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DATA QUALITY ASSURANCE

1. WHAT IS A DATA QUALITY ASSURANCE PLAN ?



What is a Data Quality Assurance Plan?

- Describes routine measures to assure data quality
- Illustrates that data possess 5 key high quality attributes
 - Validity
 - Reliability
 - Precision
 - Integrity
 - Timeliness

Validity

- *Face validity*-data must be true representations of the indicator of interest, and the indicator must be a valid measure of the result.
- *Attribution*. Changes in the indicator can be plausibly associated with USAID interventions.
- *Measurement Error*. Sampling and non-sampling errors.

Reliability

Data are considered reliable if the methods by which they are collected and analyzed remain stable over time.

Are data collection and analysis methods documented in writing and being used to ensure the same procedures are being followed each time?

Precision

- Precise data have a sufficient detail to present a fair picture of what is actually happening.
 - Is the margin of error reported along with the data?
 - Limited biases
 - Is the data collection method/tool being used to collect the data fine-tuned or exact enough to register the expected change? (e.g. A yardstick may not be precise enough tool to measure a change of a few millimeters)

Integrity

Data that have integrity are protected by a system that reduces the possibility of bias (either by transcription error or deliberate manipulation)

Are procedures or safeguards in place to minimize data transcription errors?

- Is there independence in key data collection, management, and assessment procedures?
- Are mechanisms in place to prevent unauthorized changes to the data?

Timeliness

- Are data available frequently enough to inform program management decisions?
- Are the data reported the most current practically available?
- Are the data reported as soon as possible after being collected?

What is a Data Quality Assurance Plan?

- Outlines strategies in the routine monitoring system to reduce:
 - Estimation error and bias
 - Measurement error and bias
 - Transcription errors
 - Data processing error
- Describes how/ when internal data quality assessments will be implemented

Recipe for successful data quality assurance

- A. Adequate **staff capacity, supervision and accountability**
- B. Complete **documentation of processes/ protocols** readily available to collectors and processors
- C. **Routine cross checking-mechanisms**
- D. Clear **strategy to respond** to problems
- E. Adequate **financial and logistical resources** to ensure timely performance

Essential elements of a data quality assurance plan

A. Description of staff capacity, supervision and accountability.

- Number and qualifications of staff
- Job descriptions
- Time allocated to M&E responsibilities
- Nature and timing of relevant training
- Provisions for corrective action and accountability

Essential elements of a data quality assurance plan

B. Complete documentation of processes and protocols for:

- Data collection
 - Language-appropriate
 - Clearly-defined procedures
- Data cleaning
- Recording
- Aggregation

Essential elements of a data quality assurance plan

B. Documentation of processes and protocols for:

- Data access
 - Safeguarding data
 - Reporting
 - Regular verification of consistency and compliance with methods and protocols
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- Data management and safeguard plan

Essential elements of a data quality assurance plan

C. Description of processes for routine cross-checking and verification

- What are some effective methods?
 - Supervisors or M&E officers visit small sample of HH, farmers, mothers, etc.
 - Systematic review of collected data to:
 - compare values collected across time and location
 - flag outliers
 - Reasonability checks and comparisons in data entry / processing software

Essential elements of a data quality assurance plan

D. Description of the strategy to respond to data quality problems

- Quality issues identified during routine cross-checks
- Limitations identified during a data quality assessment.

Essential elements of a data quality assurance plan

E. Description of financial resources and logistical support to assure timely performance.

e.g., for:

- Travel
- Training
- Procurement / reproduction of instruments and tools

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What must be included in the Data Management and Safeguard Plan?

- Strategies to safeguard beneficiary confidentiality
- Systems to store/maintain original data files/project records
- Database management (back up)

What must be included in the Data Management and Safeguard Plan?

- Database entry procedures
- Data management protocol
- Data management coordination across partners (for consortium/ partnerships)