

# Quality Control Framework





# Contents

---



*Evidence for Action*

<b>Section 1: Survey details, people involved and processes .....</b>	<b>1</b>
<b>Section 2: Evolution of ASER's quality control processes .....</b>	<b>3</b>
<b>Section 3: Quality control of recruitment .....</b>	<b>4</b>
<b>Section 4: Quality control of trainings .....</b>	<b>5</b>
<b>Section 5: Quality control during the survey .....</b>	<b>6</b>
<b>Section 6: Quality control after the survey .....</b>	<b>8</b>
<b>Section 7: Quality control of data entry .....</b>	<b>10</b>

## Section 1: SURVEY DETAILS, PEOPLE INVOLVED AND PROCESSES

This section outlines the basics of the ASER survey: details of the actual two-day survey, our team structure, and the various processes that we follow during the survey. These provide the context for understanding quality control systems that are in place for the survey.

### (i) SURVEY DETAILS: How is the survey done?

The ASER survey is conducted over 2 days in a village- the first day on a school day (preferably Saturday) and the second day on a holiday (preferably a Sunday). A team of 2 surveyors survey the village assigned to them.

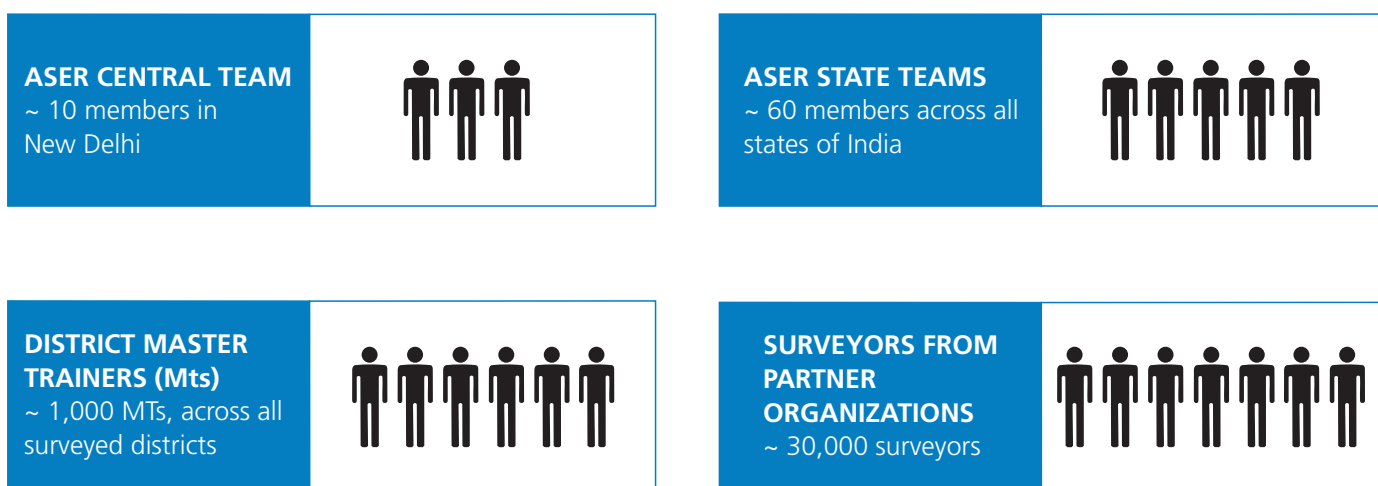
On the first day, the surveyors meet the Sarpanch or village representative and explain the purpose of the ASER survey in order to take permission to survey the village. The surveyors then visit a government school which has classes 1 to 7/8 or 1 to 4/5. If the village has more than one government school, they visit the one which has the largest enrollment. Here, they meet the headmaster/senior most teacher and explain the purpose of the ASER survey in order to take permission to collect school information. Once this information has been recorded on the relevant format, the surveyors walk around the entire village to understand its geographical structure. As they do so they make a map of the village. They also observe and record basic village infrastructure such as roads, banks, health centres etc.

After understanding how the village is laid out, surveyors divide the village into 4 sections (for a continuous village) or randomly select 4 hamlets (in villages where the population is organized in hamlets). A total of 20 households are surveyed in every village, 5 from each section or hamlet. To select these households, the survey team begins the survey from the centre of each hamlet and then selects every 5th household found on the left. This is known as the "5th household rule".

For the rest of the first day and throughout the second day of the survey, surveyors follow this process to select and visit the 20 households. In each sampled household, they record basic household information as well as information of children between the age group of 3 to 16 years. They use the ASER testing tools to assess basic reading and arithmetic skills of all children from 5 to 16 years who are resident in the household. In some years, additional assessments are also conducted, such as children's ability in English. The testing is done only in households to ensure that all children (whether enrolled in school or not) are included in the survey. Surveyors also record information about household assets in each of the 20 households that they survey.

### (ii) ASER TEAM STRUCTURE: Who does ASER?

The ASER survey covers all states and almost all rural districts of India. Due to this scale, effective survey management is crucial. To understand how the survey is managed, the diagram below depicts the structure of the survey team, which will be useful to understand how these teams control the quality of the survey:



### (iii) ASER PROCESSES:

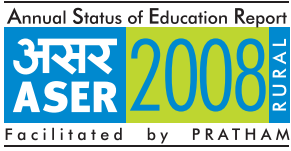




What goes into carrying out ASER and why do we need quality control?

Due to the survey's enormous coverage, maintaining its quality at every stage of the process is extremely crucial. Quality control procedures are important at every level, from the central team in Delhi to the field sites where the survey is being conducted. The diagram below represents the broad processes that are usually for the ASER survey. The following sections of this report elaborate on each of these steps and the quality control processes that go along with them.

ASER Survey Processes											
Process	Section	Description	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	
Recruitment	Section 4	ASER state teams travel across their states to recruit partners and Master Trainers.									
National Training		ASER central teams train ASER state team.									
State Training	Section 5	ASER state team train Master Trainers in every state.									
District Training		Master Trainers train surveyors in every district.									
Monitoring		Select village surveys are supervised by Master Trainers or state team members.									
Call Centre	Section 6	State monitor survey progress via frequent calls to Master Trainer to flag any problems being faced that can then be rectified in a timely manner.									
District Rechecks		Master Trainers conducted desk, phone and field rechecks.									
State Team Rechecks		State team rechecks villages in districts where Master Trainers require extra support.									
ASER Centre Recheck	Section 7	State teams swap states to conduct field rechecks.									
External Recheck		In 2014, external organizations conducted a field recheck in 9 states.									
Data Entry	Section 8	All survey data is entered in data centres across India.									
Report Release		Final ASER report is released.									

## Section 2: EVOLUTION OF ASER's QUALITY CONTROL PROCESSES

Over the years, we have aimed to strengthen our quality control processes in order to improve the quality of the data. The following highlights key processes introduced each year<sup>1</sup>

 <p>Annual Status of Education Report  <b>असर ASER 2008</b> RURAL          Facilitated by PRATHAM</p>	<p>In 2008, 'Recheck' was introduced. From all the villages to be surveyed in a district, 4 villages were randomly pre-selected, to be compulsorily rechecked, after the completion of the survey. This entailed revisiting surveyed villages to verify survey quality. (Recheck process is elaborated in Section 7).</p>
 <p>Annual Status of Education Report  <b>असर ASER 2011</b> URBAN          Facilitated by PRATHAM</p>	<p>In 2011, surveyor trainings were extended from 2 days to 3 days. In many districts, the survey was rolled out over a longer period so that fewer surveyed villages had to be managed at a time. A call centre system was also introduced, where each state hired a call centre leader to routinely make calls at each stage of the survey period to track survey progress and flag any problems (Call Centre is elaborated on in Section 6). An SMS recheck system was also introduced where compiled district level data was texted to a central server enabling immediate review. Field monitoring, district level desk and phone recheck, field recheck by Master Trainers and ASER state team field recheck was introduced which have been a part of our survey processes every year since 2011.</p>
 <p>Annual Status of Education Report  <b>असर ASER 2012</b> RURAL          Facilitated by PRATHAM</p>	<p>In 2012, compiled district level data was texted to a central server via SMS in 9 states for immediate review. Cross-state field recheck was introduced, where ASER state teams traveled to each other's states (Cross-state recheck is elaborated on in Section 7). An ASER process audit was also done.</p>
 <p>Annual Status of Education Report  <b>असर ASER 2013</b> RURAL          Facilitated by PRATHAM</p>	<p>In 2013, SMS monitoring and recheck was implemented across the country. Master Trainers and ASER teams would send an SMS when they were in a village either monitoring or rechecking the survey; this information would automatically get updated on a central server. State teams would then be able to receive a live monitoring and recheck update, in order to rectify any problems being encountered on the field in a timely manner and also to increase accountability of all monitors and recheckers.</p>
 <p>Annual Status of Education Report  <b>असर ASER 2014</b> RURAL          Facilitated by PRATHAM</p>	<p>In 2014 we maintained a village-wise database of monitored and rechecked villages across the country, as well as who had done this monitoring/recheck. This helped to understand in which districts we were confident about our data quality and which districts required further attention. An external recheck was also conducted for the first time in 9 states. (External recheck is elaborated on in Section 7).</p>

## Section 3: QUALITY CONTROL OF RECRUITMENT

As the first stage of the survey process, Master Trainers and partner organizations are selected across the country. In most cases, two Master Trainers are recruited per district for the duration of the survey. In addition, ASER Centre partners with one organization in the district which provides surveyors who survey the 30 villages in the district. In larger or more difficult to manage districts, we sometimes add additional Master Trainers and partner organizations.

In order to ensure that the processes to be carried out for the survey are carried out successfully, we nationally adopt certain standard measures for recruitment of partners and Master Trainers:

### **Partner Selection:**

Some partner organizations have worked with us for many years and some are newly recruited each year. To begin the recruitment process for the year, ASER state teams evaluate organizations they have already worked with in previous years. Some examples of criteria that teams use to evaluate partner organizations include:

- Whether the partner had met the survey quality expectations of ASER Centre. These expectations as outlined in a partner roles and responsibilities document include aspects such as if the partner provided the required number of surveyors, if these surveyors performed well enough during their training (scoring 70% or above in a quiz along with qualitative feedback of their performance) to do the survey.
- Whether the partner had been supportive through each stage of the survey period by sticking to planned timelines and assisting with resurveys in villages where the survey quality was found to be unsatisfactory; also if the partner had submitted survey-related data and financial formats in a timely manner.
- Whether the partner showed enthusiasm in working with ASER Centre and showed initiative during the survey period.

Once state teams finish evaluating the previous year's partners' performance, they decide which partners they want to continue to work with for the current year's survey. They then travel across districts where new partners need to be recruited. For new partnerships, ASER Centre and the organization agree on non-negotiables regarding survey quality as outlined in a roles and responsibilities document, and unless this is not assured by the partner, the partnership is not finalized.

### **District Institute of Education and Training (DIET) Partnerships:**

In recent years, ASER Centre has partnered with District Institutes of Education and Training in many districts and states. These partnerships are either negotiated at the state level with the State Council of Education Research and Training (SCERT), wherein majority of districts in the state had a DIET partner, or at the district level with individual DIETs. Partnering with DIETs has been beneficial for both the DIETs and ASER Centre for numerous reasons.

DIET students are the surveyors in districts with DIET partnerships; these students are being trained to become government school teachers. By participating in the survey, they acquire a firsthand understanding of children's learning levels in their own districts. Through the ASER survey, they are taught the simple ASER method of assessing learning levels of children which they could utilize as future school teachers.

### **Recruiting Master Trainers**

Master Trainers are the backbone of ASER survey implementation in the district. They are responsible for:

- Conducting district level trainings
- Quality control and verification of the survey
- Overall survey management in the district. They are the only point of contact in most districts and are responsible for carrying out all the survey processes there.

Hence, hiring good Master Trainers is central to carrying out a good survey.

**Recruitment Process:** ASER takes certain measures to ensure that the best candidates are hired as Master Trainers in their districts. Depending on different states' circumstances, different models are followed. Prospective Master Trainers are identified from both inside and outside of the partner organizations that provides surveyors. For example, if the partner organization is a college providing students as surveyors, a professor or staff member from the same college is identified as a prospective Master Trainer. In some districts, Master Trainers are recruited externally by the ASER state teams and assigned districts to work in during the survey.

ASER state teams travel to districts to be surveyed during the recruitment stage and orient prospective Master Trainers on the ASER process. The orientation took place either in each district or by calling all prospective Master Trainers to a central location in the state. For both models, state teams oriented Master Trainers on what their role would be for the survey. After the orientation, Master Trainers were screened.

### **The screening procedure consisted of the following:**

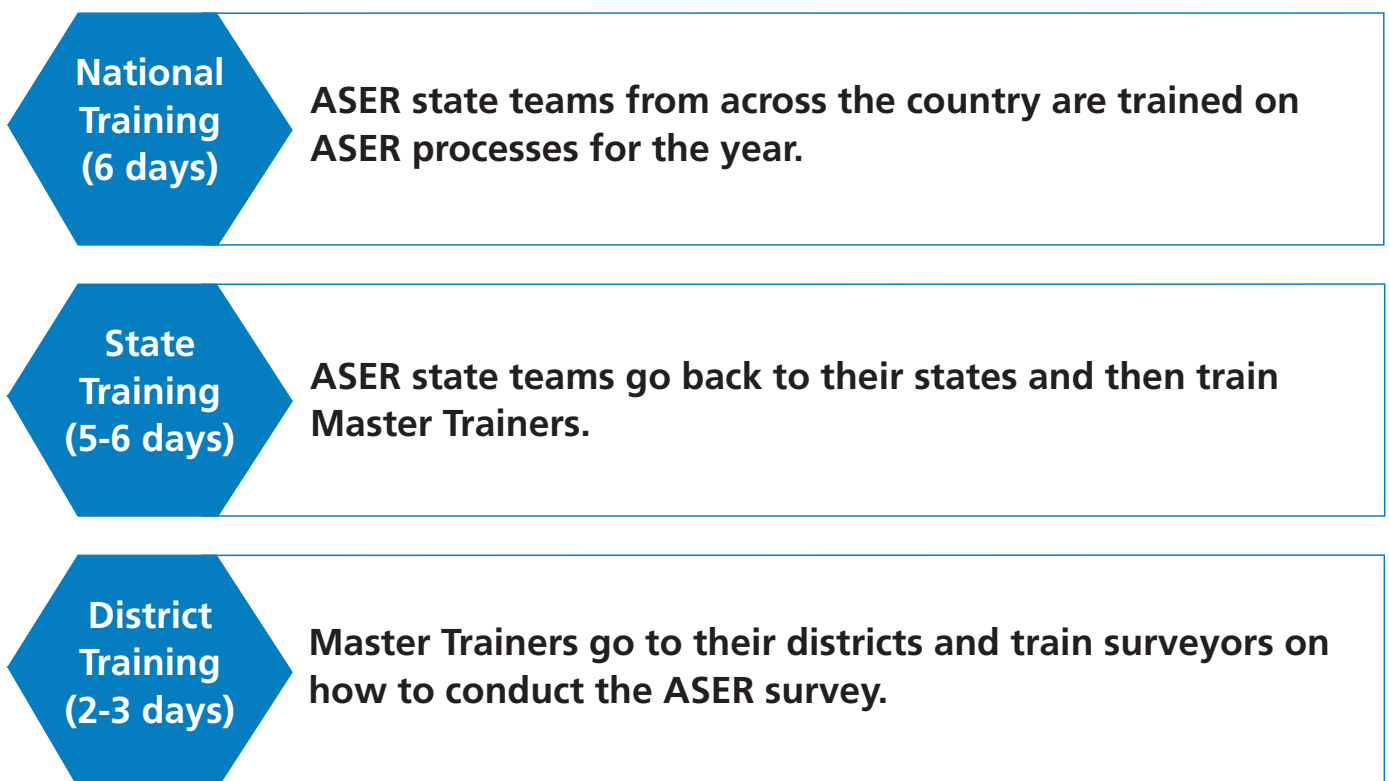
- Short-listing of candidates based on resumes to understand their basic qualifications and previous experience.
- Language quiz, mathematics quiz and English reading test administered by ASER Centre.

- Mock training - Master Trainers were assigned a section of the ASER Instruction Manual to train on, and were assessed on their training skills.
- Field visit- Master Trainers conducted a mock ASER survey. This served the dual purpose of allowing ASER Centre to assess the candidate’s interaction with villagers, parents and most importantly children. This also helped them to understand how the ASER survey is conducted in practice and what will be expected of them.
- Interview- The interview was the final round of the selection process, during which the candidates’ motivation to participate in ASER was understood.

Based on the cumulative score of each candidate in the above mentioned selection rounds as well as qualitative considerations, two Master Trainers were selected for each district. They then signed a contract with ASER Centre that detailed their roles and responsibilities (Please refer to pg. 35 in the appendix for this contract). They then traveled to a central location in their state- state level training- to be trained on their roles for ASER 2014.

## Section 4: QUALITY CONTROL OF TRAININGS

Effective training is essential to any large-scale assessment. The training ensures that information cascades effectively from one level to the next. In ASER, once recruitment of partners and Master Trainers is complete, all stakeholders involved in the survey are oriented on the various processes to be followed for the survey. ASER central and state teams, approximately 1,000 Master Trainers and 30,000 surveyors are all trained on ASER processes. The following diagram depicts how processes percolate down different levels through trainings.



Due to the scale of the survey and the large number of participants at every level of training, ensuring quality of these trainings is crucial. The two most important aspects for quality control of trainings are:

- Ensuring standardization and completeness of information cascading from one level to the other.
- Ensuring that the trainees are prepared for their role in the survey. This means ensuring that participants have a holistic understanding of the survey processes and their role in it.

**Standardization:** To ensure standardization and completeness of information at each level of training, the following was created by the central team:

**Comprehensive training schedules:** Fixed schedules consisted of classroom sessions, field visits, interactive sessions, mock trainings etc. These are sent out to state teams with time allotments for each session for the state and district level trainings.

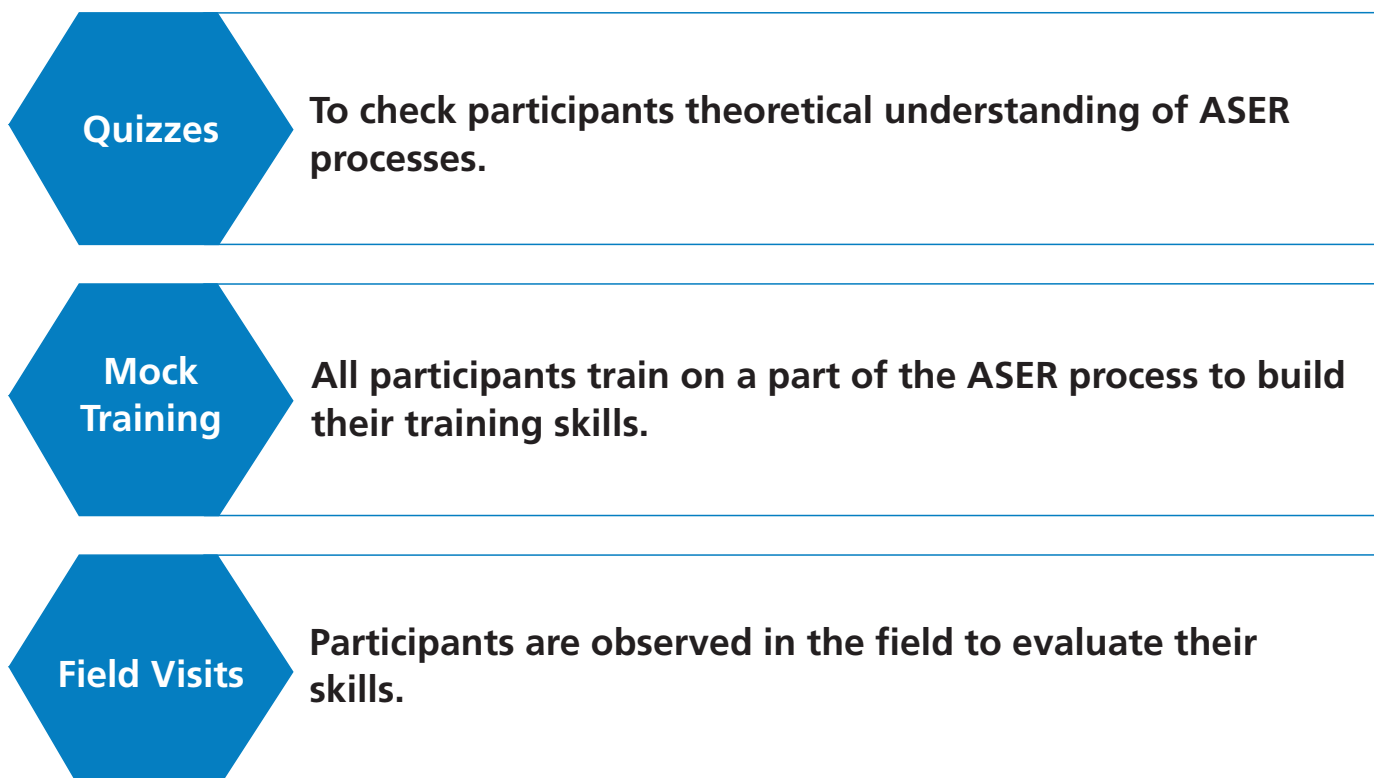


**Manuals:** All manuals (explaining survey processes) and formats are translated to regional languages for ease of understanding for the state and district trainings.

**Central team presence:** A central team member is sent to almost all state level trainings to guide and support the state teams in the state level trainings. Many district level trainings are also attended by central team members.

A Call Centre collects details of all district level trainings on a daily basis. This information helps understand if all the necessary inputs are in place for the training. For example, during the district level training, the call centre leader would ask Master Trainers of each district what the total duration of the training for the day was. This information is reviewed regularly by a member of the central ASER team.

**Participants' understanding:** There are 3 broad methods by which we aim to ensure participants' understanding of survey processes during our trainings:



The following are details of the different evaluation techniques used during the three levels of trainings:

**i Quizzes (Multiple-choice/short response items)**

- **ASER process quiz:** To gauge participants' understanding of the ASER process.
- **Monitoring and recheck process quiz:** To gauge participants' understanding of the monitoring and recheck processes to be followed.
- **Finance quiz:** To gauge participants' understanding of the survey fund flows for the year.

**ii Mock Training:** Since ASER state teams and Master Trainers have to train further on ASER processes in their states or districts, each and every participant has the opportunity to mock train on a section from the ASER manual and is evaluated and given feedback on the same

**iii Field Visit:** Participants are divided into groups and sent out into villages to practice doing the actual survey (and field recheck during the national and state level training). During field visits, group mentors observe participants' performance and interaction with people from the village.

The table below describes various evaluation techniques used at different levels of trainings:

Evaluation techniques at different levels of trainings			
Evaluation technique	National training	State training	District training
ASER process quiz	✓	✓	✓
Monitoring and recheck quiz	✓	✓	
Finance quiz	✓	✓	
Mock training	✓	✓	
Field visit	✓	✓	✓

The table below describes how these evaluation techniques are then formally documented at each level of training.

Type of Training	National training
National Training	To document the performance of the participants based on the above indicators, a state team database is maintained. Participants are then given feedback on their skills.
State Training	Similar to the National training, an 'MT profile' is maintained at each state's training, in order to keep a record and evaluate all Master Trainer's performance during their 5-6 day training. The MT profile keeps a record of their qualifications, attendance during the workshop, quiz results, observation of their performance during field visit and a record of their training skills. After the state training, the state team analyses the MTs' performance. MTs can still be dropped from supervising the survey in their respective districts after the state level training, if their performance is not up to the mark.
District Training	Surveyors' quiz results and attendance is recorded in the 'District attendance and surveyor receipt' sheet or 'Partner organization surveyor attendance' sheet.

## Movement Plans

Creating movement plans (both for the state teams and the Master Trainers) are an important follow-up activity after trainings are complete. Once Master Trainers have been trained on the ASER processes, they travel to their respective districts to conduct district trainings. For state teams to personally supervise these trainings in every district of the state is difficult. Thus, after analyzing performance of Master Trainer's from the 'MT Profile' created at the state level training, they travel to those districts in which Master Trainers require extra support during the district level trainings.

Similarly, at the district level, once the Master Trainers complete the district training, they evaluate surveyors' performance and personally monitor villages where surveyors require extra support. This process is elaborated in the next section.

## SECTION 5: QUALITY CONTROL DURING THE SURVEY MONITORING

Monitoring refers to the quality checks carried out when the survey is being conducted in the field. Monitoring is done at two levels. One level comprises monitoring of the surveyors by the Master Trainers and the other is of the Master Trainers by the state team.

Monitoring of the surveyors by the Master Trainers is done through field monitoring and phone monitoring.

### a. Field monitoring:

During the actual survey days, Master Trainers (and districts in which ASER team members are present) accompany surveying teams to monitor the survey. The objective of monitoring surveying teams is to correct any mistakes that surveyors are making and rectify them on the spot. It is part of the Master Trainer's role to ensure maximum survey quality of villages in his/her district that meet the ASER Centre standards. In some cases, monitoring is also done by state team members.

Therefore, by monitoring villages:

- We have an assurance telling us that the survey was carried out correctly in villages that were monitored.
- In a 2 weekend survey, under-confident surveyors who would be surveying another village can learn from their mistakes in the first survey weekend by taking inputs from those monitoring and not repeat them.

### Selecting villages to monitor:

Since Master Trainers cannot personally supervise every village, they shortlist villages to monitor based on their evaluation of the strength of the surveying teams, as shown by their quiz results and observations during the pilot visit in the district training.

**Each Master Trainer monitors 1 village per day. Therefore in a one- weekend survey,<sup>3</sup> 2 Master Trainers will monitor 4 villages; in a 2 weekend survey they will monitor 8 villages and so on.**

Master Trainers fill in details of their monitoring visit in a 'Monitoring checklist'

### b. Phone monitoring:

The Master Trainers call up the surveyors whom they are not monitoring in the field. The two Master Trainers divide the villages to check that surveyors are following the correct survey method and to answer any doubts that they may have in the field. The suggested phone monitoring questions are with respect to sampling method being followed, testing of the right group of children, testing procedures etc.

## CALL CENTRE

Another method of monitoring survey processes is the 'call centre' which is set up in states. This is monitoring of MTs by the state team. The call centre system introduced in 2011 has a twofold objective. The first is to collect information regarding the progress of the survey at each stage and be able to take timely and immediate action. This enables the ASER state teams to efficiently monitor districts in which they are not physically present and then travel to them if required. This 'live monitoring' is useful to prevent any serious problems during the survey, so that damage control does not have to be done later. The second objective is to increase accountability of Master Trainers. Making regular calls to Master Trainers of each district also makes them feel supported through the entire survey process.

### How does it work?

To begin setting up a call centre, each state first recruits a call centre leader (CCL). This CCL attends all days of the state training, participates in all activities in the training and also must score above 80% in the ASER quiz in order to begin his/her role as the CCL.

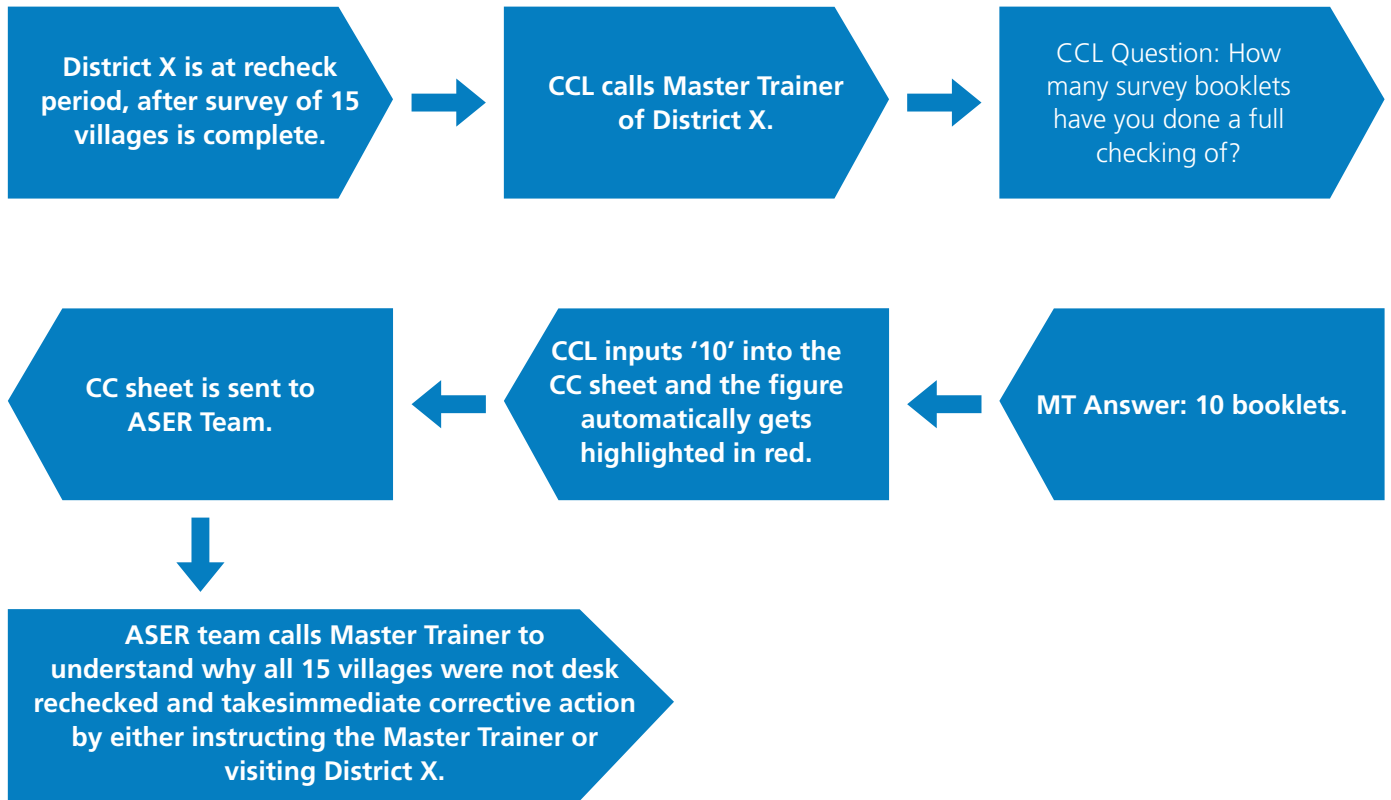
Once the survey begins, the CCL monitors the Master Trainers in every district being surveyed in the state via regular phone calls. The CCL is provided with a sheet (standard across states) from which he or she asks questions to Master Trainers regarding the progress of the survey at each stage to ensure that processes are being followed correctly. The following are the stages at which calls are made by the CCL:



The CCL fills in details of these calls in the given sheet and then circulates it to the entire team by the end of the day. The sheet automatically flags any problems that CCLs note down during their calls so that ASER state team members are easily notified if any processes are not being followed correctly and can immediately take necessary action.

**Example of Call Centre Feedback System at work**

The following diagram describes a call centre feedback system, using the example of the recheck period of the survey in district 'X'.



## Section 6: QUALITY CONTROL AFTER THE SURVEY

After villages have been surveyed, the quality control process that ASER Centre follows is that of 'recheck'. This section will explain the following recheck processes used for the survey:

- a. Recheck processes by Master Trainers: desk, phone and field recheck.
- b. Cross-state field recheck.

### a. RECHECK PROCESSES BY MASTER TRAINERS

Master Trainers are responsible for the overall quality of the survey in their district. As each survey weekend is completed, Master Trainers must carry out the quality control process of 'recheck' which ensures that the ASER survey has been done in a reliable manner. Master Trainers revisit villages to verify collected data. However, since revisiting every surveyed village is not possible, Master Trainers follow certain processes to shortlist which villages they must visit. Therefore, once the survey is complete, the following processes are followed:



#### HANDING OVER DATA:

Surveyors submit survey booklets to the Master Trainers of their district for checking.



#### DESK RECHECK:

Master Trainers do a detailed checking of survey booklets to identify incomplete or problematic data and then verify this with surveyors. A checklist helps Master Trainers to carry out a systematic desk recheck (Please refer to pg. 39 in the appendix for checklist).



#### PHONE RECHECK:

During the survey, phone numbers of all surveyed households (where available) are collected for the purpose of a phone recheck.

*Which Households?* Master Trainers make phone calls to all surveyed villages in their district. At least 8 households (2 from each section of the village) are called. If 1 of the 8 households does not respond or denies the survey happened, then 4 more households are called. Priority is given to households from which children have been tested and households whose data appears dubious.

#### *What questions are asked?*

Phone recheck questions cover the basics of the survey such as if two surveyors went to the village, if sampling, testing, and collecting of basic household information was done correctly.



#### ANALYSING FORMATS:

Master Trainers fill in a compilation sheet for their district that shows children's learning levels for all surveyed villages. (Please refer to pg. 40 in the appendix for the compilation sheet). Since data for the entire district is easily summarized in a single format, it can be used to analyze simple trends and identify inconsistent data in specific villages that point out that the survey might not have been done correctly. For example, if the format shows that total number of children surveyed in a village is much higher or lower than other surveyed villages in the same district, this could be an indicator to further verify the quality of the survey in the village.

This compilation sheet is reviewed by Master Trainers usually after a survey weekend is completed, so that they can identify any problems as soon as possible.



#### FIELD RECHECK:

After the desk and phone recheck, problematic villages are selected for field recheck by the Master Trainer. After discussing these problematic villages with the state team, Master Trainers each recheck 3 villages per week, and together recheck at least 12 of the 30 surveyed villages. (Please refer to pg. 41 in the appendix for ASER 2014 field recheck format).

## How is field recheck conducted?

### Household selection and sampling

10 households are selected from the survey booklet. Households with children in the age group of 7-16 who have been tested and households where information appears dubious are prioritized. During the field recheck, Master Trainers check if these households were selected via the right sampling method.

### Verifying testing

Tested children are shown the language, arithmetic and English testing tools and confirm that they were tested.

### School visit

Master Trainers also visit the surveyed school to verify basic details of the headmaster/head teacher and to ensure that the children were not tested in the school.

After the field recheck, if the survey quality is found to be poor, then the village is resurveyed.

#### **Field recheck by ASER state team and others:**

Based on the performance of Master Trainers and surveyors, ASER state teams also conduct field rechecks in as many districts as possible. If state teams cannot be present for district trainings then they try to recheck villages in as many districts as possible to ensure that correct survey processes have been followed.

#### **b. CROSS- STATE FIELD RECHECK**

Since 2011 ASER state teams have traveled to states other than their own and conducted a field recheck of select districts and villages. This additional layer of recheck was introduced to maintain transparency in the recheck process and to ensure that the same standard of survey was conducted across the country. Teams of 2 conduct the cross-state recheck in a district.

The recheck process for cross-state recheck is the same as field recheck done by Master Trainers. In order to ensure that processes were followed uniformly, some standard measures are adopted, as outlined below.

#### **Sampling:**

Typically, if the number of districts in a state is less than 20, then a cross-state recheck is conducted in 2 districts; if the number of districts in a state is more than 20 then a cross state recheck is conducted in 4 districts. A minimum of 4 villages are rechecked in each district. Combinations of districts are selected based on the following criteria:

#### **Purposive district selection: Analyzing district compilation sheets**

All district compilation sheets of a state are analyzed to check for anomalies in data. (For example if the number of tested children is unusually high or low). A score is generated for a district that gives a sense of the number of villages that have data anomalies. If a district has a high score, it is selected for cross-state recheck. Villages in the district are selected both purposively and randomly:

**Purposive village selection:** from the selected district, 2 villages are selected that show anomalous data.

**Random village selection:** from the selected district, 2 villages are randomly selected.

#### **Purposive district selection: State team feedback**

State teams suggest names of districts where they faced a problem during the survey or where they were not able to travel to during the survey along with detailed reasons for their selection. Such districts are considered for cross-state recheck.

**Village selection:** 4 villages are randomly selected from among all surveyed villages in the suggested district.

**Random district selection**

Districts are randomly selected for cross-state recheck in order to maintain transparency in the cross-state recheck process.

**Village selection:** 4 randomly selected villages from all surveyed villages in a district.

**Results of cross-state recheck:**

recheck: Out of the 4 villages rechecked per district, if 1 village is found to have poor survey quality, then another 4 are rechecked. These villages are decided based on the same criteria as the first 4 villages. If out of these next 4 villages, 1 village has poor survey quality, either additional rechecks are conducted or the entire district is resurveyed. If village quality is found to be poor during any stage of the recheck process then the village is resurveyed. If this is not possible, then data for the district is dropped from the final data set.

## Section 7: DATA ENTRY

All data recording during the survey is done on survey booklets provided to surveyors. To compile and then further process this data, it needs to be put onto a common server across the country. The following are broad activities followed by data entry teams:



To begin preparation for data entry, first the software is designed. The software is then tested several times using dummy data to make sure that it is entirely functional. As the software is being developed for the survey, states look for a data entry centre that is nearby to them, where they will send the hard copy survey booklets. Each state then finalizes their data entry location keeping factors such as number of data entry operators, number of districts in the state, cost of data entry etc. in mind. Data entry operators are trained either on site or telephonically on how to enter the survey data. The finalized software is then sent to these data entry locations.

During the survey, Master Trainers are instructed to submit the survey booklets directly at data entry centres or to their respective state teams as soon as the survey is completed. Data centres track the number of districts in which the survey is completed to plan for how much data entry needs to be done at a time; sometimes surveys take longer than expected and so by tracking survey progress, data centres can plan for data entry.

Once data entry begins, checking for mandatory information that needs to be filled such as school name, household number, gender and age is done. Data validation is also done, where some data entry fields can only have specific values. Certain manual checks are also put in place; for example, every 5th household (4 households from each village) is cross-checked. If five or more mistakes are found in this checking then all households in the village are rechecked. ASER state teams also visit the data entry centres to do random data entry cross checks. Compiled data is then sent to state teams for further verification, if required.



*Evidence for Action*