



NATIONAL GIS AND DATA GOVERNANCE EXPERT

DATA COLLECTION ROADMAP

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MASAR implementing partners



In collaboration with



UNIVERSITY OF
BALAMAND

1 DATA COLLECTION ROAD MAP

1.1 ESTABLISH STUDY PURPOSE AND OBJECTIVES

The study purpose and objectives establish the need for data and information needed at the GMU. It should be defined as the first step in any data collection activity. Once established, the study's purpose and objectives will help to guide the data collection to successful completion. Not only will the study's purpose and objectives be used to develop a data collection plan, but they may also be used throughout the study process for clarification of tasks or resolution of ambiguous issues.

It is not uncommon for data to be collected for several purposes with the main objective to establish a GIS database. If the different studies or uses have competing needs, GMU personnel may simply have to prioritize their data needs.

1.2 SURVEY DESIGN

1.2.1 Steps to Survey Design

1.2.1.1 Step 1: Define survey objectives, use of results, and target population

When developing a survey, objectives should be clearly defined, i.e. what insights should be gained from the survey and what should be learned. Hence, the GIS Coordinator at the GMU along with municipal mayors and the head of the UoM need to decide what indicators and insights they need to extract from the survey results. As such, the survey questions have to be very carefully drafted to allow for data analysis. Furthermore, it is advisable to invest in extremely good questionnaire design and testing for the baseline survey.

Second, it is vital to think about how the final results will be used. The reason for doing this early in the process is that the desired use of the results determines the questions and the target population.

Third, the target population to be surveyed (also referred to as the target group) needs to be identified, including sub-groups. This decision will have implications for steps later in the process, such as deciding on the number of respondents and the way they are selected.

1.2.1.2 Step 2: Draft survey questions

Much of what can go wrong in survey design happens at the drafting stage of the questionnaire. Several good practices can help produce a sound questionnaire.

It is advisable before beginning the process of drafting questions to conduct focused discussions with individuals of the target population, a focus group with municipal representatives and the local communities can help identify key issues that need to be surveyed. Once key issues have been identified, simple and clear questions can be drafted.

At this stage, a letter of invitation to participate in the survey can be drafted. It should indicate the purpose of the survey, clearly define the participants' role and explain how anonymity will be guaranteed. The survey's cover letter is extremely important, as a good letter helps maximize the response rate. Low response rates present the risk that no statistically valid conclusions can be drawn from the survey results.

1.2.1.3 Step 3: Pilot and re-adjust questionnaire

It is essential to test surveys to identify weaknesses in the survey design. This involves running the survey on a smaller-scale group of people beforehand to learn how respondents are likely to interpret and react to the questionnaire. Piloting surveys allows the GIS coordinator to discover problems in the survey design such as poorly-phrased questions and to adjust the survey design accordingly. Conducting a pilot before running the actual survey can significantly improve the quality of results. In addition, the analysis of responses to the pilot survey enables the GIS coordinator to subsequently better interpret answers to the survey questions.

Typically, volunteers from the target population respond to the questionnaire and are asked by interviewers to "think aloud" while they are preparing their answers. They may also be asked some follow-up questions to understand how they interpreted and answered each question. Standard follow-up questions ask respondents i) to say in their own words what they think the question is asking and ii) to explain how they chose a particular answer over others. Interviewers need to be knowledgeable about the objectives of each question so that they can detect issues arising from the way that respondents understand questions. They also need to be trained not to influence respondents in their answers.

It can be useful to not only test the questions but also the cover letter: Is the purpose of the survey clear to respondents and do they feel the letter motivates them to participate?

1.2.1.4 Step 4: Select respondents and the data collection method

This stage confirms the number of respondents and the way they are selected. If conducting census data regarding demographic and economic situation, all populations must be surveyed. But in other cases, a sample from the population is selected to generalize the findings and draw conclusions. Mistakes in the selection of respondents will lead to a bias in the survey results and the whole survey will be useless.

The method used to select the people who receive the survey (i.e. the sample) is called sampling methodology in statistics. One common method used is random sampling. Random sampling is a process that randomly selects respondents from the target population. For example, if the target population is “companies in a municipality”, all companies should have the same chance of being selected, and only once. This is easy if all companies in the municipalities are listed. In this case, a random number generator can simply be used to select respondents. Additional sophisticated methods exist that help reduce survey costs or ensure that there is a sufficient sample size for each sub-group of interest. Selecting the right sample size is quite complex. Contrary to common belief, it does not depend on the size of the target population.

A high response rate is important for drawing valid result conclusions. This is particularly the case if those who ignored the survey would have answered differently than respondents.

Ideally, a data collection method, therefore, maximizes the response rate, while ensuring the anonymity of respondents and making them feel comfortable to respond honestly. One can choose between self-administered data collection methods (e.g., Internet surveys) versus interviewer-administered data collections (e.g., personal interviews). Self-administered surveys are usually less expensive than interviewer-administered data collections and respondents are more likely to honestly respond to sensitive questions if no one sees how they answer. However, interviewer-administered data collections are often most effective for getting a high response rate and for exercising quality control concerning answering all questions, meeting question objectives, or the quality of answers provided. At this stage, it is timely to design ways to follow up with non-respondents to maximize response rates.

1.3 PREPARING FOR DATA COLLECTION

1.3.1 MAKING LOGISTICS ARRANGEMENTS

To make logistics arrangements, you will have to (1) set up central-local headquarters, (2) contact local authorities where the survey will be carried out, (3) decide on the size and composition of the field team, (4) arrange transportation and security, and (5) arrange to obtain or prepare copies of local maps.

1.3.1.1 Setting up central and local headquarters

The survey must have a central headquarters, from where the whole operation will be coordinated. Hence, at the GMU it is essential to set up an office dedicated to general administrative activities. The GMU office and specifically the GIS coordinator computer will serve as the storage place for questionnaires.

1.3.1.2 Contacting local authorities

Even if the data collectors are volunteers from the local community, it is essential to inform the local authorities to let them know what they would be doing and to ask for their permission, and to advise them of the team members' arrival dates.

1.3.1.3 Deciding on the size and composition of field teams

The number of interviewers required depends on the size of the municipality, the objective of the survey, the sample size, the number of days to be spent interviewing, and the number of respondents one interviewer can interview in a day. This number is estimated from the length of a working day divided by the amount of time it takes to complete one interview (determined when you pretest the questionnaire), allowing some travel time (Travel time will be substantially longer in rural than in urban areas).

Do not use more than 15 to 20 interviewers per region. It will be difficult to ensure good quality training and supervision for a larger number. Furthermore, if the survey will be done by different

teams in each region or district, make sure that the training for each team is the same. It is best to use the same trainers and training materials for all the survey field training.

Once you have decided how many interviewers are required, work out the team compositions. Each team will need one supervisor and interviewers. Common team composition includes a minimum of five persons: supervisor, and four interviewers of different genders who may work in pairs, visiting alternate houses. Working in pairs also contributes to quality control because one interviewer will always be close to another and they will make decisions together on the selection of households and other interviewing matters. It is also useful to rotate team members to avoid monotony.

1.3.1.4 Arranging transportation, and security

Transportation may be provided especially in rural areas but the cost must be estimated in advance.

Security issues in the field are very important. Hence, the field coordinator must be available to resolve any security issue.

Finally, careful arrangements should be made for paying the field workers and supervisors (in case funding is available), as well as providing them with meals, and other expenses such as water and internet. Timely payment is essential for maintaining the team's morale.

1.3.1.5 Obtaining and preparing copies of local maps

Before the fieldwork begins, copies of the maps must be available in which the survey will be conducted. These may be available from the Census Bureau or another government office. Maps must be divided into small islands. Field supervisor must assign teams for each island and estimate approximately the time needed to finish each island.

1.3.2 Pretesting the Questionnaire

You must pretest the questionnaire in the field. Apply the pilot to respondents similar to those who will be interviewed during the survey. The survey coordinator should do the pretest with the help of one or two future supervisors or interviewers.

Specifically, the pretest should answer the following questions:

- Are respondents willing to answer questions in the way you have asked them?
- Are any of the questions particularly difficult to answer or do they address sensitive issues?
- Are the questions well understood by the respondents?
- Can the interviewers follow the instructions easily, or do they misinterpret them?
- Is the questionnaire designed with adequate space and is the coding of answers clear?
- Is it necessary to create new codes for common answers which were not included in the original questionnaire?
- How long does an interview take? (This will help you to decide how many interviewers you will need.)

Note that during the pretest the interviewers are still learning the questionnaire, so the time spent per interview is longer than it will be in the field after they become more experienced.

Discuss the results of the pretest with experienced colleagues and with the interviewers.

Make any changes necessary to the instructions to interviewers. If the pretest reveals that respondents refused to answer the questions in the form in which they are given in the questionnaire, consult an experienced survey worker in the country in which you are working. These experts can help you to decide whether it is advisable to make changes to the questionnaire. If a significant number of respondents refuse to answer the questions; the survey will not be worth doing.

1.3.3 The Questionnaire Layout

A good layout helps to reduce interviewer errors in the field. Allow a separate questionnaire for each household in your sample.

Check that your questionnaire contains sections for:

1. Interview date
2. Interviewer's name (or number)
3. A unique identifying number for the cluster, household, mother, and eligible child

4. An introductory paragraph is written for your survey, explaining the purpose of the survey, asking for permission to do the interview and stating that the information obtained during the survey is confidential
5. Introductory paragraphs to the different modules

1.3.4 Selecting the Field Workers

The quality of the information obtained from a survey depends on the quality of the work done in the field. Good survey organization and thorough fieldwork are vital.

A team of interviewers and their supervisors will do the fieldwork. A brief job description for the field supervisor and the collector's job is given hereafter.

The field supervisor's job is to:

- Identify the clusters to be surveyed
- Supervise three to five interviewers as they perform the survey
- Ensure that the interviewers follow instructions
- Answer interviewers' questions as they arise
- Control the data quality by checking for errors during the interviewing, by checking that forms are completed fully and correctly, and by checking that all the respondents are answering the questions
- Identify problems and retrain interviewers who are doing their job incorrectly.

The interviewer's job is to:

- Identify the specific households to be surveyed
- Gain the consent of respondents to be interviewed
- Conduct interviews using the standard questionnaire
- Maintain standard procedures in conducting the interviews and recording the answers.

You must select the interviewers and supervisors for their ability and motivation to perform these tasks. Supervisors must understand the importance of adhering to survey instructions, and be capable of ensuring that interviewers follow instructions.

The interviewers and supervisors should be:

- Intelligent and literate and educated to a secondary school level or more

- Willing to follow instructions precisely and accurately
- Polite and able to establish a good relationship with the respondents
- Fluent in the language of the respondents.

Previous survey experience is not necessarily a positive factor. While participation in well-conducted surveys is surely an advantage, previous involvement in poorly planned and implemented surveys can lead to bad interviewing habits which may be hard to correct.

Use female interviewers if possible, and ensure that the age of the interviewers is adequate for the information you want. In some societies, women may be reluctant to provide answers on sensitive issues such as outcomes to male interviewers or to interviewers who seem too young.

In addition to the above qualifications, supervisors should have previous field experience as interviewers in well-conducted surveys.

Always select more potential interviewers than you will need. Train all of them and select the required number at the end of the course. This will guarantee that only the best field workers will be involved in the study, and will also provide a few additional interviewers in case you need replacements. Provide those who were excluded with a training certificate.

1.3.5 Choosing and Preparing the Equipment

Equipment must be purchased well in advance of the survey. In a digital survey, only a digital notebook or cell phone is enough. A GNSS/ GPS for coordinate might be needed in some survey that requires accurate locations.

A name tag is necessary to be given to surveyors to identify them.

1.3.6 Training the Field Workers

It is essential to have high-quality data. This will be possible only if you allow enough time to train the supervisors and interviewers thoroughly. Remember to:

- Plan for the training course
- Prepare interviewer guides
- Make sure adequate space is available

- Provide facilities for drinks and snacks (a good working atmosphere during the training course can help to motivate interviewers to perform well in the field)
- Use audio-visual aids during the training.

Before you train the field workers you should also:

- Translate and pretest the questionnaire, the instructions for filling in the questionnaire, and the field procedures
- Identify typical field locations for practicing household selection and interviews.

1.4 CARRYING OUT THE PILOT STUDY

The pilot study is the final rehearsal for the survey. It should be carried out soon after finishing the training period, but at least a few days before beginning the actual fieldwork.

This will allow time for correcting any problems detected during the pilot study.

The area should be selected to be representative of the situations the interviewers might face during the survey. The pilot study should last for three to five days.

The pilot study should be seen as an extension of the training program. Close supervision of the interviewers during this phase is essential.

1.5 SETTING UP COMPUTERS FOR DATA PROCESSING

The GIS coordinator or the GIS technician must be responsible for the data processing at the GMU office. In digital surveys, the collected surveys must be uploaded in real-time or daily to allow for the quality control and validation of the data.

1.6 ETHICAL CONSIDERATIONS

Household surveys typically raise several ethical questions. Such questions relate to individual rights to privacy, the need for informed consent, and responsibilities that arise upon uncovering potential information in a survey.

1.6.1 Ethical Aspects of Conducting a Survey

Ethical approval: The survey must abide by the laws of the country.

Confidentiality: All information provided to the interviewers is strictly confidential.

Records should be securely stored. Computerized records should not include any names that might be used to identify the families unless this is strictly necessary (for example, if follow-up visits are being planned).

Informed consent: heads of families should be informed about the contents of the interviews and measurements to be carried out. They must understand the procedures and give their full approval. In some countries, written consent may be required.

Feedback to the families: Families have freely donated their time to the survey and are entitled to some feedback.

Feedback to the community: Before starting the survey, the coordinators should plan what type of feedback will be given to the communities

1.7 RUNNING THE SURVEY

Running the actual survey can start smoothly after the pilot and the feedback. The field supervisor and the data collectors at this stage are well trained and ready to carry the collection as per the pilot. The data collectors' teams are grouped and distributed to their designated islands. The supervisor has to do follow-up and quality control on the collection and must be available to solve any problem and answer any question.

1.8 ANALYZING THE RESULTS

In this step, all survey responses are summarized and analyzed. The results can be presented in graphs and tables and explain what conclusions can be drawn from the data.