# Title of Plan

**e.g. LQAS Community Based Survey In 10 States of Examplandia**

# LQAS DETAILED IMPLEMENTATION PLAN v1.0 Jun 2012

AUTHORS OF PLAN

LOCAL COUNTERPART (WHENEVER POSSIBLE)

PLACE AND TIME WHERE PLAN WAS WRITTEN



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# Acronyms

|  |  |
| --- | --- |
| CA | Catchment Area |
| DIP | Detailed Implementation Plan |
| IP | Implementing Partner |
| LQAS | Lot Quality Assurance Sampling |
| MOH | Ministry of Health |
| PPS | Probability Proportional to Size |
| SA | Supervision Area |
| WHO | World Health Organisation |

# List of Stakeholders

|  |  |  |
| --- | --- | --- |
| **Organisation** | **Lead Person** | **Role** |
| UNICEF | e.g. Country Rep and or health advisor |  |
| Ministry of Health |  |  |
| Civil Society |  |  |
| Other Government Agencies |  |  |
| Other International Agencies |  |  |

# Section 1: Background

*This section should contain the following information:*

* **General situation/health situation of the host country.** This should include social, economic, political and health information relevant to the survey. Country information might include GDP, human development index ranking, details of any recent upheaval such as conflict or natural disasters and a description of infrastructure in the country. Health information might include; what are the principle health problems, who are the major health care providers, what are the most pressing health needs, what is the coverage of health services and which populations do and do not have access to health services, and how is health care funded - private vs public, donor dependency, etc. Sources of data might include: Situation Analysis of the highlighted issue, Country Program Action Plan, Medium Term Strategic Plan, Country Office Annual Reports, Poverty Reduction Strategy, surveys (e.g. DHS, MICS, KAP), sector Management Information Systems, Lives Saved Tool analyses, Marginal Budgeting for Bottlenecks analyses, Integrated Monitoring and Evaluation Plan, and country map. A description of administrative divisions in the country should also be included here, as well as a brief description of the specific area of the country where the survey will take place.
* **Background to the survey.** In this section identify if there is a specific *Project* or *Program* that the LQAS survey is supporting. What are the objectives of the program? Are there sources of data, for example administrative data or surveys, for monitoring and evaluating the program? What are the circumstances that justify the LQAS survey? How will the LQAS survey complement the other sources of program monitoring and evaluation data, for example through triangulation or by comparison? What additional information will be gained by the LQAS survey?
* **Overview of the LQAS survey.** Briefly summarize the purpose of the LQAS survey, where and when the LQAS survey will take place. Who are the respondents and how many will there be? What information will be gathered?

## 1.1 Brief Presentation of the Lot Quality Assurance Sampling (LQAS) Method

*The following explanation of LQAS can be adapted or used verbatim:*

**Lot Quality Assurance Sampling (LQAS) is a method for assessing a program by analyzing the data produced by a small sample.** It was developed in the 1920s for industrial quality control. During the mid-1980s it was adapted to assess health programs. In 1991, a World Health Organization (WHO) report on epidemiological and statistical methods for rapid health systems assessment concluded that LQAS was one of the more practical methods available and encouraged its further development to monitor health programs1.

**LQAS has emerged as a practical management tool for conducting baseline surveys and monitoring health services and health needs.** Advantages of the methodology include the following:

* LQAS sampling procedures and analyses are relatively simple and the findings can be used immediately by local managers and health workers.
* The data from individual Supervision Areas (SA) can be aggregated into an estimate of coverage for the entire program Catchment Area (CA).
* Only a small sample is needed to classify an SA as not having reached the average coverage of the CA or a predetermined target;

**LQAS works by subdividing a program CA (e.g. a district) into smaller areas that deliver health services, the SA**. A CA consists of a minimum of four SA, although five is preferred. Typically, LQAS uses a sample size of 19 individuals from each SA. In the case of 5 SA, this results in a sample of 95 respondents for the entire CA. By combining data from 5 SAs, managers can determine coverage proportions of the entire catchment area with 95% Confidence Intervals of +10% for multiple indicators. If 4 SA are included in the assessment, resulting in a total sample size of 76, the 95% Confidence Interval is still acceptable as it does not exceed 11%. In addition to this, LQAS decision rules can identify SAs that perform below the CA average coverage or pre-selected targets. These areas are then prioritised. A detailed statistical description of LQAS is included in annex 5.

## 1.2 Aims and Objectives of This LQAS Survey

**This section explains the aim and objectives of the survey.** This section should clarify all of the principal components of the survey.

* **The aim of the LQAS survey is what you intend to achieve by carrying out the survey.** The project should have just one overall aim, for example, “evaluate the performance of community case management programs in 5 districts of Examplandia”.

* **The objectives give details on how the aim will be achieved.** There may be three, four or more objectives, depending on how complex the aim is. An example of objectives which would meet the above aim might be;

1. Household survey for mothers of infants to examine uptake, utilisation and quality of services provided by community health workers
2. Survey of community health workers to assess the availability and quality of services they provide
3. Identify SAs with “inadequate” performance in need of support and SAs with “adequate” performance from which to learn from through peer-to-peer learning.
4. Carry out the above through local counterparts, leaving in place a mechanism for ongoing periodic assessment.

# Section 2: Questionnaire Development

* **This section explains how the questionnaire is to be developed.** This section should include explanations of: who will write the questionnaire; sources of questions; who will approve it; possible problems which could be encountered; in what language the questionnaire should be written and used; what languages are spoken by the respondents; what provision for informed consent and ethical approval will be made. This section should also provide details on how the questionnaire will be pretested in a field setting and specify the dates.
* **If the questionnaire has already been developed record details on all the points listed above.**

## 2.1 Target Groups

* **This section lists the target groups that will be interviewed to collect the survey data.** For example, *mothers of infants 0-5 months*; *mothers of children 12-23 months*; *mothers of infants 0-59 months who have had fever in the previous two weeks; Community Health Workers*. Usually, a survey will have between three and six universes. The target groups should be aligned to the objectives presented in section 1.2. A list of indicators for each target group is presented in annex 2
* **A questionnaire will be developed for each group.** Collectively, the questionnaires for all the groups are referred to as a *set of questionnaires*.

## 2.2 Indicators

* **This section explains how the indicators were developed and lists the principle indicator categories.** An exhaustive list of indicators can be included in Annex 2. This section should explain who selected the indicators, the criteria they used and the UNICEF program to which they are linked (e.g. Community Case Management, Strategic Results Areas). A short list of Core Indicators that are of particular interest to the Ministry of Health or to UNICEF can be given here.
* **This section should also list the targets for key indicators.** If no targets have been identified then say so.

# Section 3: Ethical Approval

**This section should deal with all the ethical considerations connected with the study.** Depending on the country,these could include:

* **Ethical approval by the local ethics committee.** This could be from the national university or government
* **Informed Consent.** What measures will be taken to gain informed consent from respondents. This should include an informed consent form and agreed procedure for gaining informed consent in the questionnaires.
* **Ensuring confidentiality.** What measures will be taken to ensure confidentiality at all stages of the survey.
* **Safeguarding of information collected.** What measures will be taken to safeguard any information collected during the survey – for example removing respondent’s names from any final reports, keeping the questionnaires in a locked office.

# Section 4: Sampling

**This section explains the size of the LQAS sample and the information this will provide**. It should contain the following information:

* **Definition of terms.** For this survey, explain what will be meant by:
  + *Supervision Area* (SA, e.g. sub district)
  + *Catchment* *Area* (CA, e.g. a specific health district)
  + *Program* *Area* (the total number of CA that could comprise a Region).
* **Total sample size.** Explain; , how many SAs per CA and how many CAs there are in the program area. Indicate that the standard sample size for LQAS is 19 respondents in each target group per supervision area. State the total number of interviews (for each target group) in the survey. Stress that the total number of SAs should not be less than 4. Explain that the table in section 5.1 gives more detailed breakdown of this information
* **This sample will give two levels of information:**
  + Classifications of SA using the targets or average coverage for each indicator.
  + Prevalence estimate at CA level for each indicator.
* **For the coverage estimates at the CA, confidence levels will vary according to how many SA it contains.**
  + **4 SA** (4x19 = total sample size 76) 95% confidence interval = +11%.
  + **5 SA** (5x19 = total sample size 95) 95% confidence interval = +10%.
  + **6 SA** (6x19 = total sample size 114) 95% confidence interval = +9%.
* **The LQAS toolkit contains a confidence level calculator to calculate the confidence interval for higher numbers of SA.**

## 4.1 Selection of interview Locations

*The following explanation of the LQAS methodology for selecting interview locations can be adapted or used verbatim:*

**The 19 interview locations in each SA are selected using Probability Proportional to Size sampling (PPS).** This works by following the steps listed below:

* Obtain from the Ministry of Health, or the Bureau of Statistics a list of all the communities in each SA and their population sizes. This list is referred to as the *sampling frame*. It does not have to be up-to-date, as long as it shows the relative size of the communities. Try to obtain the sampling frame information either as an Excel Spreadsheet or in a database.
* Calculate the cumulative population for each SA. This is explained in detail in the training manual.
* Calculate the sampling interval (total population divided by sample size, normally 19 per SA)
* Choose a random number using the Random Number Table.
* Beginning with the random number, add the sampling interval to identify locations for the number of interviews required.

This will generate a list of 19 interview locations per SA. One respondent from each target group will then be selected from each interview location using the method detailed below in section 3.2. The LQAS Tool Kit includes a Sampling Frame Generator that automatically performs the above steps.

**The following information should also be included:**

* The source of population figures for the sampling frame
* Who will be responsible for assembling the sampling frame
* A timeline for its completion

## 4.2 Selection of Respondents

*The following explanation of the LQAS methodology for selecting interview respondents can be adapted or used verbatim:*

**In each interview location, a starting household will be randomly selected using segmentation sampling.** This works by following the steps listed below:

* A map of households in the interview location is drawn up with the help of a community leader.
* The community is divided into segments containing a roughly equal number of households; a segment is then chosen at random.
* This process is repeated until a manageable number of households is arrived at (normally <30 households).
* All households in the selected segment are given a number.
* One household is chosen at random using a random number table. This household is not surveyed - the survey team carry out their first questionnaire at the next nearest household.
* There may be respondents from more than one target group in the same household. Obtain a composition of the household, and if there is more than one potential respondent in the household, select one at random. In cases where a target group is more difficult to find than the others, consider this group a priority and interview the respondent as soon as they are encountered.

**The data collector will then move from household to household until they find a respondent from each target group.** Criteria for selecting the next household will be the next nearest door. The data collector should continue going from house to house until the whole questionnaire set has been completed. This is known as “Parallel Sampling”.

**The following information should also be included:**

* Definition of what constitutes one household. Normally this is defined as a group of people that eat together from the same cooking pot; this may require adaptation to local circumstances.

# Section 5: Training

*The following explanation of the LQAS training can be adapted or used verbatim:*

**The LQAS training program is a standard length of four days pre-survey and three or four days post-survey.** Details of the course can be found in the *Assessing Community Health Programs* publications: the *Trainers Guide* and the *Participant’s Manual*. The table below shows the number of courses to be run, their location and how many participants will be attending.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region (Higher Level Administrative Area)** | **Participating Districts / Area** | **Total Number of Supervision Areas** | **Number of Participants** | **Training Venue** | **Date** |
|  |  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |
| **Total** |  |  |  |  |  |

**The following information should also be included:**

* **How many trainers will be made available and who will provide them.** This section lists the master trainer and those who are training to become LQAS trainers. In this section also indicate who will be the international trainers. Ideally, there should not be more than 30 students per trainer, but this will depend on local conditions
* **Who will print and distribute the training materials**. Notably the participants guide hand-outs and projector.
* **The language in which the training will be conducted**
* **Facilitation for participants**. Including meals provided and per diem paid.

## 5.1 Pre Survey Training

*The following explanation of the LQAS training can be adapted or used verbatim:*

**The four day LQAS training course gives participants all the skills required to carry out the survey.** Topics covered include the following:

* **Day 1:** Use of surveys, the importance of random sampling and LQAS methodology.
* **Day 2:** Selecting respondents, field practical 1 – Segmentation sampling and Selecting interview locations
* **Day 3:** Reviewing the questionnaires, planning for data collection, interview skills, field practical 2 – Interviewing participants
* **Day 4:** Planning the survey

**The following information should also be included:**

* Location of the field practical on day 2 and 3 and transport arrangements.

## 5.2 Hand Tabulation Workshops

*The following explanation of the LQAS training can be adapted or used verbatim:*

**The LQAS Hand Tabulation training course gives participants all the skills required to process the data collected during the survey.** This workshop takes place immediately after the data collection is completed. Topics covered include the following:

* **Day 1:** Hand tabulating results, data analysis (theory)
* **Day 2:** Hand tabulating results, data entry analysis (practice)
* **Day 3-4:** As required, more days for data entry and analyzing the data

**Not all data collectors are required for the hand tabulation workshop.** Further details are provided in section 7.1 Data entry.

# Section 6: Survey Organization and Supervision

**This section gives an overview of the survey and details of who is responsible for which aspect of the survey.** It should contain the following information:

* **A brief outline of the survey**. How many program areas, how many SAs, how many days are scheduled for data collection.
* **A supervision plan for the survey.** Normally, there is one SA supervisor per SA who is responsible for two to three data collectors. They will oversee data collection, review completed questionnaires, identify incomplete, missing or erroneous answers, and if needed, observe interviews or re-interview individuals. They will also take part in the data collection themselves. Above them, there is a program area supervisor for who travels from team to team ensuring data collection is taking place as planned. He or she is not normally involved in data collection.
* **An organogram of who reports to whom is included in Annex 6.** This should include Ministry of Health staff, UNICEF staff and any NGOs or consultants involved in the survey. The organogram will also serve as a chain of communication. An example is given in the annex which can be used verbatim or adapted for use.

## 6.1 Location of the Survey

**This section explains exactly where the survey will take place.** It should contain the following information:

* A brief description of the geographic location (e.g. ‘four districts in northern Uganda’)
* Include any maps of the area. Include health centres and CHW locations.
* Complete the following table to give a detailed list of program areas and the supervision areas that they contain:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Program Areas and Supervision Areas** | | | | | |
|  | **Program Area 1** | **Program Area 2** | **Program Area 3** | **Program Area 4** | **Program Area 5** |
| **SA 1** | Supervision Area 1.1 | Supervision Area 2.1 | Supervision Area 3.1 | Supervision Area 4.1 |  |
| **SA 2** | Supervision Area 1.2 | Supervision Area 2.2 | Supervision Area 3.2 | Supervision Area 4.2 |  |
| **SA 3** | Supervision Area 1.3 | Supervision Area 2.3 | Supervision Area 3.3 | Supervision Area 4.3 |  |
| **SA 4** | Supervision Area 1.4 | Supervision Area 2.4 | Supervision Area 3.4 | Supervision Area 4.4 |  |
| **SA5** |  | Supervision Area 2.5 | Supervision Area 3.5 | Supervision Area 4.5 |  |
| **SA6** |  |  | Supervision Area 3.6 |  |  |
| **SA 7** |  |  |  |  |  |

If the number of supervision areas in a program areas exceeds a number that is financial feasible to undertake, the program should consider redefining the supervision area to a higher administrative level. Alternatively, a Large Country LQAS design could be considered which is not discussed here.2

## 6.2 Human Resources

**This section explains what human resources are necessary for carrying out the survey and how they will be selected.** It should contain the following information:

* **Criteria for selection of data collectors**. Preferably, the data collectors should be state health workers who are familiar with the area they are to survey. However, *as a minimum* they should be: numerate/literate; fluent in the language used in the training as well as in whichever language the questionnaire will be administered. They also need to be available for the entire training and survey period. Ideally they will have had some experience with surveys or interviewing people. They should be physically healthy as the data collection can be physically demanding.
* **Who will be responsible for recruiting the data collectors?** From where they will be recruited?
* **What financial provision will be made for the data collectors: per diem, wages, facilitation fees**
* **Complete the following table.** If available, names of data collectors should be added.

|  |  |  |
| --- | --- | --- |
|  | **No. Supervisors** | **No. Data Collectors** |
| **Program Area 1** |  |  |
| **Program Area 2** |  |  |
| **Program Area 3** |  |  |
| **Program Area 4** |  |  |
| **Program Area 5** |  |  |
| **Program Area 6** |  |  |

## 6.3 Data Collection Plan

**This section explains how the data will be collected.** It should contain the following information:

* **Use the following table to calculate the amount of time required to carry out the survey**. To fill this in, follow the instructions below.
  + **Enter the number of supervision areas in the program area in the first column `Number of supervision areas`.** This should be a minimum of four.
  + **Calculate the second column, `Total Number of Interviews`.** Do this by multiplying the number of Supervision Areas by the sample size per SA (normally 19) by the number of target groups.
  + **In the third column, `No of data collectors` write in the total number of people collecting data in the program area**. Include the supervisors if they will be carrying out interviews.
  + **Divide the total number of interviews by the number of data collectors.** Enter this number into column 4, `No. of Interviews/DC`.
  + **Enter in column 5 the total number of days planned to collect the data.** This normally takes 4-12 days depending on the size of the survey.
  + **Divide the number in column 4 by the number in column 5.** This will give the total number of interviews per data collector per day.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Column Number** | **1. No. of Supervision Areas** | **2. Total No. of Interviews** | **3. No. Data Collectors (DC)** | **4. No. of Interviews/**  **DC** | **5. No. of Days to Collect Data** | **6.Interviews/ DC/ Day** |
| **Program Area 1** |  |  |  |  |  |  |
| **Program Area 2** |  |  |  |  |  |  |
| **Program Area 3** |  |  |  |  |  |  |
| **Program Area 4** |  |  |  |  |  |  |
| **Program Area 5** |  |  |  |  |  |  |
| **Program Area 6** |  |  |  |  |  |  |

* **The maximum number of interviews per data collector per day will vary according to the terrain.** Finding the starting household will normally take at least two hours per village, which must be done for every set of questionnaires. An average interview can normally be completed in less than 45 minutes, but time must be allotted to locate the next respondent.

**The following points should also be included in this section:**

* **Logistics for transportation.** Will data collectors provide their own transport or will transport be provided? If so, explain how this will be arranged.
* **Logistics for the survey.** How many questionnaires will need to be printed and how will this be done? A complete list of supplies required can be found in Annex 4. If clearance and official letters for the data collectors from the Ministry of Health are required, or clearance from any other official body, this should be detailed here, including review by any local ethics review board.

# Section 7: Data Processing

*The following explanation of hand tabulation can be adapted or used verbatim:*

**In the LQAS methodology, the process of turning raw data into manageable information is called Hand Tabulation.** It works by using the information gathered in the questionnaire to decide if the respondent has met the criteria for the indicator or not and recording the result on pre-prepared hand tabulation sheets. The post survey LQAS training course gives participants all the skills required to carry out this task.

**The data collection teams work together to prepare hand tabulation sheets for each supervision area.** Not all data collectors are required for the hand tabulation workshop.Normallythree data collectors are required – one to call out results, one to record, and another to assure quality control. The table below shows how many members of the team will be required for the task of hand tabulation, the location and dates of the hand tabulation workshop.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Program Area** | **Total Number of Supervision Areas** | | **Number of Participants** | **Venue** | **Date** |
|  |  | |  |  |  |
|  |  | |  |  |  |
|  |  | |  |  |  |
|  |  | |  |  |  |
|  |  |  | |  |  |

Hand tabulation sheets are developed directly from the questionnaire. There are two types of hand tabulation sheets. The first one is used to assess every question in each questionnaire in a specific supervision area. It is used to determine the number of questionnaires that were filled in and the number of correct answers that were given. The other sheet is used to summarize the results from each supervision area for the catchment area as a whole. This sheet is also used for making the LQAS classification. Examples of these sheets are found in the LQAS Tool Kit and are not normally included in the DIP.

**By the end of the hand tabulation workshop, a master sheet will have been prepared for each program area.** This will list all the supervision areas in that program area, and show for each how many of the 19 respondents met the criteria for a given indicator. From this, it will be possible to:

1. Calculate a coverage estimate for each indicator for the program area
2. Judge whether the individual supervision areas have met a predetermined target or not.

**The following information should also be included:**

* How many facilitators will be made available for the workshops and who will provide them.
* Who will print and provide the training materials
* Facilitation for participants, including meals provided, per diem paid.
* The venue for the workshop (normally it is the same location where the initial training took place).

## 7.1 Data Analysis

**This section deals with what will be done with the data once the hand tabulation is complete.** It should contain the following information:

* **Whether the results will be entered into a computer database.** If so which database management computer program will be used for the data entry (e.g., EPI Info, Access, SPSS, or others), who will do it and who will prepare the data entry screens. List here any quality control measures such as double data entry of the data.
* **The software used to analyse the data (e.g. SPSS).** If so who will do this.

## 7.3 Reporting and Dissemination of Results

**This section deals with the production of the final report and what will be done with the information generated by the study.** It should contain the following information:

* **The format of the final report.** Including approximate size and information to be covered.
* **Who will be responsible for writing the final report.**
* **Who will the results be reported too, and what form this will take.** For example, is a presentation required to accompany the report.
* **When will each of these tasks begin and finish.**

# Annex 1: Workplan

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Preparatory Activities** | **Lead** |  | | | | **Month 2** | | | | **Month 3** | | | | **Month 4** | | | | **Month 5** | | | | **Month 6** | | | | **Month 7** | | | | **Month 8** | | | | **Month 9** | | | | **Month 10** | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Review, preparation and pre-test of LQAS instruments |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prepare DIP, budget and workplan |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Review DIP, budget and workplan with stakeholders |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Discuss and agree role of supervisors and coordinators |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Discuss and establish coordination mechanisms |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Get vehicles quotations and establish arrangements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Identify and make contact with candidates proposed as master trainers |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Finalize budget and use procedures to make funds available for use |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Present documents for approval to national counterparts** (DIP, questionnaires, budget, proceedings) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sampling frame finalized |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Develop agenda for training |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Arrange supplies for training |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Print questionnaires |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prepare tabulation tables and summary result for each target group |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prepare quality control checklist for tabulations |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prepare checklists for supervisors and interviewers |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Write procedures for payment of survey participants, contractors, etc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Produce the logistics plan |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Get list of data collection teams |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Complete logistic arrangements: phone, hotel, power, training venue, etc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Implement all tasks/plans included in the DIP |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Translate questionnaires if required |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Weekly team meeting to assess progress in planning trainings |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Arrival of LQAS master trainers |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Review of all preparations and finalise them if needed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LQAS Survey training workshop |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prepare reception of questionnaires and analysis plan |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LQAS hand tabulation workshop |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Develop data entry program |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Tabulation workshops and data entry** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hire or identify lead database expert to manage data entry if needed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hire data entry clerks |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data clerks training and supervision |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data entry |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data cleaning |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Identify lead analyst and report writer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Draft report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Presentation of findings |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Revision of final report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Final report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Disseminate report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Annex 2: LQAS Community Outcome Indicators

Target Groups are the client populations that the program will serve. Each indicator is associated with one or more Target Groups. The following is a list of Target Groups that are typically used in LQAS analyses. Seldom are all of the Target Groups used in an LQAS assessment.

Mothers of Children 0 – 11 Months (or Mothers of Children 0 – 5 Months)

Mothers of Children 12 – 23 Months

Mothers of Children 0 – 59 Months

Youths (males and females 15-24 years)

Women 15-49 Years

Men 15-49 Years

Households (any occupant)

Mothers of Children 0 – 59 Months with Fever in the Last Two Weeks

Mothers of Children 0 – 59 Months with Diarrhea in the Last 2-Weeks

Mothers of Children 0 – 59 Months with ARI in the Last 2-Weeks

**Target Group 1**

|  |
| --- |
| **Category 1** |
| Indicator 1 |
| Indicator 2 |
| **Category 2** |
| Indicator 1 |
| Indicator 2 |
| **Category 3** |
| Indicator 1 |
| Indicator 2 |

**Target Group 2**

|  |
| --- |
| **Category 1** |
| Indicator 1 |
| Indicator 2 |
| **Category 2** |
| Indicator 1 |
| Indicator 2 |
| **Category 3** |
| Indicator 1 |
| Indicator 2 |

**Target Group 3**

|  |
| --- |
| **Category 1** |
| Indicator 1 |
| Indicator 2 |
| **Category 2** |
| Indicator 1 |
| Indicator 2 |
| **Category 3** |
| Indicator 1 |
| Indicator 2 |

**Target Group 4**

|  |
| --- |
| **Category 1** |
| Indicator 1 |
| Indicator 2 |
| **Category 2** |
| Indicator 1 |
| Indicator 2 |
| **Category 3** |
| Indicator 1 |
| Indicator 2 |

# Annex 3 : Draft Budget

**Budget For LQAS Training Workshop**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Unit | Quantity | Unit Cost (US$) | Unit Cost (Local Currency) | Total Cost (US$) | Remarks: (Use Local Currency Costs only if necessary) |
| Training Facility Rental | Days |  |  |  |  |  |
| Projector Rental | Piece |  |  |  |  | One LCD projector will be used in each venue (it can often be borrowed from an international or host organisation) |
| Purchase or photocopy LQAS Participant’s Manuals | Copies |  |  |  |  | One manual for each data collector. We recommend purchasing the official copy as it will be a similar price to a photocopy and can be placed on a book shelf. |
| Purchase or photocopy LQAS Trainer’s Guide | Copies |  |  |  |  | One for each trainer. We recommend purchasing the official copy as it will be a similar price to a photocopy and can be placed on a book shelf. A RC-ROM comes with the Guide that has all of the slides for the training. |
| Air tickets for travel to and from the training | Participants |  |  |  |  | For example: 8 participants = 8 round trips. |
| DSA (including accommodation) during the Training | Participants |  |  |  |  | This DSA is only for individuals who must reside at a hotel during the training. Do not duplicate other costs paid by the training such as lunches. |
| Lunch and refreshment | Participants |  |  |  |  | One morning and one afternoon coffee/tea break, plus a lunch |
| Stationery |  |  |  |  |  | Pencils, erasers, etc |
| Printing Workshop materials | Reams |  |  |  |  | Flipcharts, markers, marbles or beads for the LQAS exercise |
| Photocopy of questionnaires for training | Participants |  |  |  |  | 1 set for each participant |
| Transportation for field practice | Vehicles |  |  |  |  |  |
| Facilitation in village during field practice | Village |  |  |  |  | This is a nominal amount of money to the chief or other local leader where the field practice takes place |
| SUB-TOTAL COST LQAS TRAINING WORKSHOP | |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Item | Unit | Quantity | | Unit Cost (US$) | | Unit Cost (Local Currency) | | Total Cost (US$) | | Remarks: (Use Local Currency Costs only if necessary) | |
| Training Facility Rental | Days |  | |  | |  | |  | | This can be the same venue as used for the initial LQAS training | |
| Projector | Piece |  | |  | |  | |  | | One LCD projector will be used in each venue | |
| Photocopy of Tabulation Tables | Copies |  | |  | |  | |  | | This cost includes copies for practice and for actual tabulation | |
| Photocopy Summary Tabulation Tables | Copies |  | |  | |  | |  | | This cost includes copies for practice and for actual tabulation | |
| DSA (including accommodation) during the Workshop | Participants |  | |  | |  | |  | | This DSA is only for individuals who must reside at a hotel during the training. Do not duplicate other costs paid by the training such as lunches. | |
| Lunch and refreshment | Participants |  | |  | |  | |  | | One morning and one afternoon coffee/tea break, plus a lunch | |
| Stationary |  |  | |  | |  | |  | |  | |
| SUB-TOTAL COST TABULATION WORKHSHOP |  | |  | |  | |  | |  | |  |

**Budget for Hand Tabulation Workshop**

**Budget for LQAS Data Collection**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Unit | Quantity | Unit Cost US$ | Unit Cost (Local Currency) | Total Cost US$ | Remarks: (Use Local Currency Costs only if necessary) |
| Prepare sampling frame for Supervision Area |  |  |  |  |  | Use the Sampling Frame processor in the LQAS tool kit |
| Translation and back translation of Questionnaires | Translator/ Questionnaires |  |  |  |  | The back translation can normally be done with a small committee of bilingual supervisors working in the project |
| Pre-testing of Questionnaires |  |  |  |  |  |  |
| Produce and print SA maps  (1 x SA) | Maps |  |  |  |  | These maps have a practical purpose. Costs not clear |
| Photocopy questionnaires | Questionnaires |  |  |  |  | 3 extra for each county for wastage |
| Transport hire for data collection teams | Transport |  |  |  |  | For example: Transport for each data collection team member 237x$5x8days (this can be motor bike, public transport, local car hire) |
| Car / vehicle hire for supervision | Car / or other |  |  |  |  | Refuelling only if SMOH or NGO car |
| Car hire for supervision | Car / or other |  |  |  |  | Refuelling only if SMOH or NGO car |
| DSA for \_\_\_(e.g.,158 interviewers: state number of interviewers) | Interviewers |  |  |  |  | The DSA includes accommodation, meals and incidentals. |
| DSA for \_\_\_ (e.g., 79 local supervisors: state number) | Local supervisors |  |  |  |  | One local supervisor/county/\_\_ days |
| DSA for district, provincial, state level supervisors / 5 days (keep this number to a minimum) | District, provincial, state supervisors |  |  |  |  | Supervisor who will actively engage in field work. |
| DSA for central level supervisors (two per state/US$ \_\_\_/day/6 days) | Central supervisors |  |  |  |  |  |
| Air tickets for travel to and from the training ($\_\_\_/ trip/person) | Participants |  |  |  |  | For example: 8 participants = 8 round trips. Include costs for the hand tabulation workshop as well. |
| Local Guide allowances | Guides |  |  |  |  | For example: 1 village guide per location |
| Air time allowances for local supervisors mobiles | Supervisors |  |  |  |  | For example: $4 /6daysx79 county supervisors |
| Air time allowances for state overall supervisors | State Supervisors |  |  |  |  | For example: $4 /6daysx20 state supervisors |
| Air time allowances for central overall supervisors | Central supervisors |  |  |  |  | For example: $4 /6daysx10 central supervisors |
| Clip-boards for questionnaires | Piece |  |  |  |  | One for each interviewer and supervisor |
| Bags to carry questionnaires | Piece |  |  |  |  | One for each interviewer and supervisor |
| SUB-TOTAL COST DATA COLLECTION | |  |  |  |  |  |

**Budget for Data Entry and Analysis**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Unit | Quantity | Unit Cost US$ | Unit Cost (Local Currency) | Total Cost US$ | Remarks: (Use Local Currency Costs only if necessary) |
| Manager of the data entry and cleaning |  |  |  |  |  | This task can often be carried out by a knowledgeable in house person. In this case there is no additional cost. When a person is hired from the outside then payment should be made only when the double data entry has been verified. |
| Lunch and refreshment for 5 data entry clerks@ 5 days | Data entry clerks |  |  |  |  | Lunch/person = $20 plus $14 for snack/tea/coffee/water: morning and afternoon |
| Daily out of pocket for 5 data entry clerks ($15/day/participant/4days) | Data entry clerks |  |  |  |  | During 5-day-training of data entry clerks |
| Data entry clerks payment | Data entry |  |  |  |  | 5 data entry clerks (US$\_\_/ day/ \_\_ days) (Payment is for Entry and Double Entry of the data and the cleaning.) |
| SUBTOTAL DATA ENTRY AND ANALYSIS | |  |  |  |  |  |

# Annex 4: List of Supplies

**Training:**

* LCD power projector – one per training
* Electrical extension cord(s) - one per training
* At least 1 extra light bulb - one per training
* Flip chart - two per training
* Flip chart marker (various colours) - one set per training
* Marbles and bags: One bag of 100 marbles - 50 green + 50 red - for every three participants in the class. Prepare a second bag of 100 marbles - 80 green + 20 red - for every three participants.
* Questionnaires for field practice – two per data collector
* Participant hand-out – one per data collector
* Notebook - one per data collector
* Pencil - one per data collector
* Sharpener - one per data collector
* Eraser - one per data collector

**Survey**

* Pencil - one per data collector
* Sharpener - one per data collector
* Eraser - one per data collector
* Calculators - one per data collector
* Clipboard - one per data collector
* Day pack or bag to carry questionnaires and materials - one per data collector
* Random number tables x2 - one per data collector
* Raincoat if applicable -- one per data collector
* Community maps or notebook paper for making maps - one per data collector

# Annex 5: A Formal Description of LQAS

LQAS classifies Supervision Areas as high or low HF performance relative to a predetermined target set for an indicator (or in comparison with the average for the indicator for a catchment area). LQAS classifies SA using a decision rule “d” that optimizes identification of low performance SA. For each SA, a sample of “n” individuals in a client group is evaluated, and a “d” was selected that determines the cut-off number of SA with adequate performance below which the SA is classified as low performance for a specified indicator. The decision rule “d” depends on the sample size, the thresholds for classifying high and low performance, and the selection of two misclassification errors: the probability of misclassifying an area with high coverage as low (α\_error) and the probability of misclassifying an area with very low coverage as high (β\_error). SA with intermediate performance are classified as high or low depending on how close they fall to the relevant thresholds. As an example, assume that the target for an indicator (such as measles vaccination coverage) is set at 80%. The upper threshold “pU” is 80% for identifying high (or acceptably) performing SA while the lower threshold, “pL“ is 50%; “pL“ is normally set 30 percentage points less that “pU“. The sample size “n” and decision rule are selected to ensure α\_errors of <10%, and β\_errors < 10%--or more formally:

P (X<d\_|\_n,\_pU\_≥\_80%)\_≤\_α\_≤\_0.10

P (X≥d\_|\_n,\_pL\_≤\_50%)\_≤\_β\_≤\_0.10

α\_+\_β\_<\_0.20.

These conditions yielded an optimum sample size of 19 individuals in the sample with a decision rule of 13 children having received a measles vaccination. The decision rule “d” is selected using the LQAS table, found in annex 7. Instruction on how to use the table is provided in the Training Manual.

# Annex 6: Organogram

# Annex 7: Decision Rule Table



# REFERENCES

1. MEASURE, Evaluation, et al. (1998). *Report of a Technical Meeting on the Use of Lot Quality Assurance Sampling (LQAS) in Polio Eradication Programs. Arlington, The MEASURE* Evaluation Project/John Snow Research and Training: 17.
2. Hedt, B., C. Olives, et al. (2008). "Large Country-Lot Quality Assurance Sampling: A new method for rapid monitoring and evaluation of of health, nutrition, and population programs at sub-national levels." The World Bank, HNP Discussion Paper **May 2008**: 60.
3. Hedt, B. L., M. Pagano, et al. (In Review). " Large Country-Lot Quality Assurance Sampling: Combining LQAS and Cluster Sampling Methodologies for Regional and Local Program Management."