



Ghana Statistical Service

P.O Box GP 1098

Accra



**2024 INTEGRATED BUSINESS ESTABLISHMENT
SURVEY I (IBES I)**

INTERVIEWER'S MANUAL (PHASE I)

January 2024

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CHAPTER ONE

INTRODUCTION

1.0 Preamble

The Integrated Business Establishment Survey (IBES) is an economic census to be conducted on the full set of economic units across all sectors of Ghana's economy. These economic units include all establishments undertaking some economic activity in Ghana. The census is structured in two phases, Phase I and Phase II. Phase I is the listing of all non-household establishments/businesses in Ghana to produce a business register for Ghana. Phase II will be a sample survey which will focus on detailed operational activities of businesses in all sectors of the economy. The Register will serve as a sampling frame for the selection of establishments for the second phase of IBES. Generally, the Census will be conducted on the full set of economic units across all sectors of Ghana's economy. The Agriculture census and the Ghana living Standards Survey focus on the economic activities within the household whilst the IBES focuses on non-household economic activities.

1.1 Purpose of Phase 1

The purpose of Phase 1 is to obtain an up to date information and accurate description of all businesses in Ghana. such information is necessary to assist in planning and decision-making to improve productivity.

1.2 Objectives of Phase 1

The main objectives of the census are to:

- a) Obtain data on economic activity and employment as a basis for government and businesses decision making;
- b) Measure employment by economic activity, region and district.
- c) Collect internationally comparable data on the structure and activity of all businesses.
- d) Obtain a framework that will enable Statistical Service update the business register periodically;
- e) Obtain a sampling frame that will enable Statistical Service to conduct the second Phase of the Integrated Business Establishment Survey (IBES);
- f) Obtain a sampling frame that will help conduct other Surveys.
- g) Classify businesses into Green and Conventional firms and provide the basis to measure the green economy in IBES II;
- h) Provide detailed analysis of the firmographics to inform business decision-makers
- i) Provide indicators to measure firm growth in-country and across the country using the SDG and other indicators;

1.3 Confidentiality

We wish to emphasize the confidential nature of your work as an enumerator. The success of a census depends on the willingness and cooperation of the respondent. This in turn depends to a large extent on whether the respondent believes the information he/she gives out will be kept confidential.

As an enumerator you must know the provisions made by the census of all business organizations to keep information collected confidential. The Statistical Service Act, 2019 (Act 1003) mandates the Statistical Service as the central statistics producing and coordinating institution for the National Statistical System and strengthening quality, relevant, accurate, and timely statistical information for national development. In this manual the subject of confidentiality will be raised several times. Study these passages carefully. Listen attentively to what your instructors have to say about it. Resolve from the onset that you will in no way breach the confidentiality provisions.

1.4 Scope And Coverage

1.4.1 Scope of IBES Phase I

The first phase of IBES is a census. This census will cover all non-household establishments. These establishments are engaged in economic activities or are non-profit institutions, and they cut across all the sectors of the economy. Each unit of production will be captured as a different unit given that it is legal unit: A legal unit is a unit that has legal personality, i.e. the law attributes rights and obligations to it, in the sense that it has:

- ✓ Right of ownership, permitting it to hold assets in its own name;
- ✓ Right to engage in activities in its own name and on its own behalf;
- ✓ Right to conclude contracts with third parties;
- ✓ Right to institute legal proceedings, i.e. to defend its interests; and.
- ✓ Right to dispose of its assets and resources.

The Non-Household IBES Establishments Include:

1. All units of production whose physical location are fixed and can be described and traced;
2. All stores /containers not used primarily as residence for households;
3. All fitting shops, fabrication shops, and carpentry shops, block making factories, etc., whether housed in a complete structure or not;
4. All churches/temples/mosques located in a permanent structure;
5. All public sector institutions;
6. All institutions (housed in a structure) engaged in agriculture and agriculture related activities, usually called institutional agriculture;
7. All shops/stores/units of production which are visible outside the residential premise/attached to the residential premise, but have access to entry or exit by customers/public;
8. All businesses with sign posts/boards/indications of business activities;
9. All shops in a complete structure (popularly called store) in the market place;
10. All stalls in the market place with occupants operating permanently (i.e 5 to 6 days a week) in this unit. These stalls could either be hired/rented or purchased (they are usually owned by the MMDAs and are rented);
11. Educational institutions (both public and private); and
12. Health facilities e.g. Hospitals/ Clinics/maternity homes, etc in a fixed location

But excludes:

1. All mobile businesses eg. Hawkers;
2. Traders in open spaces;
3. Traders in homes where shops are NOT visible;
4. All trading units, which are mainly retail shops selling on small tables under sheds. E.g market sheds, and stalls without permanent (i.e 5 to 6 days a week) occupants;
5. Shrines;
6. Brothel ; and
7. Churches in school building/ churches without a permanent structure ;

1.4.2 Coverage

All establishments will be covered irrespective of the size of the business.

1.4.3 Geographical Coverage

The whole of Ghana will be covered.

1.5 IBES Zones

IBES zones are specially delimited geographical areas. The zones are delimited on the basis of business and establishments. The IBES zone is the smallest unit that one can canvass during the IBES period. Enumerators are to visit all establishments within their zones as has been assigned to them.

The IBES zones contain Enumeration Areas (EAs) varying in sizes, ranging from one (1) Enumeration Area (EA) to an aggregation of Enumeration Areas (SA) or Supervisory Areas (SA) per zone.

Enumerators are responsible for ensuring that all establishments on the list of their zones are enumerated. In each case, the enumerator must carry out accuracy and completeness checks before leaving the establishment. They are also responsible for making a field summary of the completed questionnaire.

Case 1: Enumeration zone as part of a supervisory area (many EZ to an SA)

This will occur when businesses within a supervisory area are in excess of what is expected to be covered by an enumerator. This would mostly be the case in the central business districts such as Makola-Accra, Adum-Kumasi, and Market Circle- Takoradi, etc. In cases like this, a combination of enumerations areas within an SA may be assigned to enumerators.

Case 2: Enumeration zone equal to the whole of SA. (One EZ to one SA)

This will occur when the number of businesses in an SA is just enough to be covered by an enumerator. This would mostly occur in less busy business areas. Eg. Teshie-Accra, Madina-Accra, Anloga-Kumasi, etc.

Case 3: Enumeration zone as a combination of SAs. (One EZ to many SAs)

This will occur when the number of businesses within an SA is less than the number expected to be covered by an enumerator. This would occur mostly in the semi-urban and rural areas. Eg. Anfoega Agatanyigbe in the Volta Region, Ajumako-Besease in the Central Region.

1.6 Legal Authority

The census is being conducted under the Statistical Service Act, 2019 (Act 1003) which empowers the Government Statistician to conduct the business register census.

1.7 Census (Phase 1) Organisation

The census is planned and organized by the Industrial Statistics Section of the Ghana Statistical Service. The census organization is headed by the Government Statistician and is composed of three major units. These are:

- Design and Data processing
- Field Operation
- Administration

1.8 Census Field Organization

IBES ORGANOGRAM FOR PHASE I



1.9 Field Staff

Field Monitors

The monitoring staff from the IBES Secretariat will visit the field staff in the regions to ensure that quality work is being done and also help address problems which the field staff may encounter. They will also act as liaison officers between the Regional Statisticians and the Census Secretariat.

Regional Statistician

The Regional Statistician will be responsible for the overall supervision of the census in his/her region. He/she will provide administrative support to the census. In particular, he/she will assist the District zonal coordinators in dealing with difficult establishments, and provide transport and communication link with the Census Secretariat. In addition, the Regional Statistician is to ensure that the work is completed on schedule in his/her region.

District Zonal Coordinators

The District Zonal Coordinator will be the supervisor of the census in the district and will be responsible for the overall supervision in his/her district. In particular, he/she will assist the supervisors in dealing with difficult establishments, provide support for field enumerators and serve as communication link between the Regional Census Secretariat and field officers. In addition, the District Zonal Coordinators will ensure that the work is completed on schedule and collect all tablets from field staff. He/she must ensure that proper editing is done, and necessary corrections are done in the field before syncing the data to headquarters.

Supervisor

The supervisor, whose task is to supervise the enumerators in his/her team, will report to the District Zonal Coordinators. He/she will assign work to his/her enumerators, observe their interviews, and also edit completed questionnaires received from them. He/she will also assist the enumerators to resolve problems that may occur including uncooperative respondents.

Enumerator

An enumerator is assigned to each supervisory area. He/she is to visit all the establishments in his/her zone, explain the purpose of the census, give assistance with the completion of the questionnaire, review the questionnaire for completeness and accuracy and obtain any additional information that may be necessary. He/She is to make a field summary for his/her enumeration zone.

1.10 Preparatory Work

The preparatory activities began in 2021 and data is expected to be collected in January 2023. Data processing is expected start when field commence.

1.11 Publicity

The census is an important national undertaking. There will be census publicity before the enumeration commences. This will involve advertisements, announcements and radio/television discussions.

CHAPTER TWO

ENUMERATOR'S RESPONSIBILITIES, DUTIES AND CONDUCT

2.1 Introduction

Obtaining good quality data from respondents is crucial to the success of the economic census. The quality of data collected depends largely on the enumerator. You must clearly understand your responsibility and role and be ready to perform it well. This manual is designed to help you understand clearly your role and responsibilities and perform it well

2.2 Enumerator's Responsibilities

2.2.1 Follow instructions

It is your responsibility to clearly understand and follow instructions on the questionnaires and in this manual. It is necessary that each enumerator ask the census questions as indicated in the questionnaire and use identical definitions and procedures. Instructions and procedures in the manual must be strictly followed.

2.2.2 Confidentiality

It is your responsibility to keep the information collected confidential. Completed questionnaires must at all times be kept in your satchel, and the satchel zipped. At home, you must keep your satchel in a secure place from the reach of others.

2.2.3 You must complete your assignment

You are expected to work hard and complete the area assigned to you within the allocated time. You will not be permitted to resign once you have started enumeration. However, in case you become ill or incapacitated whilst working on the census you should report immediately to your supervisor so that a replacement could be arranged immediately.

2.3 Summary Of Enumerator's Duties

- Take the oath of secrecy
- Attend the training course and complete training assignments
- Commence enumerating your zone on the date set
- Plan your work on the enumeration planner
- Meet with your supervisor as arranged
- Record problems and comments in your field note book for discussion with your supervisor.
- Follow the instructions given to you by your supervisor
- Complete the enumeration of your zone within the allocated time.
- Compile the field summary for your zone
- Return all Tablets and materials to your supervisor on completion of field work
- Attend the enumerators debriefing for your area.

2.4 Restrictions

2.4.1 No other activities during enumeration

You are prohibited from engaging in activities such as petty trading, political or religious propaganda during the enumeration. People who are in full-time employment elsewhere cannot take part in the census without a formal release from their employers. Students who are fully engaged in educational institutions which are in session during the training and enumeration periods cannot take part in the census.

2.4.2 No unauthorized persons should help you in your work

You are not permitted to delegate your work to anyone. No one can help you except your supervisor or another enumerator as directed by your supervisor.

2.4.3 No discussion of census work

You are not to discuss your work with anyone except your supervisor, or an authorized economic census staff.

2.4.4 Disciplinary proceedings

If you break any of the above rules, disciplinary action will be taken against you. This may include termination of work or institution of legal proceeding against the offender

2.5 Continuation Of Your Appointment

2.5.1 Performance of Duties

The continuation of your appointment is conditional on your satisfactory delivery of your duties as an enumerator and maintenance of a high standard of behaviour. In this respect, you must keep in mind that you represent the Ghana Statistical Service (GSS) and as such must conduct yourself professionally. Note that GSS relies on the goodwill and co-operation of respondents in accessing data from the public. Enumerators would be dismissed if they misbehave or disrespect respondents or supervisors

2.5.2 Absenteeism

Any person who is absent from training or the enumeration without prior approval from the Census Coordinator, Regional Statistician or his/her field supervisor, will be dismissed from the census.

2.5.3 Disruptive Influence

Any enumerator, supervisor or field coordinator who in the judgment of the Census Coordinator creates a disruptive influence will be dismissed from the census.

2.5.4 Breach of Confidentiality

Disciplinary proceedings will be taken should you breach the confidentiality requirements of the census. In addition, you may face legal prosecution.

CHAPTER THREE

TRAINING AND SUPERVISION

3.1 Training

All persons selected for the Census field work must attend the enumerator's training course. Training comprises of both classroom work and mock interviews in both English and local languages.

3.1.1 Training programme

On the first day of training you will be registered and given copies of the training programme, the Enumerator's manual, questionnaire and other relevant materials. You should study the training programme and take note of topics to be treated on each day. Before each training session, study the manual and write down any questions you may have. Ask the questions during the training sessions and ensure you obtain clarification during the training session.

3.1.2 High standards expected of you

During enumeration you will be dealing with managers, accountants and other high profile officials. They will expect you to demonstrate high level of professionalism and knowledge of purpose of the census and the questionnaire. This manual and training course will adequately prepare you for that purpose. Therefore you have to pay attention during training and learn carefully the census concepts and procedures.

3.1.3 Demonstrations, practical work and tests

The training would consists of observing demonstrations and being examined. You would need to pay particular attention to the demonstrations to prepare you for the test. You will be tested on your knowledge during training. Regard these tests as an opportunity to know your strengths and weaknesses, and to overcome the latter.

3.1.4 Training continues in the field

Your training as an enumerator does not end when the formal training period is completed. It continuous whenever you meet your supervisors to discuss your work in the field. Formal training provides you with basic knowledge and information regarding the census, the questionnaires and procedures. Continued observation and supervision during the field work builds on this. As you encounter situations which were not covered during the training, discuss them with your supervisor. Your experience may alert the project secretariat to a new observation of the census and would assist them with interpretation of the data.

3.2 Supervision

As we have noted, training is a continuous process which does not end with the classroom sessions. Observation and supervision during the field work are part of your training. Your supervisor plays an important role in this regard and ensure the quality of the census. He/she will:

- Observe some of your interviews to ensure that it is conducted in the right manner and interpreting concepts correctly.
- Review each questionnaire to be sure it is complete and internally consistent.
- Meet with you on a regular basis to discuss your performance, and give instructions or work assignments

CHAPTER FOUR

ENUMERATOR’S FIELD KIT

4.1 You will be supplied with materials listed in 4.4 These materials are properties of the state and you are accountable for them.

4.2 You are required to return to the census secretariat all materials marked with an asterisk (*). Failure to do so may result in a deduction from your allowance, the value of the items not returned.

4.3 Failure to return all questionnaires will lead to disciplinary or legal proceedings taken against you.

4.4 List of Materials

Quantity	Description	Use
1	Bag	For keeping enumeration materials safe. This is to be returned to your supervisor after enumeration is completed
100	*Questionnaires	For collecting information from the establishment. Every copy is to be returned to your supervisor whether used or not.
2	Ball Pen	For use during the enumeration
1	Enumerator’s Manual	For training and reference in the field
1	*Field Note Pad	For keeping daily record on enumeration experience and problems.
10	*Field summary Form	For summarization of selected items on completed questionnaire.
1	Clip Boards	For attaching notes to questionnaires
1	Letter of Introduction	To introduce the enumerator and inform the respondent about the census
1	EZ Map	Enumeration Zone (EZ) would be use to identify the boundary of your enumeration in the IBES
1	*I. D. Card	For Identification
2	*Rubber folder (My Clear Bag)	For safe keeping of questionnaires

NB: In case you are not issued some of these materials or you run short of some materials in the fiel., report to your supervisor immediately

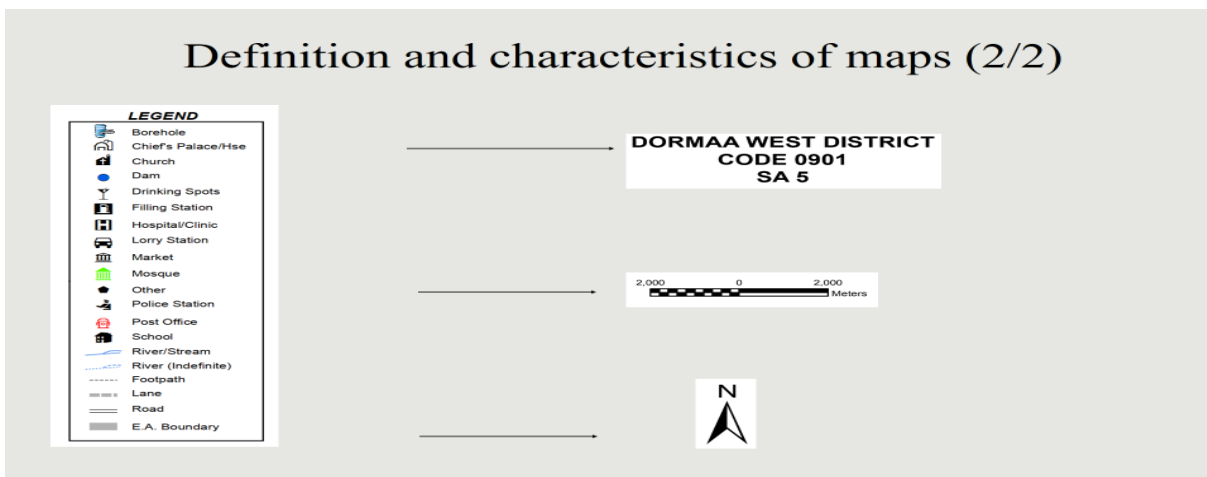
CHAPTER FIVE

USE OF MAPS IN THE CENSUS

5.1. Definition of maps

A map may be defined as the representation of the entire earth surface or a part of it on a piece of paper or other surface. It is a diagrammatic representation of an area of land or sea showing physical and man-made features including etc. A map generally has the following characteristics, Title, Legend, Scale, and North Arrow.

Figure 5.1: Example of Map



5.1.1: Maps used for data collection

Different types of map are used for purposes of field data collection, these include:

- I. EA Map (a locality, part of a locality or group of localities)
- II. SA Map (group of EA Maps)
- III. District Map (Unit of administration)

5.1.2: Enumeration Area (EA) map

An Enumeration Area (EA) map is the map of the smallest geographical area with a well-defined boundary and features that is assigned to an enumerator which can easily be canvassed and enumerated during the data collection period. The objective of the Listing can only be achieved if all structures are listed. The map will be your most important aid in achieving complete listing of your EA. It is very important that you know the area assigned to you in order to cover it systematically. Remember that the EA map is simply an image of land, water and other features that are unique to a particular part of the country.

The map shows the boundaries and names of all sides of the EA. It also shows localities, roads, streets, rivers, streams, railways, houses and other major features within the boundaries of the EA. An EA has an estimated average population of 750, even though it can be more or less. There are three (3) main types

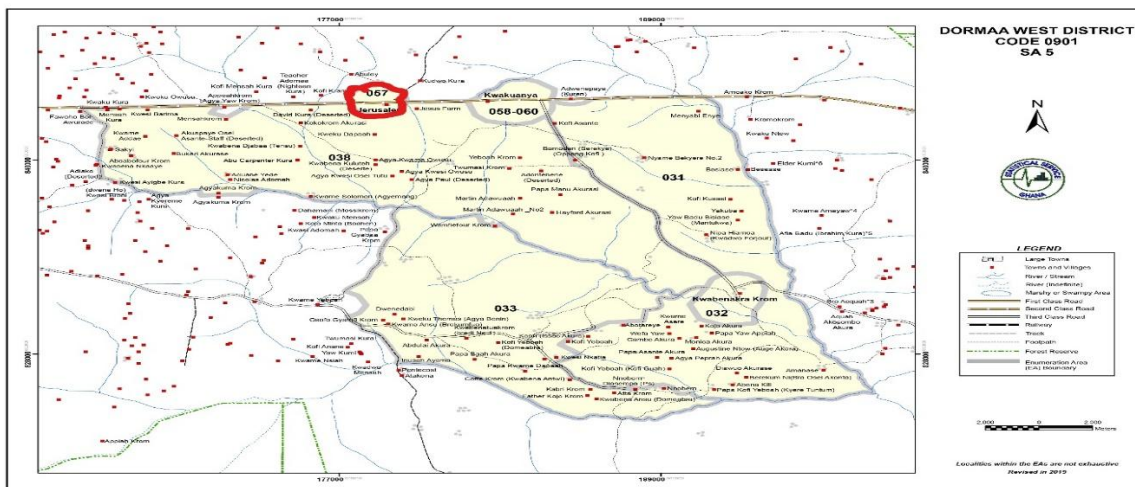
of Enumeration Area Map. These are Type 1, 2 and 3 EA maps. The following information are usually found on an EA map irrespective of type.

- a) Locality Name and Code
- b) Region and District name and their codes
- c) Name and number of Supervision Area (SA)
- d) Name/Base of Enumeration Area
- e) Enumeration Area Number

5.1.3: Type 1 Enumeration Area (EA) Map

The Type 1 EA map shows an enumeration area which is formed out of one locality (i.e. One Locality = One EA). This type of EA is normally referred to as an island and is found in a rural area (See Figure 5.2).

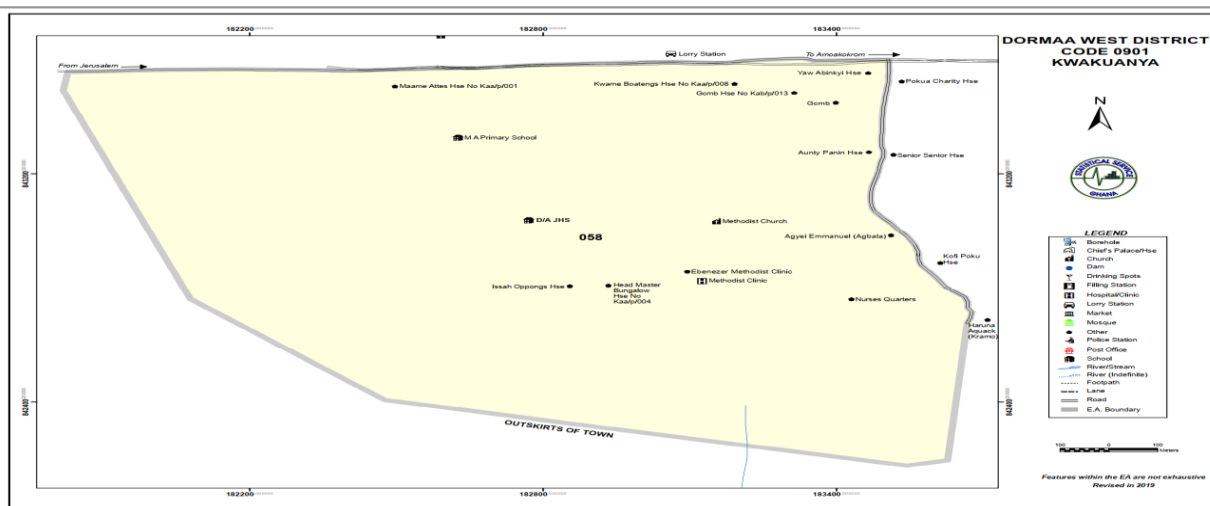
Figure 5.2: Example of Type 1 EA (EA numbers 057)



5.1.4: Type 2 Enumeration Area (EA) Map

The Type 2 EA map shows two or more EAs in one locality (i.e. One Locality = Many EAs). The Type 2 map below (Figure 5.3) shows names of points of interest including Pentecost Church, Presby Church, Lorry Station, etc. In Type 2 EAs, boundaries are mostly formed by features like streets, buildings, lanes, drains, railway lines, etc.

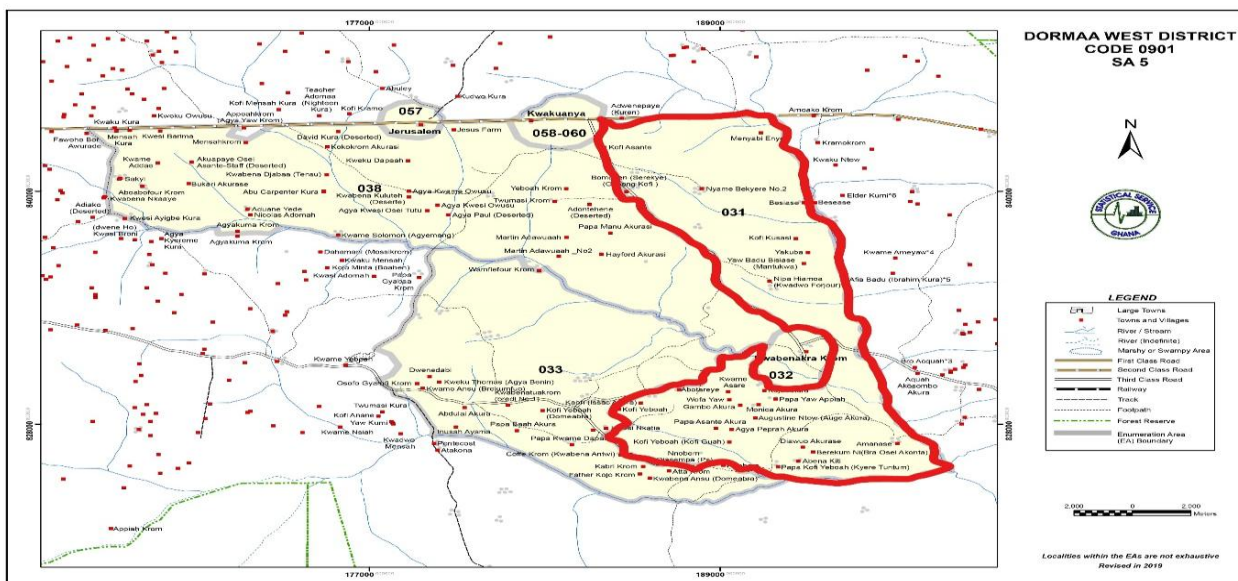
Figure 5.3: Example of Type 2 EA (EA numbers 058,)



5.1.5: Type 3 Enumeration Area (EA) Map

The Type 3 EA map shows several localities coming together to form one EA (i.e. Many Localities = One EA). These EAs are the rural type. A Type 3 EA is usually made up of two or more localities and its boundaries are marked mostly by natural and artificial features such as streams, rivers, mountains, roads, and footpaths (See Figure 5.4).

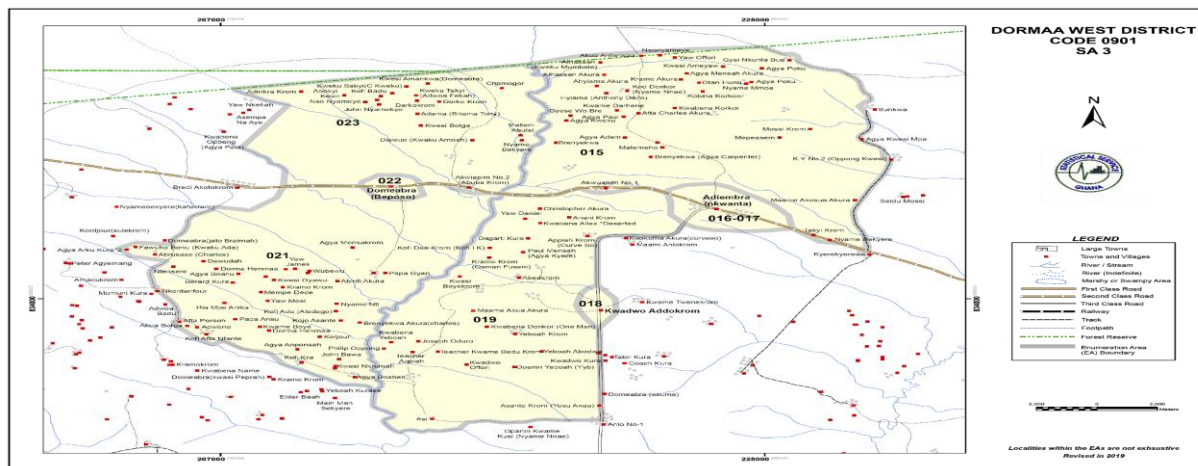
Figure 5.4: Example of Type 3 EA (EA numbers 031)



5.1.6: Supervision Area (SA) Map

The Supervision Area (SA) is the area for which a census enumeration supervisor is responsible. It is made up of an average of eight (8) Enumeration Areas. The variation depends on the population sizes, the topography and difficulty of enumerating the area. The SA map is contiguous and assigned to a supervisor during the census enumeration. See Figure 5.7.

Figure 5.5: Example of SA Map



5.1.7: New localities in EA

Do not assume that the list of localities on the PHC 2 Form is complete because there may be other localities which do not appear on the list or the map. Though the EA Map and PHC 2 Form must indicate all localities in the EA, it is possible that some of these may not have been captured during the demarcation exercise or may no longer be in existence or new ones may have been established since the completion of the demarcation exercise. List such localities and notify your supervisor of any changes.

5.1.8: Geographic Identification Codes (Geo-Codes)

Enumeration Areas (EAs) have been assigned consecutive numbers within the administrative division and in conformity with the geographic coding of the country that uniquely identifies each EA. It is a ten (10) digit code system which contains geographic identification codes of each administrative area and EA n

Table 0:1: Geographic codes

Geographical Area	Digit Location	Code	Range	Remarks
Region	First Two	2-Digits	01-16	From Western = 01 to Upper West =16
District	3 rd and 4 th	2-Digits	01- 47	Ashanti has the Highest = 47
District Type	5 th	1-Digit	1- 3	District=1, Municipal = 2, Metropolitan = 3
Sub-Metro	6 th and 7 th	2-Digits	01- 05	KMA has the highest = 5
EA Number	8 th , 9 th & 10 th	3-Digits	001-999	To be numbered sequentially within district/municipal/sub-metro

- a) **Region name:** There are 16 regions in Ghana. Each region has its own code, based on the serpentine ordering recommended by the United Nations for Listing.
- b) **District:** Within these Administrative Regions are districts (MMDAs) and there 260 Administrative districts in Ghana.
- c) **Statistical District:** There are 271 Statistical Districts have been created, including all the existing Metropolitan, Municipal and District Assemblies in Ghana.
- d) **District Type:** District type refers to the existing administrative District or Municipal or Metropolitan Area.
- e) **Sub-Metro:** Is a geographically defined urban jurisdiction or centre performing governance and administrative functions at the sub-metropolitan level. It is represented in the Geo-Code by a 2-digit code. Greater Accra has two Metropolitan Assemblies namely: Accra Metropolitan Assembly (AMA) and Tema Metropolitan Assembly (TMA). The district in Greater Accra region and their codes are presented in Appendix 1 of this manual.

Table 0:2: List of Sub metros within the Metropolitan Assemblies

Name of Metropolitan Assembly	Name of Sub Metros	Number of Sub Metros
STMA	Takoradi, Sekondi and Esikado-Ketan	3
Cape Coast	Cape Coast North and Cape Coast South	2
AMA	Ablekuma South, Ashiedu Keteke and Okaikoi South	3
TMA	Time Central and Tema East	2
KMA	Nhyiaeso, Subin, Manhyia South, Manhyia North and Bantama	5
Tamale	Tamale South and Tamale Central	2
Total		17

- f) **EA Number:** EA number is a 3-digit number assigned to each Enumeration Area in the district.
- g) **Locality Code:** This is three-digit code for localities listed on PHC 2
- h) **Point of Interest (POI)** It is a specific point location that someone may find useful or interesting. It is a feature on a map (or in a geo dataset) that occupies a particular point. An example is a point on the map used to represent a school or a church, etc.
- i) **Map Orientation:** For using any map, it is important to know how to align it on the ground correctly so as to be able to identify and locate certain features on the ground that are shown on the map in relation to ground features. The process of aligning a map with ground features is known as “map orientation”
- j) **Legend** - In cartography, the information on a map that explains which symbols are used for the features and variables that are represented on the map. This includes the symbol key required to interpret the map, for example, the shade colours and corresponding value ranges of a population density map.

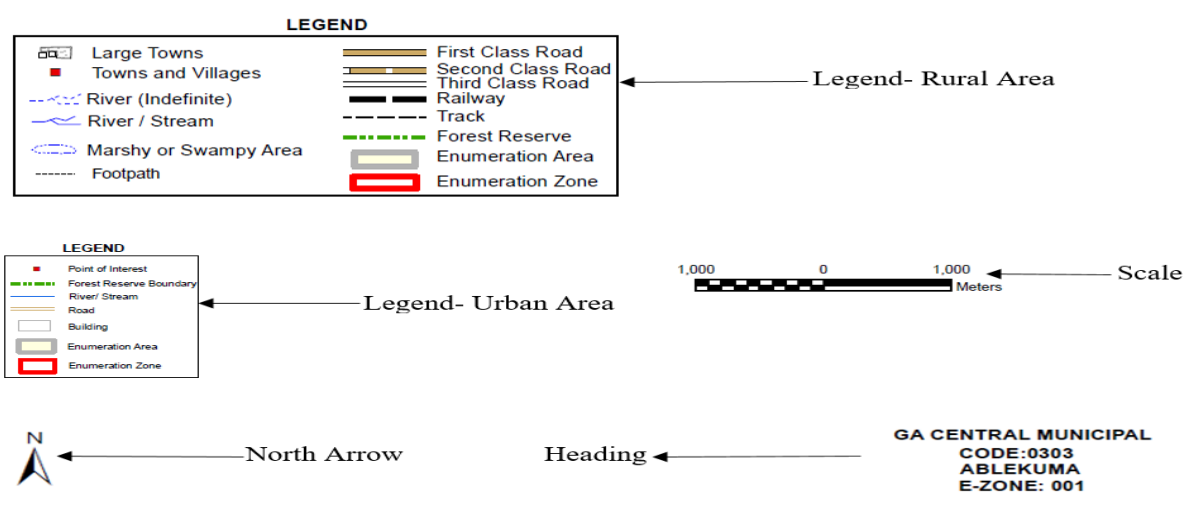
- k) **Administrative unit** – It is a geographic area that serves administrative and governmental functions. They are usually defined and established by legal action.
- l) **Boundary** - a line that defines the extent of an area unit or the location where two areas meet. A boundary is represented in a GIS as a line feature, which may define a side of a polygon. The boundary may or may not be visible on the ground; i.e., it can follow real-world features such as roads and rivers, or it can be defined solely by geographic coordinates.
- m) **Contiguity** - if two or more geographical features are neighbours or adjacent.
- n) **Geographic code** - unique alphanumeric identifier that is assigned to a legal, administration, statistical reporting unit. This is a unique numeric identifier that is assigned to a legal administrative, statistical reporting unit.
- o) **Outskirts** - It is the outer part of a locality. The concept of outskirts must be clearly understood by all users of EA maps. In most cases outskirts apply to type 1 and type 2 EAs. It is usually the uninhabited area of the locality after the last structure/dwelling. It should be noted that when 2 or more localities are contiguous and are almost joined together, this concept of outskirts no more holds.

2023 IBES ENUMERATION AREA ZONES (E-ZONES)

5.1.9: Definition of e-zone

An IBES zone is the smallest spatial area to be completed by an enumerator during the IBES enumeration period. They are specially delineated geographical areas that encompass a number of businesses and establishments to be enumerated. E-zones contain Enumeration Areas (EAs) which vary in size, ranging from one (1) Enumeration Area (EA) to an aggregation of EAs called Supervisory Areas (SA) per zone.

Figure 5.6: Characteristics of e-zone maps



5.1.10: Purpose of e-zones

To group business establishments producing goods and services into spatial units just big enough for one enumerator to complete enumeration within the IBES enumeration period. The zones have well defined boundaries that confines the enumerator to an assigned area. This way, the enumerator is not likely to leave out any portion of area assigned nor stray into another zone.

5.1.11: Basis for zone creation

For the purpose of this project, Enumeration Zones (EZ) were created based on estimated number of structures that produce goods and services in each Enumeration Area (EA) for the Integrated Business Establishment Survey (IBES). The project required the assignment of specific zone numbers to enumeration areas and a cluster of enumeration areas located all throughout the country.

5.1.12: Core dataset used for the creation of zones

For the purpose of the IBES project, Enumeration Zones (EZ) were created based on number of non-residential structures in each Enumeration Area (EA). This was done by extracting all 99 non-residential facilities from the listing data obtained during the 2021 Population and Housing Census. Because the focus of the project is on facilities that produce goods and services (business establishments), 72 out of the 99 non-residential structures which were identified as business establishments were extracted to create Enumeration Zones (EZ) for the IBES Project. The list of business establishments used for the delineation of zones is listed below.

Zone composition

- i. Estimated number of business establishments forming a e-zone in metropolitan and regional capital is between 200-299
- ii. Estimated number of business establishments for other e-zones is between 300-399

E-Zone Geocodes

1. The e-zone Geographical Code [Geocode]: is a unique numeric identifier that is assigned to each EZ.
2. An e-zone code consists of a 10-digit EA code plus a 3-digit e-zone number
3. The E-Zone code is a 13-digit geocode.

Table 5.3: Illustration of Components of E-Zone code

GEO AREA	CODES	RANGE	
Region	2-digits	01 - 16	This uniquely identifies each of the 16 regions
District	2-digits	01 – 43	This uniquely identifies each of the districts
District Type	1-digit	1 - 3	1 = District 2 = Municipal 3 = Metropolitan
Sub-Metro	2-digits	00 - 05	
EA Number	3-digits	001 - 999	This uniquely identifies an EA in a district
EZ Number	3-digits	001-999	This uniquely identifies an EZ in a district

Figure 5.7: Sample urban E-Zone map

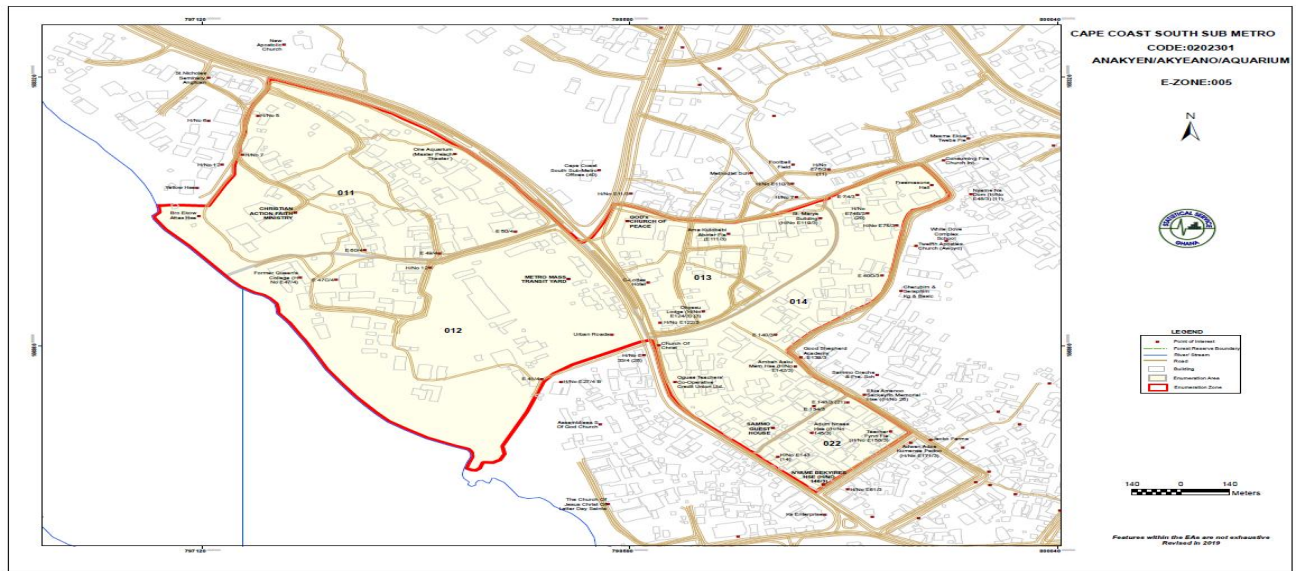
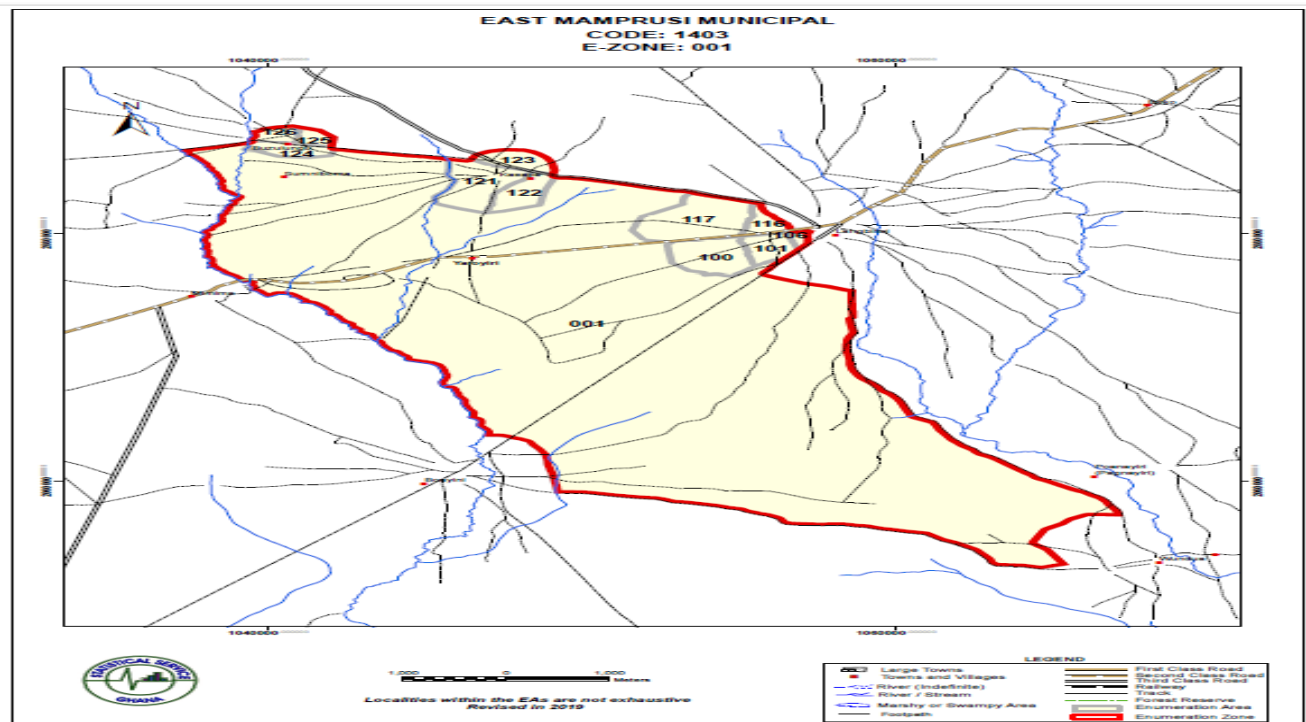


Figure 5.8: Sample rural E-Zone map



5.1.13: Steps to locating your E-Zone

1. Understand and acquaint yourself with the map symbols and directions.
2. Orient your map correctly
3. Trace boundary of e-zone
4. Use the EA description alongside the landmarks/ localities on the map as a guide to locate the assigned EA.
5. Identify EA using EA name (base) for Type 2 EA and for Type 3 EA, look for the base locality.
6. Identify the starting point of the EA as indicated on the PHC 2.
7. Orient your map correctly with the help of the north arrow symbol on the map. The symbols will help you recognize the geographical features shown on the map while the “North” direction will enable you know your bearings.
8. Trace the EA boundary With the aid of the PHC 2
9. Canvass the EA for Types 1 & 2 by systematically moving within and around the entire EA, segment by segment. Familiarize yourself with the EA and identify key features that will help facilitate the process of listing and enumeration.
10. For Type 3 EAs, canvass the localities by systematically moving from one locality to the other, and moving around each locality.
11. The individual EA Maps, EZ Maps, District Maps and the Descriptions (PHC 2) complement one another; hence Supervisors/Enumerators should use them together.

5.1.14: Determining workload per E-Zone

- **Where are many E-zones to an SA (many EZ to an SA)**

This will occur when businesses within a supervisory area are in excess of what is expected to be covered by an enumerator. This would mostly be the case in the central business districts such as Makola-Accra, Adum-Kumasi, and Market Circle- Takoradi, etc. In cases like this, a combination of enumeration areas within an SA may be assigned to enumerators.

- **Where an E-zone is equal to a whole SA. (One EZ to one SA)**

This will occur when the number of businesses in an SA is just enough to be covered by an enumerator. This would mostly occur in less busy business areas. Eg. Teshie-Accra, Madina-Accra, Anloga-Kumasi, etc.

- **Where an E-zone is a combination of SAs. (One EZ to many SAs)**

This will occur when the number of businesses within an SA is less than the number expected to be covered by an enumerator. This would occur mostly in the semi-urban and rural areas. Eg. Anfoega Agatanyigbe in the Volta Region, Ajumako-Besease in the Central Region.

5.1.15: Difficult E-zones

1. Difficult e-zones include: Zones in which business establishments are relatively farther apart and enumerators are required to cover long distances between one establishment and another
2. Areas where the nature of the land makes movement difficult –Areas having mountains, hills, valleys, steep slopes etc
3. Rivers, streams, lakes, dams, marshy areas etc
4. Thick vegetation cover with limited access routes/roads.

How to access a difficult e-zones

- I. Familiarise yourself with your map features to identify and avoid routes on harsh terrain
- II. Do not attempt to canvass zones composed of type3 EAs as that can be very challenging
- III. Plan your itinerary effectively and make adequate time for movement to and within EAs in the zone
- IV. Contact the people/opinion leaders in your zone ahead of your trip to guide you on the most convenient routes to use
- V. Inform and seek additional support from the project secretariat to facilitate your movement when you find that necessary. For example arrangement for a boat to cross the Volta Lake or other water bodies, supply of lifejackets etc.

Interactive maps

Interactive maps are dynamic maps that allow for some level of interaction between the map user and the map. This mapping technique involves the use of Geographic Information System (GIS) to show or pinpoint data on a map. The map works in a system of layers with the different levels of geographic information placed on top of each other.

Unlike static maps, interactive maps have advantages or features designed to improve the display of a large amounts of complex data. An example of such advantage is the zoom capability which allows users to focus on either the details of a particular region or to gain a quick overview of a wider area.

Complementing static maps with interactive maps

Backdrop images of interactive maps with relevant map features and Points of Interest (POIs), running on top of static EA maps would facilitate the location of EA boundaries as well as business establishments in the zones.

Important guides

1. Be sure you do not leave out any establishment **included** in your zone (Gap situation)
2. Do not stray beyond the boundaries of your zone into other zones (overlapping situations)
3. Enumerators must ensure that all establishments that fall within their zones are captured (complete coverage)

CHAPTER SIX

FIELD PROCEDURES

The success of the census depends on how well the fieldwork is conducted. For effective fieldwork, field procedures and planning of field work, location of establishment and meeting with supervisors must be strictly followed. It is also important that enumerators uphold confidentiality during the exercise.

6.1 Confidentiality

The PNDC Law 135 which empowers the Ghana Statistical Service (GSS) to conduct this census also forbids the institution or its representative from disclosing information on any particular establishment to outsiders.

As an enumerator, you are the Government Statistician's representative in the field. You are required to handle all documents carefully and conduct your work in a manner that will ensure confidentiality. Remember that you have taken an oath of secrecy. Legal action will be taken against you if you release or disclose any part of information on the census to unauthorized persons or institutions .

a: Handling of documents during interview:

During interview, make sure the tablet is in the case and administer the questionnaire.

b: Reference to Other Respondents

Do not refer to names and answers obtained from respondents while interviewing another respondent. Do not let a respondent see a completed questionnaire of another respondent.

c: Keeping of census materials at home:

Keep all census materials, especially documents, in safe and secured places. Preferably, keep them in boxes or cup-boards with locks.

d: Keeping Census Data from Members of Family and Friends

Do not discuss census data with members of your family or friends. You must not permit any unauthorized person, even a member of your family, to see a completed questionnaire. You must not solicit, or accept assistance from non-census personnel in your enumeration duties.

6.2 Planning Your Field Work

After your training, you will be given your materials, as is listed in chapter four. You should aim to finish your work by the end of the assigned period. In an EZ, identify your boundary, pick a strategic point on the boundary, and move along lanes, paths, streets, and roads until you exhaust the EZ to ensure that all businesses in the EZ are covered. In an EZ made up of several localities, you should ensure that all localities within the EZ are covered.

6.3 Identification Of Establishment

6.3.1 Finding the establishment

The country has sixteen (16) administrative -regions. Each region is divided into districts, and each district is divided into Enumeration Zones (EZs). A supervisor will be assigned a number of enumerators, and each Enumerator will be assigned an EZ with one or more EAs. The map of EZs has the EAs with the boundaries well delineated. The EZ map will be provided to guide the enumerators to know the boundary of the area in which he/she is working.

In an EZ made up of both urban and rural EAs, the Enumerator must ensure that he/she starts with the urban settlement, pick a strategic point on the boundary of the settlement and move along lanes, paths, streets, and roads until he/she exhausts the settlement(s) in order to ensure that all businesses in the settlement are covered. After that, he/she should go to the rural settlement(s) and ensure that all localities are covered.

In cases where there is more than one establishment within a structure, the Enumerator should ensure that each establishment is treated as an independent establishment and a questionnaire administered. Examples of these cases are establishments located within shopping malls and those located within an office complex etc.

An enumerator should start from a certain point and move in the EZ. As he/she moves, he/she should look for structures with establishments, companies, or businesses. When the Enumerator suspects that an economic activity is being undertaken in a structure, he/she should deploy acceptable protocols and enter, greet the occupants and then ask whether any business activity is going on there. He/she should also ask the people in the neighborhood whether establishments exist in the area. If there is, he should administer the Questionnaire. Where practicable, in an EZ with more than one EA, the Enumerator should exhaust one EA before moving on with other EAs with the guide of the EA boundaries. The Enumerator should proceed until he/she exhausts the enumeration zone assigned to him/her.

6.4 First Visit To The Ez

6.4.1 What to do during the first visit

The purpose of this visit is to inform opinion leaders of the IBES and introduce the purpose and objective of your visit. You will be given a letter of introduction for this purpose. The first visit is essential. You should make a good impression on this visit. You are to find out from the respondent whether

- i. He/she wants to complete the Questionnaire himself/herself or
- ii. Needs an online questionnaire application to fill or
- iii. Furthermore, ask if He/she will need some help.

a. Respondent completing the questionnaire

If a respondent wants to complete the questionnaire himself/herself, leave the questionnaire behind and

make an appointment with him/her on when you are to return to collect it.

b. Respondent needs assistance to complete the questionnaire

If a respondent needs assistance completing the Questionnaire, assist immediately or book an appointment with him/her as to when to go back for the interview. If the respondent does not ask for the Questionnaire, you should not leave it behind. If he/she asks to study it, wait for him/her to do so and take it back. If he/she insists on keeping it, give out one copy only.

c. Appointments

In making appointments politely impress on respondents the need to complete field work before the end of the period. Be careful so that one appointment does not coincide with another in planning your work. For example, do not make two appointments for the same day within a short time interval. Also take into consideration the distance between the two establishments. Keep all appointments you make with respondents in note.

6.4.2 Problems Arising From the First Visit

a. Interview at First Visit

In booking appointments, politely impress on respondents the need to complete fieldwork before the end of the period. Be careful, so one appointment does not coincide with another in planning your work. For example, do not make two appointments for the same day within a short time interval. Also, take into consideration the distance between the two establishments. Keep all appointments you make with respondents in the notebook.

b. Refusals and non-co-operative respondents

If a respondent tells you he/she is busy and does not want to be disturbed, ask when you should call back. If, after introducing the Questionnaire to a respondent and he/she is reluctant to be interviewed, impress upon him/her that the information **will be kept** confidential. Explain to the respondent that it is mandatory to provide the needed information. If he/she still refuses, leave and come back another day to continue the persuasion until the respondent agrees to participate in the survey. If all the persuasion fails, report to your supervisor, who will have to follow up to persuade the respondent. Please remember that no persuasion is enough until the data is correctly collected. Thus, persuasions **MUST** continue until the respondent provides the data.

6.5 Meeting With Your Supervisor

The supervisor will support you in fieldwork. He/she will arrange regular meetings with you. You should report all field problems to him/her. Before you start enumeration, your supervisor will arrange with you the time and place to meet him during the first weeks. On the Monday of the third week of enumeration, your supervisor will meet you and other enumerators of his/her team. Be on time for the meeting. The purpose of the meeting is for you and your supervisor to discuss any problem you might have encountered during your first visits. The supervisor will review your appointments and help to solve your problems if any. He/she will arrange subsequent meetings with you. If you have an appointment that morning, you must let

your supervisor know beforehand.

6.6 General Enumeration Problems

Listed below are some problems you may encounter apart from those mentioned under sections 6.3.2 and 6.4.2 of this chapter.

6.6.1 Workers on leave

If you come across establishments where all workers are on mass leave, enquire from the watchman or neighbors when work resumes, attach a note to the Questionnaire, and give it to your supervisor. Arrangements will be made to enumerate the establishment later.

6.6.2 Person to give information not available

If the person who can give you information has traveled, is sick, or not available, find out whether his/her assistant can do so. If not, find out when he/she is expected to be back, attach a note to the Questionnaire, and give it to your supervisor. The note should indicate the firm's name and the proper location to assist in a future visit.

6.6.3 Call-Backs

A respondent may reschedule an appointment and ask you to call back. In a situation where the respondent is not available for the appointment, then enumerators would be required to make several attempts to get the respondent and convince him/her to complete the Questionnaire. If you fail to reach the respondents after several attempts, report to your supervisor.

6.6.4 Other problems

You may encounter other problems for which specific answers may not be found in the manual. The general principle is to record all field problems in your notebook and report them to your supervisor.

6.7 Field Checks

To avoid repeating mistakes, your supervisor will go through every completed Questionnaire with you regardless of whether it was filled out by you or by the respondent. The purpose is to detect and correct errors as quickly as possible. This will ensure that any errors in the two are not carried into the others. When he/she detects errors, he/she will request you to effect the appropriate changes.

6.7.1 Check interviews and spot checks

Your supervisor has been instructed to re-interview some of your respondents. The respondents to be re-interviewed will be selected at random. Your supervisor will also conduct some spot checks. You should therefore conduct all your interviews properly.

6.8 FIELD RECORDS

The records enumerators keep will enable the Census Secretariat to know the progress of enumeration in the field. You must therefore keep good records of your work.

6.8.1 Use of notebook

You will notice one of the items in your field kit is a note book. It is meant to be used as a diary. You must record all enumeration experiences and problems in it for discussion with your supervisor.

6.8.2 Completing the summary sheet

After completing each questionnaire, you must fill the summary sheet. You will notice that all the information needed to complete the form would have been recorded in your questionnaire.

In completing the form, write the required information in the columns provided.

Column 1:	Number of establishments visited (reference number)
Column 2:	The names of the establishment
Column 3:	The physical location
Column 4:	Main economic activity
Column 5:	Total number of persons engaged
Column 5:	Date of your First Visit to establishment
Column 6:	Date of collection of questionnaire or interview
Column 7:	Name of respondent (Ref. Item 20.1 on the questionnaire)
Column 8:	General remarks

Before you hand over the form to your supervisor, you must sign it. Your supervisor will check and also sign.

6.8.4 Completion of your work

a. After completing your work you must contact your supervisor. He/she will sit down with you and review your work. He/she will go through your summary sheet and sign it if satisfied.

CHAPTER SEVEN

PREPARING FOR AN INTERVIEW

7.1 Introduction

As mentioned earlier, your training will consist of a combination of lectures and practical sessions. You must be thoroughly conversant with the instructions and the questionnaires so that you can approach the respondents with confidence.

7.2 Appearance And Whom To Interview

7.2.1 Your Appearance

You should be neatly dressed. You should not wear fancy clothing. You should be cheerful, polite and confident, because in most cases the firms' management will be aware that a census is being taken and will expect a visit from an enumerator, and will therefore be cooperative. Make sure you have the following items before an interview:

1. Your identity card
2. Introductory letter to the respondent
3. The questionnaire for the establishment
4. Your instruction manual
5. Your pen

7.2.2 Whom to interview

Enter the premises. Tell the receptionist or the person you may meet that you are Economic Census enumerator and ask to see the manager, if he is not in, ask to see an assistant manager or the accountant. Do not easily be put off by a receptionist who says the manager is "busy". Show your identity card, and ask him/her to inform the manager you need to see him for twenty minutes on Economic Census. If you are unable to get through to the manager, see the accountant, or assistant manager. On meeting the manager or assistant manager or accountant, introduce yourself. Show your identity card and hand him/her the letter of introduction. Explain the purpose of your visit and ask who will be responsible for completing the questionnaire. Arrange an appointment to return to pick up the questionnaire or to complete the questionnaire by interview. Thank everyone on your way out and depart.

7.3 Approaches To Enumerating Establishments

Enumerators should give respondents the opportunity to choose from any of the three forms of questionnaire tool thus. There are five approaches to enumerating establishments:

1. Questionnaire drop off and pickup
2. Direct interview using CAPI
3. Telephone interview
4. Online questionnaire
5. Combination of 1 and 2

Each of these is described below.

7.3.1 Questionnaire drop off and pick up

If the establishment wishes the questionnaire to be left for them to complete, drop it off and arrange an appointment to pick it up. On the appointed day, meet the receptionist and remind him/her of your previous appointment with the manager (or whoever the respondent is). Greet the respondent and state that you have come back for the census questionnaire. Thank him/her, and say that you are required to review it.

Review Procedure.

1. Confirm that the information preprinted in the identification is correct if no amendment has been made.
2. Review the description of principal industry. Is it adequate?
3. Ask the respondent if he/she had any difficulties in completing the questionnaire and write them in your note book.
4. Complete section F of the questionnaire. Check for completeness and accuracy.
5. Ask respondent to complete certification if this has not been done.
6. Thank the respondent for his/her cooperation and depart.
7. Key in the response into the CAPI and sync to HQ.

7.3.2 Direct interview procedure

Meet the receptionist and follow the procedures described in 6.2.2. If necessary remind the respondent of your appointment. Take questionnaire out and begin the interview.

Procedure:

1. Explain that the census is conducted for industry, services, and agriculture sectors of the economy. Explain also that the information is confidential
2. Proceed to section A of questionnaire. These questions are quite easy, and should enable you to build up a feeling of friendliness with your respondent. His cooperation will increase as he/she realize you know what you are about. Continue with the other questions and complete the interview.
3. Refer to your manual if necessary. It is meant to help you
4. Complete Section F at the end of the questionnaire and ask the respondent to complete the certification.
5. Thank the respondent for his cooperation and depart.

7.3.3 Interrupted interview

In a situation where the respondent inform you that he/she has another appointment or the data you are requesting is not readily available whilst the interview is still ongoing, then you need to do one of the following.

- Find out if any other person can assist.
- If the data is not readily available, make another appointment.

6.3.4 Telephone interview

Before The Call

There are several things you need to have ready before you even start dialing a number to start an interview. You must make sure you are in an environment that is conducive for your calls, so there should be no disturbance around you. You should also make sure the equipment you will be using for the interview process- your phone and tablets – are in good condition. Phone interviews require you to be very attentive, otherwise you might miss something, so it is important that you have everything prepared before you begin. Specifically:

- Make sure you can get as much privacy as possible.
- Inform the respondents of the establishment of what you are about to do, so you are not disturbed. If possible, get a private room. Write boldly on a piece of paper: DO NOT DISTURB, and place it on the door. It is important to minimize distractions, so your respondent does not become bored or frustrated and hang up.
- Make sure you have your tablet ready, fully-charged and open to the first household you will interview
- Check the volume on your phone. Do a test with a friend to make sure you can be heard and you can hear clearly. You don't want to miss anything the respondent says because your volume is too low.
- Have a clock in front of you, and time yourself; so you can pace your questions.

6.3.5 Online Questionnaire

In the instance where an establishment opt out for online questionnaire, enumerators are to initiate the process with the CAPI on their mobile device (tablet), thus:

- Filling the entire section A (identification section), which includes generating the Reference number, picking GPS coordinates and other relevant areas in the Section.
- Sending the generated reference number on the CAPI via mail through the CAPI to the respondent. The respondent will continue the rest of the form using the given reference number.

Enumerators are to ensure respondents complete the form by doing a follow up either through a phone call or an in person visit.

7.4 Conducting An Interview

7.4.1 Interview technique

Successful interviewing is an art and should not be treated as a mechanical process. Each interview is a new source of information, so make it interesting and pleasant. The art of interviewing develops with practice but there are certain basic principles which are followed by every successful interviewer. In this section you will find a number of general guidelines on how to build rapport with the respondent and conduct a successful interview.

7.4.2 Building rapport with the respondent

The enumerator and the respondent are strangers to each other and one of the main tasks of an interviewer (enumerator) is to establish rapport. The respondent's first impression of you will influence his/her willingness to cooperate with you.

Be confident and courteous. Smile, and make a salutation like “Good morning”, and proceed with your introduction, something along the lines; “My name is I am an enumerator from the Ghana Statistical Service, am here to conduct an interview on the IBES .

Never adopt an apologetic manner, and do not use words like “could you spare a few minutes? Would you mind answering some questions?. Yours is an important national assignment, there is no need to be apologetic. On the other hand, don’t try to be over bearing. Courtesy and politeness does it. For example, say “I would like to ask you some questions/I would like to talk to you for a moment”.

7.4.3 Stress confidentiality

If the respondent is hesitant about giving data, explain that the information is confidential. Data is only published in aggregated form but not on firm level. It is therefore impossible to identify information on any particular establishment. Show him your copy of the industrial Census Bulletin. Do not mention the names of other establishments or respondents you have enumerated. Be very careful that you only have the respondent’s questionnaire before you. Any other questionnaires must be in their envelopes, in the satchel. The satchel must be zipped. Your careful handling of questionnaires will do much to build up the respondent’s confidence.

7.4.4 Length of interview

Most respondents may not be comfortable with the length of the interview. Many of them may express concern about how long the interview will take. Patiently and politely inform him/her that the interview would not take long and that about 30 minutes is required and show him the questionnaire. If the respondent persists that another day be fixed, then make an appointment.

7.4.5 Remaining neutral

When assisting the respondent to complete the questionnaire you must be disciplined in your reaction to some of the information he/she may give you. Do not by your expression or your reply register disbelief in the data he has given you. Be calm and neutral whenever you need to indicate that the data is inconsistent with other data previously given. Do not express your political affiliation when political issues are raised.

7.4.6 Do not change the sequence of the questions

Ask the questions in the order as they are on the questionnaire. Do not change sequence of the question. When assisting with the completion of the questionnaire, make sure that both you and the respondent each have a questionnaire before you.

7.4.7 Don’t allow the respondent to rush through the interview

Respondents sometimes try to rush through the interview. Politely say that you have to get answers to each question, and calmly proceed with the interview.

1. Always be polite and patient
2. Don’t ever express disbelief with the respondent’s answers
3. Never argue.
4. Be professionally persistent.

3. Public-Private Partnership also referred to as Private/State Ownership are businesses that are jointly owned by the state and private individual(s) or firm(s)

C18: TYPE OF LEGAL ORGANIZATION

Businesses acquire legal status through registration at the Registrar Generals Department. They may take the form of Private limited company, Sole proprietorship, Partnership etc.

However if a business is not registered with RGD and considers itself to operation within the confines of any of the above status, this status should be stated as the legal status of the establishment.

Sole Proprietorship: Sole proprietorship is a business unit owned and controlled by a single individual. Another name for Sole Proprietorship is Sole Trader. Also called one man business, all decisions are taken by the owner.

Limited Liability Company: is an association between two and fifty people with a set of objectives for either profit or non-profit basis. There are shareholders who are the owners of the company and directors, secretary and auditors who are the officers of the company.

Partnership: Partnership is made up of a minimum of two (2) and maximum twenty (20) persons who engage in profit making business. Their relationship is defined by an Agreement/Deed which is stamped at the Lands Valuation Board before acceptance at RGD.

External Company: it is a branch of an existing Company usually registered by local manager on behalf of the company registered outside the jurisdiction of Ghana, who wants to own a branch or place of business in Ghana. Note, that the local Manager must at all times be resident in Ghana.

Subsidiary Business Name: A Company may carry on Business under a Business Name which does not consist of its corporate name. This can be called a subsidiary of the parent Company with the Parent Company being the owner. A stamp of the Parent Company is required and signed by one of its existing directors or secretary

Unlimited Liability Company (Private and Public): Unlimited Liability Company has the same composition as a limited liability company except that the liabilities of its owners are unlimited. It is usually registered by professional body such as Law firms, Auditing and Architectural firms

Professional Body: Involves organizations whose members are individual professionals. This usually depends on whether or not the profession requires the professional to have a 'license to practice', or to be on a professional register. Example of professional bodies is Ghana Bar Associations.

Company Limited by Guarantee (Private or Public): this is a company that has the liability of its members limited to amounts that they respectively undertake or guarantee to contribute to the assets of the company in case of liquidation. The company is also not permitted to make profits, for example social enterprises, non-governmental organizations (NGOs), churches and charities, clubs, Association or Foundations

Company Limited by Shares (Private and Public): Company Limited by Shares is an association between two and fifty people with a set of objectives for either profit or non-profit basis. There are shareholders who are the owners of the company and directors, secretary and auditors who are the officers of the company. Its liability is limited.

C19: OWNER’S NATIONALITY

This section collects information on nationality of owner(s). It is particularly relevant to privately owned establishments.

Ghanaian: This category includes owners of establishments who are Ghanaians by birth or by naturalization.

Non Ghanaians: This category includes owners of establishment who are foreign nationals

Ghanaian and Non Ghanaian: This refers to joint ownership of establishments by a Ghanaian(s) and Non- Ghanaian(s).

C20: How many people own this Establishment? This question wants to solicit information on the number of persons owning the establishment. Put the total in the boxes provided and disaggregate into male and female.

1. TOTAL 2.MALE 3.FEMALE

Selecting the Principal Activity

Consider the following examples:

Example 1

Consider an establishment that is engaged in manufacturing of one product. For example, Mrs. Jones' bakery specialized in the production of one product, i.e. bread. In this case it is simple to state the principal activity as baking of bread.

Example 2

Establishment X is engaged in four production activities as indicated in the table below.

Table1: Value and Share of Products

Activity	Value of Sales (Millions of Ghana Cedis)	Share of Total Sales (%)	Activity Ranking
Processing of Meat Products	54,229	6.1	3rd Principal
Manufacture of yoghurt	30,500	3.4	
Packaging of coffee	279,233	31.6	2nd Principal
Production of Soap	520,370	58.8	1st Principal
Total	884,332	100.0	

D1	P	R	O	D	U	C	T	I	O	N		O	F		S	O	A	P				

D3	P	A	C	K	A	G	I	N	G		O	F		C	O	F	F	E	E			

D5	M	A	N	U	F	A	C	T	U	R	E		O	F		Y	O	G	H	U	R	T

From the table above, assuming the respondent provided the information (either verbally or written) on value of sales then from your computation the 1st principal activity would be *Production of Soap* because it has the highest share of sales (58.8%); followed by *Packaging of Coffee* (31.6%), and then *Processing of Meat Product* (6.1%).

Example 3

An establishment that is engaged in

- Manufacture of roofing tiles
- Construction of buildings.

In this case if the establishment does not keep separate books of account, then use the value of output for each activity to determine the principal industrial activity. If separate books of account are available, then treat them as different establishments in manufacturing and construction.

Poor Principal Activity Description

Poor description of activity is one of the main reasons questionnaires are returned to enumerators, who must then go back to the establishment and get a detailed description. An example of poor description is : “Manufacture of Machinery”. There are different types of machineries; our interest however is to capture manufacture of a specific machinery. This is *unacceptable* since it would be difficult to know which of the following classification to use:

Manufacture of engines and turbines

Manufacture of agricultural machinery and equipment

Manufacture of metal and wood working machinery

Manufacture of office and accounting machinery

Manufacture of electrical industrial machinery

Manufacture of electrical appliances and housewares

All such description as” manufacture of machinery”, “manufacture of appliances”, manufacture of equipment” are inadequate and will not be accepted.

• Other Examples of Poor Principal Activity Description

The following are some examples of poor economic activity descriptions. The questionnaires would have been sent back to the enumerator. Comments on these are in brackets.

- Manufacture of machine parts. (What Machine part?)
- Manufacture of office equipment. (What equipment?, Is this office equipment a calculators, Writing pens, pins, paper clips, pencils, air-conditioners, chairs?)
- Fabrication of steel (What sort of fabrication? Is this steel meant for buildings, cars, bridges, durables? It could be meant for hundreds of different things)
- Manufacture of metal products. (There are hundreds of different metal products. Which ones are you referring to?)
- Wood processing. (What type? Is it dressing timber? Is it Furniture Manufacturing?)
- Manufacture of furniture. (What sort of furniture? Is it home furniture or office furniture? Is it made of steel, glass, or wood?)

Note

If an enumerator encounters a challenge such as the above, the he/she should probe for more clarity on the response to question to ascertain the correct activity description.

Rules for Writing Good Principal Activity Description

(a). The respondent can always give a good description of the establishment’s activity. Listen to the respondent carefully. If necessary get him/her to write it out on a piece of paper if the respondent can read and write.

(b). Nouns such as “machinery”, equipment”, appliance” are to be qualified by at least one and usually two adjectives, e.g.:

Manufacture of agricultural machinery
Manufacture of electrical laboratory equipment
Manufacture of electrical household appliances
Manufacture of wooden household furniture
Drilling of wells
Wiring of houses
Construction of roads

c. When in doubt, write down the establishment's main products

e.g. "Produces canned pineapple juice, canned pineapple chunks, canned orange juice, bottled mineral drinks, bottled syrups".

Examples of Services and others

Typing of documents
Photocopying of document
Faxing of documents
Internet browsing services
Auditing of Clients Accounts
Legal advice services

This question seeks to enquire from the respondents if the establishment is provide mobile money service.

D5. Is this establishment an agency providing mobile money services (Mobile money agent)?

1. Yes 2. No

This question seeks to enquire from the respondents if the establishment is provide other banking services apart from momo.

D6. Is this establishment an agency providing other banking services apart from momo?

1. Yes 2. No

D7: State the sub-sector in Industry

Here the respondent is supposed to state the main sub-sector within which the establishment operates. The enumerator should choose from the following:

Mining and Quarrying

- **Extraction of crude petroleum and natural gas**

This includes the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands and the production of natural gas and recovery of hydrocarbon liquids. This includes the overall activities of operating and/or developing oil and gas field properties, including such activities as drilling, completing and equipping wells, operating separators, emulsion breakers, desilting equipment and field gathering lines for crude petroleum and all other activities in the preparation of oil and gas up to the point of shipment from the producing property.

This excludes support activities for petroleum and gas extraction, such as oil and gas field services, performed on a fee or contract basis, oil and gas well exploration and test drilling and boring activities. Also excludes refining of petroleum products, survey activities, and geologic and seismic.

Examples:

1. Extraction of crude petroleum oils	3 Draining and separation of liquid hydrocarbon fractions
2. Processes to obtain crude oils	4. Production of crude gaseous hydrocarbon (natural gas)

Mining of metal ores

This division includes mining for metallic minerals (ores), performed through underground or open-cast extraction, seabed mining etc. Also included are ore dressings and beneficiating operations, such as crushing, grinding, washing, drying, sintering, calcining or leaching ore, gravity separation or flotation operations. Excluded under this classification are manufacturing activities such as the roasting of iron pyrites, the production of aluminum oxide and the operation of blast furnace.

Examples

1. Gold mining	3. Mining of bauxite
2. Diamond mining	4. Mining of manganese

Extraction of salt

This class includes extraction of salt from underground including by dissolving and pumps salt production by evaporation of sea water or other saline water, crushing, purification and refining of salt by the producer. This class excludes processing of salt into food-grade salt, e.g. iodized salt, potable water production by evaporation of saline water.

Example:

1. Crushing, purification and refining of salt by the producer

- **Mining support service activities**

This division includes specialized support services incidental to mining provided on a fee or contract basis. It includes exploration services through traditional prospecting methods such as taking core samples and making geological observations as well as drilling, test-drilling or re-drilling for oil wells, metallic and non-metallic minerals. Other typical services cover building oil and gas well foundations, cementing oil and gas well casings, cleaning, bailing and swabbing oil and gas wells, draining and pumping mines, overburden removal services at mines, etc.

Examples:

1. Test drilling in connection with petroleum or gas extraction	3. Liquefaction and regasification of natural gas for purpose of transport done at the mine site.
2. Draining and pumping services on a fee or contract basis	

- **Manufacturing**

This includes the physical or chemical transformation of materials, substances, or components into new products. The materials, substances, or components transformed are raw materials that are products of agriculture, forestry, fishing, mining or quarrying as well as products of other manufacturing activities. Substantial alteration, renovation or reconstruction of goods is generally considered to be manufacturing. However, units that transform materials or substances into new products by hand or in the worker’s home and those engaged in selling to the general public of products made on the same premises from which they are sold, such as bakeries and custom tailors, are also included in this section.

For example, the output of alumina refining is the input used in the primary production of aluminum; primary aluminum is the input to aluminum wire drawing; and aluminum wire is the input for the manufacture of fabricated wire products.

Assembly of the component parts of manufactured products is considered manufacturing. This includes the assembly of manufactured products from either self-produced or purchased components. The manufacture of new final products (as opposed to secondary raw materials) is classified in manufacturing, even if these processes use waste as an input. For example, the production of silver from film waste is considered to be a manufacturing process.

Examples:

1. Manufacture of groundnut oil	7. Manufacture of flour mixes and prepared blended flour
2. Manufacture of fruit juices (orange, guava, pineapple, lemon squash, canning, bottling of fruit juice)	8. Making of kenkey
3. Preparation and preservation of fish	9. Manufacture of distilled, potable Akpeteshie
4. Killing, dressing of poultry	10. Kente weaving
5. Manufacture of yoghurt	10. Kente weaving
6. Manufacture of fresh liquid milk, pasteurized, sterilized, homogenized, heat treated	11. Bleaching of jeans

- **Construction**

This section includes general construction and specialized construction activities for buildings and civil engineering works. It includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature.

General construction is the construction of entire dwellings, office buildings, stores and other public and utility buildings, farm buildings etc., or the construction of civil engineering works such as motorways, streets, bridges, tunnels, railways, airfields, harbours and other water projects, irrigation systems, sewerage systems, industrial facilities, pipelines and electric lines, sports facilities as construction. Also included is renting of construction equipment with operator which must be classified with the specific construction activity carried out with this equipment and operator. If these activities are carried out not for later sale of the construction projects, but for their operation (e.g. renting of space in

these buildings, manufacturing activities in these plants), the unit would not be classified here, but according to its operational activity, i.e. real estate, manufacturing etc.

Examples:

1. Construction of all types of residential buildings	7. Building site drainage
2. Construction of hospitals	8. Geophysical activities
3. Construction of parking garages	9. Site preparation for mining
4. Construction of bridges	10. Installation of heating and air-conditioning systems
5. Construction of roads	11.. Installation of lightning conductors
6. Construction of civil engineering constructions	12. Installation of door and window frames

- **Electricity, gas, steam and air conditioning supply**

This section includes the activity of providing electric power, natural gas, steam, hot water and the like through a permanent infrastructure (network) of lines, mains and pipes. Also included are the distribution of electricity, gas, steam, hot water and the like in industrial parks or residential buildings. This section therefore includes the operation of electric and gas utilities, which generate, control and distribute electric power or gas. Also included is the provision of steam and air-conditioning supply.

- **Water collection, treatment and supply**

This class includes water collection, treatment and distribution activities for domestic and industrial needs. Collection of water from various sources, as well as distribution by various means is included.

The operation of irrigation canals is also included; however the provision of irrigation services through sprinklers, and similar agricultural support services, is not included.

D8: Sub-sector in Services

- **Wholesale and retail trade; repair of motor vehicles and motorcycles**

This section includes **wholesale** and **retail** sale (i.e. **sale without transformation**) of any type of goods and the rendering of services incidental to the sale of these goods. Wholesaling and retailing are the final steps in the distribution of goods. Goods bought and sold are also referred to as merchandise under wholesale trade and consumer goods or retail goods under retail trade .

Also included in this section are the repair of motor vehicles and motorcycles.

1. **Sale without transformation:** is considered to include the usual operations (or manipulations) associated with trade, for example sorting, grading and assembling of goods, mixing (blending) of goods (for example sand), bottling (with or without preceding bottle cleaning), packing, breaking bulk and repacking for distribution in smaller lots, storage (whether or not frozen or chilled),

cleaning and drying of agricultural products, cutting out of wood fibre boards or metal sheets as secondary activities.

2. **Wholesale trade except sales and repairs of motor vehicle and motor cycle:** is the resale (sale without transformation) of new and used goods to retailers, to industrial, commercial, institutional or professional users, or to other wholesalers, or involves acting as an agent or broker in buying goods for, or selling goods to, such persons or companies.

3. **Retail trade except of motor vehicle and motor cycle:**

Is the resale (sale without transformation) of new and used goods mainly to the general public for personal or household consumption or utilization, by shops, department stores, stalls, mail-order houses, door-to-door sales persons, hawkers and peddlers, consumer cooperatives, auction houses etc. It also include, activities such as washing, polishing of vehicles , the retail sale of automotive fuel and lubricating or cooling products or the renting of motor vehicles or motorcycles.

4. **sales and repairs of motor vehicle and motor cycle:**

This includes all activities (except manufacture and renting) related to motor vehicles and motorcycles, including lorries and trucks, such as the wholesale and retail sale of new and second-hand vehicles, the repair and maintenance of vehicles and the wholesale and retail sale of parts and accessories for motor vehicles and motorcycles. Also included are activities of commission agents involved in wholesale or retail sale of vehicles.

It exclude activities such as washing, polishing of vehicles , the retail sale of automotive fuel and lubricating or cooling products or the renting of motor vehicles or motorcycles included under retail trade.

Examples:

1. Maintenance and repair of motorcycles	8. Retail trade of hardware
2. Maintenance and repair of motor vehicles	9. Retail sale activities of general stores that have, apart from their main -sales of food products
3. Wholesale of yams (export/import)	10. Retail sale of furniture
4. Wholesale of fruit and vegetables	11. Retail sale of meat and meat products including poultry
5. Wholesale of dairy products	12. Retail sale of alcoholic beverages
6. Wholesale of household appliances	13. Retail sale of fuel for motor vehicles and motorcycles
7. Wholesale of blank audio and video tapes and diskettes, magnetic and optical disks (CDs, DVDs)	14. Retail sale of computers 15. Retail sale of fabrics

• Transport and Storage

This section includes the provision of passenger or freight transport, whether scheduled or not, by rail, pipeline, road, water or air and associated activities such as terminal and parking facilities, cargo handling, storage etc. Included in this section is the renting of transport equipment with driver or operator. Also included are postal and courier activities.

This section excludes maintenance and repair of motor vehicles and other transportation equipment the construction, maintenance and repair of roads, railroads, harbours, airfields as well as the renting of transport equipment without driver or operator.

Examples:

1. Passenger transport by inter-urban railways	6. Operation of excursion, cruise or sightseeing boats
2. Land transport of passengers by streetcar	7. Transport of passengers by air over regular routes and on regular schedules
3. Metro mass transit 4. Transport from town-to-airport	8. Operation of general merchandise warehouses
4. Other renting of private cars with driver	9. Operation of storage and warehouse facilities for all kind of goods
5. Passenger road transport: taxi operation	10. Operation of car parks or garages, bicycle parkings

• **Accommodation and Food Service**

This includes the provision of short-stay accommodation for visitors and other travellers and the provision of complete meals and drinks fit for immediate consumption. . Also included is the provision of longer-term accommodation for students, workers and similar individuals. Some units may provide only accommodation while others provide a combination of accommodation, meals and/or recreational facilities. It excludes the provision of long-term accommodation as primary residences, which is classified in Real estate activities (section L), preparation of food or drinks that are either not fit for immediate consumption or that are sold through independent distribution channels, i.e. through wholesale or retail trade activities classified under Manufacturing (section C).

Examples:

1. Short term accommodation activities provided by bed and breakfast units	6. Catering for conferences
2. Short term accommodation activities provided by hotels	7. Activities of bars
3. Short term accommodation activities provided by suite / apartment hotels	8. Activities of beer parlors and pubs
4. Activities of cafeterias	9. Activities of coffee shops
5. Activities of restaurants	10. Private hostels for students
5. Activities of restaurants	11. Accommodation provided by workers hostels

• **Information and Communication**

This includes the production and distribution of information and cultural products, the provision of the means to transmit or distribute these products, as well as data or communications, information technology activities and the processing of data and other information service activities. The main components are publishing activities including software publishing, motion picture and sound recording activities, radio and TV broadcasting and programming activities (d, Telecommunications activities and information technology activities and other information service activities.

Examples:

1. Activities of publishing books in print, electronic (CD, electronic displays etc.) or audio form or on the Internet	8..Activities of studio engineers
2. Publishing of books	9. Activities of radio networks, i.e. assembling and transmitting aural programming to the facilitators or subscribers via over the air broadcasts, cable or satellite radio broadcasting activities over the internet (internet radio stations) data broadcasting integrated with radio broadcasting
3. Publishing of lists of facts/information (databases) that are protected in their form, but not in their content. These lists can be published in printed or electronic form	10. Self-produced programme components (e.g. local news, live reports) or a combination thereof
4. On-line publishing of statistics or other information	11. Operating of cell phone networks
5. Production of motion pictures, videos, television programmes or television commercials	12. Provision of data entry services
6. Post-production activities such as computer-produced graphics, animation and special effects	13. Application service provisioning
7. Distributing film, video tapes, DVDs and similar productions to motion picture theatres, television networks and stations and exhibitors	

- **Financial and Insurance Activities**

This includes financial service activities, including insurance, reinsurance and pension funding activities and activities to support financial services. This also includes the activities of holding assets, such as activities of holding companies and the activities of trusts, funds and similar financial entities.

Examples:

1. Banks e.g. commercial bank, Central bank	7. Life insurance policies
2. Credit unions	8. Provision of insurance services other than life insurance
3. Money order activities	9. Funding of pension funds and plans
4. Activities of holding companies, i.e. units that hold the assets (owning controlling-levels of equity) of a group of subsidiary corporations and whose principal activity owns the group.	10. Activities of forex bureau etc
5. International trade financing NGO	11. Securities brokerage activities
6. Money lending outside the banking system e.g. micro finance	12. Management of mutual funds

- **Real Estate Activities**

This includes acting as lessors, agents and/or brokers in one or more of the following: selling or buying real estate, renting real estate, providing other real estate services such as appraising real estate or acting as real estate escrow agents. Activities in this section may be carried out on own or leased property and may be done on a fee or contract basis. Also included is the building of structures, combined with maintaining ownership or leasing of such structures.

Examples:

1. Buying, selling, renting and operating of self-owned or leased apartment buildings and dwellings	4. Activities of real estate agents and brokers
2. Provision of homes and furnished or unfurnished flats or apartments for more permanent use, typically on a monthly or annual basis	5. Buying, selling, renting and operating of self-owned or leased land
3. Intermediation in buying, selling and renting of real estate on a fee or contract basis	6. Development of building projects for own operation, i.e. for renting of space in these buildings.

- **Professional, scientific and technical activities**

This includes legal activities such as advice and representation in connection with labour disputes, advice and representation in criminal cases, legal representation of one party’s interest against another party, whether or not before courts or other judicial bodies by, or under supervision of, persons who are members of the bar etc. Also, accounting, bookkeeping and auditing activities; tax and management consultancy such as preparation of personal and business income tax returns , preparation or auditing of financial accounts, advisory activities and representation on behalf of clients before tax authorities, provision of advice and help to businesses and public services in planning, organization, efficiency and control, management information, provision of advice on human resource policies and public relations and communication etc.

Architectural and Engineering activities: Technical testing and Analysis.

Architectural and engineering activities and related technical consultancy for example engaging in engineering design of machines, materials, instruments, structures, processes and systems activities, engaging in cartographic and spatial information activities, provision of building design and drafting services, consulting activities for machinery, industrial processes and industrial plant etc.

Technical testing and analysis such as certification of products, including consumer goods, motor vehicles, aircraft, pressurized containers, nuclear plants, testing activities in the field of food hygiene, including veterinary testing and control in relation to food production etc

Scientific Research and Development

Research and experimental development on natural sciences, engineering, social science and humanities for example research and development on engineering and technology, research and development on medical sciences, research and development on biotechnology, research and development on agricultural sciences, research and development on social sciences, research and development on humanities etc.

Advertising and market research

This includes the provision of a full range of advertising services (either through in-house capability or sub contract) including advise, creating and production of advertising and placing of outdoor advertising, e.g. billboards, panels, bulletins and frames, window dressing, showroom design, car and bus carding, creating and placing advertising in newspapers, periodicals, radio, television, the internet and other media, media representation, i.e. sale of time and space for various media soliciting advertising etc.

Other professional scientific and technical activities

Other professional, scientific and technical activities for example activities of graphic designers, activities of interior decorators, fashion design related to furniture and other interior decoration, film developing and photo printing laboratories, commercial and consumer photograph production, security consulting activities, patent brokerage activities (arranging for the purchase and sale of patents) etc.

Veterinary activities

Veterinary activities includes the provision of animal health care and control activities for farm animals or pet animals carried out by qualified veterinarians in veterinary hospitals as well as when visiting farms kennels or homes , in own consulting and surgery rooms or elsewhere. It also include ambulance activities related to these activities health care and control activities for pet animals etc.

• Administrative and support service activities

This includes the renting and leasing of tangible and non-financial intangible assets, including a wide array of tangible goods, such as automobiles, computers, consumer goods and industrial machinery and equipment to customers in return for a periodic rental or lease payment. It also includes leasing of intellectual property and similar products, activities of employment placement agencies, travel agency and tour operator activities, Security and investigation activities, cleaning activities, Landscape care and maintenance service activities (parks and gardens), Photocopying, document preparation and other specialized office support activities, activities of call centres.

Examples:

1. Renting and operational leasing of passenger cars (without drivers)	7. Renting of tents
2. Renting and operational leasing of utility trailers and recreational vehicles	8. Renting of office accommodation or containers
3. Renting of pleasure boats, canoes, sailboats etc.	9. Activities of on-line employment placement agencies
4. Renting of video tapes, records, CDs, DVDs etc	10. Private security agencies
5. Renting and leasing of furniture	11. Investigation and detective service activities.
6. Renting of musical instruments	

- **Public administration and defense; compulsory social security**

This section includes activities of a governmental nature, normally carried out by the public administration. This includes the enactment and judicial interpretation of laws and their pursuant regulation, as well as the administration of programmes based on them, legislative activities, taxation, national defence, public order and safety, immigration services, foreign affairs and the administration of government programmes. Compulsory social security activities includes: funding and administration of government-provided social security programmes such as sickness, work-accident and unemployment insurance, retirement pension, programmes covering losses of income due to maternity, temporary disablement, widowhood etc.

Examples:

1. Administration and operation of taxation schemes	6. Public administration of educational services
2. Administration and operation of statistical services at various levels of government	7. Administration of waste collection and disposal operations
3. Budget implementation and management of public funds and public debt	8. Funding and administration of retirement pensions
4. Central government administration	9. Administration, supervision and operation of combat forces of army, navy and air force.
5. Local government administration	

- **Education**

This section includes education at any level or for any profession, oral or written and other means of communication. It includes education by the different institutions in the regular school system at its different levels as well as adult education, literacy programmes etc. Also included are military schools and academies, prison schools etc. at their respective levels. The section includes public as well as private education. For each level of initial education, the classes include special education for physically or mentally handicapped pupils.

Examples:

1. photography schools	5. performing arts schools
2. automobile driving schools	6. Technical and vocational secondary education
3. learning centres offering remedial courses	7. Secondary education
4. computer training,	8. Tertiary (Training colleges, Universities etc)

- **Human Health and Social Work Activities**

This section includes the provision of health and social work activities. Activities include a wide range of activities, starting from health care provided by trained medical professionals in hospitals and other facilities, over residential care activities that still involve a degree of health care activities to social work activities without any involvement of health care professionals.

Examples:

1. Medical, diagnostic and treatment activities	6. Activities of herbal medicine practitioners/centres
2. Medical, diagnostic and treatment activities of maternity hospitals	7. Activities of traditional birth attendants
3. Medical, diagnostic and treatment activities of mental health and substance abuse hospitals	8. Activities of blood analysis laboratories
4. Family planning centres providing medical treatment, such as sterilization and termination of pregnancy, without accommodation	9. Activities of orphanages
5. dental practice activities of a general or specialized nature, e.g. dentistry, endodontic and pediatric dentistry; oral pathology, orthodontic activities	10. Activities of X-ray laboratories and other diagnostic imaging centres

- **Arts, entertainment and recreation**

This section includes a wide range of activities to meet varied cultural, entertainment and recreational interests of the general public, including live performances, operation of museum sites, gambling, sports and recreation activities. Broadly, it include creative arts and entertainment activities ; libraries, archives, museums and other culture activities; gambling and betting activities; sports activities and amusement and recreation activities.

Examples:

1. Operation of concert and theatre halls and other arts facilities	6. Operation of football clubs
2. Production of group circuses or companies, orchestras or bands	7. Activities of amusement parks or theme parks
3. Operation of art museums	8. Operation of nature reserves, including wildlife preservation, etc.
4. Operation of botanical and zoological gardens	9. Lotto operators
5. Operation fitness centers/gym	

- **Other Service Activities**

This section includes the activities of membership organizations, the repair of computers and personal and household goods and a variety of personal service activities not covered elsewhere in the classification.

Examples:

1. Activities of chambers of commerce, guilds and similar organizations e.g. Ghana Chamber of Commerce	12. Repair and maintenance of printers
2. Activities of public relations and labour negotiations of business and employer organizations	13. Repair and maintenance of cellular phones
3. Activities of medical associations e.g. Ghana Medical Association	14. Repair and maintenance of commercial TV and video cameras
4. Activities of journalists associations e.g. Ghana Journalist Association (GJA)	15. Repair and servicing of refrigerators and freezers
5. Activities of associations whose members are employees interested chiefly in the representation of their views concerning the salary and work situation, and in concerted action through organization	16. Repair and maintenance of shoes
6. Activities of churches	17. Repair and alteration of clothing
7. Activities of mosques	18. Repair of bicycles
8. Activities of political organizations and auxiliary organizations such as young people's auxiliaries associated with a political party	19. Hair washing and similar activities for men and women
9. Activities of rotary clubs	20. Rental of equipped space in funeral parlours
10. Activities of student associations	21. Preparing the dead for burial or cremation and embalming and morticians' services
11. Repair and maintenance of laptop computers	

• **Activities of households as employers of domestic personnel**

This class includes: activities of households as employers of domestic personnel such as maids, cooks, waiters, laundresses, gardeners, gatekeepers, chauffeurs/drivers, caretakers, babysitters, tutors, secretaries etc.

It allows the domestic personnel employed to state the activity of their employer in censuses or studies, even though the employer is an individual. The product produced by this activity is consumed by the employing household. This class excludes: provision of services such as cooking, gardening etc. by independent service providers (Companies or individuals).

• **Activities of extraterritorial organizations and bodies**

This includes: activities of international organizations such as the United Nations and the specialized agencies of the United Nations system, regional bodies etc., the International Monetary Fund, the World Bank, the World Customs Organization, the Organisation for Economic Co-operation and Development, the Organization of Petroleum Exporting Countries, the European Communities, the European Free Trade

Association, Africa unity, ECOWAS etc. in addition it also includes: activities of diplomatic and consular missions determined by the country of their location rather than by the country they represent.

D9: Sub-Sector in Agriculture:

This Subsector includes the exploitation of vegetal and animal natural resources, comprising the activities of growing of crops, raising and breeding of animals, harvesting of timber and other plants, animals or animal products from a farm or their natural habitats.

• **Crops**

This subsector includes Growing of perennial and non-perennial crops. Non-perennial crops are plants that do not last for more than two growing seasons. Included is the growing of these plants for the purpose of seed production. Growing of perennial crops on the other hand are growing of plants that lasts for more than two growing seasons, either dying back after each season or growing continuously. Included is the growing of these plants for the purpose of seed production.

Examples:

1. Growing of beans	9. Growing of vegetables
2. Growing of Rice	10. Growing of Watermelon
3. Growing of Cassava	11. Operation of agricultural irrigation equipment
4. Growing of pineapple	12. Activities pest control in connection with agriculture
5. Growing of citrus fruits	13. Provision of agricultural machinery with operators and crew
6. Growing of groundnuts	14. Land maintenance for agricultural use
7. Growing of grain maize	15. Preparation of crops for primary markets
8. Growing of millets	

• **Livestock and Poultry**

This subsector includes activities of Animal production. This group includes raising (farming) and breeding of all animals and poultry fowls except aquatic animals. But it excludes: breeding support services, such as stud services; farm animal boarding and care; and production of hides and skins from slaughterhouses.

Examples:

1. Raising and breeding of cattle	8. Raising and breeding of guinea fowls
2. Raising and breeding of horses (including. Racing horses)	9. Keeping of bees
3. Production of raw milk from cows and buffaloes	10. Raising of rabbits
4. Raising and breeding of goats	11. Operation of snail farms
5. Raising and breeding of sheep	13. Sheep shearing
6. Raising and breeding of pigs	14. Activities to promote propagation, growth and output of animals
7. Raising and breeding of poultry	

- **Forestry and Logging**

Forestry and logging includes the production of round wood for the forest-based manufacturing industries as well as the extraction and gathering of wild growing non-wood forest products. Besides the production of timber, forestry activities result in products that undergo little processing, such as fire wood, charcoal, wood chips and round wood used in an unprocessed form (e.g. pit-props, pulpwood etc.). These activities can be carried out in natural or planted forests.

Examples:

1. Production of charcoal in the forest (using traditional methods)	4. Transport of logs in the forest
2. Production of utility poles	5. Production of fence posts
3. Production of logs and chips	

- **Fishing and Aquaculture**

This Subsector includes fishery and aquaculture, covering the use of fishery resources from marine, brackish or freshwater environments, with the goal of capturing or gathering fish, crustaceans, molluscs and other marine organisms and products (e.g. aquatic plants, pearls, sponges etc). Also included are activities that are normally integrated in the process of production for own account (e.g. seeding oysters for pearl production).

This Subsector does not include building and repairing of ships and boats and sport or recreational fishing activities. Processing of fish, crustaceans or molluscs is excluded, whether at land-based plants or on factory ships.

Examples:

1. Activities of vessels engaged both in fishing and in processing and preserving of fish e.g. fishing trawler	5. Fishing on a commercial basis in lakes
2. Fishing on a commercial basis in oceans and coastal waters	6. Production of fingerlings
3. Fishing on a commercial basis in inland waters	7. Fish farming in freshwater
4. Fishing on a commercial basis in rivers	

SECTION E

NUMBER OF PERSONS ENGAGED

This section seeks to collect information on persons engaged by all establishments. Persons engaged may be Ghanaian(s) and non-Ghanaian(s) who are working for the establishment either for monetary, non-monetary or voluntary. These persons may either be engaged temporarily or permanently. The information in this section is critical for analyzing employment: by sex, region, economic activity, and sector. Additionally, this information will serve as a basis for selecting samples to conduct economic and other related surveys. ..

NATIONALITY

For the purpose of this exercise, Ghanaian is defined into three groups;

(1) Ghanaian by birth: A person born in or outside Ghana, one of whose parents is a Ghanaian citizen. A native or naturalized member of Ghana who owes allegiance to Ghana government and is entitle to its protection.

(2) Dual Nationality: This relates to a citizen of Ghana who holds the citizenship of another country in addition to his/her Ghanaian citizenship

(3) Ghanaian by naturalization: This includes the following:

- Adopted Child: A child who is legally placed with parent(s) who is/are not its natural parents.
- Citizenship by Registration: A person who acquired citizenship by registration.
- Naturalization: A person who acquired Ghanaian citizenship by naturalization.

Enumerators are supposed to fill in the spaces provided:

E1: How many persons were engaged in the activities of the Establishments as at 31st January, 2023?

The enumerator should enquire from the respondent the number of persons engaged in the activities of the establishment as at 31st January, 2023. **Managerial, Professional and Administrative:** These include human resource managers, Accountants, Auditors etc.

Managerial / Professional & Administrative

	TOTAL	MALE	FEMALE		TOTAL	MALE	FEMALE
E1: Persons engaged	<input type="text"/>	<input type="text"/>	<input type="text"/>		E1:	<input type="text"/>	<input type="text"/>
E2: Non-Ghanaian	<input type="text"/>	<input type="text"/>	<input type="text"/>		E2:	<input type="text"/>	<input type="text"/>
E3: Unpaid	<input type="text"/>	<input type="text"/>	<input type="text"/>		E3:	<input type="text"/>	<input type="text"/>
E4: Paid	<input type="text"/>	<input type="text"/>	<input type="text"/>		E4:	<input type="text"/>	<input type="text"/>

SECTION F

NUMBER OF PERSONS ENGAGED

NUMBER OF PERSONS ENGAGED OVER THE LAST 12 MONTHS

In every establishment there are persons who are either directly or indirectly involved in the production of goods, delivery of services, or both. This section seeks to establish the total number of persons directly and indirectly engaged in the activity of the establishment whether skilled, unskilled, or temporary, permanent over the past 12 months. This excludes apprentices.

Skilled Workers: These are workers who have special skills, knowledge or (usually acquired) ability in their work. For example, auto-mechanics who repair faulty cars; software developers, Electricians who attend to activities related to electrical; a chemical engineer directly involved in Petroleum refinery.

Unskilled Workers: These are persons who are directly involved in the actual activity of the establishment but lack the required technical skills to deliver on the job. Such persons though are not necessary apprentices may become skilled acquiring knowledge on the job.

	TEMPORARY	PERMANENT	SKILLED	UNSKILLED
F1: Number of persons engaged as at 1st January, 2022	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F2: O/w Female	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F3: O/w Male	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F4: Number of persons engaged as at 30th June, 2022	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F5: O/w Female	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F6: O/w Male	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F7: Number of persons engaged as at 31st December, 2022	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F8: O/w Female	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
F6: O/w Male	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

SECTION G

ESTABLISHMENT RECORDS

ESTABLISHMENT ACCOUNTING RECORDS

The accounting details of the establishment are critical for two main reasons. This information will help classify establishments into formal and informal and determine where enumerators will go for the detailed accounting information of the establishment at the second phase of IBES.

G1: The enumerator should ask for the year in which the establishment commence operations?

--	--	--	--

G2: The enumerator should ask the respondent where the accounting records of the establishment are kept. The enumerator should enquire whether the accounting records are kept in the establishment, the head office or managed by another establishment. The enumerator should write the code that corresponds to the response in the box provided.

G3: The enumerator should ask which type of accounting records are kept by the establishment. An establishment is considered to be formally keeping records if it has professionals managing the accounting records. However, if the establishment does not have professionals keeping records then it is considered to be informally keeping records. The enumerator should identify establishments that do not keep records. The enumerator should write the code that corresponds to the response in the box provided.

1. **Formal Accounts records** 2. **Informal Accounts records**

G4: The enumerator should ask the respondent whether the establishment operates for profit or not for profit.

The enumerator should write the code that corresponds to the response in the box provided.

SECTION H

IDENTIFYING GREEN FIRMS

This section seek to find out establishments that are into production of environmental outputs (goods and services for sale) and environmental processes used within the establishment in the year 2022. This section will help identify the green and conventional establishments in the Ghana.

Please select Yes/No for the questions below: Yes No . If “Yes “or “No”, please mark one

Last year (2022), did your establishment use, produce or practice any of the following to reduce pressures on the environment?

H1. Generate or use electricity, heat or fuel from renewable sources (wind, solar, biomass etc.) or manufacture equipment that produce renewable energy?

Enumerators should ask if the establishment produce Environmental goods and services or use (use within the establishment, not for sale) any goods and services or technologies and practices aiming at reducing or eliminating pressures of your establishment on the environment or to make more efficient use of natural resources in the production process. Environmental goods and services are those goods and services whose main purpose is environmental protection and/or resource management. They include research and development, installation and maintenance services. Examples manufacturing of wind turbine equipment, solar heating equipment, photovoltaic energy equipment, biomass-fired industrial boilers, energy efficient manufacturing equipment, electrical appliances, buildings and vehicles; energy efficient lighting, including their maintenance and servicing) and improve the energy efficiency of buildings and the efficiency of energy storage and distribution (such as Smart Grid technologies)

H2. Prevention, reduction and elimination of toxic, pollutants and other hazardous waste?

Enumerators should find out if the establishment produce technologies (goods) or provide services for SALE which prevent, reduce eliminate pollution and air emissions such as elimination of creation of pollutants or toxic components; removal pollutants and hazardous waste from environment; eliminate the creation of waste materials (e.g., water and sewage treatment plants, equipment for treatment of industrial waste water and sewage, waste-to-energy facilities) and elimination of pollution by using manufacture of waste gas absorbers, waste gas flare/incinerator, catalytic converters, pollutant recovery condensers, filters, absorbers, more-efficient wood-burning stoves, manufacturing of rechargeable batteries, etc.

Also, if the establishment uses technologies or practices to reduce or eliminate the creation or release of pollutants or toxic components as a result of your operations or to remove pollutants and hazardous waste from environment (e.g., carbon dioxide, methane, carbon monoxide, nitrogen oxides, herbicides and pesticides, heavy metals, radioactive contamination, etc.).

H3. Conservation and preservation of the environment by planting trees, recycling, ecotourism etc.?

Enumerators should find out if the establishment produce technologies (goods) or provide services for SALE which protect environment and conserve natural resources such as protection of air, soil, ground and surface water, aquatic resources, timber resources, water resources, mineral resources, biodiversity and wildlife (includes growing and planting trees for reforestation; ecotourism, etc.), remediation of soil,

land management, monitor and control the quality of air, water, soil and research and development on environmental protection. Also if the establishment use technologies or practices to reduce the withdrawals of natural resources, or eliminate the creation of waste material as a result of your operations (e.g., collecting and reusing or recycling of glass, metals, paper, rubber, textiles) and waste water; composting solid waste, remanufacturing of waste material, etc.), operations to protect and conserve natural resources i.e. protection and remediation of soil, groundwater and surface water; reduction of water or other resource consumption (including by using storm water); protection of biodiversity and landscapes; protection and remediation of timber resources (includes sustainable forestry practices); protection and remediation of aquatic resources; etc.

H4. Manufacture or use of inorganic fertilizers, pesticides, antibiotic for livestock, and genetically modified organisms?

Enumerators should find if the establishment produce agricultural products (crops, vegetables, fruits, meat, dairy products, cotton, and wool) without or with very limited use of chemical fertilizers and pesticides, plant growth regulators such as hormones, antibiotic use in livestock, genetically modified organisms, artificial insemination, etc. Also, if the establishment produce agricultural products using explicit climate smart or organic agricultural practices which require natural and organic inputs and/or well-defined techniques such as no tilling etc.

SECTION I

DIGITAL FINANCE

This section seeks to collect information on payment system by the establishments. Digital finance is the delivery of traditional financial services digitally, through devices such as computers, tablets and smartphones. Digital finance has the potential to make financial services accessible to underserved populations in areas that lacked physical infrastructure for these services.

Please select the correct response for the questions below:

I1: The enumerator should ask, for business transactions, which payment systems is used by the firms use or accept? (Multiple responds allowed) .If the answer to I1 = 1, 2, 3 Skip to I3, IF I1 = 4 GO TO I2a

1. **Cash:** is money in the physical form of currency, such as banknotes and coins.
2. **Cheque:** is a document you can issue to your bank, directing it to pay specifies sum mentioned in digits as well as words to the person whose name is borne. Example is shown below:



3. **Bank transactions:** is a record of money that has moved in and out of your bank account.
4. **Digital finance** (broadly: personal mobile money, merchant payments/MoMopay, QR code, POS device, zepay, e-zwich, etc.)



5. Other.....

I2a. The enumerator should ask, which way the establishment use or accept DF? (Multiple responds allowed)

1. Pay employees (B2E)
2. Pay bills (electricity, water, taxes, etc.) (B2G)
3. Pay input suppliers (B2B)
4. Accept as payments for output to customers/buyers (C2B)
5. Accept loans on it (B2B)
6. Accept payments from government on it (G2B)
7. Other.....

I2b. Which specific DF technologies do you use or accept? (multiple responds allowed)

1. Personal mobile money (any)
2. MoMopay / Vodafone Pay
3. QR code payment systems (QR Code, GhQR, etc.)
4. POS device
5. Payment aggregators or platforms (fintechs + eg. zeepay, GhanaPay, etc.)
6. Card payments (e.g., debit card, credit card, visa card, e-zwich, etc.)
7. Internet and/ Mobile Banking
8. Other

I2c. The enumerator should ask, why the establishment adopted and/or use DF (perceived benefits)? (Multiple responds allowed)

1. Don't have to travel to pay or receive payments
2. Reduce theft of business money (better liquidity or money management)
3. We can reach out and deliver to a larger market both near (cash + non-cash customers) and far (e-commerce)
4. Easy to get input supplies or provide business output on credit (inter-business trade credit)
5. It builds a credit history for future credit acquisitions: **Credit history is a record of how a person handles money and debt, including credit card accounts and other loans.**
6. It is better liquidity or money management
7. 6. Other.....

I3. The enumerator should ask why the establishment did not adopted and/or not use DF (perceived costs)? (multiple responds allowed)

1. **Lack of knowledge about how it works** : not having the information or idea about something DF works
2. **Uncertainty about returns or benefits of using DF**: not having knowledge relating to the amount of money that the business is going to earn in a given period or benefit of using DF.
3. Perceived future taxation of business because more formalized with DF:
4. My business partners (suppliers/customers/competitors etc) have not adopted DF yet
5. Concerns about fraud on DF technologies
6. 6. Perceived higher cost/charges on DF transactions
7. Too expensive / costly to acquire a DF technology (e.g., new POS machine, new service phone, etc.)
8. Other (e.g., don't trust DF services, too expensive to onboard DF, etc.).....

SECTION J

UNIQUE IDENTITY OF ESTABLISHMENT

This section seeks to collect information on unique identification number by establishments. The information in this section is critical since it will give each establishment a unique identity. Additionally, this information will help during selecting samples to conduct economic and other related surveys.

J1: Tax Identification Number (TIN)

Fill in the space below with the establishment's TIN number. TIN numbers are 11 digits. Eg. P0008509607, C0015670981 and V0200768131. The one starting with P are for individuals, C is for companies and V is for government institution or NGO's.

J2: Ghana Card of owner / CEO

Fill in the space below with the owner's Ghana Card number.

SECTION K:

REVENUE (Gh¢)

This section seeks to collect information on revenue obtained by the firms establishments. The information in this section is critical since it serve as the basis for obtaining the size of firms.

The enumerator should ask, the category in which establishments annual revenue belong in 2022. **Select one of the categories.**

- | | | |
|--|--|--|
| 1. 1 - 50,000 <input type="checkbox"/> | 2. 50,001 - 100,000 <input type="checkbox"/> | 3. 100,001 - 150,000 <input type="checkbox"/> |
| 4. 150,001 - 200,000 <input type="checkbox"/> | 5. 200,001 - 500,000 <input type="checkbox"/> | 6. 500,001 - 1,000,000 <input type="checkbox"/> |
| 7. 1,000,001 - 5,000,000 <input type="checkbox"/> | 8. 5,000,001- 6,000,000 <input type="checkbox"/> | 8. 6,000,001-- 10,000,000 <input type="checkbox"/> |
| 9. 10,000,001 - 15,000,000 <input type="checkbox"/> | 10. 15,000,001 - 18,000,000 <input type="checkbox"/> | |
| 10. 18,000,001 - 20,000,000 <input type="checkbox"/> | 10. 20,000,001 and above <input type="checkbox"/> | |

CHAPTER NINE

TABLET AND CAPI USE

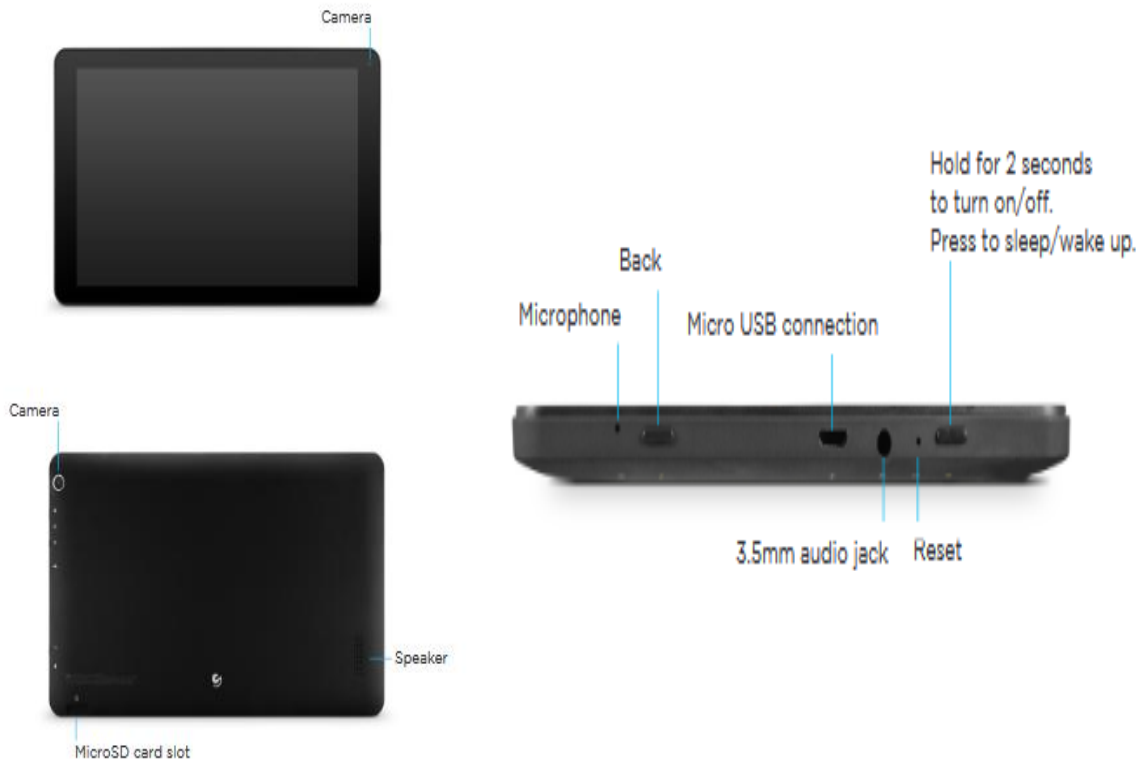
Introduction

Advancement in Information and Communication Technology, predominantly in mobile computing devices and wireless connectivity have brought up new approaches for data collection which are faster and collect data that is of higher quality than the traditional paper-based methods. Mobile electronic devices, such as laptop, tablets, smartphones and Personal Digital Assistants (PDAs) have proved to reduce data capture and processing time, minimize errors, near real-time data transmission and monitoring thereby improving data quality and data capture over the Paper Assisted Personal Interviewing (PAPI) method. This document is in two parts, The Hardware (Tablet) and the Software (CAPI Application). It contains a complete guide and description overview of a tablet and Application used for the 2023 IBES.

General overview of a tablet

What is a tablet?

A tablet is a wireless, portable personal computer with a touchscreen interface which uses the touchscreen as a primary input. The tablet *form factor* is typically smaller than a notebook computer, but larger than a smartphone. The applications that the tablet use can be Android, Windows or Apple operating system. Features of a tablet



Accessories



SD Card



Android
Charger



Power Bank



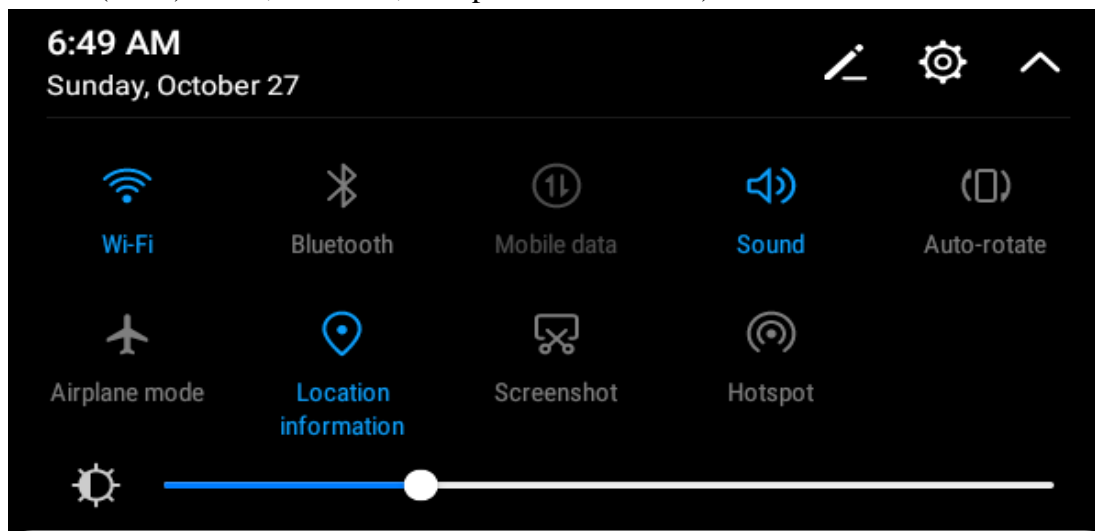
Android Cable

Accessories are peripherals that are added to the tablets to aid its functionality for a successful IBES data collection exercise. These are SD card, charger, power bank, android cable

- **ANDROID CHARGER:** This is an accessory that is attached to the tablet to enable you to charge the tablet battery whenever the battery life is low.
- **SD CARD** (Secure Digital **Card**): It is a type of memory card typically used in tablet or smartphones which is slotted into the tablet purposely for backups.
- **POWER BANK:** It is a portable charger designed to recharge your cell phones, tablets and other electronic gadgets.

Status bar (Icons)

The Status bar is located at the top of the home screen which provides device information (such as Internet Network (WiFi) status, Location, Hotspot and Bluetooth).



Tablet key functions needed for 2023 IBES CAPI application

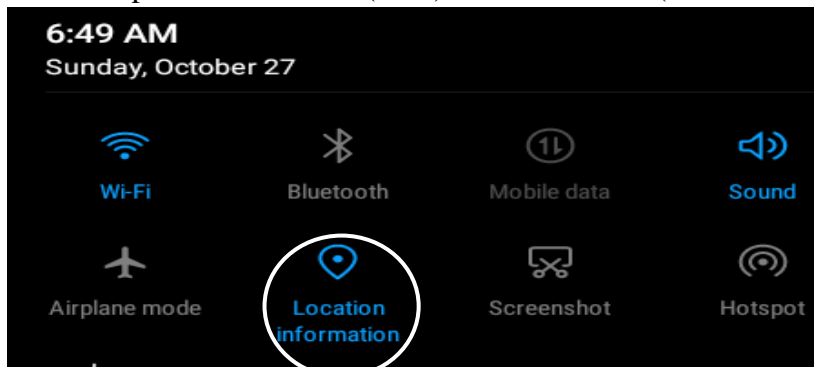
There are some key functionalities of the tablet that the Enumerator and Supervisor will be using throughout the field exercise. These functions are the *Location (GPS)*, *Bluetooth*, *Mobile Data* and *WiFi*

Location (GPS)

Location is a Global Positioning System (GPS) that allows the enumerator to pick a coordinate of every structure that will be listed. The accepted accuracy of a structure coordinate should be within 5 meters range.

How to turn on Location (GPS)?

- Swipe down from the top of the Tablet Home Screen to view the status bar
- Tap on the Location (GPS) icon to activate (The icon will turn to Green)



Picking accurate GPS

Coordinates (Refer to Section 9.16,

number 9)

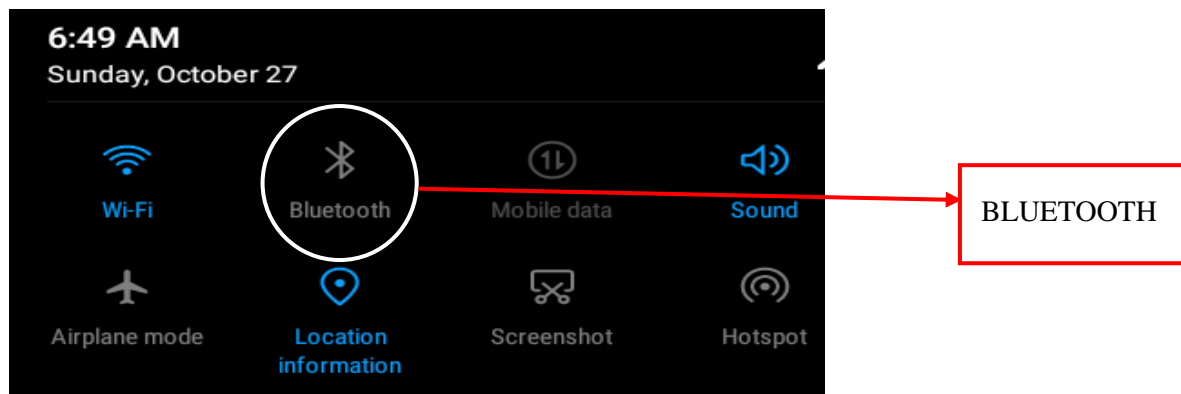
- Do not pick GPS coordinates under cloudy/dark weather
- Do not move the tablet while GPS is reading
- Always stand in the middle or in front of the structure to pick the GPS coordinate
- Never pick GPS coordinates under a shade or a covered space

Location Accuracy Settings

- Open your device's Settings app.
- Tap **Location**.
- Tap **Advanced** > **Google Location Accuracy**.
- Turn **Improve Location Accuracy** on or off

Bluetooth

Bluetooth is a short-range communications technology that connects the tablet wireless to another tablet. This function allows first level data transmission (Synchronization) among team members (Enumerator-to-Supervisor/Supervisor-to-Enumerator).

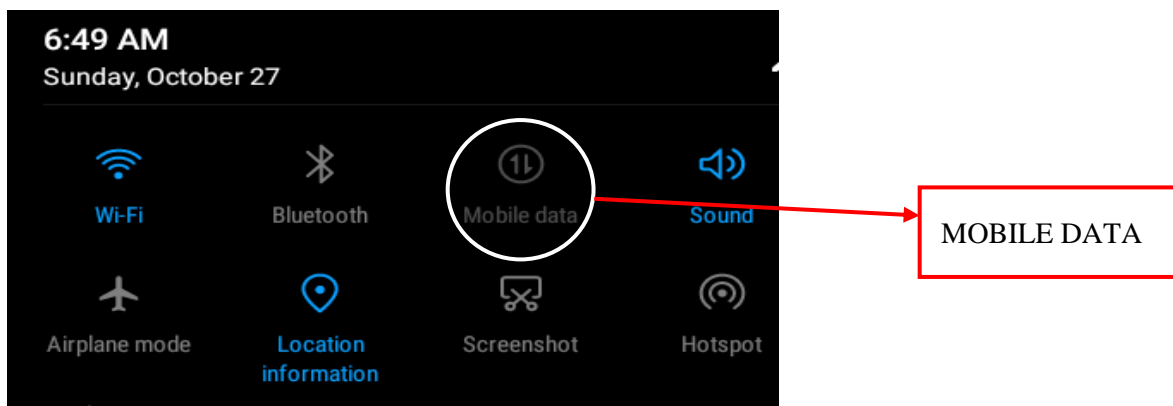


Using Bluetooth to pair your Tablet

- Use the status bar to turn your device's Bluetooth on/off. From a Home screen, Swipe down the status bar to display the notification panel.
- Tap on the Bluetooth Icon to turn Bluetooth on or off.
- When Bluetooth is first turned On, it scans for nearby Bluetooth devices and displays them for pairing
- Make sure that the target device is discoverable so that your device can find it.
- Tap the name of the target device when you see it displayed in the Bluetooth devices section. Your device automatically tries to pair with the target device.
- Always make sure that, the Bluetooth is turned on before pairing
- The Bluetooth communication range is approximately 30 feet (9 metres).
- Both the sender and the receiver should be ready concurrently
- Without pairing the two devices, Bluetooth data transfer from Enumerator to Supervisor will not take place.

Mobile data

Mobile data is Internet content delivered to mobile devices such as tablet and smartphones over a wireless cellular connection. This allows the field officer to transmit data to the Central Server (HQ) via internet connection

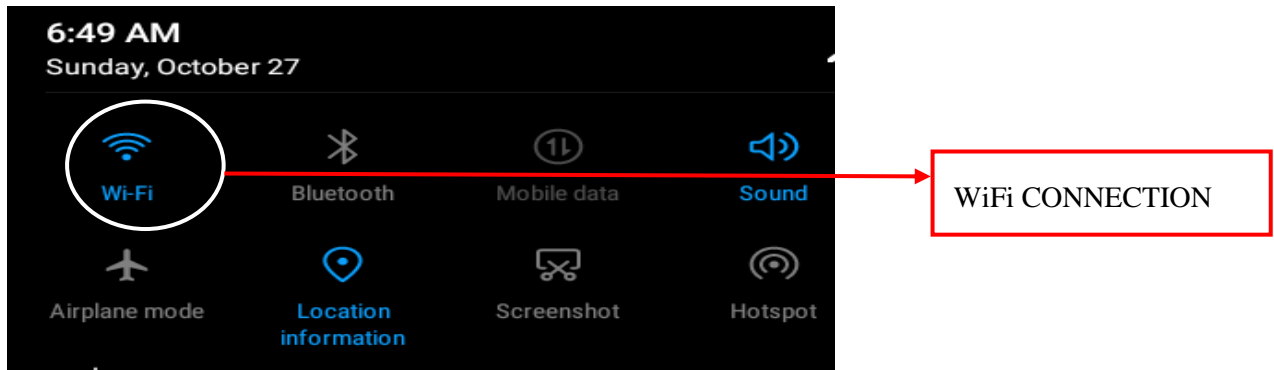


How to turn on/off mobile data

- From the Home screen, swipe down the status bar to display the notification panel
- Tap on the Mobile Data Icon to turn it on or off
- A sim card is required in order to have a base connection
- Check you have enough internet data bundled (use *124# on all networks to check)
- Always check the strength of the Network signals (Edge, 2G, 3G, 4G). Network signal strength of 3G or 4G is appropriate to enable you send the data.
- The strength of the Internet connection varies depending on the type of network connected or available

WiFi

This allows you to connect to the Internet through Hotspot or another source



How to turn on/off WiFi

- From a Home screen, swipe down the status bar to display the notification panel
- Tap on the WiFi icon to turn on to see available networks and connect.

WiFi Networks Connection Troubleshooting – Samsung Tablet

To scan for a Wi-Fi network and connect to it:

- i. From a Home screen, tap **Apps** > Settings. **Or**
- ii. Drag the Status bar down to display the Notification panel. (generic)
- iii. Tap **Connections** > **Wi-Fi**, and then tap **On/Off** to turn on Wi-Fi. **or**
- iv. Tap on Wi-Fi icon to turn on Wi-Fi after the status bar is dragged down

When Wi-Fi on, your device automatically scans for available networks and displays them.

- i. Tap the network you want to connect to.

When you select an open network, you are automatically connected to the network. Otherwise, enter a password to connect.

WiFi Networks Connection Troubleshooting – Huawei Tablet

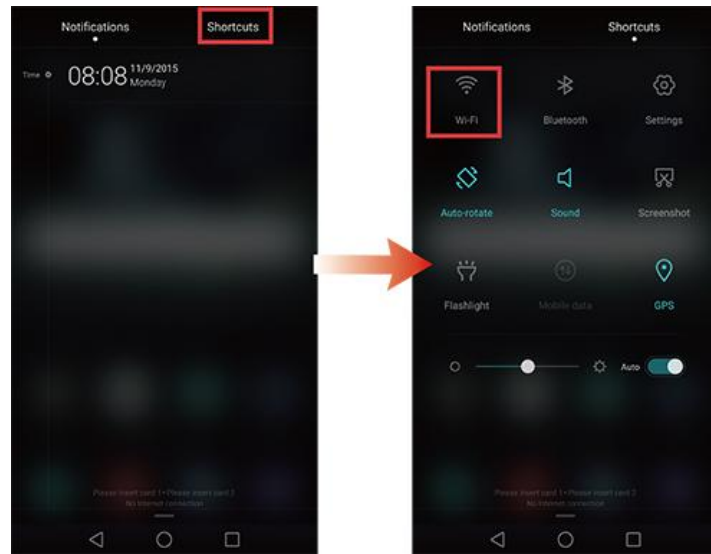
Method 1:

Swipe downward from the status bar open the notification panel.

On the Shortcuts page, touch and hold Wi-Fi to enter Wi-Fi settings screen.

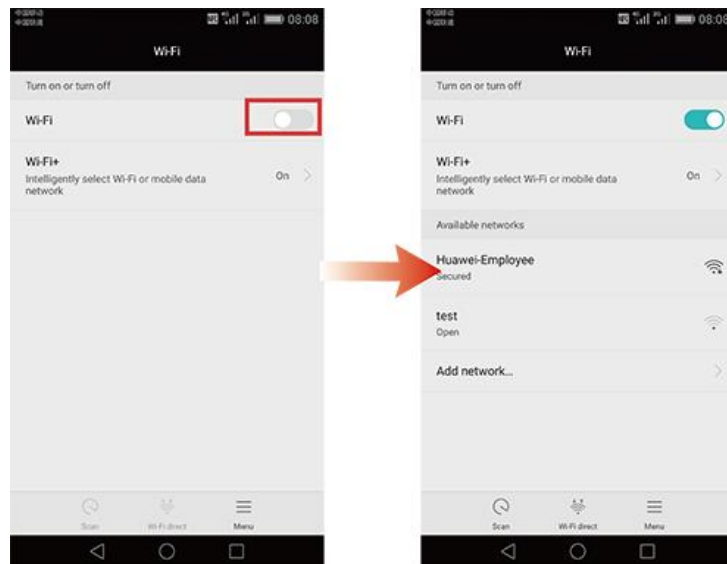
Swipe Wi-Fi switch to turn on Wi-Fi.

The phone will search and list the available WLAN networks



to
Wi-

Tap the WLAN network that you'd to connect. If you've chosen an encrypted network, you need to type password to connect



like
in

Date and time

Time and Date of interviews are automatically recorded. All age and other computations are linked to the system date and time. The Date and time can be checked from the **logout screen, Home Screen** or at the **Top right** of the screen.


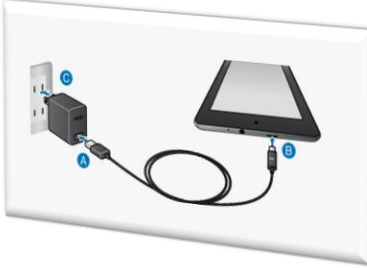


How to Set date and time (Steps Below)

- i. From a Home screen, tap **app** > on Settings >> locate **System** (Touchmate), General >> **Device Manager** (Samsung), **Advanced Settings** (Huawei)
- ii. >> Select Date & Time
- iii. Select Menu >> **Date and time**
- iv. Switch Automatic **date & time** off or uncheck
- v. Switch automatic **time zone** off or uncheck
- vi. Select time zone >> set time zone to Azores (Touchmate and Samsung), Accra Ghana (Huawei)

- vii. To **set** the **time**, scroll down, and select **Time**. Use the scroll key to **set** the **time**, and select OK
- viii. To **set** the **date**, scroll down, and select **Date**. Use the scroll key to **set** the **date**, and select OK

Charging your tablet battery

Battery power life is measured by the amount of power in the **battery** at a point in time. The run time of the battery power depends on the level of which the battery has been charged. Users should ensure that tablets are fully charged before work starts.

	Battery full: Battery is fully charged.	
	Battery low: Battery is low.	
	Battery charging: Battery is charging.	

- Unplug the tablet and the charger from the electrical plug when it is fully charged
- Use the AC power supply defined in the specifications of the charger. An improper power voltage may cause a fire or a malfunction of the charger.
- If the power cable is damaged (for example, the cord is exposed or broken), stop using the cable at once. Otherwise, it may lead to an electric shock.
- Do not leave your tablet plugged all the time (i.e. overnight). *Overcharging is bad for the battery.*




How do I reduce battery power drain on the tablet?

If the battery on your tablet is draining very fast there are some few things you can do to improve battery performance.

- Make sure that the tablet is fully charged in the morning before you start work. Fully charging your tablet each evening will improve battery performance during the workday.
- Make sure that you put your tablet into sleep mode or turn it off when you are not using the tablet to save battery power.
- You can also reduce the screen brightness to reduce battery drain
- Some functions such as Bluetooth, WiFi, Mobile Data should be switched off (deactivated) to reduce power consumption

Navigation Icons

The following icons are commonly used on the Home screen or other application screens. Touch the icons to perform the following operations.

Touch...	To...
	Return to the previous screen.
	Return to the Home screen.
	Open the list of recently used applications and running applications.

Rules governing tablet use for fieldwork

Enumerators must adhere to GSS acceptable use policy and stated rules at all times.

- The Tablet and Accessories are properties of GSS and you are responsible for taking care of them.
- The primary purpose of assigning the tablet is for 2023 IBES field work alone; *usage of tablet for any other purposes is strictly prohibited*
- Each tablet has been prepared for one enumerator and should be used by that enumerator alone.
- Never create a password to lock the screen
- Do not attempt to upgrade any application on the tablet or install any application.
- No Supervisor/ Enumerator is allowed to repair or to authorize repairs of a damaged tablet
- Do not delete any folders or files on the tablet
- Do not give it to children to use it to play
- Promptly report any lost or stolen IT assets
- Don't attempt send data off the device (Ensure confidentiality at all time)

Tablet and accessories care and use

Things to avoid when handling tablet and accessories

- i. Do not expose the tablet to water or any liquid substance (e.g. Rain, drinks, water etc.) (If any foreign object or liquid enters the device, stop using the device immediately, power it off, remove all the cables connected to it, and then contact the IT Officer)
- ii. Do not place the tablet on a floor, on bed or in a chair
- iii. Do not expose the tablet to dust or dirt
- iv. Never place objects on top of the tablet
- v. Do not expose the tablet to excessive sunlight
- vi. Do not slam the tablet when you are putting it down
- vii. Never place the tablet on rough or sloped surfaces
- viii. Keep the device far from sources of heat and fire, such as a heater or a candle
- ix. Do not subject the tablet to magnetic fields
- x. Charge whenever and wherever there is opportunity (At night, in the car, etc.)
- xi. During thunderstorms, power off the device, and then remove all the cables connected to it to prevent it from getting damaged due to lightning strikes.
- xii. Do not use the device where inflammables or explosives are stored, for example, in a gas station, oil depot, or chemical plant. Otherwise, explosions or fires may occur
- xiii. Keep the tablet out of the reach of children

- xiv. Do not put the Tablet in high temperature places (over 40°C), especially not in a car with the windows closed in the sun
- xv. Press the Tablet's buttons gently. Pressing them or the screen too hard can damage the Tablet.

Introduction to CAPI

What is CAPI?

CAPI (Computer-Assisted-Personal-Interviewing) is a technology that uses mobile devices (such as personal digital assistants, laptops, tablets and smartphones) and Internet or cellular networks to assist Enumerators in collecting data in the field. Interview Data is collected using electronic questionnaires on mobile devices and transmitted to a central server (Database) for real-time quality control and analysis. CAPI also offers active data collection management tools such as automatic progress reports, which allow project managers to monitor and organize fieldwork efficiently.

Why use CAPI in 2023 IBES data collection?

Use of CAPI eliminates several operational and data processing steps in traditional face-to-face paper interview data production (such as printing, data entry and physical management of the questionnaires). This reduces the time lag between data collection and data analysis. Overall data quality is improved because the use of electronic questionnaires enables automatic skip patterns to check entry quality during the interviews. Data validation can be done during data collection, as the information is ready for statistical analysis as soon as an interview is completed.

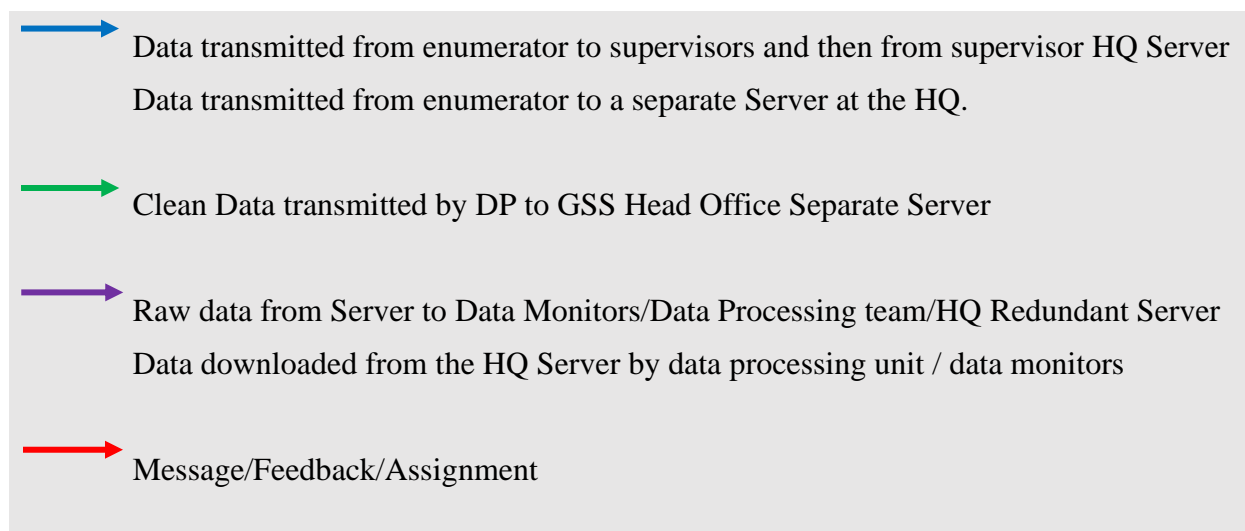
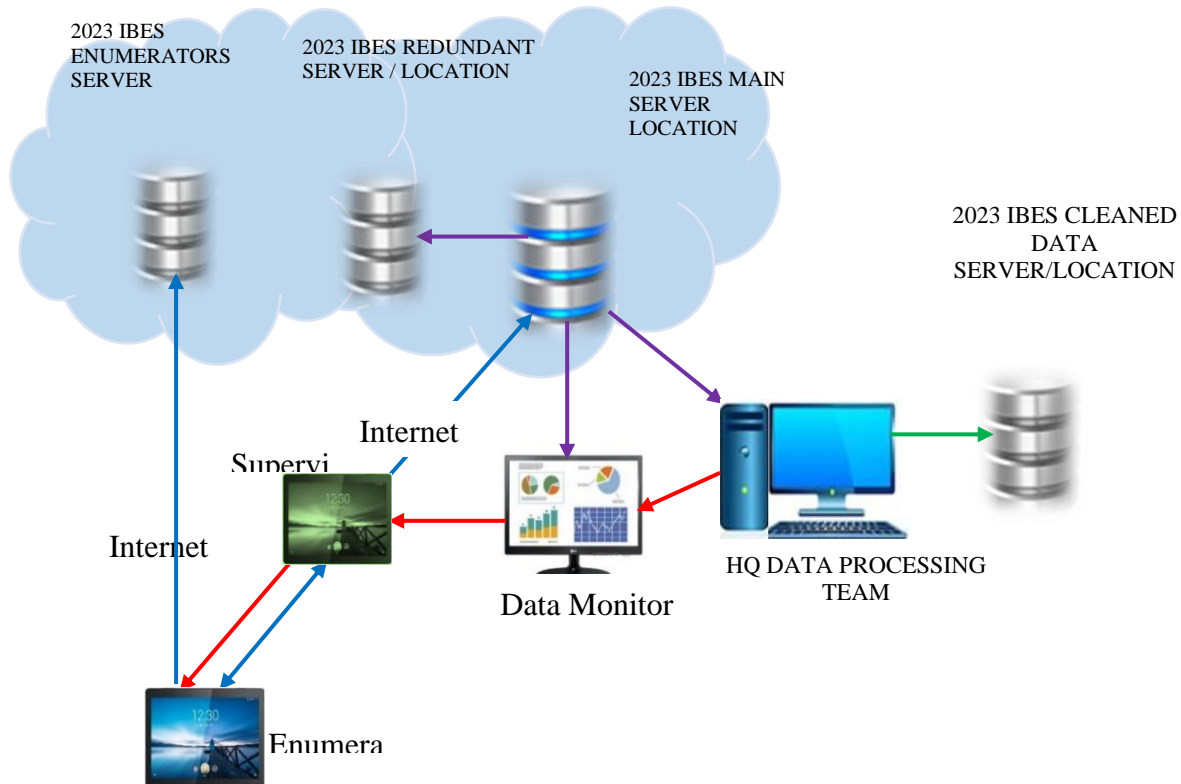
Benefits of CAPI over paper questionnaire for data collection

- A. Quality
- Computes skip & codes automatically
 - Data constraints are programmed
 - Incorporates Multimedia
 - Enables use of GPS functionality
 - Survey progress monitoring in real time for quality control and analysis
 - Capturing of images, sound, video, GPS position, etc.
 - Consistency checks
- B. Timeliness
- Reduces the time lag between data collection and publication of results
 - Reduces data entry time
 - Real time data access
 - Fast, assisted by automatic in-built maps and manuals
- C. Cost
- Issues of Space for Data Entry Office resolved
 - Saves paper cost
 - Eliminates data entry cost

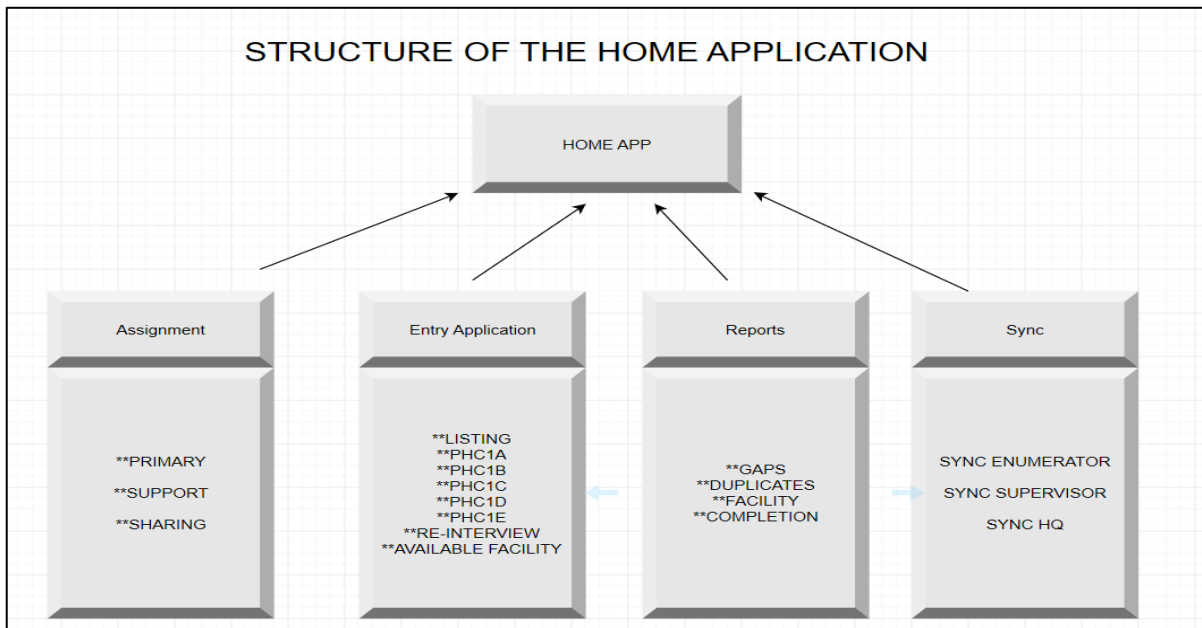
Data flow in 2023 IBES CAPI application operations

There are three ways of which data will be transmitted to HQ (Servers)

- The first level is between the Enumerator and Supervisor, where the data is transmitted (synced) via Bluetooth connectivity to the Supervisor's tablet for review.
- The second level is where the Supervisor sends the **Team's Data** to **HQ** (2023 IBES Main Server)
- The third option is an Enumerator syncing to the 2023 IBES Enumerators Server



Structure of 2023 IBES CAPI Home Application



The structure of the 2023 IBES CAPI home application consists of four core items:

- The Assignment
- Entry Application
- Reports
- Sync

Assignment: on the Application home menu sets the roles of field officers as a Supervisor, Primary and Supporting Enumerator(s). The 2023 IBES Application have three (3) levels of assignments:

- **Primary:** Is the assignment of an EA to an original Enumerator (*first to receive the EA*) by the Supervisor.
- **Supporting:** Supporting Enumerator to receive an assignment of EA from Supervisor that has already been assigned to a primary Enumerator. This action takes place when the primary Enumerator would not able to complete the work on schedule and needs support.
- **Sharing:** Is a distribution of a work that is supposed to be enumerated by the primary Enumerator. This action takes place where the primary Enumerator could not able to finish enumeration on time and needs support.

Entry Application: can be found on the menu. The Entry application provides the interface to access and start the various questionnaires. eWhen you launch the Entry application, it gives you access to open the various questionnaires, re-interview and available facility.

Reports: provide a check for the status of work of field officers (Enumerators and Supervisors).

Sync: enables Enumerators and Supervisors to transfer data.

Users of the 2023 IBES CAPI Application

There are two main users of the 2023 IBES CAPI application. The application has been designed with the **Supervisor** and **Enumerator** in mind, where each of them has their own functional menu. Supervisors will need **Internet** to **sync with HQ**, but Enumerators do not require Internet but rather need a **Bluetooth** to sync with Supervisor for data transmission. Table 9.1 has information on users' responsibilities.

Table 9.1: Users' specific responsibilities

Enumerator	Supervisor
Receive an assignment from Supervisor	Assign SA to a Supervisor
List all establishments	Assign work to Enumerators
Enumerate all establishments	Ensure all establishments are enumerated
Ensure all partial save cases are completed	Ensure all establishments are enumerated
Check for inconsistencies for corrections	Check for duplicate and partial saves cases for corrections and completeness
Sync data with Supervisor	Sync data with Enumerator
Sync data with HQ	Sync data with HQ
Receive update from Supervisor	Receive update from HQ
Report any problem encountered to the Supervisor	Run reports on completed EAs for omission and correction
Report IT related issues to Supervisor/DIT	Report IT related issues to DIT

2023 IBES CAPI application features and their functions

The IBES CSEntry application is designed to be straightforward to use, with features and options that users can easily manipulate. Upon opening CSEntry on the tablet, IBES 2023 data entry application is launched having different element. The screen element is the composition of the features of the 2023 IBES application interface. Below are the elements and their functions.

Login ID composition

In 2023 IBES application usage, login is required to get access to the main system or application.

A. Supervisor

Every Supervisor is assigned a unique ID, a **12-digit code** which is required before proceeding using the app. This is to ensure some level of accountability as to who does what at a point in time.

The composition of the Supervisor ID is made up of:

Regional Code = 00
District Code = 00
District Type =000
Supervisor ID (SA) =000
Status = 00

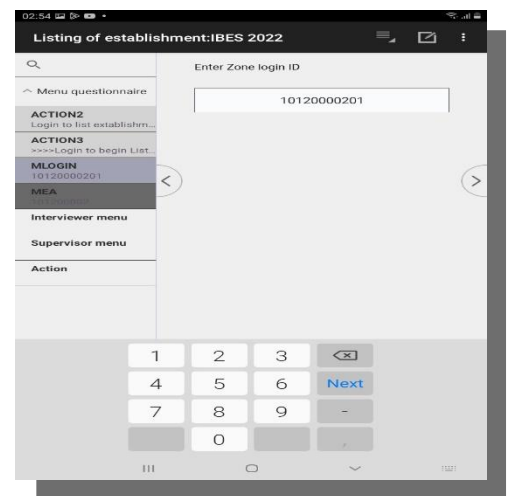


B. Enumerator

Every **Enumerator** is assigned a unique ID, a 12-digit code which is required to proceed using the app. This is to ensure some level of accountability as to who does what at a point in time. The composition of the ID is made up of:

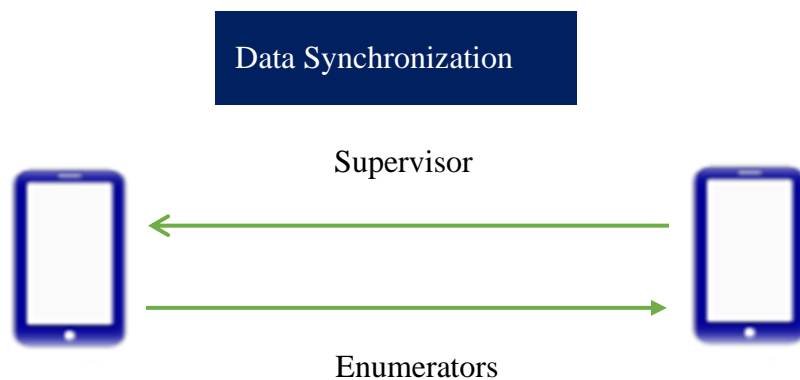
Regional Code = 00
District Code = 00
District Type =000
EA No. = 000
Status = 01

NOTE: Additional Enumerator(s) to support a primary Enumerator will be assigned a status 02, 03, 04, etc., depending on the number of Enumerators assigned.



Data synchronisation

The synchronisation function in this exercise allows the exchange of data with devices such as tablets, Smartphones etc. among team members. After collecting data in the field, you need to transfer the data collected from the Enumerator's through Supervisor's tablets back to central server (Database) to create a combined data file. This is done by sending the data from each Enumerator's device to Supervisor's tablet via Bluetooth for onward transmission to a central server. Enumerators are to make sure all data collected are synced with the Supervisor's tablet on daily basis for onward transmission to the central server on the same day.



A. Predictive text functionality

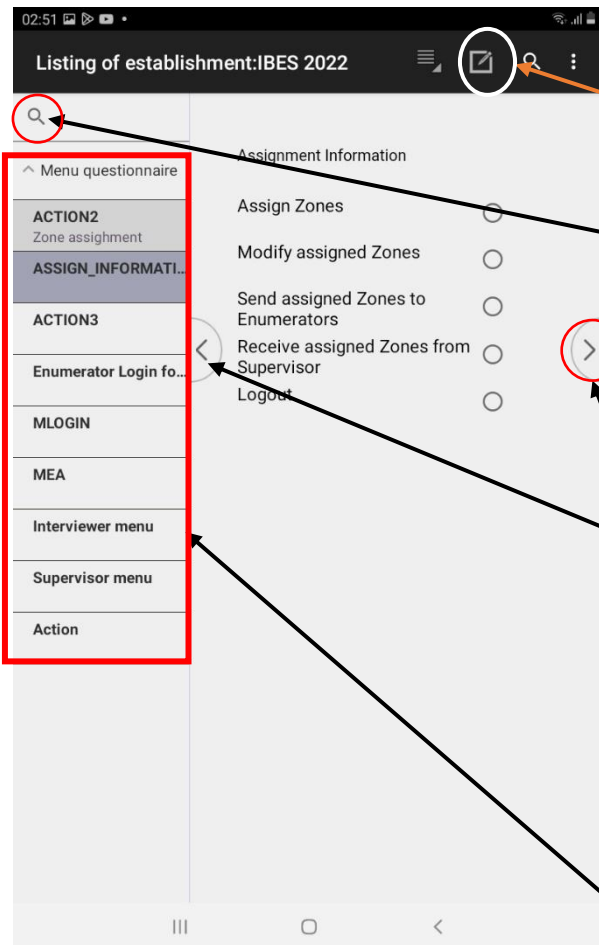
Predictive Text suggests words that match your text entries and can automatically complete common words. Predictive text can learn your personal writing style from your application.

B. Application versioning

A particular release of the CAPI application that is slightly different from other forms of the same CAPI App. Or a copy of CAPI Application that has been changed so that it is slightly different from the current one. The version helps you to know if there is a new upgrade or changes in the application.

Know the CAPI application

Basic Symbols and Types of Buttons



Note Box

Clicking on the pencil and paper icon, you will have the opportunity to type a field-specific note. If you do not want to add a new note, you can press the Android back button to cancel.

User Inputs: Search Box

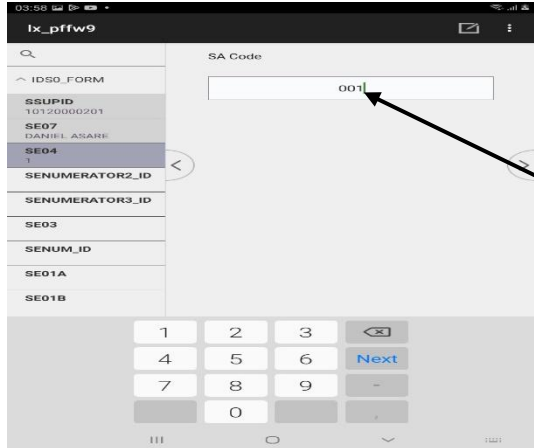
After clicking on the search icon, a space will appear where you can type a search query. The list of responses will automatically filter based on your search query. The full text of each response is searched, not necessarily starting from the first letter of the response.

Navigation Buttons

These are the left and right navigation buttons, which correspond to moving backwards or forwards in the data entry application. Clicking on the Android back button will close out of adding or modifying a case.

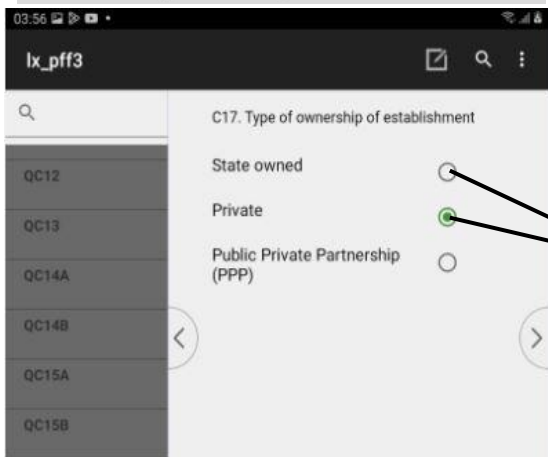
Case Tree

Clicking on the show case tree icon brings up the case tree. The case tree displays all fields that have been entered in the data entry application, showing the field label as well as the field response. If you click on a field, you will be taken to that field. This allows you to quickly move from one part of the questionnaire to another. Once the case tree is shown, clicking on the CS icon again will take you up the hierarchy of the data entry application.



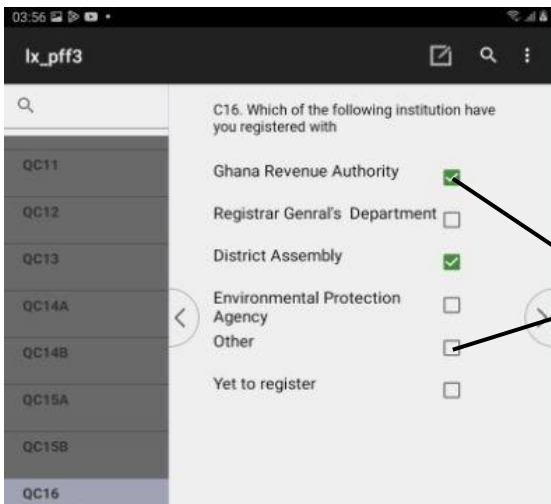
Text Box

To enter data in a text box field, simply type the response using the keypad on the screen. If a keypad does not appear automatically, tap on the field and a keypad will appear to start entry.



Radio Buttons

When presented with a list of radio buttons, you must select **one**, and **only one**, response. Click on the response label, or the corresponding radio button, to make your selection.



Check Boxes

This will allow you to select one or more (multiple selection) responses. Click on the response label, or the corresponding checkbox, to make a selection. Once you are finished making all selections, you can proceed to the next field.

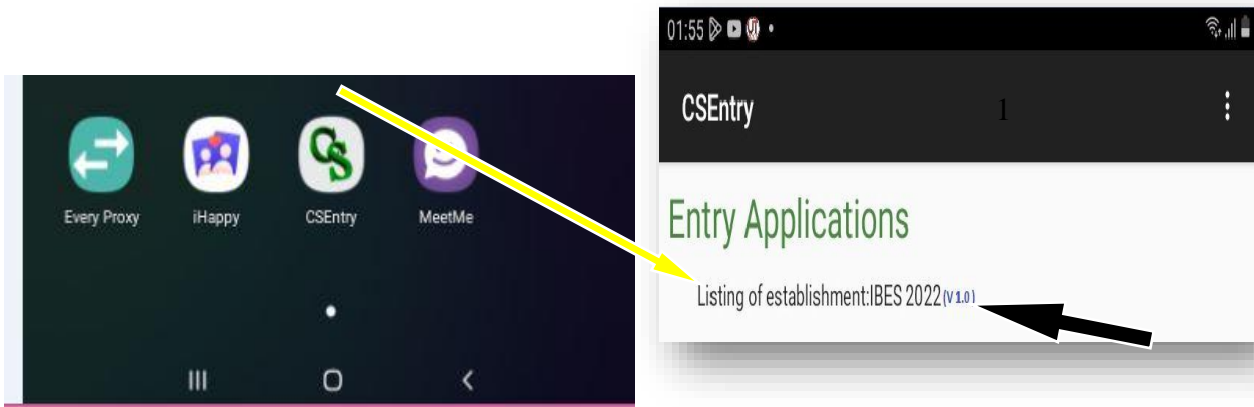
The 2023 IBES CAPI Application

CAPI supervisory and enumeration area assignment

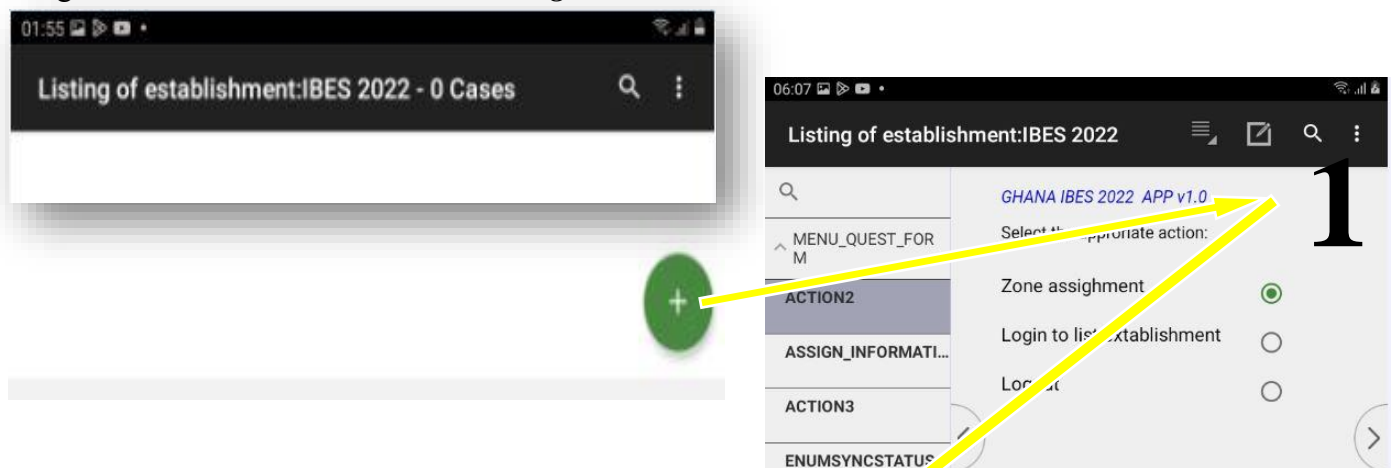
To create an assignment (account/SA) for Supervisor:

Launch the **CSEntry** Application on the tablet Home Screen to open the 2023 IBES CAPI software.

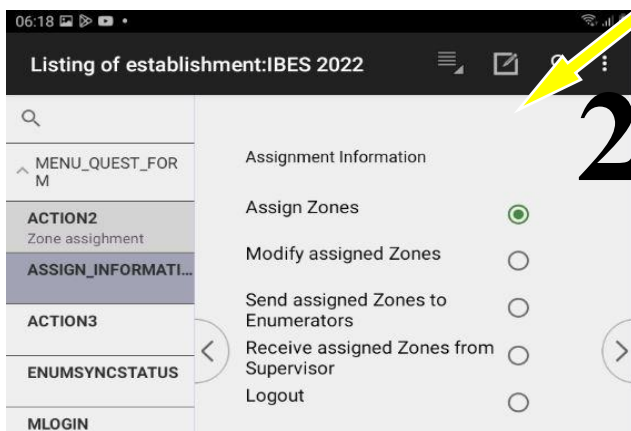
1. Tap on the 2023 IBES (version 1.0) to start the application.



2a. After starting the application, the next screen asks you to “Tap **Plus (+)** sign at the lower right corner that displace the next screen for ‘**Zone Assignment**’ or ‘**Login to list establishment**’ or ‘**Logout**’ As a supervisor choose “**Zone assignment**” and proceed to assignment information. Then select “**Assign Zones**”

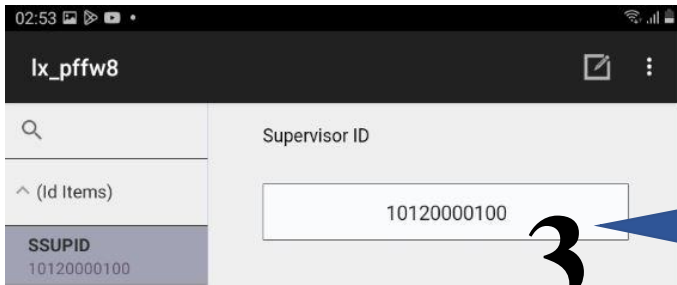


2b.



Key in your Supervisor ID to move to the supervisor menu to assign yourself the entire SA.

(3/4) Login with a Supervisor code (e.g. 010120000100) to access the supervisor menu. In the process, choose “**Create account**” to create your SA. If your login ID is incorrect choose “**Re-enter login**” to go back to login your ID.

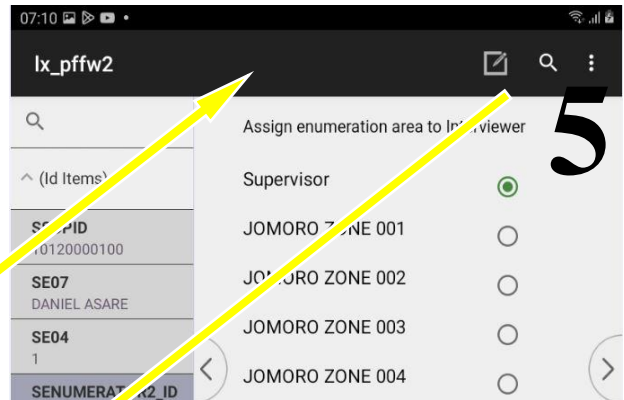
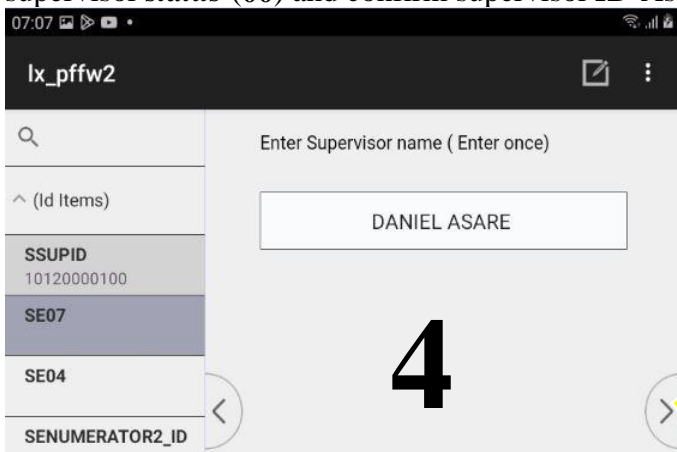


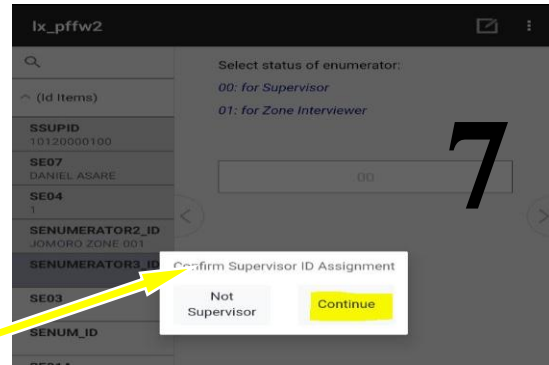
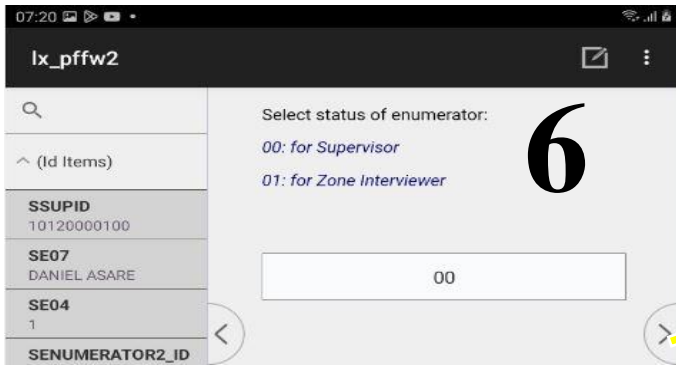
4

Login: Enter 12digit user
Login ID number to
Proceed

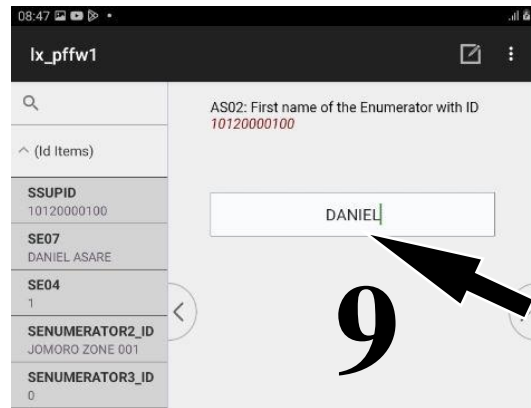
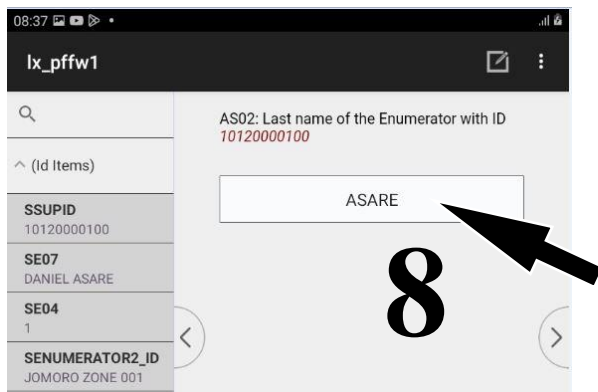
NOTE: This Login ID will

(5/6) You are required to enter your full name (Enter once), then proceed to select *Supervisor* then your supervisor *status (00)* and confirm supervisor *ID* Assignment

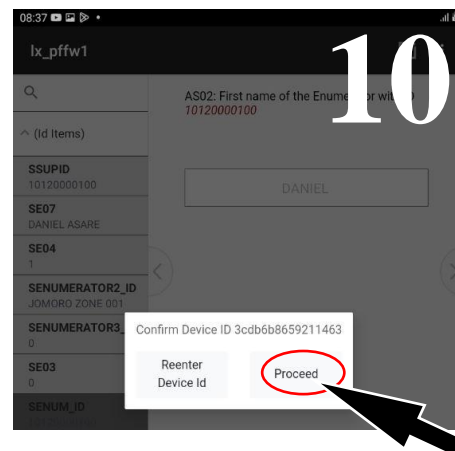




(5/6) You are required to enter your **Last name** and **First name** to identify your name with the account or SA.

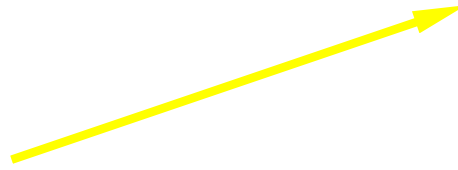
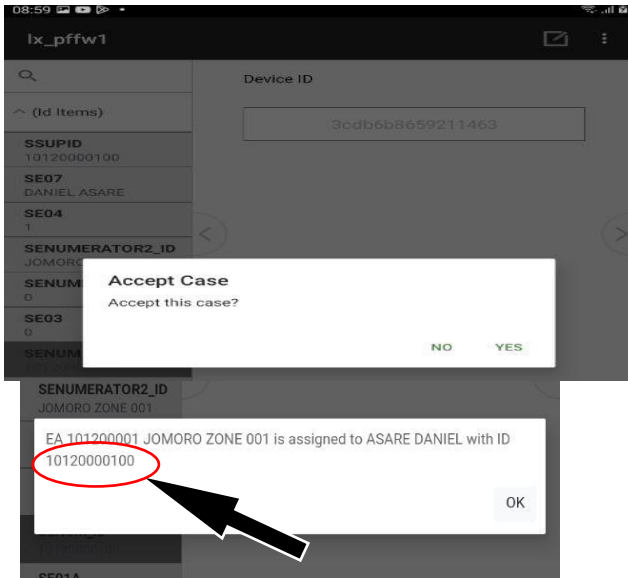


7. You will be required to also enter the **Device ID** of the tablet. Choose **No** and **Confirm** to automatically pick the device ID



(8/9) After keying the device ID you will be required to **Confirm** creating Supervisor account for [your name entered earlier].

Choose **Confirm** to finally create the account/SA. The press Ok to complete it.



Enumerator assignment by supervisor

The supervisor is required to assign Zones EAs to the enumerators after Supervisor's SA assignment. CAPI takes you back to the login screen.

9

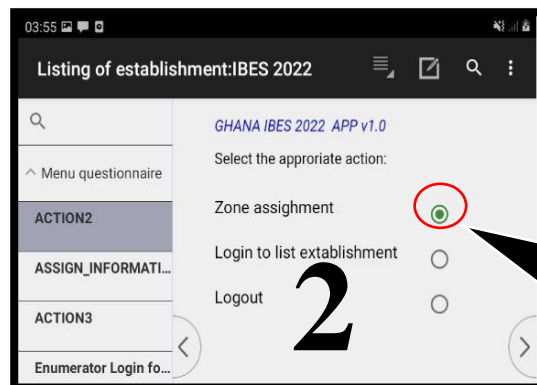
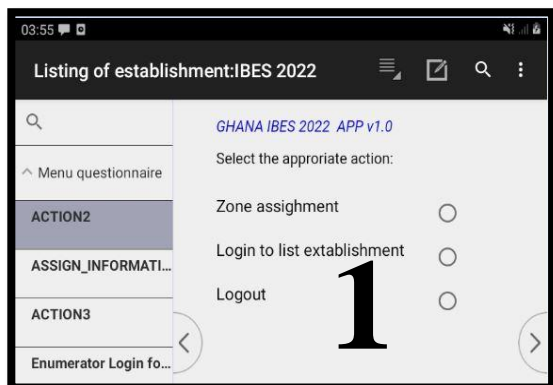
11



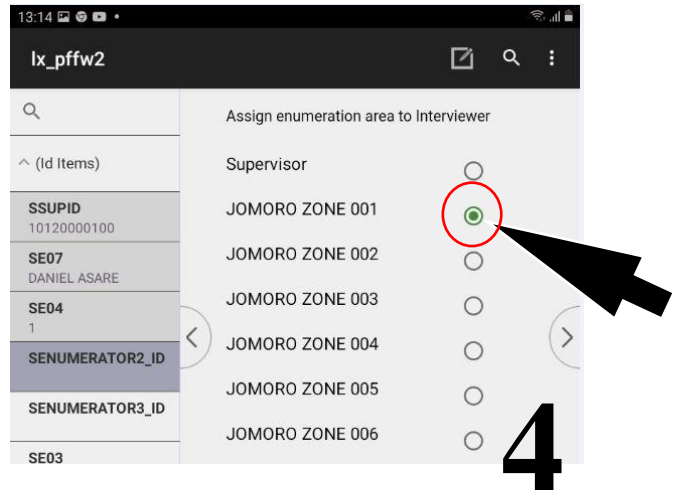
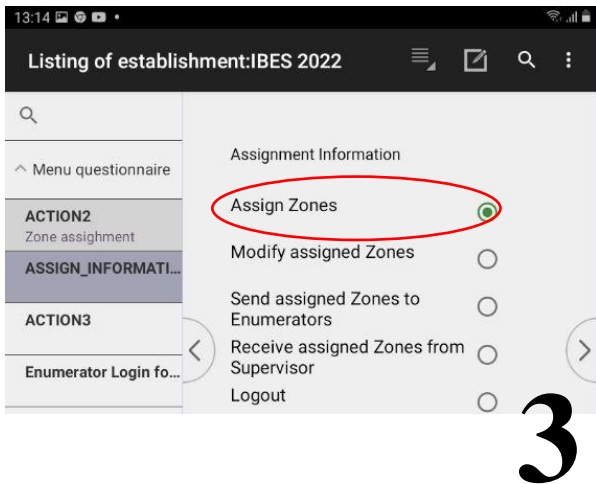
CREATING ZONE ASSIGNMENT (EA) FOR ENUMERATOR ON SUPERVISOR TABLET

(10) In creating the zone assignment for the enumerator, at the **Login** screen,

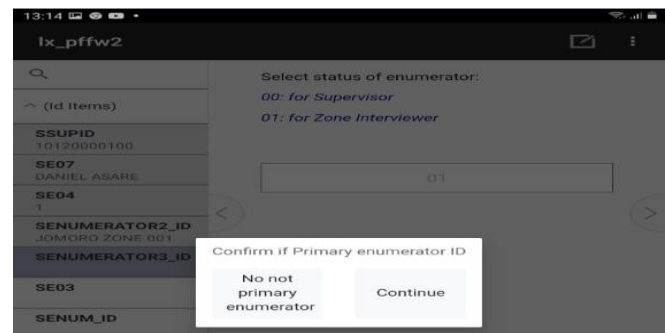
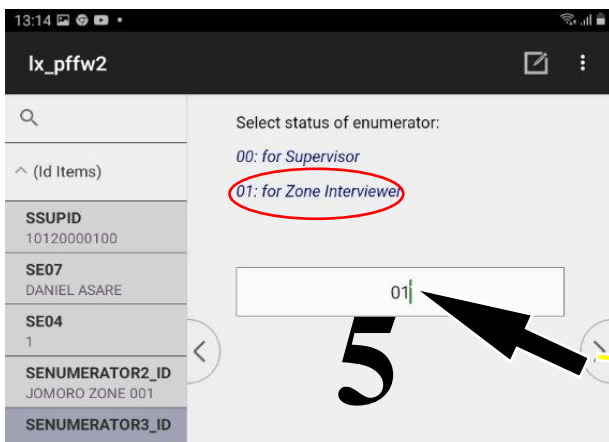
- Supervisor >>proceeds to the supervisor menu and create an assignment for the enumerator.
- At this screen, choose **“Zone assignment”** to move to the next screen.



(11) Move to the next screen to select the **Assign Zones** to be assigned to the enumerator. Select the **EA NAME** and move to the next screen.

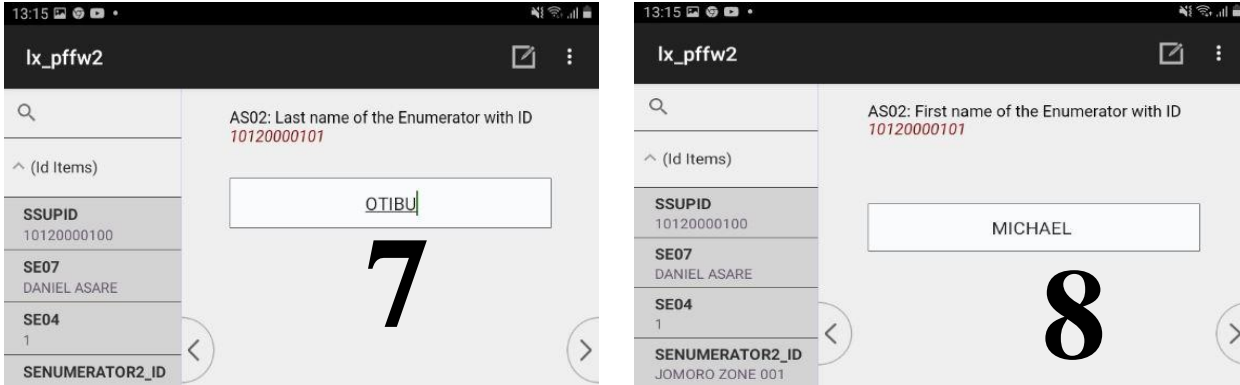


(12) The next screen enquires whether the enumerator is the **Primary Enumerator** or a **Support Enumerator**. If he/she is the Primary Enumerator, then select “**Primary enumerator**” and proceed to the next screen.

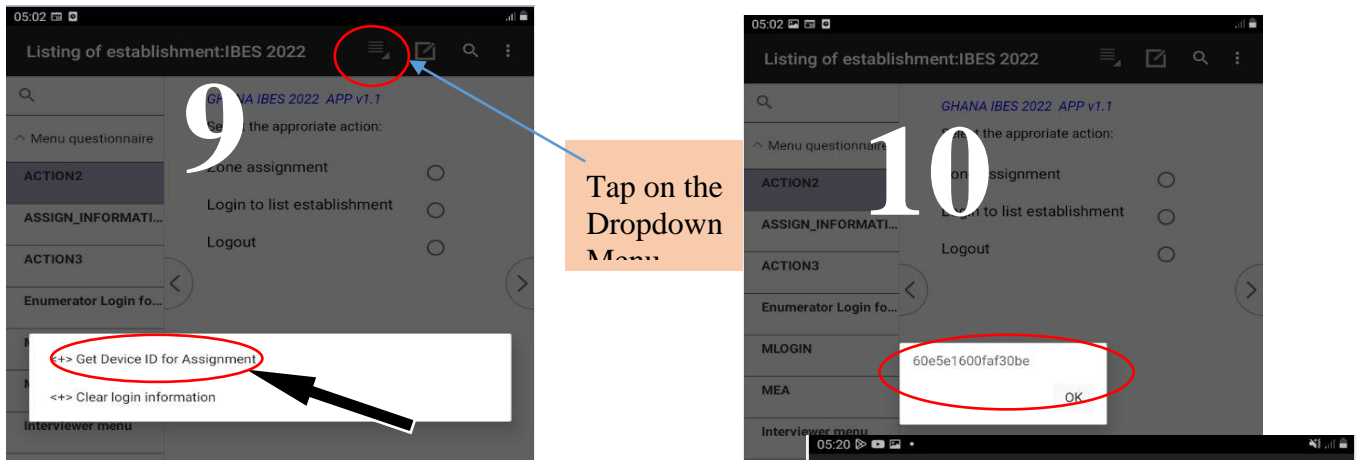


NOTE: Support Enumerator cannot be assigned an EA without assigning the **Primary Enumerator**

13/14) Here, you are required to enter the Enumerator's **last name** and move to the next screen to add the **first name**. This will enable the Enumerator to be identified with that particular EA.

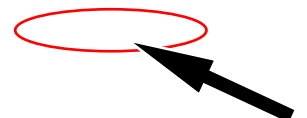
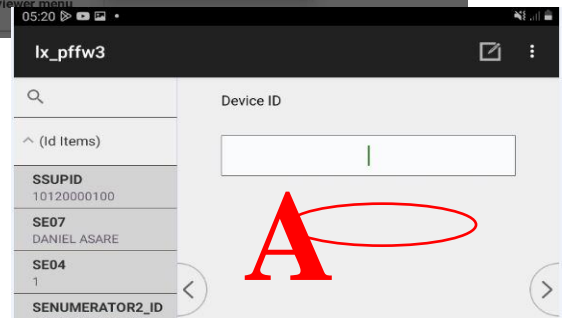


(15/16) After entering the Enumerator's name, you will need to also get the **device ID** from the Enumerator. Now ask the Enumerator to get the **device ID** from the dropdown menu on his/her tablet as indicated below.



(17) Carefully enter the displayed device ID on Enumerators tablet as required on you the Supervisor's tablet to associate the EA to his/her device ID.

You cannot assign his/her work to him/her if the device ID is not correctly entered. If the ID is not correctly entered, the tablet requires that you re-enter the Enumerator's device ID correctly.



Confirm creating a primary Enumerator account for the Enumerator whose name and ID will be showing on the screen.

(18) Press **(YES)** to complete the process of creating account for the Enumerator on the Supervisor's tablet.

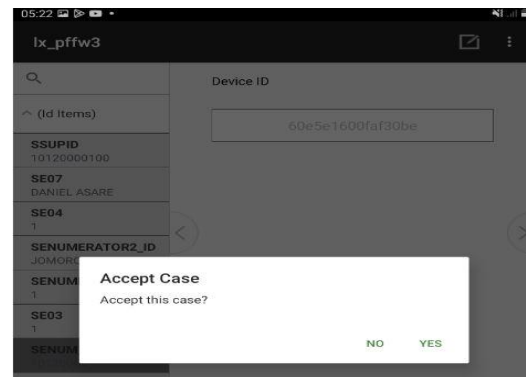
NOTE: Currently the account created for the **Enumerator** is still on the Supervisor's tablet and has been transferred to the Enumerator.

Therefore, the Supervisor has to **Sync** with the Enumerator via Bluetooth in order to transfer the EA assigned to the Enumerator's tablets to enable him/her work.

The Enumerator cannot start work without syncing the Supervisor to receive the **Assigned Zone**.

After the process is complete, the Enumerator is then required to login with the Enumerator ID assigned to

The Supervisor should ensure that the Enumerator has the correct ID. Every Enumerator is identified in the system by the code. The Enumerator is linked to an EA.



the
not



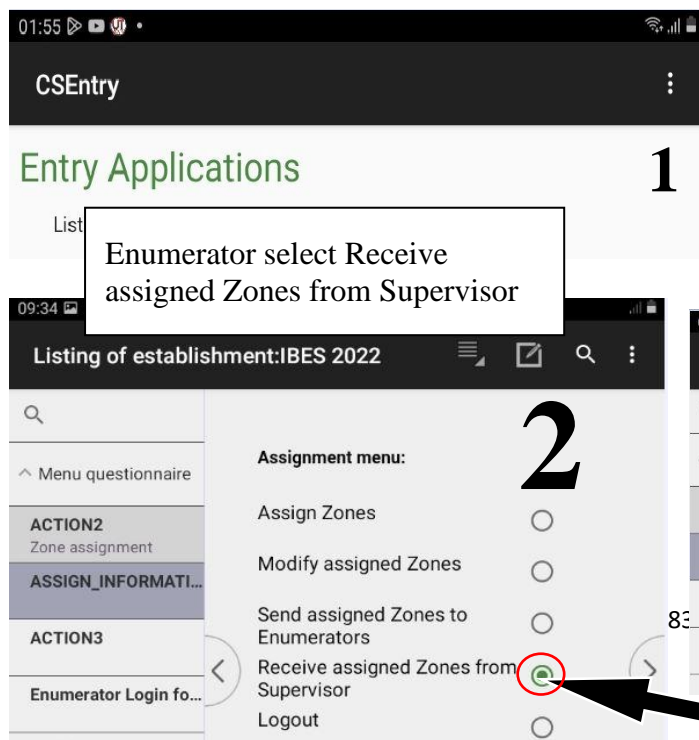
start
with

ID:010120000101 -OTIBU MICHAEL (0101200001)

Enumerators Login ID

Enumerator syncing with supervisor to receive Assigned Zone (EA)

The Enumerator should launch the application to receive the **Assigned Zones** from supervisor



Enumerator select Receive assigned Zones from Supervisor

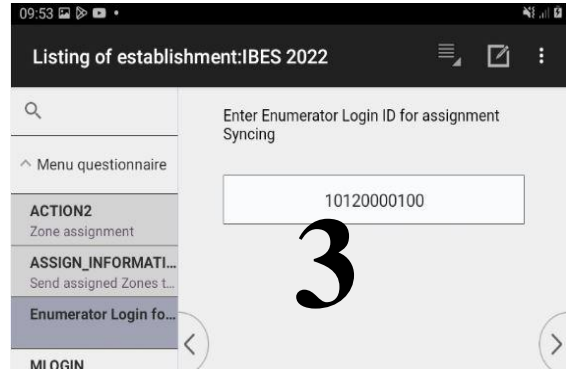
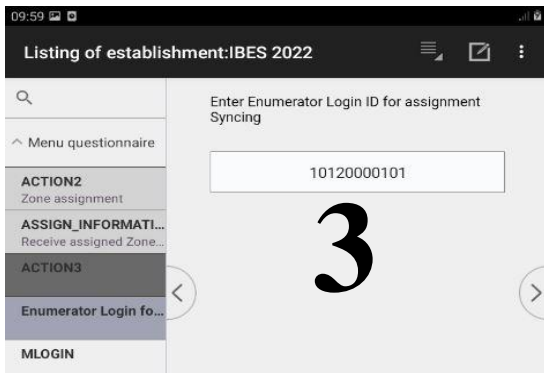
Supervisor select Send assigned Zones to Enumerators

1

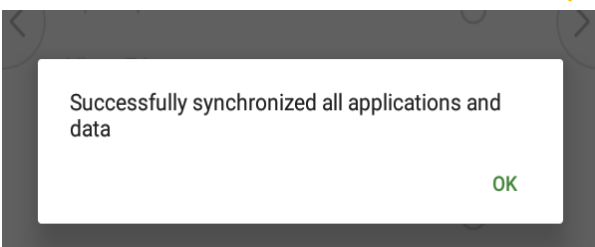
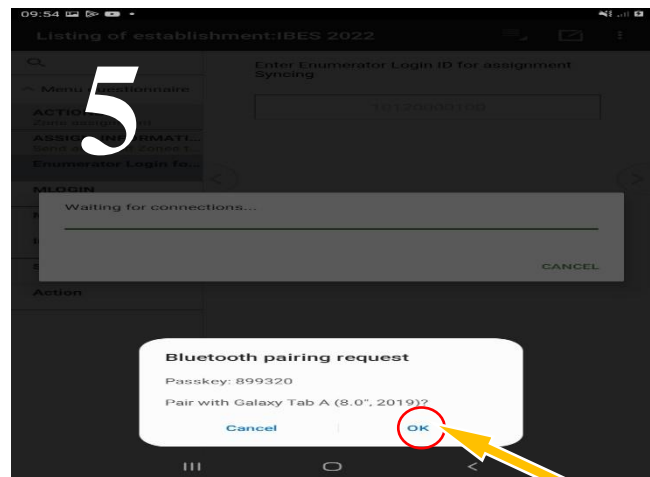
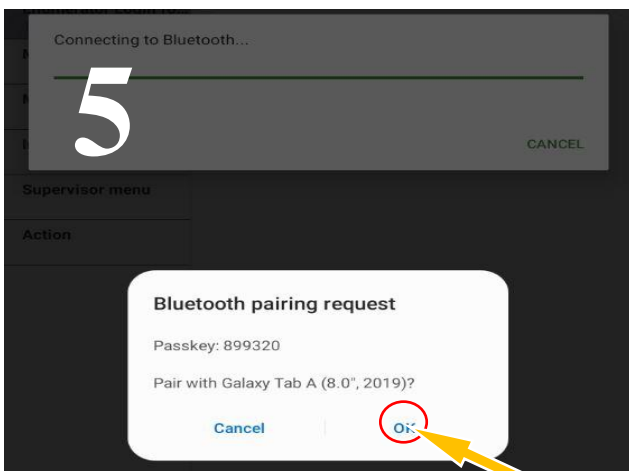
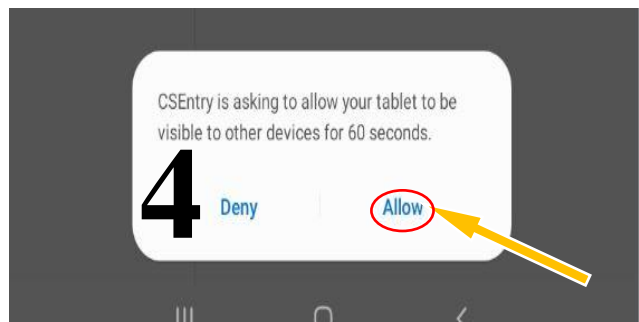
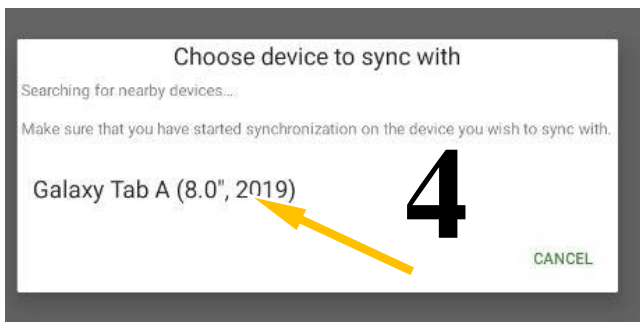
2

2

83

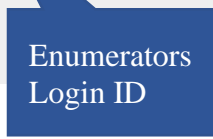
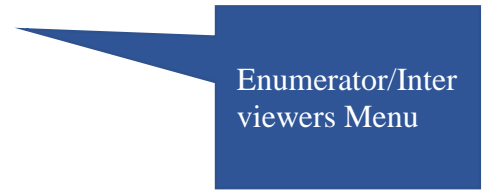
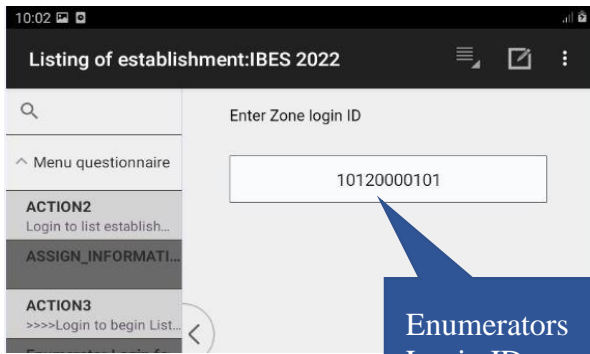
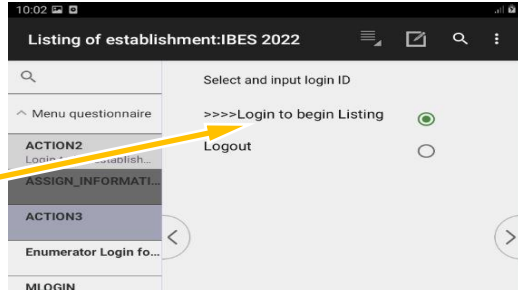
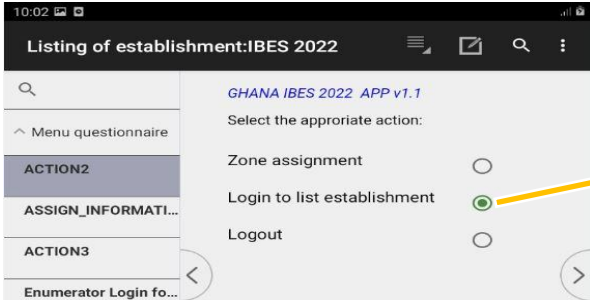


Both Enumerator and Supervisor select “PAIR” after the Enumerator has selected the Supervisor’s tablet i.e. (Team 8 1)



NOTE

After the process is successfully completed, the Enumerator is then required to login with the Enumerator ID assigned to him. The Supervisor should ensure that the Enumerator has the correct ID.



GLOSSARY

REFERENCE NUMBER

The number on each questionnaire that enables the movement of the questionnaire during field work and data processing to be controlled.

COVERAGE

The units counted or enumerated. The geographical coverage is all of Ghana, and it includes all businesses undertaking some economic activity.

DATA PROCESSING

The stage of census operation that follows data collection. It comprises the following activities: programme writing and testing, editing and coding, data entry, verification, validation and tabulation.

DEBRIEFING

A meeting at the end of a census operation at which all participants give their views on the census operation and make recommendations for improvement in the future.

EDITING

It is the application of checks that identify missing, invalid or inconsistent entries or that point to data records that are potentially in error.

EMPLOYEE

Is a person who enter an agreement, which may be formal or informal, with an establishment to work for the establishment in return for remunerations in cash or4 in kind.

ESTABLISHMENT

An establishment is a unit engaged in the production of goods or services of the same kind usually at one location. A typical establishment is a single firm or business unit engaging in a single kind of business under a single ownership at a single location.

ENUMERATION

To enumerate is to name one by one as in counting. Enumeration is the process of naming one by one and collecting information from establishments.

ENUMERATOR

An enumerator is a person who counts off one by one. In the 2014 IBES he/she is the economic field worker who administers the questionnaire and carries out other field procedures.

FIELD SUMMARY

The totals of selected information compiled by the enumerator at the end of enumeration

FINANCIAL YEAR

The firm's accounting period. The firm's financial accounts relate to a financial year which may not be the calendar year. A common financial year is the 1 April to 31 March of the following year.

ECONOMIC ACTIVITY

The particular activity or activities undertaken by the establishment. Examples of economic activity are: Processing meat products, Manufacture of agricultural machinery and equipment. Sale of text books Sale of children dress

LEARNERS

Persons undergoing on-the-job training without pay. These include unpaid apprentices.

QUESTIONNAIRE

The document on which data is collected. It contains questions and instructions for completion.

RESPONDENT

A person who supplies information for the completion of the questionnaire. In a census respondents are mainly accountants, proprietors, and managers etc.

SCOPE

Range of view or enquiry. In this census the scope is establishments engaged primarily in any sectors of the economy such as manufacturing, trading, mining and quarrying, construction, hotels, restaurants, etc. Establishments engaged in these activities are in-scope.

TABLES

Arrangement of data in columns and rows. The survey statistician sets out the results of the census in tables. The final product of data processing is the printing out of tabulated data. Tables are the basis of further analysis.

APPENDIX 1: DISTRICT CODES

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
WESTERN				
WR	Jomoro	Half-Assini	2	0101
WR	Ellembelle	Nkroful	1	0102
WR	Nzema East Municipal	Axim	2	0103
WR	Ahanta West	Agona Nkwanta	2	0104
WR	Effia Kwesimintsim Municipal	Kwesimintsim	2	0105
WR	Sekondi Takoradi Municipal (STMA)		3	0106
WR	Takoradi			01
WR	Sekondi			02
WR	Essikado-Ketan			03
WR	Shama	Shama	1	0107
WR	Wassa East	Daboase	1	0108
WR	Mpohor	Mpohor	1	0109
WR	Tarkwa-Nsuaem Municipal	Tarkwa	2	0110
WR	Prestea/Huni Valley	Bogoso	2	0111
WR	Wassa Amenfi East	Wassa Akropong	2	0112
WR	Wassa Amenfi Central	Manso Amenfi	1	0113
WR	Wassa Amenfi West	Asankragua	2	0114
CENTRAL				
CR	Komenda Edina Eguafo Abirem Municipal	Elmina	2	0201
CR	Cape Coast Metro		3	0202
CR	Cape Coast South			01
CR	Cape Coast North			02
CR	Abura Asebu Kwamankese	Abura-Dunkwa	1	0203
CR	Mfantsiman Municipal	Saltpond	2	0204
CR	Ekumfi	Essakyir	1	0205
CR	Gomoa West	Apam	1	0206
CR	Effutu Municipal	Winneba	2	0207
CR	Gomoa Central	Gomoa	1	0208
CR	Gomoa East	Afransi	1	0209
CR	Awutu Senya East Municipal	Kasoa	2	0210
CR	Awutu Senya West	Breku	1	0211
CR	Agona East	Nsaba	1	0212
CR	Agona West Municipal	Swedru	2	0213

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
CR	Asikuma Odoben Brakwa	Asikuma	1	0214
CR	Ajumaku Enyan Essiam	Ajumako	1	0215
CR	Assin South	Nsuaem-Kyekyewere	1	0216
CR	Twifo Heman Lower Denkyira	Hemang	1	0217
CR	Twifo Ati Morkwa	Twifo Praso	1	0218
CR	Assin Central Municipal	Assin Fosu	2	0219
CR	Assin North Municipal	Assin Breku	1	0220
CR	Upper Denkyira East Municipal	Dunkwa-On-Offin	2	0221
CR	Upper Denkyira West	Diaso	1	0222
GREATER ACCRA				
GAR	Ga South	Ngleshie Amanfro	2	0301
GAR	Weija Gbawe Municipal	Weija	2	0302
GAR	Ga Central Municipal	Sowutuom	2	0303
GAR	Ablekuma North	Darkuman	2	0304
GAR	Ablekuma West Municipal	Dansoman	2	0305
GAR	Ablekuma Central	Lartebiokorshie	2	0306
GAR	Accra Metropolitan Assembly (AMA)		3	0307
GAR	Ablekuma South			01
GAR	Ashiedu Keteke			02
GAR	Okai Koi South			03
GAR	Korle Klotey	Korle Klotey	2	0308
GAR	Ayawaso Central	Kokomlemle	2	0309
GAR	Ayawaso East Municipal	Nima	2	0310
GAR	Ayawaso North Municipal	Accra New Town	2	0311
GAR	La Dadekotopon Municipal	La	2	0312
GAR	Ledzokuku	Teshie	2	0313
GAR	Krowor	Nungua	2	0314
GAR	Adentan Municipal	Adentan	2	0315
GAR	Ayawaso West Municipal	Dzorwulu	2	0316
GAR	Okai Koi North	Tesano	2	0317
GAR	Ga North	Ofankor	2	0318
GAR	Ga West	Amasaman	2	0319
GAR	Ga East	Abokobi	2	0320
GAR	La Nkwantanan-Madina Municipal	Madina	2	0321

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
GAR	Kpone Katamanso	Kpone	2	0322
GAR	Ashaiman	Ashaiman	2	0323
GAR	Tema West	Tema Community 18	2	0324
GAR	Tema Municipal Assembly (TMA)		3	0325
	Tema East			01
GAR	Tema Central			02
GAR	Ningo Prampram	Prampram	1	0326
GAR	Shai Osudoku	Dodowa	1	0327
GAR	Ada West	Sege	1	0328
GAR	Ada East	Ada-Foah	1	0329
VOLTA				
VR	South Tongu	Sogakope	1	0401
VR	Anloga	Anloga	1	0402
VR	Keta Municipal	Keta	2	0403
VR	Ketu South	Denu	2	0404
VR	Ketu North	Dzodze	2	0405
VR	Akatsi North	Ave Dakpa	1	0406
VR	Akatsi South	Akatsi	1	0407
VR	Central Tongu	Adidome	1	0408
VR	North Tongu	Battor Dugame	1	0409
VR	Ho West	Dzolokpuita	1	0410
VR	Adaklu	Adaklu Waya	1	0411
VR	Agortime-Ziope	Agortime-Kpetoe	1	0412
VR	Ho Municipal	Ho	2	0413
VR	South Dayi	Kpeve	1	0414
VR	Afadzato South	Ve Golokwati	1	0415
VR	North Dayi	Amfoega	1	0416
VR	Kpando Municipal	Kpando	2	0417
VR	Hohoe Municipal	Hohoe	2	0418
EASTERN				
ER	Birim South	Akim Swedru	1	0501
ER	Birim Central Municipal	Akim Oda	2	0502
ER	Achiase	Achiase	1	0503
ER	Asene Manso Akroso	Manso	1	0504
ER	West Akim Municipal	Asamankese	2	0505
ER	Upper West Akim	Adeiso	1	0506

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
ER	Ayensuano	Coaltar	1	0507
ER	Nsawam Adoagyiri Municipal	Nsawam	2	0508
ER	Akwapim South	Aburi	1	0509
ER	Akwapim North Municipal	Akropong Akwapim	2	0510
ER	Okere	Adukrom	1	0511
ER	New Juaben South Municipal	Koforidua	2	0512
ER	New Juaben North	Effiduase	2	0513
ER	Suhum Municipal	Suhum	2	0514
ER	Abuakwa North	Kukurantumi	2	0515
ER	Abuakwa South	Kibi	2	0516
ER	Denkyembuor	Akwatia	1	0517
ER	Akyemansa	Ofoase	1	0518
ER	Kwaebibirem	Kade	2	0519
ER	Birim North	New Abirem	1	0520
ER	Atiwa West	Kwabeng	1	0521
ER	Atiwa East	Anyinam	1	0522
ER	Fanteakwa South	Osino	1	0523
ER	Yilo Krobo Municipal	Somanya	2	0524
ER	Lower Manya Krobo Municipal	Odumasi-Krobo	2	0525
ER	Asuogyaman	Atimpoku	1	0526
ER	Upper Manya Krobo	Asesewa	1	0527
ER	Fanteakwa North	Begoro	1	0528
ER	Kwahu South	Mpraeso	1	0529
ER	Kwahu West Municipal	Nkawkaw	2	0530
ER	Kwahu East	Abetifi	1	0531
ER	Kwahu Afram Plains South	Tease	1	0532
ER	Kwahu Afram Plains North	Donkorkrom	1	0533
ASHANTI				
AR	Amansie South District	Manso Adubia	1	0601
AR	Amansie Central	Jacobi	1	0602
AR	Akrofuom District	Akrofuom	1	0603
AR	Adansi South	New Edubiase	1	0604
AR	Adansi Asokwa District	Adansi Asokwa	1	0605
AR	Obuasi East District	Tutuka	1	0606
AR	Obuasi Municipal	Obuasi	2	0607
AR	Adansi North	Fomena	1	0608
AR	Bekwai Municipal	Bekwai	2	0609

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
AR	Amansie West	Manso Nkwanta	1	0610
AR	Atwima Kwanwoma	Foase	1	0611
AR	Bosomtwe	Kuntanase	1	0612
AR	Bosome Freho	Asiwa	1	0613
AR	Asante Akim Central Municipal	Konongo	2	0614
AR	Asante Akim South	Juaso	2	0615
AR	Asante Akim North	Agogo	1	0616
AR	Sekyerere Kumawu	Kumawu	1	0617
AR	Sekyerere East	Effiduase	1	0618
AR	Juaben Municipal	Juaben	2	0619
AR	Ejisu Juaben Municipal	Ejisu	2	0620
AR	Oforikrom Municipal	Oforikrom	2	0621
AR	Asokwa Municipal	Asokwa	2	0622
AR	Kumasi Metropolitan Assembly (KMA)		3	0623
AR	Nhyiaeso			01
AR	Subin			02
AR	Manhyia South			03
AR	Manhyia North			04
AR	Bantama			05
AR	Kwadaso Municipal	Kwadaso	2	0624
AR	Suame Municipal	Suame	2	0625
AR	Old Tafo Municipal	Old Tafo	2	0626
AR	Asokore Mampong Municipal	Asokore	2	0627
AR	Kwabre East	Mampong	1	0628
AR	Afigya Kwabre South	Kodie	1	0629
AR	Atwima Nwabiagya North District	Barekese	1	0630
AR	Atwima Nwabiagya South	Nkawie Kuma	2	0631
AR	Atwima Mponua	Nyinahin	1	0632
AR	Ahafo Ano South West	Mankranso	1	0633
AR	Ahafo Ano North	Tepa	1	0634
AR	Ahafo Ano South East District	Adugyama	1	0635
AR	Offinso North	Akomadan	1	0636
AR	Offinso Municipal	Offinso	2	0637
AR	Afigya Kwabre North District	Boamang	1	0638
AR	Sekyerere South	Agona	1	0639
AR	Mampong Municipal	Mampong	2	0640
AR	Ejura Sekyedumase Municipal	Ejura	2	0641

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
AR	Sekyere Central	Nsuta	1	0642
AR	Sekyere Afram Plains	Drobonso	1	0643
WESTERN NORTH				
WNR	Aowin	Enchi	2	0701
WNR	Sefwi Akontombra	Akontombra	1	0702
WNR	Suaman	Dadieso	1	0703
WNR	Bodi	Bodie	1	0704
WNR	Sefwi Wiawso Municipal	Wiawso	1	0705
WNR	Sefwi Bibiani Ahwiaso Bekwai	Bibiani	2	0706
WNR	Juaboso	Juaboso	1	0707
WNR	Bia West	Essam-Debiso	1	0708
WNR	Bia East	Adabokrom	1	0709
AHAFO				
AHR	Asunafo South	Kukuom	1	0801
AHR	Asunafo North Municipal	Goaso	2	0802
AHR	Asutifi South	Hwidiem	1	0803
AHR	Asutifi North	Kenyasi	1	0804
AHR	Tano North	Duayaw Nkwanta	2	0805
AHR	Tano South	Bechem	2	0806
BONO				
BR	Dormaa West	Nkran Nkwanta	1	0901
BR	Dormaa Central Municipal	Dormaa Ahenkro	2	0902
BR	Dormaa East	Wamfie	1	0903
BR	Sunyani Municipal	Sunyani	2	0904
BR	Sunyani West	Odumasi	1	0905
BR	Berekum East Municipal	Berekum	2	0906
BR	Berekum West District	Jinijini	1	0907
BR	Jaman South	Drobo	1	0908
BR	Jaman North	Sampa	1	0909
BR	Tain	Nsawkaw	1	0910
BR	Wenchi Municipal	Wenchi	2	0911
BR	Banda	Banda Ahenkro	1	0912
BONO EAST				
BER	Nkoranza South Municipal	Nkoranza	2	1001
BER	Techiman Municipal	Techiman	2	1002
BER	Nkoranza North	Busunya	1	1003
BER	Techiman North	Tuobodom	1	1004

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
BER	Atebubu Amantin	Atebubu	2	1005
BER	Sene West	Kwame Danso	1	1006
BER	Sene East	Kajaji	1	1007
BER	Pru West District	Prang	1	1008
BER	Pru East District	Yeji	1	1009
BER	Kintampo South	Jema	1	1010
BER	Kintampo North Municipal	Kintampo	2	1011
OTI				
OR	Biakoye	Nkonya-Ahenkro	1	1101
OR	Jasikan	Jasikan	1	1102
OR	Kadjebi	Kadjebi	1	1103
OR	Krachi East	Dambai	2	1104
OR	Krachi West	Kete-Krachi	1	1105
OR	Krachi Nchumuru	Chinderi	1	1106
OR	Nkwanta South	Nkwanta	2	1107
OR	Nkwanta North	Kpassa	1	1108
NORTHERN				
NR	Kpandai District	Kpandai	1	1201
NR	Nanumba South District	Wulensi	1	1202
NR	Nanumba North Municipal	Bimbilla	2	1203
NR	Zabzugu District	Zabzugu	1	1204
NR	Tatale/Sanguli District	Tatale	1	1205
NR	Saboba District	Saboba	1	1206
NR	Yendi Municipal	Yendi	2	1207
NR	Mion District	Sang	1	1208
NR	Nanton District	Nanton	1	1209
NR	Tamale Metropolitan Assembly		3	1210
NR	Tamale South			01
NR	Tamale Central			02
NR	Sagnarigu Municipal	Sagnarigu	2	1211
NR	Tolon District	Tolon	1	1212
NR	Kumbungu District	Kumbungu	1	1213
NR	Savelugu Municipal	Savelugu	2	1214
NR	Karaga District	Karaga	1	1215
NR	Gushegu Municipal	Gushegu	2	1216
SAVANNAH				
SR	Bole District	Bole	1	1301
SR	Sawla-Tuna-Kalba District	Sawla	1	1302

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
SR	North Gonja District	Daboya	1	1303
SR	West Gonja District	Damango	1	1304
SR	Central Gonja District	Buipe	1	1305
SR	East Gonja Municipal	Salaga	2	1306
SR	North East Gonja	Kpalbe	1	1307
NORTH EAST				
NER	Mamprugu Moagduri District	Yagaba	1	1401
NER	West Mamprusi Municipal	Walewale	2	1402
NER	East Mamprusi Municipal	Gambaga	2	1403
NER	Bunkpurugu Nankpanduri District	Bunkpurugu	1	1404
NER	Yunyoo-Nasuan District	Yunyoo	1	1405
NER	Chereponi District	Chereponi	1	1406
UPPER EAST				
UER	Builsa South District	Fumbisi	1	1501
UER	Builsa North Municipal	Sandema	2	1502
UER	Kassena Nankana East Municipal	Navrongo	2	1503
UER	Kassena Nankana West District	Paga	1	1504
UER	Bolgatanga Municipal	Bolgatanga	2	1505
UER	Talensi District	Tongo	1	1506
UER	Bolgatanga East	Zuarugu	1	1507
UER	Bongo District	Bongo	1	1508
UER	Nabdam District	Nangodi	1	1509
UER	Bawku West District	Zebilla	1	1510
UER	Binduri District	Binduri	1	1511
UER	Bawku Municipal	Bawku	2	1512
UER	Garu District	Garu	1	1513
UER	Tempane District	Tempane	1	1514
UER	Pusiga District	Pusiga	1	1515
UPPER WEST				
UWR	Wa West District	Weichiau	1	1601
UWR	Wa East District	Funsi	1	1602
UWR	Wa Municipal	Wa	2	1603
UWR	Nadowli Kaleo District	Nadowli	1	1604
UWR	Daffiama Bussie Issa District	Issa	1	1605
UWR	Sissala East Municipal	Tumu	2	1606
UWR	Sissala West District	Gwollu	1	1607
UWR	Jirapa Municipal	Jirapa	2	1608
UWR	Lawra Municipal	Lawra	2	1609

REGION	DISTRICT NAME	DISTRICT CAPITAL	DISTRICT TYPE	DISTRICT CODE
UWR	Lambussie Karni District	Lambussie	1	1610
UWR	Nandom District	Nandom	1	1611

APPENDIX 2: COUNTRY CODES

S/N	COUNTRY	CAPITAL	CONTINENT	CODE
1	Cote d'Ivoire	Yamoussoukro	Africa	2001
2	Togo	Lome	Africa	2002
3	Burkina Faso	Ouagadougou	Africa	2003
4	Benin	Porto-Novo	Africa	2004
5	Guinea	Conakry	Africa	2005
6	Nigeria	Abuja	Africa	2006
7	Mali	Bamako	Africa	2007
8	Cameroon	Yaounde	Africa	2008
9	Guinea-Bissau	Bissau	Africa	2009
10	The Gambia	Banjul	Africa	2010
11	Liberia	Monrovia	Africa	2011
12	Niger	Niamey	Africa	2012
13	Senegal	Dakar	Africa	2013
14	Sierra Leone	Freetown	Africa	2014
15	Mauritania	Nouakchott	Africa	2015
16	Algeria	Algiers	Africa	2016
17	Angola	Luanda	Africa	2017
18	Botswana	Gaborone	Africa	2018
19	Burundi	Bujumbura	Africa	2019
20	Cape Verde	Praia	Africa	2020
21	Central African Republic	Bangui	Africa	2021
22	Chad	N'Djamena	Africa	2022
23	Comoros	Moroni	Africa	2023
24	Congo Republic	Brazzaville	Africa	2024
25	Democratic Republic of Congo	Kinshasa	Africa	2025
26	Djibouti	Djibouti	Africa	2026
27	Egypt	Cairo	Africa	2027
28	Equatorial Guinea	Malabo	Africa	2028
29	Eritrea	Asmara	Africa	2029
30	Ethiopia	Addis Ababa	Africa	2030
31	Gabon	Libreville	Africa	2031
32	Kenya	Nairobi	Africa	2032

S/N	COUNTRY	CAPITAL	CONTINENT	CODE
33	Lesotho	Maseru	Africa	2033
34	Libya	Tripoli	Africa	2034
35	Madagascar	Antananarivo	Africa	2035
36	Malawi	Lilongwe	Africa	2036
37	Mauritius	Port Louis	Africa	2037
38	Mayotte	Mamoudzou	Africa	2038
39	Morocco	Rabat	Africa	2039
40	Mozambique	Maputo	Africa	2040
41	Namibia	Windhoek	Africa	2041
42	Reunion	Saint-Denis	Africa	2042
43	Rwanda	Kigali	Africa	2043
44	Saint Helena	Jamestown	Africa	2044
45	Sao Tome and Principe	Sao Tome	Africa	2045
46	Seychelles	Victoria	Africa	2046
47	Somalia	Mogadishu	Africa	2047
48	South Africa	Pretoria (administrative); Cape Town (legislative); Bloemfontein (judiciary)	Africa	2048
49	Sudan	Khartoum	Africa	2049
50	South Sudan	Juba	Africa	2050
51	Swaziland	Mbabane	Africa	2051
52	Tanzania	Dar es Salaam; Dodoma (legislative)	Africa	2052
53	Tunisia	Tunis	Africa	2053
54	Uganda	Kampala	Africa	2054
55	Western Sahara	El Aaiún	Africa	2055
56	Zambia	Lusaka	Africa	2056
57	Zimbabwe	Harare	Africa	2057
58	Afghanistan	Kabul	Asia	3001
59	Armenia	Yerevan	Asia	3002
60	Azerbaijan	Baku	Asia	3003
61	Bahrain	Manama	Asia	3004
62	Bangladesh	Dhaka	Asia	3005
63	Bhutan	Thimphu	Asia	3006
64	Brunei	Bandar Seri Begawan	Asia	3007
65	Burma	Naypyidaw	Asia	3008
66	Cambodia	Phnom Penh	Asia	3009
67	China	Beijing	Asia	3010
68	Christmas Island	Flying Fish Cove	Asia	3011
69	Cocos (Keeling) Islands	West Island, Cocos (Keeling) Islands	Asia	3012

S/N	COUNTRY	CAPITAL	CONTINENT	CODE
70	Gaza Strip	Gaza City	Asia	3013
71	Georgia	Tbilisi	Asia	3014
72	Hong Kong	Victoria City	Asia	3015
73	India	New Delhi	Asia	3016
74	Indonesia	Jakarta	Asia	3017
75	Iran	Tehran	Asia	3018
76	Iraq	Baghdad	Asia	3019
77	Israel	Jerusalem	Asia	3020
78	Japan	Tokyo	Asia	3021
79	Jordan	Amman	Asia	3022
80	Kazakhstan	Astana	Asia	3023
81	Korea, North	Pyongyang	Asia	3024
82	Korea, South	Seoul	Asia	3025
83	Kuwait	Kuwait City	Asia	3026
84	Kyrgyzstan	Bishkek	Asia	3027
85	Laos	Vientiane	Asia	3028
86	Lebanon	Beirut	Asia	3029
87	Macau	Macau (Macao)	Asia	3030
88	Malaysia	Kuala Lumpur	Asia	3031
89	Maldives	Male	Asia	3032
90	Mongolia	Ulaanbaatar	Asia	3033
91	Nepal	Kathmandu	Asia	3034
92	Oman	Muscat	Asia	3035
93	Pakistan	Islamabad	Asia	3036
94	Paracel Islands	Woody Island	Asia	3037
95	Philippines	Manila	Asia	3038
96	Qatar	Doha	Asia	3039
97	Saudi Arabia	Riyadh	Asia	3040
98	Singapore	Singapore	Asia	3041
99	South Georgia and the South Sandwich Islands	King Edward Point	Asia	3042
100	Sri Lanka	Colombo; Sri Jayewardenepura Kotte (legislative)	Asia	3043
101	Syria	Damascus	Asia	3044
102	Taiwan	Taipei	Asia	3045
103	Tajikistan	Dushanbe	Asia	3046
104	Thailand	Bangkok	Asia	3047
105	Timor-Leste	Dili	Asia	3048
106	Turkey	Ankara	Asia	3049

S/N	COUNTRY	CAPITAL	CONTINENT	CODE
107	Turkmenistan	Ashgabat	Asia	3050
108	United Arab Emirates	Abu Dhabi	Asia	3051
109	Uzbekistan	Tashkent	Asia	3052
110	Vietnam	Hanoi	Asia	3053
111	West Bank	East Jerusalem	Asia	3054
112	Yemen	Sanaa	Asia	3055
113	American Samoa	Pago Pago	Australia/ Oceania	4001
114	Australia	Canberra	Australia/ Oceania	4002
115	Cook Islands	Avarua	Australia/ Oceania	4003
116	Coral Sea Islands	Cato Island	Australia/ Oceania	4004
117	Fiji	Suva	Australia/ Oceania	4005
118	Guam	Hagåtña	Australia/ Oceania	4006
119	Kiribati	Tarawa Atoll	Australia/ Oceania	4007
120	Marshall Islands	Majuro	Australia/ Oceania	4008
121	Micronesia, Federated States of	Palikir	Australia/ Oceania	4009
122	Nauru	government offices in Yaren District	Australia/ Oceania	4010
123	New Caledonia	Nouméa	Australia/ Oceania	4011
124	New Zealand	Wellington	Australia/ Oceania	4012
125	Niue	Alofi	Australia/ Oceania	4013
126	Norfolk Island	Kingston	Australia/ Oceania	4014
127	Northern Mariana Islands	Capitol Hill, Saipan	Australia/ Oceania	4015
128	Palau	Melekeok	Australia/ Oceania	4016
129	Papua New Guinea	Port Moresby	Australia/ Oceania	4017
130	Pitcairn Islands	Adamstown	Australia/ Oceania	4018
131	Solomon Islands	Honiara	Australia/ Oceania	4019
132	Tokelau	Atafu	Australia/ Oceania	4020
133	Tonga	Nuku'alofa	Australia/ Oceania	4021
134	Tuvalu	Vaiaku village, Funafuti province	Australia/ Oceania	4022
135	Vanuatu	Port-Vila	Australia/ Oceania	4023
136	Wallis and Futuna	Mata Utu	Australia/ Oceania	4024
137	Akrotiri	Episkopi Cantonment	Europe	5001
138	Albania	Tirana	Europe	5002
139	Andorra	Andorra la Vella	Europe	5003
140	Austria	Vienna	Europe	5004
141	Belarus	Minsk	Europe	5005
142	Belgium	Brussels	Europe	5006
143	Bosnia and Herzegovina	Sarajevo	Europe	5007
144	British Indian Ocean Territory	Camp Justice	Europe	5008

S/N	COUNTRY	CAPITAL	CONTINENT	CODE
145	British Virgin Islands	Road Town	Europe	5009
146	Bulgaria	Sofia	Europe	5010
147	Croatia	Zagreb	Europe	5011
148	Cyprus	Nicosia	Europe	5012
149	Czech Republic	Prague	Europe	5013
150	Denmark	Copenhagen	Europe	5014
151	Dhekelia	Episkopi	Europe	5015
152	Estonia	Tallinn	Europe	5016
153	Faroe Islands	Tórshavn	Europe	5017
154	Finland	Helsinki	Europe	5018
155	France	Paris	Europe	5019
156	French Guiana	Cayenne	Europe	5020
157	French Polynesia	Papeete	Europe	5021
158	Germany	Berlin	Europe	5022
159	Greece	Athens	Europe	5023
160	Guernsey	Saint Peter Port	Europe	5024
161	Holy See (Vatican City)	Vatican City	Europe	5025
162	Hungary	Budapest	Europe	5026
163	Iceland	Reykjavik	Europe	5027
164	Ireland	Dublin	Europe	5028
165	Isle of Man	Douglas	Europe	5029
166	Italy	Rome	Europe	5030
167	Jan Mayen	Longyearbyen	Europe	5031
168	Jersey	Saint Helier	Europe	5032
169	Latvia	Riga	Europe	5033
170	Liechtenstein	Vaduz	Europe	5034
171	Lithuania	Vilnius	Europe	5035
172	Luxembourg	Luxembourg	Europe	5036
173	Macedonia	Skopje	Europe	5037
174	Malta	Valletta	Europe	5038
175	Moldova	Chisinau	Europe	5039
176	Monaco	Monaco	Europe	5040
177	Netherlands	Amsterdam; The Hague (seat of government)	Europe	5041
178	Netherlands Antilles	Willemstad	Europe	5042
179	Norway	Oslo	Europe	5043
180	Poland	Warsaw	Europe	5044
181	Portugal	Lisbon	Europe	5045
182	Romania	Bucharest	Europe	5046
183	Russia	Moscow	Europe	5047

S/N	COUNTRY	CAPITAL	CONTINENT	CODE
184	Samoa	Apia	Europe	5048
185	San Marino	San Marino	Europe	5049
186	Montenegro	Podgorica	Europe	5050
187	Serbia	Belgrade	Europe	5051
188	Slovakia	Bratislava	Europe	5052
189	Slovenia	Ljubljana	Europe	5053
190	Spain	Madrid	Europe	5054
191	Sweden	Stockholm	Europe	5055
192	Switzerland	Bern	Europe	5056
193	Ukraine	Kyiv	Europe	5057
194	United Kingdom	London	Europe	5058
195	Anguilla	The Valley	North America	6001
196	Antigua and Barbuda	Saint John's	North America	6002
197	Bahamas	Nassau	North America	6003
198	Barbados	Bridgetown	North America	6004
199	Belize	Belmopan	North America	6005
200	Bermuda	Hamilton	North America	6006
201	Canada	Ottawa	North America	6007
202	Cayman Islands	George Town	North America	6008
203	Costa Rica	San Jose	North America	6009
204	Cuba	Havana	North America	6010
205	Dominica	Roseau	North America	6011
206	Dominican Republic	Santo Domingo	North America	6012
207	El Salvador	San Salvador	North America	6013
208	Greenland	Nuuk	North America	6014
209	Grenada	Saint George's	North America	6015
210	Guadeloupe	Basse-Terre	North America	6016
211	Guatemala	Guatemala City	North America	6017
212	Haiti	Port-au-Prince	North America	6018
213	Honduras	Tegucigalpa	North America	6019
214	Jamaica	Kingston	North America	6020
215	Martinique	Fort-de-France	North America	6021
216	Mexico	Mexico City	North America	6022
217	Montserrat	Plymouth	North America	6023
218	Nicaragua	Managua	North America	6024
219	Panama	Panama City	North America	6025
220	Puerto Rico	San Juan	North America	6026
221	Saint Kitts and Nevis	Basseterre	North America	6027
222	Saint Lucia	Castries	North America	6028
223	Saint Pierre and Miquelon	Saint-Pierre	North America	6029

S/N	COUNTRY	CAPITAL	CONTINENT	CODE
224	Saint Vincent and the Grenadines	Kingstown	North America	6030
225	Trinidad and Tobago	Port-of-Spain	North America	6031
226	Turks and Caicos Islands	Cockburn Town	North America	6032
227	United States of America (USA)	Washington, D.C.	North America	6033
228	Argentina	Buenos Aires	South America	7001
229	Aruba	Oranjestad	South America	7002
230	Bolivia	La Paz (administrative); Sucre (judicial)	South America	7003
231	Brazil	Brasilia	South America	7004
232	Chile	Santiago	South America	7005
233	Colombia	Bogota	South America	7006
234	Ecuador	Quito	South America	7007
235	Falkland Islands (Islas Malvinas)	Stanley	South America	7008
236	Guyana	Georgetown	South America	7009
237	Paraguay	Asuncion	South America	7010
238	Peru	Lima	South America	7011
239	Suriname	Paramaribo	South America	7012
240	Uruguay	Montevideo	South America	7013
241	Venezuela	Caracas	South America	7014
242	Statelessness		Stateless	8888