

## **EXPERIENCE WITH THE 2004 POPULATION AND HOUSING CENSUS – SIERRA LEONE**

**CARTOGRAPHIC MAPPING:** For every census preparatory work, the cartographic exercise occupies a lot of time and resources in the census calendar. That was very true of the 2004 Population and Housing census of Sierra Leone.

The planning of the cartographic mapping started with the fielding in of a cartographic expert (an international expert.) The expert, assisted by a national counterpart helped in forming a cartographic mapping committee of stakeholders including the university and other line ministries. The primary objective of the committee was to develop a field cartographic manual to be used by field staff in the subsequent mapping exercise. The document was finalized after a series of meetings stating the terms of reference of mapping staff and related equipments to be used.

This was followed by an advertisement and recruitment of the various categories of mapping staff. The recruitment process was a rigorous one identifying mapping supervisors as geography university graduates and mapping assistants as geography high school graduates. This was essential to ensure efficient and reliable mapping output. A practical training was undertaken as well after which 13 teams of five were deployed in the 13 districts. The most modern method of mapping was used utilizing the Global Positioning System (GPS). The primary objective of each mapping team was to map every locality in the country with respect to the following:

- Collect GPS Co-ordinate of every locality
- Collect GPS Co-ordinate of administrative boundaries
- Collect GPS Co-ordinate of health and educational facilities
- Take household quick counts of every locality
- Record GPS co-ordinates & house hold counts on field forms provided
- Describe Enumeration Area boundaries in urban areas

The above information was then used to plot EA boundaries on maps (scale 1:50000 & 1:25000) provided using household sizes of 80-120 in rural areas and 80-100 in urban areas. Every EA was followed by a description and number.

The exercise lasted for 2 years after which final EA maps were printed for enumeration. Census enumerators were then trained in the use of maps and mapping supervisors were deployed to assist them in the process.

The mapping was generally successful as reflected in the overall high quality of census data collected with much ease.

The selection of staff with relevant educational background was critical to the overall quality of mapping information collected. It also reduced time spent on supervision and consequently saving resources for other needed census operations.

The establishment of a mapping committee was timely and necessary as relevant stakeholders made useful input in the development of the cartographic field manual (referred to as the bible) that proved useful in the guidance of the mapping process.

An initial administrative list of all localities in the country was an invaluable asset to the teams. At least they had something they could start off with in addition to what they were given by local authorities. It was also wise to compliment each team with a local guide who knows the terrain better to ease movement between one locality and the next.

The mapping staff were maintained right on to the end of enumeration and some were engage as supervisors as they were very useful in interpreting the maps they designed when problems emerge during enumeration.

Some mistakes were however made one of which was to deploy teams in smaller administrative units neighboring each other. This made the quality control procedure much rigorous in producing the final maps. A team should have been placed in a large administrative unit (district) with small sub-divisions (chiefdoms) under its control. The quality control procedure would then have to be limited between districts.

Another mistake was that some enumerators failed to list settlements that emerged after the mapping process. This was to form part of an important database for the cartographic unit to map those settlements as a post census activity. Some maps were not even returned in the process.

**PUBLICITY CAMPAIGN:** A publicity and advocacy unit was established in the census secretariat funded by The United Nations Population Fund. This unit was charged with the responsibility of handling all publicity relating to the census. A publicity and advocacy expert was recruited for some couple of weeks to advice the unit on how to handle specialized census publicity. A committee was also established comprising of members of the press and electronic media.

The activities of the unit started however late due to funding problems. When commenced, its initial target was the field cartographic mapping. The community needed sensitization on the on-going cartographic mapping and the forthcoming census. Press releases were made in various media publications and various radio discussions held with emphases on the cartographic mapping and its relevance to a successful census. Publicity campaign for the mapping exercise was done in all districts and it was fruitful as mapping staff collected information they required with much ease due to good publicity.

Publicity for census enumeration took a more robust approach and started a couple of months before the actual enumeration. It started with the establishment of census publicity committees in all districts. All sensitization methods were engaged ranging from press releases, radio discussions, drama and billboards. All levels of society were involved in these committees ranging from government to civil societies.

## **RECRUITMENT AND TRAINING OF ENUMERATORS**

Upon completion of the Cartographic field mapping, the total number of Enumerators required for the census was established based on the total number of enumeration areas delineated countrywide. This in turn led to the establishment of the total number of Field Officers and Supervisors to be recruited. The next phase was to determine the criteria required to be fulfilled by the three categories in terms of both educational and professional experience. Training manuals were produced for both supervisors and enumerators. These training manuals contained the basic information required by all categories to fulfil their respective tasks ranging from the various modules dealt with in the census questionnaire to the tasks and exceptional expectations required of them.

Advertisements were made in the print and electronic media for interested and competent individuals to apply for various positions as specified above. The basic criterion set forth for the positions of Field Officers and Supervisors were a good first degree, knowledge in census data collection and must be an indigene or should have spent three years working in the district in which he/she is applying.

For the Enumerators, the prospective candidates must have completed secondary school education and must possess three GCE O'Levels or WASSCE, or attended a teacher training college or both and should also be an indigene or should have lived or worked in the district in which he/she is applying for at least three years.

Then Regional Training Coordinators were selected from among the various Directors in the office and charged with the responsibility of coordinating all levels of training in their respective regions. Experts in all areas dealt with in the census questionnaire were contracted to train participants (Field Officers, Supervisors and Enumerators) in modules covering their respective areas. These experts were drawn from the University, Government ministries and specialised sections within the office like the GIS/Cartography. It was agreed that all the three categories of personnel as stated above were to be given the same training though at various stages as this would enhance the thorough understanding of all the modules to be treated.

Applications were then sent out and interviews for both field officers and supervisors conducted at Statistics Sierra Leone head quarters. Successful candidates were selected.

This field officers and supervisors were the first to be trained. It started with the field officers who in turn helped in training the supervisors.

The training of enumerators started with the full list of all applicants and their supporting documents from each district submitted to the Regional training coordinator. Dates were set for the training of all enumerators in their respective chiefdoms. These training took place with the assistance of the Field officers and supervisors who had earlier been trained. At the end of the training session, final selection tests were conducted based on the training and the successful candidates were finally selected as Enumerators.

## **FIELD WORK**

Census enumeration field operation took place in December 2004 from the 4<sup>th</sup> to the 19<sup>th</sup>.

## **USE OF ICT**

In the execution of the 2004 population and housing census, data processing unit was to develop a system design and implement a system encompassing the complete series of operations required for each data processing stage on the census data to conform to the social and economic environment. The main data processing stages were made up of questionnaires organization and batching, questionnaires editing, data conversion to electronic format, data verification, data validation, creation of census database, and generation of census tabulations.

To effectively handle these issues, data processing unit was involved in the planning stage, which includes personnel hiring and organization, selection and purchasing of equipment, analysis and design of census data structure, and activities scheduling and budgeting.

In order to identify and keep track of each census questionnaire, the unit organized and arranged the questionnaires in enumeration number sequence (ie. Province / District / Chiefdom / Section / EA sequence) in the Questionnaires Store. The Coding Data Processing Officers edited the questionnaires in order of the sequence for further processing.

An option of direct data entry method was considered for data conversion instead of scanning. In addition, IMPS application software was selected for the programming of the data entry, verification, consistency correction, file merge and tabulations systems. SPSS and MS-Excel were used for statistical analysis and graphing.

Data Entry Officers systematically converted the census data into electronic format. Double entry system (verification) was established in order to ensure data accuracy. After a complete conversion of each district data, the data entry officers were swapped to verify each batch in the completed district dataset. After verification, each batch (EA) in the district was then subjected to validation process to check the consistencies of each individual record for correction. The corrected records were used to update the Census

Database in MS-Access DBMS and IMPS formats. From time to time, tabulations were produced and analyzed to vet the accuracy and validity of the data.

Because of the above organization and strategies, data processing was completed on schedule. Enough PCs were made available for other data processing and post census activities. Many people gained employment and also new skills were developed from the PCs section option (alleviated post war problems). Data was made available early enough for analysis, planning and development of the electoral boundaries for the 2007 presidential and parliamentary elections.

## **PLANS FOR NEXT CENSUS**

### **A**

#### **PREPARATORY WORK**

The next Population and Housing Census will be conducted in December 2014. The Censuses and GIS division has already started preparatory work.

One of the main sponsors of the previous Population and Housing Census was the United Nations Population Fund. This arm of The United Nations made tremendous contribution to the census process. Contacts have already started with this donor in respect of post census cartographic map updating. There are plans to deploy 28 mapping staff in all 14 districts in the country to periodically undertake updating of localities. This will to some extent reduce the workload during the actual census mapping 2014. The GIS division has digitized census maps down to EA level and merged with the census data for analytical purposes. The digital maps will be used as a starting point for the 2014 census cartographic work.

Various modules and tabulations used in the 2004 population and housing census are also undergoing review to suit changing trends in the social and economic environment.

#### **FIELD OPERATIONS**

Traditionally, censuses are done in the month of December. Two factors are responsible for this. Firstly because that is the period when students who are normally recruited are on holiday. Secondly, December is the period when most people return to their place of birth to spend their x-mass holiday and therefore a convenient time for enumeration. This date will therefore remain the same for subsequent censuses. More funds will be required for the next census as the population is expected to double and therefore more enumerators, field officers and supervisors. This also has a direct effect on the logistics and materials required.

Next census field operation is expected to be more advanced and efficient as coverage of mobile phones in the entire country will be close to 100%. This will greatly ease communication as it is intended to let focal persons be equipped with cell phones.

## **DATA PROCESSING**

Because of the successful manner in which the data processing was done, there are plans to adopt the same methodology. Software and other technical inputs can change for better options in technology. Statistics Sierra Leone has also made a wise decision to retain some of the 120 data entry operators and IT specialists to build on capacity till the next Census in 2014.

## **SPECIALIZED ANALYSIS BY SUBJECT**

The analytical process of the census is just about completed. External and local consultants were hired by the office to supervise the work of various analyst handling specialized subjects like mortality, migration (to name a few). Like all other operations of the census, the organization has decided to train staff in the area of census analysis to avoid hiring consultants in the future.

## **LEGISLATION**

A legislative act empowers Statistics Sierra Leone as the official body for collection, compilation, co-ordination, analysis and dissemination of official statistics. This legislation greatly enhances the institutions effort to co-ordinate and monitor the use of census data for development purpose.

## **DATA DISSEMINATION**

Census data dissemination is a very crucial process as a major objective of the entire process is to make data available to users for development planning. The process will start with the public launching of the census result that will take place in the capital city and later in the provinces. Representatives from all government ministries and departments, local and international non-governmental organizations, the civil society, educational institutions and other important stakeholders will be represented. Above all the data will be available at Statistics Sierra Leone web site, its library and distributed among major stakeholders`.

## **B.**

The main existing and anticipated problems that will hamper the progress of the next census are as follows:

- Funding is viewed as a serious impediment to the success of the next census as the government lacks the capacity to fund in full all the operations as happened previously. There is a possibility that the funding of the next census will be donor

driven which will result in a lot of bureaucratic procedures and waste of time especially when donors like the EU are involved.

- Then there is the need to build on the capacity of staff within the office if they are to effectively implement the census operations and limit reliance on external consultants.
- Acceptance of census result in some quarters has always been a problem. Sierra Leone is no exception especially when the census result was launched a couple of months to the parliamentary and presidential elections. Good sensitization on the validation and use of census result is extremely essential to ensure its use.