Gaborone	Gaborone	Kwenagape Kenny Mogotsinyane	Ruth Mothibi, Modise Ramaretlwa, , Bakang S. Motlhatlhedhi, Oabona Machete, Maipelo Bathokebafé, Yvonne Muzola, Chakawa Budani	Petunia Lizzy Mosele
2	2	Francistown	Francistown	Tapologo Baakile	Boitumelo Dudu Gaongalelwe, Moffat Masingwane, Moratiwa Kgosiemang, Olebile Jeremaiah. Sekgantsho	Batsogile Mokenti, Boitumelo Kobua
3	3	Lobatse	Lobatse	Grace Mphetolang	Virginia Tebogo Sebekedi, Rejoyce Mbalekelwa	
4	4	Selebi-Phikwe	Selebi Phikwe	Kebonyethebe Johane	Phemelo Ntwayapelo, Ontebile Jackie. Puleng	Moloko Allen Moloko, Rahube Tsheole
5	5	Orapa	Orapa	Susan Matroos	Sandra Modise	Kebareng Marapo, Dipuo David
SR	District Code	Census District	Sub-District / Admin Authority	Census Technical Coordinator	Census Technical Officers	Census IT Officer
6	6	Jwaneng	Jwaneng	Ruth Kauthengwa	Tebogo Tsienyane	Tumelo Njolomole, Tetelo Thuo

SR	District Code	Census District	Sub-District / Admin Authority	Census Technical Coordinator	Census Technical Officers	Census IT Officer
7	7	Sowa	Sowa	Tapologo Baakile	Elliot Ramooki	Batsogile Mokenti, Boitumelo Kobua
8	10	Ngwaketse	Kanye Admin Authority, Moshupa Sub District	Ruth Kauthengwa	Kebabonye Molefhi, Ditiro Bogatsu, Kelebetse Mbinganyi, Wendy Tshepo Daniel, Kagiso Sakeng, Kutlo Oratile	Tumelo Njolomole, Tetelo Thuo
9	11	Barolong	Good Hope Sub District	Grace Mphetolang	Lekoko Simako, Onalenna Motshegwe	Tumelo Njolomole, Tetelo Thuo, Jennifer Ditlhong
10	12	Ngwaketse West	Mabutsane Sub District	Ruth Kauthengwa	Bunnie Komane , Peter Serunya	Tumelo Njolomole', Tetelo Thuo
11	20	South East	South East District (Ramotswa and Tlokwen)	Grace Mphetolang	Phaladi Labobebdi, Kebotsemang Ditsela, Otsile Chelenyane, Galaletsang Marumo	One Dithole, Linky Moalosi
12	30	Kweneng East	Molepolole-Lentsweletau Sub District and Mogoditshane-Thamaga Sub District	Onneetse Gaosekelwe	Kutlwano Sebolaaphuti, Winstern Kabo, Thuso Otukile, Kefilwe Precious Gonnetsweng, Kakanyo Fani Dintwa, Thabang Ramaja, Laronka Kaisara	Boitumelo Dibetso
13	31	Kweneng West	Lethakeng Sub District	Onneetse Gaosekelwe	Stephen Pheko, Mothati Setume, Daniel Magogwe	Boitumelo Dibetso
14	40	Kgatleng	Kgatleng	Kwenagape Kenny Mogotsinyane	Gaolatlhe Mmolawa, Mpho Keboi, Khumo. Katholo	Boammaaruri Malemenyane, Matlhogonolo Moatshe
15	50	Central Serowe-Palapye	Serowe Admin Authority	Susan Matroos	Malebogo Rakgantswana, Keamogetse Moreo, Peloewetse Peloewetse, Lillian Marumo, Mariam Kakuwa, Zibo Albert, Batho Rendo	Kebareng Marapo, Dipuo David
16	51	Central Mahalapye	Mahalapye Sub District	Kebonyethebe Johane	Ipuseng Moaletsane, Potlako Kgari, Judith Metlhayotlhe Letebele, Joshua Otladisa	Moloko Allen Moloko, Rahube Tsheole
17	52	Central Bobonong	Bobirwa Sub District	Kebonyethebe Johane	Ndiye Nko, Mavis Mogami, Mogotsi Morewanare	Moloko Allen Moloko, Rahube Tsheole
18	53	Central Boteti	Lethakane Sub District	Susan Matroos	Keanewa Mandoze, Chandler Madisa, Lakidzane Tiro	Kebareng Marapo, Dipuo David
19	54	Central Tutume	Tutume Sub District	Tapologo Baakile	Boitumelo Goaletsa Kesetse, Kwashirai Chigodora, Lillian Ntheetsang, Dithapelo Lesolame, Tlhalosang Gakeadumele, Tebogo Mohutsiwa	Laronka Sengwaketse, Gouta Maseko

SR	District Code	Census District	Sub-District / Admin Authority	Census Technical Coordinator	Census Technical Officers	Census IT Officer
20	60	North East	North East	Moffat Malepa	Ditshupo Gaobotse, Sebego Ribase	Larona Sengwaketse, Gouta Maseko
21	70	Ngamiland East	Maun Admin Authority	Tebogo Laletsang	Thabo Tswiio, Lucy Toise, Bonang Keagakwa	Sanah Moeng, Thatayaone Mooki
22	71	Ngamiland West	Okavango Sub District	Tebogo Laletsang	Dikoloti Gareoitse, Watsie Tlhase, Ananias Basimanebotlhe	Sanah Moeng, Thatayaone Mooki
23	72	Chobe	Chobe	Moffat Malepa	Phatsimo Bolowe, Charles Rabothiwa	Michael Andina
24	73	Delta	Part of Maun Admin Authority	Tebogo Laletsang	Mothusi Ditlou	Sanah Moeng, Thatayaone Mooki
25	80	Ghanzi	Ghanzi Admin Authority	Eden Onyadile	Elizabeth Mantswe, Ipopeng Tirelo, Phillip Gothata, Othusitse Monametsi	Moemedi Ntunyane
26	81	CKGR	Part of Ghanzi Admin Authority	Eden Onyadile	Kaone Rasedibo	Mothusi Gokatweng
27	90	Kgalagadi South	Tsabong Admin Authority	Ketso Makhumalo	Babuang Sidney Tlhomelang, Godiraone Gaolaolwe	Albert Keletwang
28	91	Kgalagadi North	Hukuntsi Sub District	Ketso Makhumalo	Moshe Raletsatsi , Lesego Tswiio	Albert Keletwang

## Appendix 3: Statistics Botswana Census Personnel - 2022 PHC

Statistics Botswana Census Personnel who were deployed to the field and participated full time in the 2022 Census during Training of Enumerators and the Enumeration Exercise as well as mop ups

SR1	FIRST NAMES	SURNAME	DESIGNATION	SR 2
1	Phetogo	Zambezi	National Census Coordinator	1
2	Tapologo	Baakile	Census Technical Coordinator	1
3	Onneetse	Gaosekelwe	Census Technical Coordinator	2
4	Kebonyethebe	Johane	Census Technical Coordinator	3
5	Ruth	Kauthengwa	Census Technical Coordinator	4
6	Tebogo	Laletsang	Census Technical Coordinator	5
7	Ketso	Makhumalo	Census Technical Coordinator	6
8	Moffat	Malepa	Census Technical Coordinator	7
9	Susan	Matroos	Census Technical Coordinator	8
10	Kwenagape K.	Mogotsinyane	Census Technical Coordinator	9
11	Grace	Mphetolang	Census Technical Coordinator	10
12	Eden	Onyadile	Census Technical Coordinator	11
13	Zibo	Albert	Census Technical Officer	1
14	Lillian	Marumo	Census Technical Officer	2
15	Mariam	Kakuwa	Census Technical Officer	3
16	Ananias	Basimanebotlhe	Census Technical Officer	4
17	Maipelo	Bathokebafé	Census Technical Officer	5
18	Ditiro	Bogatsu	Census Technical Officer	6
19	Phatsimo	Bolowe	Census Technical Officer	7
20	Otsile	Chelenyane	Census Technical Officer	8
21	Kwashirai	Chigodora	Census Technical Officer	9
22	Wendy Tshepo	Daniel	Census Technical Officer	10
23	Kakanyo Fani	Dintwa	Census Technical Officer	11
24	Mothusi	Ditlou	Census Technical Officer	12
25	Kebotsemang	Ditsela	Census Technical Officer	13
26	Tlhalosang	Gakeadumele	Census Technical Officer	14
27	Ditshupo	Gaobotse	Census Technical Officer	15
28	Godiraone	Gaolaolwe	Census Technical Officer	16
29	Boitumelo Dudi	Gaongalelwe	Census Technical Officer	17
SR1	FIRST NAMES	SURNAME	DESIGNATION	SR 2
30	Dikoloti Dickson	Gareoitse	Census Technical Officer	18
31	Kefilwe Precious	Gonnetsweng	Census Technical Officer	19
32	Phillip	Gothata	Census Technical Officer	20
33	Winstern	Kabo	Census Technical Officer	21
34	Larona Tina	Kaisara	Census Technical Officer	22
35	Khumo	Katholo	Census Technical Officer	23
36	Bonang	Keagakwa	Census Technical Officer	24
37	Mpho	Keboi	Census Technical Officer	25
38	Boitumelo G.	Kesetse	Census Technical Officer	26
39	Potlako	Kgari	Census Technical Officer	27
40	Moratiwa	Kgosiemang	Census Technical Officer	28

SR1	FIRST NAMES	SURNAME	DESIGNATION	SR 2
41	Bunnie	Komane	Census Technical Officer	29
42	Phaladi	Labobedi	Census Technical Officer	30
43	Dithapelo	Lesolame	Census Technical Officer	31
44	Judith M.	Letebele	Census Technical Officer	32
45	Oabona	Machete	Census Technical Officer	33
46	Chandler	Madisa	Census Technical Officer	34
47	Daniel	Magogwe	Census Technical Officer	35
48	Keanewa	Mandoze	Census Technical Officer	36
49	Galaletsang	Marumo	Census Technical Officer	37
50	Moffat	Masingwane	Census Technical Officer	38
51	Boitumelo	Matlhaga	Census Technical Officer	39
52	Rejoice	Mbalekelwa	Census Technical Officer	40
53	Kelebetse	Mbinganyi	Census Technical Officer	41
54	Gaolatlhe	Mmolawa	Census Technical Officer	42
55	Ipuseng	Moaletsane	Census Technical Officer	43
56	Sandra Tshepo	Modise	Census Technical Officer	44
57	Mavis	Mogami	Census Technical Officer	45
58	Tebogo	Mohutsiwa	Census Technical Officer	46
59	Kebabonye	Molefhi	Census Technical Officer	47
60	Othusitse	Monametsi	Census Technical Officer	48
61	Keamogetse	Moreo	Census Technical Officer	49
62	Mogotsi	Morewanare	Census Technical Officer	50
63	Ruth K.	Mothibi	Census Technical Officer	51
64	Bakang Susan	Motlathledi	Census Technical Officer	52
65	Onalenna	Motshegwe	Census Technical Officer	53
66	Elizabeth	Motshubelwa	Census Technical Officer	54
67	Yvonne Bobo	Muzola	Census Technical Officer	55
68	Ndiye	Nko	Census Technical Officer	56
69	Lillian	Ntheetsang	Census Technical Officer	57
70	Phemelo	Ntwayapelo	Census Technical Officer	58
71	Kutlo	Oratile	Census Technical Officer	59
72	Joshua	Otlaadisa	Census Technical Officer	60
73	Thuso	Otukile	Census Technical Officer	61
74	Patience	Peloewetse	Census Technical Officer	62
75	Stephen Rich	Pheko	Census Technical Officer	63
76	Ontebile J.	Puleng	Census Technical Officer	64
77	Charles	Rabothiwa	Census Technical Officer	65
78	Malebogo L.	Rakgantswana	Census Technical Officer	66
79	Thabang	Ramaja	Census Technical Officer	67
80	Modise	Ramaretlwa	Census Technical Officer	68
81	Elliot	Ramooki	Census Technical Officer	69
82	Kaone	Rasedibo	Census Technical Officer	70
83	Batho	Rendo	Census Technical Officer	71
84	Sebego	Ribase	Census Technical Officer	72

SR1	FIRST NAMES	SURNAME	DESIGNATION	SR 2
85	Kagiso	Sakeng	Census Technical Officer	73
86	Chakawa	Budani	Census Technical Officer	74
87	Tebogo V.	Sebekedi	Census Technical Officer	75
88	Kutlwano	Sebolaaphuti	Census Technical Officer	76
89	Olebile J.	Sekgantsho	Census Technical Officer	77
90	Peter	Serunya	Census Technical Officer	78
91	Mothati	Setume	Census Technical Officer	79
92	Lekoko	Simako	Census Technical Officer	80
93	Ipopeng	Tirelo	Census Technical Officer	81
94	Lakidzane	Tiro	Census Technical Officer	82
95	Watsie	Tlhase	Census Technical Officer	83
96	Babuang S.	Tlhomelang	Census Technical Officer	84
97	Lucy	Toise	Census Technical Officer	85
98	Tebogo	Tsienyane	Census Technical Officer	86
99	Thabo Jacob	Tswiio	Census Technical Officer	87
100	Michael	Andina	Census IT Officer	1
101	Dipuo	David	Census IT Officer	2
102	Boitumelo	Dibetso	Census IT Officer	3
103	Mothusi	Gokatweng	Census IT Officer	4
104	Albert	Kelatwang	Census IT Officer	5
105	One	Kgosiemang	Census IT Officer	6
106	Boitumelo	Kobua	Census IT Officer	7
107	Boammaaruri	Malemenyane	Census IT Officer	8
108	Kebareng	Marapo	Census IT Officer	9
109	Gouta	Maseko	Census IT Officer	10
110	Linky	Moalosi	Census IT Officer	11
111	Matlhogonolo	Moatshe	Census IT Officer	12
112	Sanah	Moeng	Census IT Officer	13
113	Batsogile	Mokenti	Census IT Officer	14
114	Moloko Allen	Moloko	Census IT Officer	15
115	Thatayaone	Mooki	Census IT Officer	16
116	Petunia Lizzy	Mosele	Census IT Officer	17
117	Tumelo	Njolomole	Census IT Officer	18
118	Moemedi	Ntunyane	Census IT Officer	19
119	Tsheole	Rahube	Census IT Officer	20
120	Larona	Sengwaketse	Census IT Officer	21
121	Tetelo	Thuo	Census IT Officer	22
122	Royal	Chalashika	Census Cartographer	1
123	Keatametse	Madisa	Census Cartographer	2
124	Motlotlegi	Molefhe	Census Cartographer	3
125	Tshepo Bridget	Morake	Census Cartographer	4
126	Gift	Mpungwa	Census Cartographer	5
127	Christopher	Phiri	Census Cartographer	6

SR1	FIRST NAMES	SURNAME	DESIGNATION	SR 2
128	Sapelo	Phoza	Census Cartographer	7
129	Richard	Ramosiane	Census Cartographer	8
130	Kesaobaka	Alec	Census Matron	1
131	Shadie Dorothy	Baruti	Census Matron	2
132	Tshamekang	Difele	Census Matron	3
133	Reginah O.	Dikalanyane	Census Matron	4
134	Motiribi	Gabothuse	Census Matron	5
135	Vinolia	Gaotlolwe	Census Matron	6
136	Lorato	Jorosi - Kemoeng	Census Matron	7
137	Ruth	Keakile	Census Matron	8
138	Portia Loratang	Kgasa	Census Matron	9
139	Shaleba	Kgosiemang	Census Matron	10
140	Dianah	Kokomane	Census Matron	11
141	Oletetse C.	Maitlhoko	Census Matron	12
142	Victoria	Mannathoko	Census Matron	13
143	Annah	Manokola	Census Matron	14
144	Sophie	Mapete	Census Matron	15
145	Tabuya	Mathana	Census Matron	16
146	Oagile	Matlakele	Census Matron	17
147	Nono Eurnice	Moalosi	Census Matron	18
148	Beauty	Mochudi	Census Matron	19
149	Gopolang	Moitoi	Census Matron	20
150	Nnang	Mongatane	Census Matron	21
151	Thandie	Mooketsi	Census Matron	22
152	Josephina	Mpulubusi	Census Matron	23
153	Lebone	Nnolwane	Census Matron	24
154	Maitumelo	Nyere	Census Matron	25
155	Maria	Rakgomo	Census Matron	26
156	Pinkie	Ramagonono	Census Matron	27
157	Seipati	Ramocho	Census Matron	28
158	Tsholofelo	Ramontsho	Census Matron	29
159	Tshepanang	Seepamere	Census Matron	30
160	Adelina	Seleke	Census Matron	31
161	Florence	Sengakane	Census Matron	32
162	Marang	Teisi	Census Matron	33
163	Ruth	Tshekedi	Census Matron	34
164	Jimmy	George	Census Publicity Officer	1
165	Nametso	Kgosiyame	Census Publicity Officer	2
166	Onalenna	Letshabo	Census Publicity Officer	3
167	Lebogang	Magocha	Census Publicity Officer	4
168	Mogae	Mogae	Census Publicity Officer	5
169	Lillian	Mogami	Census Publicity Officer	6

SR1	FIRST NAMES	SURNAME	DESIGNATION	SR 2
170	Onalethata	Reitseng	Census Publicity Officer	7
171	Kebonye	Setshube	Census Publicity Officer	8
172	Ndapiwa	Gaolatlhe - Major	Census Publicity Officer	9
173	Temba	Sibanda	Census Publicity Officer	10
174	Oarabile	Mmusi	Graphic Designer	1
175	Makgotla	Molokwe	Procurement Officer	1
176	Motsila	Motsilanyane	Procurement Officer	2
177	Joel	Olebogeng	Procurement Officer	3

## Appendix 4: District Census Officers - 2022 PHC

### District Census Personnel - 2022 PHC - Full time participation during training and/or enumeration

SR	First Name	Surname	Census District Code	Census District	Sub-District / Admin Authority
1	Baleseng	Jila	1	Gaborone	Gaborone
2	Diane	Oabile	1	Gaborone	Gaborone
3	Onalenna	Shaudi	1	Gaborone	Gaborone
4	Ontatheletse	Molapisi	1	Gaborone	Gaborone
5	Bakang M.	Moengele	2	Francistown	Francistown
6	Ditiro B.	Oageng	2	Francistown	Francistown
7	Patrick	Isaac	2	Francistown	Francistown
8	Kenosi	Sethaile	3	Lobatse	Lobatse
9	Seolebaleng	Motana	3	Lobatse	Lobatse
10	Kopano Klen	Mofonga	4	Selebi Phikwe	Selebi Phikwe
11	Ifanilo Brian	Setume	4	Selebi Phikwe	Selebi Phikwe
12	Thabo Doba	Ogopotseng	5	Orapa	Orapa
13	Lemmy	Maphanyane	6	Jwaneng	Jwaneng
14	Onkabetse	Nkagelang	7	Sowa	Sowa
15	Nonofo	Leshaga	10	Ngwaketse	Kanye Administration Authority
16	Keabetswe	Kgaswane	10	Ngwaketse	Kanye Administration Authority
17	Maryjane	Autlwetse	10	Ngwaketse	Kanye Administration Authority
18	Stephinah	Dingwe	10	Ngwaketse	Moshupa Sub
19	Tshepo	Kgotso	10	Ngwaketse	Moshupa Sub
20	Benjamin	Batoloni	11	Barolong	Good Hope Sub
21	Poyeya	Moyowa	11	Barolong	Good Hope Sub
22	Tshepiso	Leepo	12	Ngwaketse West	Mabutsane Sub
23	Betty	Baepi	12	Ngwaketse West	Mabutsane Sub
24	Ofentse	Mothulatshipi	20	South East	Ramotswa Sub
25	Fredericks M.	Ndjavera	20	South East	Ramotswa Sub
26	Edgar	Madisa	21	South East	Tlokweng Sub
27	Molefe	Mosimanewapitso	21	South East	Tlokweng Sub
28	Kabelo	Ntopo	30	Kweneng East	Molepolole/Lentsweletau Sub
29	Moletsane N.	Kabelo	30	Kweneng East	Molepolole/ Lentsweletau Sub
30	Aletta	Kgotlaeame	30	Kweneng East	Molepolole/ Lentsweletau Sub
31	Bridget	Motseosi	30	Kweneng East	Mogoditshane/Thamaga Sub
32	Tebo	Kgosikhumo	30	Kweneng East	Mogoditshane/Thamaga Sub
33	Thabo	Morapedi	31	Kweneng West	Letlhakeng Sub
34	Stimela	Stimela	31	Kweneng West	Letlhakeng Sub
35	Peggie M.	Molefe	31	Kweneng West	Letlhakeng Sub
36	Boitshupo	Setlhoka	40	Kgatleng	Mochudi
37	Kabo	Ramochele	40	Kgatleng	Mochudi
38	Tebogo	Malane	50	Central Serowe/Palapye	Serowe Admin Authority

SR	First Name	Surname	Census District Code	Census District	Sub-District / Admin Authority
39	Collen	Tubeo	50	Central Serowe/Palapye	Serowe Admin Authority
40	Jonathan	Tsheko	50	Central Serowe/Palapye	Serowe Admin Authority
41	Rorisang	Chubele	50	Central Serowe/Palapye	Palapye Admin Authority
42	Tshepo	Mogojwe	50	Central Serowe/Palapye	Palapye Admin Authority
43	Chendzimo	Mokgopo	50	Central Serowe/Palapye	Palapye Admin Authority
44	Pule	Ramolemoge	51	Central Mahalapye	Mahalapye Sub
45	Gophepa	Mothusi	51	Central Mahalapye	Mahalapye Sub
46	Anti	Tshireletso	51	Central Mahalapye	Mahalapye Sub
47	Sekgabiswa	Keitumetse	52	Central Bobonong	Bobirwa Sub
48	Laone	Morake	52	Central Bobonong	Bobirwa Sub
49	Tebogo Kedirile	Gagoangwe	53	Central Boteti	Letlhakane Sub
50	Tom	Bakae	53	Central Boteti	Letlhakane Sub
51	Sebonisiwe K.	Gabatshela	53	Central Boteti	Letlhakane Sub
52	Mpho	Modiega	54	Central Tutume	Tonota Sub
53	Kopo	Maradung	54	Central Tutume	Tonota Sub
54	Benjamin	Bogopa	55	Central Tutume	Tonota Sub
55	Thato	Mookodi	54	Central Tutume	Tutume Sub
56	Gospel	Moetheho	54	Central Tutume	Tutume Sub
57	Keneilwe	Nkhwa	54	Central Tutume	Tutume Sub
58	Chris Kumbulani	Moseki	60	North East	North East
59	Mokgamedi	Lemogang	60	North East	North East
60	Oabona	Kalatswe	70	Ngamiland East	Maun Admin Authority
61	Thatayotlhe	Ramatlala	70	Ngamiland East	Maun Admin Authority
62	Tiny	Ramoroka	70	Ngamiland East	Maun Admin Authority
63	Ramogaupi	Gaborekwe	73	Delta	Maun Admin Authority
64	Pheto Oratile	Dintwe	71	Ngamiland West	Okavango Sub
65	Phaniel	Bagonoti	71	Ngamiland West	Okavango Sub
66	Tumelo	Chibua	71	Ngamiland West	Okavango Sub
67	Olefile V.	Maikaelelo	72	Chobe	Chobe
68	Mishingo	Sithelo	72	Chobe	Chobe
69	Masego	Kgomotso	80	Ghanzi	Ghanzi Admin Authority
70	Othusitse	Baseki	80	Ghanzi	Ghanzi Admin Authority
71	Oritjiua	Setekia	80	Ghanzi	Ghanzi Admin Authority
72	Gaseediwe	Marakala	80	Ghanzi	Ghanzi Admin Authority
73	Tshoganetso	Paphane (Lesomo)	80	Ghanzi	Ghanzi Admin Authority
74	Letlhogonolo	Korononeo	80	Ghanzi	Charles Hill Sub
75	Tebogo	Mekwe	80	Ghanzi	Charles Hill Sub
76	Kabelo	Wasetso	90	Kgalagadi South	Tsabong Admin Authority
77	Origin	Nthubu	90	Kgalagadi South	Tsabong Admin Authority
78	Mpho	Keareng	90	Kgalagadi South	Tsabong Admin Authority
79	David	Ntshole	91	Kgalagadi North	Hukuntsi Sub
80	Tebogo Maria	Gobuamang	91	Kgalagadi North	Hukuntsi Sub

## Appendix 5: District Census IT Officers - 2022 PHC

### District Census IT Officers - 2022 PHC - Full time participation during training and/or enumeration

SR	NAME	SURNAME	CENSUS DISTRICT	District Code	Sub District / Admin Authority
1	Onkeditse	Monare	Gaborone	1	-
2	Zibani	Ntibinyane	Gaborone	1	-
3	Gaopalelwe	Seepamore	Gaborone	1	-
4	Banyana	Thipe	Gaborone	1	-
5	Tebogo	Lentswe	Francistown	3	-
6	Motshegets	Motswakhuting	Francistown	3	-
7	Maipelo	Pelontwa	Francistown	3	-
8	Gaolatlhe	Sethaku	Francistown	3	-
9	Neoyame	Kelosiwang	Lobatse	3	-
10	Letsogile	Matseke	Lobatse	3	-
11	Tshepo	Molomo	Lobatse	3	-
12	Kefilwe	Thaga	Lobatse	3	-
13	Dikakanyo	Diloro	Selebi Phikwe	4	-
14	Amogelang	Gomotho	Selebi Phikwe	4	-
15	Gabalape Mmabontle	Letlole	Selebi Phikwe	4	-
16	Kealeboga H.	Nthompe	Selebi Phikwe	4	-
17	-	-	Orapa	5	-
18	Otsholetsebg	Kepu	Jwaneng	6	-
19	Oduetse	Malawana	Jwaneng	6	-
20	Kedibonye	Onyango	Jwaneng	6	-
21	Molekodi	Segabo	Jwaneng	6	-
22	Tshepo	Maribeng	Sowa	7	-
23	Kutlwano	Thwabi	Sowa	7	-
24	Reginah	Kgaile	Ngwaketse	10	Kanye Admin Authority
25	Seepi	Mogami	Ngwaketse	10	Kanye Admin Authority
26	Phodiso M.	Mpone	Ngwaketse	10	Kanye Admin Authority
27	Lemogang	Tema	Ngwaketse	10	Kanye Admin Authority
28	Kgakgamatso	Monnaesi	Ngwaketse	10	Moshupa Sub
29	Thuso	Morolong	Ngwaketse	10	Moshupa Sub
30	Khumo	Motswagole	Ngwaketse	10	Moshupa Sub
31	Kagiso	Tshitlho	Ngwaketse	10	Moshupa Sub
32	Kagiso	Golebanye	Barolong	11	Good Hope Sub
33	Keemenao	Marman	Barolong	11	Good Hope Sub
34	Pako	Mathokgwane	Barolong	11	Good Hope Sub
35	Thapelo	Njolomole	Barolong	11	Good Hope Sub
36	Kesegofetse	Amon	Ngwaketse West	12	Mabutsane Sub
37	Godwill	Moswang	Ngwaketse West	12	Mabutsane Sub
38	Kealeboga	Motshome	Ngwaketse West	12	Mabutsane Sub
39	Oteng	Ramarea	Ngwaketse West	12	Mabutsane Sub
40	Mpho	Lesogo	South East	20	Tlokweng Sub

## District Census IT Officers - 2022 PHC - Full time participation during training and/or enumeration

SR	NAME	SURNAME	CENSUS DISTRICT	District Code	Sub District / Admin Authority
41	Sean	Letlole	South East	20	Tlokweng Sub
42	Mpho	Sekoboane	South East	20	Tlokweng Sub
43	Mompoloki	Wankie	South East	20	Tlokweng Sub
44	Pako	Chabadisele	South East	20	Ramotswa Sub
45	Oberd Lesego	Orapeleng	South East	20	Ramotswa Sub
46	Tuelo Emmanuel	Rasenyai	South East	20	Ramotswa Sub
47	Thusego	Selemela	South East	20	Ramotswa Sub
48	Amogelang	Seleka	Kweneng East	30	Mogoditshane/Thamaga
49	Gaolathe	Isau	Kweneng East	30	Mogoditshane/Thamaga Sub
50	Sekgabo	Magapa	Kweneng East	30	Mogoditshane/Thamaga Sub
51	Kabelo	Moadimo	Kweneng East	30	Mogoditshane/Thamaga Sub
52	Botho	Mongae	Kweneng East	30	Mogoditshane/Thamaga Sub
53	Tshepo P	Galeromelwe	Kweneng East	30	Molepolole/Lentsweletau Sub
54	Bame	Goitsewang	Kweneng East	30	Molepolole/Lentsweletau Sub
55	Tsholofelo	Retshabile	Kweneng East	30	Molepolole/Lentsweletau Sub
56	Temogo	Keoabile	Kweneng West	31	Letlhakeng Sub
57	Resego	Koitsiwe	Kweneng West	31	Letlhakeng Sub
58	Tumelo	Sabata	Kweneng West	31	Letlhakeng Sub
59	Kago	Sutlhe	Kweneng West	31	Letlhakeng Sub
60	Mmoni	Jakoba	Kgatlang	40	-
61	Shanganani	Mabreaden	Kgatlang	40	-
62	Boniface	Maduo	Kgatlang	40	-
63	Monosi	Mahlatjie	Kgatlang	40	-
64	Bryne	Mokgobe	Kgatlang	40	-
65	Martin	Thaule	Kgatlang	40	-
66	Oratile Elton	Kgatampi	Central Serowe-Palapye	50	Palapye Admin Authority
67	Aaron	Libengo	Central Serowe-Palapye	50	Palapye Admin Authority
68	Mathata Pro	Motshabanye	Central Serowe-Palapye	50	Palapye Admin Authority
69	Maitumelo Granny	Pheko	Central Serowe-Palapye	50	Palapye Admin Authority
70	Olebile	Oki	Central Serowe-Palapye	50	Serowe Admin Authority
71	Neo	Kedadumetse	Central Serowe-Palapye	50	Serowe Admin Authority
72	Clarence	Manale	Central Serowe-Palapye	50	Serowe Admin Authority
73	Lillian	Tshenyego	Central Serowe-Palapye	50	Serowe Admin Authority
74	Mothusi	Kediseng	Central Mahalapye	51	Mahalapye Sub
75	Thane	Rakgomo	Central Mahalapye	51	Mahalapye Sub
76	Samuel	Segobai	Central Mahalapye	51	Mahalapye Sub
77	Goabaone	Sesinyi	Central Mahalapye	51	Mahalapye Sub
78	Elizabeth	Mosepele	Central Bobonong	52	Bobirwa Sub
79	Levy	Badubi	Central Bobonong	52	Bobirwa Sub
80	Otshepheng	Keboitse	Central Bobonong	52	Bobirwa Sub
81	Louis Kabelo	Ramaphoi	Central Bobonong	52	Bobirwa Sub
82	Gakeleboe	Gakeonyatse	Central Boteti	53	Letlhakane Sub

## District Census IT Officers - 2022 PHC - Full time participation during training and/or enumeration

SR	NAME	SURNAME	CENSUS DISTRICT	District Code	Sub District / Admin Authority
83	Oineile	Maakgadiatla	Central Boteti	53	Letlhakane Sub
84	Keolekile	Moagi	Central Boteti	53	Letlhakane Sub
85	Moolisa	Moroka	Central Boteti	53	Letlhakane Sub
86	Balekanye	Olebile	Central Boteti	53	Letlhakane Sub
87	Motshidisi	Gagobotswe	Central Tutume	54	Tonota Sub
88	Bonang	Leburu	Central Tutume	54	Tonota Sub
89	Mogomotsi Kago	Motsemme	Central Tutume	54	Tonota Sub
90	Portia	Mankunzini	Central Tutume	54	Tutume Sub
91	Kealeboga	Moloko	Central Tutume	54	Tutume Sub
92	Mishingo	Moseja	Central Tutume	54	Tutume Sub
93	Ellias	Motshepa	Central Tutume	54	Tutume Sub
94	Thabo	Phele	Central Tutume	54	Tutume Sub
95	Keotshpile	Gabarate	North East	60	North East
96	Tambona	Jopi	North East	60	North East
97	Edward	Maseko	North East	60	North East
98	Boitshoko	Masololo	North East	60	North East
99	John	Baaitse	Ngamiland East	70	Maun Admin Authority
100	Thulaganyo	Kebakile	Ngamiland East	70	Maun Admin Authority
101	Tshoganetso	Lecha	Ngamiland East	70	Maun Admin Authority
102	Moitse	Maatla	Ngamiland East	70	Maun Admin Authority
103	Mothusi	Mapine	Ngamiland East	70	Maun Admin Authority
104	Sipho	Ngadimela	Ngamiland East	70	Maun Admin Authority
105	Motshidisi	Ramatebele	Ngamiland East	70	Maun Admin Authority
106	Peccy	Dikgale	Ngamiland West	71	Okavango Sub
107	Kelentse	Kelebisitswe	Ngamiland West	71	Okavango Sub
108	Keleretswe Gideon	Ketshwaetswe	Ngamiland West	71	Okavango Sub
109	Lesego	Machola	Ngamiland West	71	Okavango Sub
110	Reshma	Jackson	Chobe	72	-
111	Matshidiso	Matho	Chobe	72	-
112	Neo	Moroka	Chobe	72	-
113	Duduetsang	Paul	Chobe	72	-
114	John	Baitse	Delta	73	Maun Admin Authority
115	Sipho	Ndikimbela	Delta	73	Maun Admin Authority
116	Mbai	Kuhepa	Ghanzi	80	Charles Hill Sub
117	Floyd	Letsholathebe	Ghanzi	80	Charles Hill Sub
118	Tumelo	Mositwa	Ghanzi	80	Charles Hill Sub
119	Nicholas	Setimela	Ghanzi	80	Charles Hill Sub
120	Itumeleng	Moanaphuti	Ghanzi	80	Ghanzi Admin Authority
121	Basego	Ntuka	Ghanzi	80	Ghanzi Admin Authority
122	Seabelo	Oitsile	Ghanzi	80	Ghanzi Admin Authority
123	Leungo Eric	Sekalaba	Ghanzi	80	Ghanzi Admin Authority
124	Thabo	Tau	Ghanzi	80	Ghanzi Admin Authority

## District Census IT Officers - 2022 PHC - Full time participation during training and/or enumeration

SR	NAME	SURNAME	CENSUS DISTRICT	District Code	Sub District / Admin Authority
125	Edwin	Kebalefestse	Kgalagadi South	90	Tsabong Admin Authority
126	Thabiso	Moje	Kgalagadi South	90	Tsabong Admin Authority
127	Mpho	Molelekwa	Kgalagadi South	90	Tsabong Admin Authority
128	Kenosi	Mpolokeng	Kgalagadi South	90	Tsabong Admin Authority
129	Onkemetse	Tshamekang	Kgalagadi South	90	Tsabong Admin Authority
130	Opelo Olivia	Dinotshe	Kgalagadi North	91	Hukunsi Sub
131	Phomolo James	Madubula	Kgalagadi North	91	Hukunsi Sub
132	Otshotswe	Mahumba	Kgalagadi North	91	Hukunsi Sub
133	Charles Kealeboga	Montswiwa	Kgalagadi North	91	Hukunsi Sub

## Appendix 6: District Census Matrons - 2022 PHC

### District Census Matrons - 2022 PHC - Full time participation during training and/or enumeration

SR.	NAME	SURNAME	Census District Code	CENSUS DISTRICT	Sub-District / Admin Authority
1	Priscilla K.	Mokibe	1	Gaborone	-
2	Judith	Thobane	2	Francistown	-
3	Motlalepula	Letshelaphala	3	Lobatse	-
4	Idah	Kgomotso	4	Selebi Phikwe	-
5	Pauline	Phefo	6	Jwaneng	-
-	-	-	5	Orapa	-
6	Dineo	Lopang	7	Sowa	-
7	Kitso	Moseki	10	Ngwaketse	Kanye Admin Authority
8	Pono	Montebatsi	10	Ngwaketse	Kanye Admin Authority
9	Jacqueline	Dipolai	10	Ngwaketse	Moshupa Sub
10	Ikanyaone	Monare	10	Ngwaketse	Moshupa Sub
11	Desmond	Tshugane	11	Barolong	Good Hope Sub
12	Goakabetswe	Mmapadi	12	Ngwaketse West	Mabutsane Sub
13	Mooketsi	Ditau	20	South East	Ramotswa Sub
14	Khumo	Mosala	20	South East	Tlokweng Sub
15	Simisane	Mosalakatane	30	Kweneng East	Molepolole/Lentsweletau Sub
16	Daniel	Molefe	30	Kweneng East	Mogoditshane/Thamaga Sub
17	Lebogang	Segone	31	Kweneng West	Letlhakeng Sub
18	Omphemetse	Gaowele	40	Kgatleng	-
19	Ruth	Moreotsile	40	Kgatleng	-
20	Veronica	Kalabante	40	Kgatleng	-
21	Merapelo	Kesegofetse	40	Kgatleng	-
22	Dorothy	Hobona	40	Kgatleng	-
23	Maitshwarelo	Otshubile	50	Central Serowe-Palapye	Palapye Admin Authority
24	Nametso	Rebabonye	50	Serowe Admin	Serowe Admin Authority
25	Shady	Gaboswele	50	Serowe Admin	Serowe Admin Authority
26	Naledi	Bonang	50	Serowe Admin	Serowe Admin Authority
27	Kelebogile	Gagothuse	50	Serowe Admin	Serowe Admin Authority
28	Opadile	Mosotho	51	Central Mahalapye	Mahalapye Sub
29	Sarah	Mathibedi	51	Central Mahalapye	Mahalapye Sub
30	Lorato Rose	Samuel	52	Central Bobonong	Bobirwa Sub
31	Mmadipalo	Emmanuel	52	Central Bobonong	Bobirwa Sub
32	Omphemetse	Nthoiwa	53	Central Boteti	Letlhakane Sub
33	Hilda	Seoforeng	53	Central Boteti	Letlhakane Sub
34	Goleba M.	Motsumi	53	Central Boteti	Letlhakane Sub
35	Lydia	Sekobye	53	Central Boteti	Letlhakane Sub
36	Wahabi	Masalela	54	Central Tutume	Tonota Sub
37	Kwangu	Jotia	54	Central Tutume	Tutume Sub
38	Simisane	Mochaeli	60	North East	-
39	Florah	Mbuso	60	North East	-

## District Census Matrons - 2022 PHC - Full time participation during training and/or enumeration

SR.	NAME	SURNAME	Census District Code	CENSUS DISTRICT	Sub-District / Admin Authority
40	Kakale	Mosupe	60	North East	-
41	Neo	Thapelo	70	Ngamiland East	Maun Admin
42	Mmoloki Keaven	Makanti	71	Ngamiland West	Okavango Sub
43	Kehumile	Leesemane	71	Ngamiland West	Okavango Sub
44	Budzani	Marotho	71	Ngamiland West	Okavango Sub
-	-	-	-	Delta	Part of Maun Admin
45	Virginia	Matlhatsa	73	Chobe	-
46	Emmanuel	Makuke	80	Ghanzi	Ghanzi Admin Authority
47	Sapoti	Lekgothu	80	Ghanzi	Ghanzi Admin Authority
48	Etlhomame	Setima	80	Ghanzi	Ghanzi Admin Authority
49	Julia	Nnoma	80	Ghanzi	Charles Hill Sub
50	Opelo	Gaoweduwe	80	Ghanzi	Charles Hill Sub
51	Gladys	Tshelebana	80	Ghanzi	Charles Hill Sub
-	-	-	81	CKGR	Part of Ghanzi Admin
52	Oanthata	Kewagamang	90	Kgalagadi South	Tsabong Admin Authority
53	Grace Goabaone	Salani	91	Kgalagadi North	Hukuntsi Sub

## Appendix 7: District Commissioners (DCs) and Deputy District

SR	Admin District	Name Of District Commissioner (DC)	Census District Code	Census District	Census District Code	Sub-District / Admin Authority (Aa)	Name Of Deputy DC For Sub-District / Admin Authority
1	Gaborone	Grace Seitshiro	1	Gaborone	1	Gaborone	-
2	Francistown	Chabongwa Matseka	2	Francistown	2	Francistown	-
3	Southern	Mompoloki Mochanang	3	Lobatse	3	Lobatse	William Keareng
4	Central	Angelina Leano	4	Selebi Phikwe	4	Selebi Phikwe	Mokgethi Mfila
5	Central	Angelina Leano	5	Orapa	5	Orapa	Mokgethi Mfila
6	Central	Angelina Leano	6	Jwaneng	6	Jwaneng	Odiseng Janie Moruti
7	Central	Angelina Leano	7	Sowa	7	Sowa	Tsaone Nkarabang
8	Southern	Mompoloki Mochanang	10	Ngwaketse	10	Kanye Admin Authority	Norman Patlakwe
9	Southern	Mompoloki Mochanang	10	Ngwaketse	10	Moshupa Sub District	Thabang Waloka
10	Southern	Mompoloki Mochanang	11	Barolong	11	Good Hope Sub District	Peggy Kutlase
11	Southern	Mompoloki Mochanang	12	Ngwaketse West	12	Mabutsane Sub District	Dintle Setlhotlhe
12	South East	Sebokwane Dikgope	20	South East	20	Ramotswa Sub District	Kushatha Tsokedi
13	South East	Sebokwane Dikgope	20	South East	20	Tlokweng Sub District	Kebatsabile Tsie
14	Kweneng	Berenice Mosime	30	Kweneng East	30	Molepolole-Lentsweletau Sub District	Innocent Maotwe
15	Kweneng	Berenice Mosime	30	Kweneng East	30	Mogoditshane-Thamaga Sub District	Segametsi Reuben-Koontse
16	Kweneng	Berenice Mosime	31	Kweneng West	31	Letlhakeng Sub District	Ikgopoleng Lekoape
17	Kgatleng	Kolobetso Sejakgomo	40	Kgatleng	40	Kgatleng	-
18	Central	Angelina Leano	50	Central Serowe-Palapye	50	Serowe Admin Authority	Bakuedi Masole
19	Central	Angelina Leano	50	Central Serowe-Palapye	50	Palapye Admin Authority	Edson Malebane
20	Central	Angelina Leano	51	Central Mahalapye	51	Mahalapye Sub District	Bakani Mathumo
21	Central	Angelina Leano	52	Central Bobonong	52	Bobirwa Sub District	Claude Batsile
22	Central	Angelina Leano	53	Central Boteti	53	Letlhakane Sub District	Ewetse Selelo
23	Central	Angelina Leano	54	Central Tutume	54	Tutume Sub District	Utlwang Kerekang

SR	Admin District	Name Of District Commissioner (DC)	Census District Code	Census District	Census District Code	Sub-District / Admin Authority (Aa)	Name Of Deputy DC For Sub-District / Admin Authority
24	Central	Angelina Leano	54	Central Tutume	54	Tonota Sub District	Boitumelo Mokwena
25	Nortn East	Gobe Macha	60	North East	60	North East	-
26	North West	Boammaruri Otlhogile	70	Ngamiland East	70	Maun Admin Authority	Ramogaopi Gaborekwe
27	North West	Boammaruri Otlhogile	71	Ngamiland West	71	Okavango Sub District	Tumelo Tamasiga-Chibuaya
28	Chobe	Sekgabo Makgosa	72	Chobe	72	Chobe	-
29	North West	Boammaruri Otlhogile	73	Delta	73	Part Of Maun Admin Authority	Ramogaopi Gaborekwe
30	Ghanzi	Mooketsi Lesetedi	80	Ghanzi	80	Ghanzi Admin Authority	Patrick Toteng
31	Ghanzi	Mooketsi Lesetedi	80	Ghanzi	80	Charles Hill Sub District	Aaron Mafokate
32	Ghanzi	Mooketsi Lesetedi	81	CKGR	81	Part Of Ghanzi Admin Authority	Patrick Toteng
33	Kgalagadi	Bigboy Mangwa	90	Kgalagadi South	90	Tsabong Admin Authority	-
34	Kgalagadi	Bigboy Mangwa	91	Kgalagadi North	91	Hukuntsi Sub District	Segomotso Nkwane

## Appendix 8: Guidelines to Writing of Dissemination Manuscripts - 2022

### 1. Introduction

Following completion of data cleaning and sharing of the 2022 Population and Housing Census (PHC) data for further analysis, the drafting of manuscripts has commenced. In engaging analysts who shall author chapter manuscripts, it is important that common ground rules are established. Pursuant to that, Statistics Botswana is putting forward these guidelines with all intent and purposes not meant to be prescriptive. However, it is strongly recommended that analysts adhere to the guidelines to a great extent as the final manuscripts will be compiled into a publication, making consistency in presentation and flow of information necessary. This is a crucial exercise leading to the 2022 PHC Dissemination Conference earmarked for May 2024.

Manuscripts will be submitted for review by the Census Analysis Review Committee early May 2024. Analysts will make presentations based on their approved manuscripts at the Dissemination Conference. The entire process will entail: **i)** Submission of abstract; **ii)** Abstract adjudication; **iii)** Submission of draft manuscript and adjudication; **iv)** Conference presentation; incorporation of comments from the Conference; **v)** Submission of final manuscripts and **vi)** Payment of honorarium.

### 2. Presentation of Manuscripts

Given the aforementioned, the manuscripts are expected to be of quality in terms of content and comprehensiveness. It must also provide a concise summary of the findings. The information must also flow from beginning to end, while being self-contained, concise, and clear. The manuscripts must follow the agreed guidelines for ease of review and compilation.

The thematic reports should be of high quality in terms of presentation, analysis, relevance, utility and have the following attributes:

- a. **Concise:** Covers the required material in a relevant and succinct manner
- a. **Readability:** Uses simple, professional, clear and jargon-free language
- a. **Analytical:** describes and interprets results of the data clearly and discusses policy implications of the specific themes.

### 3. Review of Manuscripts

The Census Analysis Review Committee (CARC) will review the manuscripts and make a determination on the readiness of the manuscripts for presentation at the Dissemination Conference. The purpose of the exercise is to:

- a. Give indication on the number of papers expected, so as to draw the dissemination programme
- b. Check the completeness of the papers and their alignment to the approved abstracts
- c. Advise analysts with a view to improve on the analysis ahead of the dissemination conference

The detailed guidelines for presentation of the manuscripts as well as the writing style are provided in items 5 and 6 below.

## 4. Guidelines for Drafting Manuscripts

### a. Thematic Report: Title of the Chapter

### b. Table of Contents

- List of tables
- List of figures
- List of acronyms and abbreviations
- Acknowledgments

### c. Executive Summary

- Brief summary of the report, methodology, findings, conclusion and recommendations. This should be at most one and a half pages.

### d. Introduction

- Context – socio-cultural, political, economic & demographic
- Objectives of the analysis
- Definitions of main concepts

### e. Literature Review (Should be comprehensive but compact)

- Highlight the state of research & knowledge, including available or emerging methodologies
- Develop a population & development theoretical framework to ensure that the research is policy-relevant, especially in the context of sustainable development goals (SDGs)
- Use peer-reviewed material and published policy documents
- Consider past and current government policy frameworks (NDP12, Vision 2036) and global development goals (Agenda 2063 and SDGs)

### f. Methodology

- Describe clearly the methods and procedures used
- These methods must be internationally acceptable or recommended
- The paper should clearly indicate new perspectives, approaches or evidence on the subject

### g. Findings and Discussions

Comprises the main report and must at most be between 10 and 15 pages of A4 (single line spacing).

- Identify and relate performance indicators to Revised NPP, NDP, Vision 2036, SDGs, Africa 2063 etc.
- Where possible, include national & district level indicators
- Establish trends analysis on core indicators

### h. Policy Implications

- Make policy-relevant statements i.e. what do the results mean in terms of policy?
  - Indicate relevant policy effect the chapter seeks to inform
  - Indicate any policy-relevant implications being proposed
- Indicate implications for Revised NPP, NDP, Vision 2036, SDGs, Agenda 2063, etc.

### i. Conclusion and Recommendations

- The conclusion should highlight salient findings and message(s)
- Indicate Implications of the findings on policy
- Make appropriate recommendations

#### j. About Authors

- Information about authors to include relevant experience and background.

#### k. References

- Provide adequate citations of all resources and published materials used in the manuscripts, according to the APA Referencing Style

#### l. Appendices

- Statistical Tables
- Maps and
- Any other relevant material

#### m. Deliverables

On completion of the analysis the following outputs must be delivered to Statistics Botswana by the agreed date:

##### i. Before Dissemination

- Report or manuscript soft copy on SD card or any portable storage
- PowerPoint presentation to be used during dissemination conference.

##### ii. After Dissemination

Edited and final outputs as above.

## 5. Presentation of Census Manuscripts Style Guide

The Census Manuscripts Style Guide reflects Statistics Botswana's writing and publications preferences to facilitate convergence and standardisation of writing and publishing census dissemination papers. This style guide will help reduce the time spent on editing, re-writing, re-formatting and re-structuring of documents for publication and dissemination.

The guide recommends usage of language that is factual and accurate, non-inflammatory, non-judgmental, non-sexist, and non-racist. In this regard, language that is neutral and caters for many nations and cultures is recommended.

British English language usage, and highlights words and spelling usage in the same is prescribed. The style guide is aligned to United Nations Editorial Manual, and recognizes it as the authority in editorial matters.

### 5.1 Keying In

Census Dissemination Analytical Manuscripts must be keyed in as per the following guidelines:

- Software:** Microsoft Word software. Microsoft Excel must be used for tables.
- Font Type and Size:** Century Gothic font, point size 12
- Page Margins:** A margin of 2.4 cm must be left at the top, bottom and sides of the page. The document must be aligned left and right.
- Page Numbering:** All pages should be consecutively numbered with Arabic numerals (1, 2, 3...). The page numbers must be centred at the bottom of each page.
- Space Bar:** The space bar should be used once when keying in words, and there should be only one space after a full stop, coma, colon or semi-colon.
- Line Spacing:** The line spacing should be 1.15

- g. **New Chapter:** Each Chapter must start on a new page.
- h. **Table of contents:** It should not go beyond the headings and subheadings.
- i. **Title of the article:** Bold and capital
- j. **Name of the Author(s):** Bold and Normal with institution of affiliation
- k. **Alignment:** Justify
- l. **Length of Manuscripts:** Manuscripts should contain no more than 15 A4 pages.

## 5.2 Language

The acceptable language for the Census Dissemination Analytical Manuscripts is British English.

## 5.3 Spelling

Just as in the case of language, spelling usage for census dissemination manuscripts is British English. For word usage, Fowler's Dictionary of Modern English Usage and Oxford University Press are the authority. The Concise Oxford Dictionary is the authority on matters of English spellings.

### Word Usage and Spelling Examples:

- a. Generally words should be written with "-ise" and not "-ize".
- b. The word "Analyse" should always be written with "-yse". This is also true for "catalyse" and "paralyse".
- c. Manuscripts should observe the difference in spelling between verbs and nouns, such as: advise (verb) advice (noun); practise (verb) practice (noun).
- d. Authors must note that "program" refers to a set of instructions that a computer uses to perform a particular instruction, while the word "programme" refers to a plan which has been developed for a particular purpose or organised activities.

## 5.4 Presentation

- a. Know your target audience.
- b. Write with the targeted reader(s) in mind. Aim for succinctness, readability and ease of comprehension, and avoid digressions and ambiguity.
- c. The problem or gap being addressed, objectives and methodology must be clearly expressed.
- d. The information must be arranged logically.
- e. Do not cloud the presentation with personal value judgments and biases.
- f. Avoid jargon, informal words, slang, conversational, buzzwords and regional words. Aim for global appeal.
- g. Formal English writing style does not use as many connectives. Limit the use of words like "however", "moreover", "nevertheless", and "undoubtedly".
- h. In the article '**the**' should be used only when it is really needed. If a concept can stand on its own, '**the**' in the article should be left out. Example: Instead of "The Rural Urban Migration management plans are key", write "Rural Urban Migration plans are key".
- i. Lists after a colon (:) whether using (a), (b), (c), bullets or numbers should have each item starting with a capital letter.
- j. Countries and regions must be listed in alphabetical order. Example: Botswana, China, The Gambia, Zimbabwe when appearing in text.
- k. In tables, countries with the highest figure must come first.

## 5.5 Punctuation

- a. **Ampersands:** An ampersand is the shorthand symbol representing "and". It should not be used in the manuscript text and tables, charts and graphs.

**Example:** “Manufacturing, hotels and restaurants, and transport, storage and communication sectors”

#### Not

“Manufacturing, hotels & restaurants and transport, storage & communication sectors”

**b. Contractions:** Do not use contractions such as “can’t”, “won’t”, “it’s”, and “don’t”. They are difficult to read especially for people with learning disabilities and those whom English is not a first language.

**c. Colons versus Semicolons:** Colons and not semicolons should be used to introduce a list or an idea. A semicolon should be used to join two sentences.

### 5.6 Numbers

- a. The word number(s) should not be abbreviated to “no”, “nos” as it can be read incorrectly.
- b. Numbers from zero to nine should be written as words with numbers in brackets. The exception is on dates, figure or table titles, and where the number relates directly to the statistics being presented.
- c. Numbers 10 and above should be written as numerals, up to 999,999.
- d. Use commas to separate thousands in figures e.g. 1,680,863. There should be no space before or after the comma(s)

### 5.7 Date

- a. The date format to be used is “[Date] [Month] [Year]” written out with no commas e.g. “19 June 2023”. The date format can also be presented as 19/04/2024.
- b. Should the day of the week be relevant, it must be placed before the date e.g. Tuesday 19 June 2023.
- c. Superscripts “st”, “nd”, “rd” and “th” should not be placed after the date.

### 5.8 Tables and Charts

- a. No frames and borders on tables, except for lines below and above columns headings and the last row of tables e.g.
- b. For figures on tables use “-“ for zeros, “..” for not available, “n/s” for not stated and unknown.
- c. Tables to be formatted to 1 decimal place
- d. Tables and charts should be serially numbered and titled - [see Table 2](#).
- e. Tables must be produced in Microsoft Excel (except those which are part of text)-[see Table 2](#).

**Table 1: Percent International Migrant Workers by Employment and Sex 1991**

Employment	Male	Female	Total
Farm			
Mines			
Construction			
Retail			
Self Employed			
Domestic			
Other			
<b>Total</b>			

## 6. Timelines

The following table provides the schedule of activities towards the dissemination conference date.

**Table 2: 2022 Population and Housing Census (PHC) Analysis Timelines**

No	Item	Date
1	Revisiting the data for inconsistencies to be taken of	Done
2	Sharing of Data	1st - 8th March 2024
3	Drafting of Papers	11th Mar – 21st April 2024
4	Submission of draft papers	24th April 2024
5	Review of papers	29th April -12th May 2024
6	Feedback on papers	7th -14th May 2024
7	Resubmission of papers (corrections)	14h -17th May 2024
8	Submission of dissemination papers and power-point presentations	20th - 24th May 2024
9	Dissemination Conference	11th – 12th June 2024
10	Incorporation of workshop comments	13th – 19th June 2024
11	Submission of final papers	20th - 26th June 2024
12	Payment of Honorarium	28th June - 3rd July 2024



# Population & Housing Census 2022

## Administrative & Technical Report



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