

NATIONAL CENSUS

CENSUS PLANNING

Andy Tye, global business leader for census at DRS Data Services Limited, gives advice on how to conduct a successful census project

DIFFERENT COUNTRIES ARE LIKELY

to attribute varying importance to the tasks involved in planning for a census – according to their circumstances, resources and political drivers. However, costs, sound project management, legal frameworks and publicity are all significant issues that should be considered when planning a national population census.

It is likely that cost estimates for the entire census project will be needed for legislative or governmental approval. A detailed timetable of all the activities in the form of a project plan, highlighting the major milestones and the critical path will also be required, along with some legislative provision to cover matters like confidentiality of information.

Consideration needs to be given to how the population is to be enumerated, or counted. For example, is the population to be enumerated according to who is resident on the night of the census, or according to who is usually resident, or both? Thought should also be given to non-nationals and how special populations, such as the hospitalised, prisoners, temporary visitors and nationals travelling abroad, are to be counted.

PROJECT PHASES

Census projects can typically be divided into seven key phases.

Phase one involves looking into stakeholders' requirements. Consultation programmes need to be established at the very beginning of census planning to identify what data needs to be captured. The various stakeholders might include central and local government, academic researchers and the business community.

Phase two is the preparation stage. The entire territory needs to be mapped using physical maps or Geographical Information Systems (GIS) software. These need to be of a sufficiently large scale so that the country can be divided into enumerator workloads using easily-observable features on the ground – like roads and rivers – without any gaps or overlaps. The size of enumerator workloads will depend on the methods of data collection, the number of enumerators to be used and the length of the collection period.

The preparation phase also involves designing forms to capture the data. In most countries censuses are undertaken by enumerators conducting face-to-face interviews. Some countries drop-off forms and collect them at a later date. Some more developed countries rely on postal services to distribute and return forms. These factors have important implications on the content and design of the census form. It is important not to overload

the form with so many questions that the quality of data captured is compromised.

Face-to-face enumeration interviews have the benefit of improving data quality and increasing the number and complexity of questions that can be included, albeit they are likely to be more costly than approaches that do not require face-to-face contact.

In general, best practice suggests that forms should be simple, should ask the fewest questions possible and lack any complex definitions, concepts or complicated routing instructions. The same form does not have to be used for all households – a sample of households can be asked extra questions. Many countries use this short-form/long-form approach.

The volume of forms for census is very large. For the Sudanese census in 2008, DRS designed and printed 11 million forms – equal to 27 articulated truck loads!

SELECTION AND TRAINING

Phase two also includes the selection and training of enumerators. Recruiting the large number of temporary staff needed will be a significant undertaking. The skills that the enumerators need will define the criteria for their recruitment selection. Some countries choose to select on professional qualifications, whereas others might choose to recruit from the student population. Lessons from previous census projects will help to refine the effectiveness of the recruitment process but financial constraints can be a limiting factor.

Training is usually undertaken close to the census date so that the knowledge is fresh in everyone's minds. It is essential that all staff are trained to the same standard and to follow the same methods. One popular approach is to use cascade systems for recruitment, training and general people management. This involves appointing several high level census supervisors, each of whom is responsible for a large area of the country. These then recruit and train census officers, who in turn recruit, train and supervise the work of the enumerators.

To cover 'drop-outs', reserve staff are often recruited and trained and, depending upon the languages involved, interpreters may be needed.

It is important to have clear aims when testing the process. Some typical aims might be to test the data collection procedures and enumerators' ability to follow instructions, to test public knowledge of, and confidence in, the census authorities and the census process and to test the processing of data. Pilot projects that test these methods are deemed critical to optimise systems for any full national census project.

It takes considerable time to design



a test, evaluate the results, make any necessary changes and possibly re-test. It is important, therefore, that adequate time is allocated in the census project timetable.

GATHERING DATA

Phase three involves enumeration, the gathering the census data. For most countries this is the most costly part of the whole operation. Once it has been decided how the population is to be enumerated, or counted, and appropriate forms have been designed, the length of the data-collection period needs to be established.

Although the census will refer to a single night, it will not be practicable to conduct the

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factor in the Sudanese census as people tend to migrate during its rainy season.

Phase four involves processing the census data. It must be decided how the census data will be captured into the census database. Popular options include manual data input and OMR or ICR scanning. The census forms in Malawi were scanned using six high speed OMR and Image scanners.

Decisions will also need to be made about how to verify data, handle errors and omissions, such as what editing and data input techniques will be deployed. Quality control systems are recommended for this purpose, such as key correction, mass verification, sampling and automatic coding of data captured.

Phase five involves census data evaluation. Most developed countries carry out some form of a census evaluation programme. This is often a coverage-check to estimate the extent of undercount. The quality of the data should also be checked for 'response error'. Decisions will need to be made on what to do about the errors detected and if the census estimates need to be adjusted to take them into account.

Phase six is the analysis of census data. This is an ongoing phase of a census project with data being analysed in many ways using various parts of the data, or datasets. One of the most common and immediate requirements is to determine the population size and population breakdown by region. Local government funding typically relies on this data for the allocation of their budgets. The UN will use data from the 2008 Malawi census to decide the level of funding for feeding stations and healthcare.

Finally, phase seven is the dissemination of census data. What tables will be produced and in what order – given that the end-to-end census process can take months or even years? What strategies will be used to avoid inadvertent disclosure of individuals? Will subsets or micro-data be made available and, if so, in what form and under what conditions and safeguards?

Andy Tye is global business leader for census at DRS Data Services Limited. Having been involved in more than 15 national population registration projects around the world, DRS has the skills and experience in the complete census data collection cycle.

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entire data collection exercise the very next day. This means there has to be a period of time set as the 'collection period'. If this is too long, memories will become unreliable but if it is too short, excessive numbers of enumerators will be needed. A collection period of two to three weeks is usually set, but this will vary

according to local circumstances and available resources. In Malawi, enumeration started on 8 June 2008 and finished on 28 June 2008 using a total of 13,000 enumerators.

Local considerations may need to be factored into the exact timing of the census. Timing of enumeration was an important