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STAPLES VALUE CHAIN NAFKA ACTIVITY

TASK ORDER NO. AID 621-TO-II-05000

Internal Data Quality Assessment Report

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19 June 2014

This publication was produced for review by the United States Agency for International Development. It was prepared by ACIDI/VOCA in compliance with the terms and conditions of Task Order No. AID-621-TO-II-05000.

STAPLES VALUE CHAIN NAFAKA ACTIVITY

TASK ORDER NO. AID-621-TO-11-05000

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DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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INTRODUCTION

NAFAKA Project Activity internal data audit is a response to a recommendation agreed upon in April 2014 partly as an activity to take stock of the efforts that have been invested by NAFKA to improve data management and reporting system and a routine monitoring activity to check the quality of data collected. Following this recommendation and action point, NAFKA project activity requested for short-term technical support from ACDI/VOCA Regional M&E Specialist (RMES) to facilitate an internal data audit.

Trip objectives

The primary objective of this trip were twofold:

- a) To assess the effectiveness of NAFKA M&E system to provide credible and quality information; and
- b) To assess the quality of data collected and reported by the project and implementing partners.

Specifically the task involved:

1. Undertaking a comprehensive data quality audit on data reported in FY 2012 and 2013.
2. Support the project M&E team appraise and strengthen NAFKA M&E systems.
3. Identify risks to NAFKA data quality.
4. Guide the team in developing an action plan aimed at strengthening project M&E system as well as improving data quality and management.

METHODOLOGY

To appraise the country office M&E system, two approaches were followed:

- a) Recounting of reported data and comparing the recounted.
- b) Review of the project M&E systems through face to face interview with the M&E team.

Recounting of reported data

Recounting of reported data involved actual verification of data based on source documents, database, annual outcome survey data as well as computation of figures particularly data related to annual indicators as well as indicators whose figures can be obtained using estimates. This was followed by making comparison between the reported figures in order to establish the margin of error as well as identify the reasons (data risk) for the discrepancy. The margin of error was arrived at using the following formula:

$$\text{Margin of error (ME)} = \frac{[(\text{Recounted Figure} - \text{Reported Figure})/\text{Recounted Figure}] * 100}{}$$

Critical to this process was establishing validity and reliability of data collected by following step by step the procedures, and process used to collect and compute indicator figures. The following were formed part of the checklist during data audit:

- a) There is a clear & standard definition of the indicator, disaggregation and what needs to be measured.

- b) Data collection procedures are clear and documented.
- c) The steps followed to compute the indicator are clearly documented.
- d) The unit of analysis is appropriate.
- e) Data collection of this indicator is timely.
- f) The Margin of error is acceptable.

We planned to recount/verify year 1 (2012) and Year 2 (2013) data. However, we faced a challenges validating reported data for year 1 especially the outcome level data given that the reported numbers were based on estimates. The data was also incomplete and comparison between what was reported and what the first outcome survey found were not comparable. Notably, there are huge variances between the two sets of data (estimated and first annual outcome survey) which makes comparison less meaningful given the fact that two different methodologies were used in collecting and computing the same (See Annex Tables). Given this reality, we sought to focus on year 2 data (2013). Therefore, the data reported in this IDQA is only year 2 data.

Review of project M&E System

An Internal data quality audit tool adapted from PEPFAR was used to appraise NAFAKA M&E system. This involved a group interview with the NAFAKA M&E management team i.e. The M&E Manager, M&E Coordinator, and the Database Manager. The appraisal focused on the following key functional areas:

- Reviewing the M&E structure, functionality and staff capacity.
- Reviewing the Performance Monitoring Plan.
- Data collection process.
- Data management and process.
- Data quality mechanisms and controls (Audit trails etc.).

The review of the M&E system will allow identification of strengths, best practices, need, and gaps/weakness. The review was guided by the following questions:

- Do the key M&E and data-management staff members have clearly assigned roles and responsibilities?
- Do the M&E and data-management staff members have a clear understanding of their assigned roles and responsibilities?
- Do the key personnel have the necessary skills and tools to implement the country M&E Plans?
- Is there human capacity to collect, verify, enter and analyze data at the country office?
- Are there standard set of data collection and reporting tools/formats to systematically collect data?
- Are data recorded with sufficient precision/detail to measure relevant indicators?
- Are source documents kept and made available in accordance with a written policy?
- Are data quality challenges identified and mechanisms in place to address them?
- Are there clearly defined and followed procedures/mechanisms to identify and reconcile discrepancies in reports?
- Is there an established and regular feedback mechanism at the country and partner level?
- Is the M&E system built into the design of the program?

FINDINGS

The figure below shows a comparison between reported and recounted data for data reported at the end of 2013 financial year. It is evident that the reported figures for 5 of the 6 selected indicators had a zero variance. Marginal difference of 0.12 is observed in the yield data which is slightly higher than the acceptable proportion of 0.1 or 10%.

PART I: DATA VERIFICATIONS

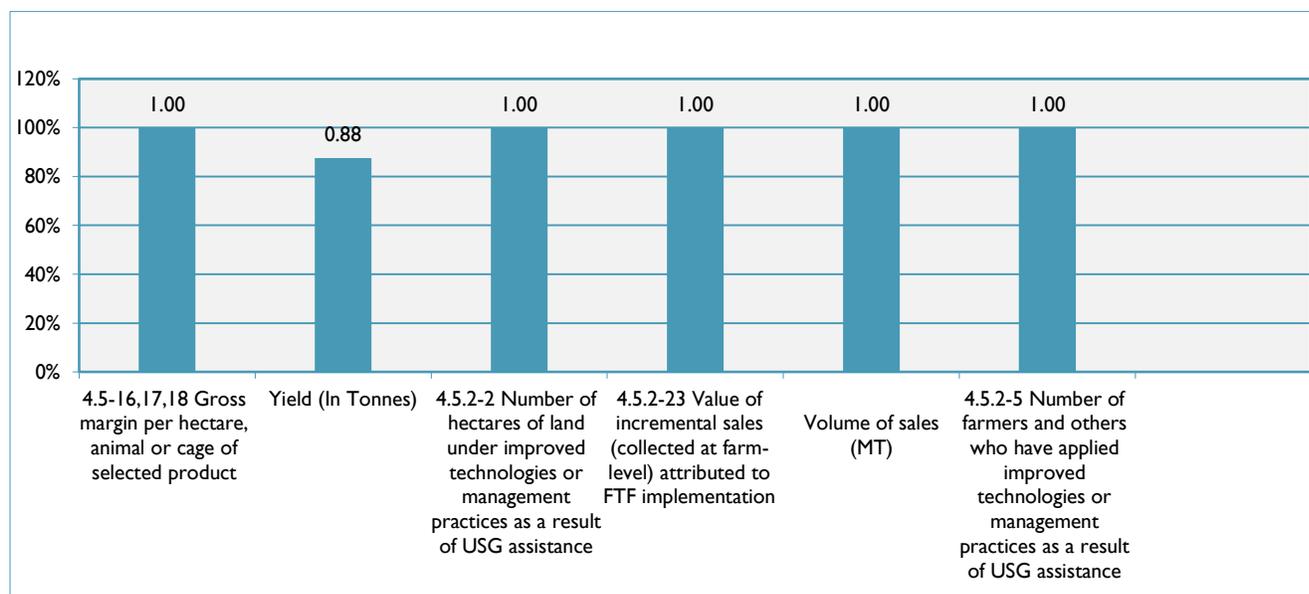


Figure I: Margin of error between reported and recounted data

The variation in the yield data is a result of a computational error.

PART 2: SYSTEMS ASSESSMENT

I	II	III	IV	V	Average Score
M&E Structure, Functions and Capabilities	Indicator Definitions and Reporting Guidelines	Data-collection and Reporting Forms / Tools	Data Management Processes	Overall Reporting System	
3.00	3.00	2.75	2.11	2.25	2.62
Colour Code Key					
green	2.5 - 3.0	Yes, completely			
yellow	1.5 - 2.5	Partly			
red	< 1.5	No - not at all			

Table I: Assessment of NAAKA Data Management and Reporting System

In terms of the M&E system, and related functionalities, the table shows great improvements in NAFKA M&E system except for data management process and linkages between the field, Morogoro and Dar es Salaam. There are still challenges in the way the whole system links to each other. This is one of the reasons why we have variation in reported data at each level of aggregation. As much as the team understands processes and procedures required to ensure credible data, they are not documented. There is also a weak link between reporting and M&E data processing. Ideally, reported data should be generated by the M&E Manager, validated by the M&E Specialist or Manager before it is included in the reports. This reporting and data processes don't seem to be well synchronized. Ideally, reported data should mirror what is in the performance monitoring plan.

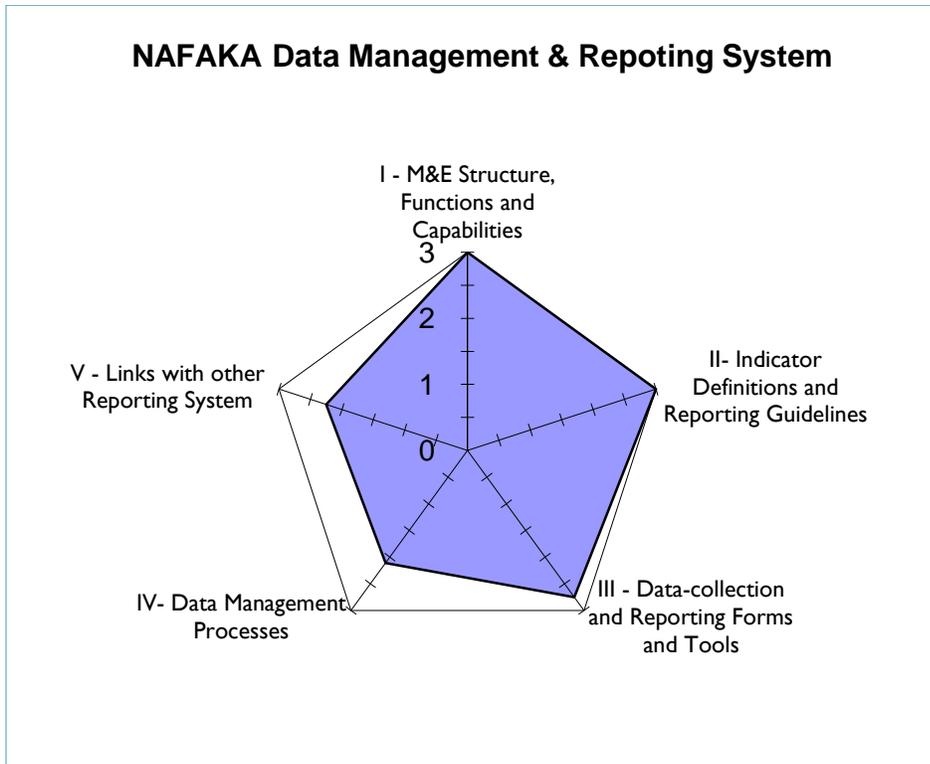


Figure 2: A radar image of NAFKA M&E system

The radar image above clearly shows that NAFKA M&E team should put more effort in defining, documenting and solidifying data management processes for smooth collection, aggregation, validation, reporting and sharing of data at each level. Given the concerns of the mission regarding inconsistency in the figures both reported and shared in different forums, there is need to better manage how data is generated and shared across the board. NAFKA should agree on who can share data, which data should be shared and what period should the reference point for data shared given the fact that data flow into the system is continuous. This will hugely minimize the problem of having different figures reported and those shared.

As much as the other functional areas seems to be well developed, there are still grey areas particularly on the indicator definitions and calculation steps. The M&E Team still needs to refine definitions and agree on how they are applied internally to project-specific work. The PMP and the indicator reference sheets need to be updated with operationalized steps to what needs to be counted for each indicator, how it is counted and what triggers the counting. This therefore means finalizing the project monitoring and evaluation plan in general and shared (not by email circulation) but through a forum where the

M&E team presents key functional areas to members of staff and each staff provided with a copy as a working tool.

Below, is a detailed observations made on each functional area of NAFKA M&E system.

M&E Structure, Functions and Capabilities

1	There are designated staff responsible for reviewing the quality of data (i.e., accuracy, completeness and timeliness) received from sub-reporting levels (e.g., from clusters).	Yes - completely
2	There are designated staff responsible for reviewing aggregated numbers prior to submission to the ACDI/VOCA and USAID (e.g., to the central M&E Unit).	Yes - completely
3	All relevant staff responsible for data collection and reporting have received training on the data management processes and tools.	Yes - completely
4	Division of roles and responsibilities among M&E Staff in relation to M&E functions are well distributed	Partly
5	All relevant M&E staff have been hired and trained with clear job title and functional descriptions provided.	Yes - completely

Going by the table above, it is evident that NAFKA M&E structure is in place, with each level of responsibility clearly defined as per the sample organogram shared by the team. However, much needs to be done in terms of ensuring that each member of the team understand what their role entails as well as what their contribution is to the overall good of the team and NAFKA at larger. Mentorship and support by the senior M&E members should be one of the ways in which new members are socialized into their roles. Currently NAFKA has about 13 M&E team members with a majority being new. Given that the M&E management did a detailed review of the each staff job description alongside to go with the new M&E structure, mentorship and coaching processes need to be initiated and given adequate time so that the new staff are able to internalise their responsibilities and understand their deliverables. For this to happen effectively the management team needs to balance between staff strengthening and meeting of M&E deliverables. This therefore requires better activity and staff management plans.

Indicator Definitions and Reporting Guidelines

NAFKA has a performance monitoring plan that clearly defines each indicator and how it is measured. Given that the PMP is a living document, it requires some updating given frequent changes made by the mission. For instance, the number of Full Time Equivalent (FTE) employees by MSMEs has been changed but NAFKA PMP still contains old figures i.e. 1-5 for medium enterprises instead of 1-10 as per current indicator handbook released in September 2013.

The M&E Unit has provided written guidelines to each sub-reporting level on:		
4	... <i>what</i> they are supposed to report on.	Yes - completely
5	... <i>how</i> (e.g., in what specific format) reports are to be submitted.	Yes - completely
6	... <i>to whom</i> the reports should be submitted.	Yes - completely
7	... <i>when</i> the reports are due.	Yes - completely

Similarly, updates on methods of calculation of computing indicator values should be updated in the performance Indicator Reference Sheets (PIRS) accordingly. There are clear guidelines on reporting dates and the entire flow. The only challenge we found in reporting was the lack of harmony between

the reported data and what is contained in the PMP. There is need to find a way of synchronizing the two processes so that the PMP data and data contained in the reports are harmonized before sharing or reporting.

Despite written guidelines completely being in place, technical reports where most of the discrepancies with the database are found do not currently follow a required format. There is need therefore to re-socialize the technical reports to comply with the standard guidelines so as to make final reporting writing less demanding and less inconsistencies in reported data.

Data-collection and Reporting Forms/ Tools

NAFAKA has standardized the way data is collected across the board. Each level of reporting as well as partners use the same tools collect raw data from the field.

8	Clear instructions have been provided by the M&E Unit on how to complete the data collection and reporting forms/tools.	Yes - completely
9	The M&E Unit has identified standard reporting forms/tools to be used by all reporting levels	Yes - completely
10	...The standard forms/tools are consistently used by the Service Delivery Site.	Yes - completely
11	All source documents and reporting forms relevant for measuring the indicator(s) are available for auditing purposes (including dated print-outs in case of computerized system).	Partly

The team has established a systematic way of filing and ensuring that reporting forms are easily available.



Figure 3: NAFKA Filing system

Despite this improvement, there is still a challenge in centrally managing information within the project. The same issue was pointed out during the external audit conducted by The Mitchell Group (TMG). Some documents can only be found with NAFKA partners and thus a challenge to access them in a timely fashion or when the partner representative is not available. Clear instructions and regular reminders according to the M&E team are sent to NAFKA partners on all data need to be submitted to M&E timely so that verification is done before entry to the database. Consensus on the use of centralized database system to manage and report data has been reached but still abiding by this

agreement is still a challenge. There is definitely a need to sit with partners and resolve some of these issues.

There is need to have a copy of the same documents/data in a central repository for easy access during reporting and data audit. One recommendation might be to consider using SharePoint document site to manage all the M&E and other related documents and user rights assigned.

Data Management Processes

We also reviewed in detail NAFKA data management processes and procedures. The checklist below provides an overview of how NAFKA data management process operates in terms of data processing, cleaning, auditing, sharing and feedback mechanism between different levels of responsibility.

12	Feedback is systematically provided to Morogoro, partners and all service delivery points on the quality of their reporting (i.e., accuracy, completeness and timeliness).	Yes - completely
13	If applicable, there are quality controls in place for when data from paper-based forms are entered into a computer (e.g., double entry, post-data entry verification, etc.).	Yes - completely
14	If applicable, there is a written back-up procedure for when data entry or data processing is computerized.	No - not at all
15	If yes, the latest date of back-up is appropriate given the frequency of update of the computerized system (e.g., back-ups are weekly or monthly).	Yes - completely
16	Relevant personal data are maintained according to national or international confidentiality guidelines.	Yes - completely
17	The recording and reporting system avoids double counting people within and across Service Delivery Points (e.g., a person receiving the same service twice in a reporting period, a person registered as receiving the same service in two different locations, etc.)	Yes - completely
18	The reporting system enables the identification and recording of a "drop out", a person "lost to follow-up" and a person who died.	No - not at all
19	There is a written procedure to address late, incomplete, inaccurate and missing reports; including following-up with service points on data quality issues.	No - not at all
20	If data discrepancies have been uncovered in reports from service points, the Intermediate Aggregation Levels (e.g., clusters, districts or regions) has the M&E documented a procedure on how these inconsistencies have been resolved.	No - not at all

From the checklist above, it is evident that this is still one of the weak areas as far as NAFKA data management and reporting system is concerned. Even though the team seem to understand what needs to be done at each level of data flow, the processes and procedures are still ad hoc and none of these procedures are written into guidelines. There is need for the "verbal" procedures to be documented as part of the project M&E plan and each M&E team be taken through each of the procedures. For instance, what happens when there is data quality issues from the field, how often is data backed up, who provides feedback to the different levels as data moves up the ladder, how are drop-outs managed etc.

However, it is important to note that despite this limitation, what is generated from the database is the same but information is requested by different people and different time and shared in different forums. There is need to stick to indicator data sharing from quarterly or annual reports that were generated from the database or data manager. Without harmonization with what comes through the M&E channel, there is a likelihood of discrepancies in the data found in the body of the report and that in the PMP.

Feedback mechanism is also a critical data management and reporting issues. The reporting levels within NAFKA seem to be systematic, the feedback mechanism to different sub reporting levels seem not to be functioning adequately. Issues with timeliness, accuracy, and completion of data and gaps in reports especially by subcontractors are still abound. In additionally, if there are any changes made shared by the M&E Manager, he doesnt receive feedback in order to harmonize and defend the figures he shares. There should be a written communication to each reporting level in cases there are issues related to incomplete data, missing information, failure to follow the reporting format etc. In the case of aggregated data, before changing the data provided by the Database Manager, he should be notified and in case changes have to be made he should be the one making changes and re-submit a new version of the data which will officially form part of the data audit trail.

In terms of the way forward, NAFKA M&E team is reviewing data management processes and procedures while coming up with new ones based on the weakness identified. The finalization and sharing NAFKA performance plan should be priority this quarter. Fast tracking this activity is critical together with performance Indicator reference sheet and other guides. My strong recommendation is for the M&E Management team to finalize the MERL plan and share the entire team.

Links with Reporting System

The checklist below, shows an appraisal and the status of data flow and linkages across the different levels of the reporting system.

17	Within NAFKA data are reported through a single channel of the reporting system	Partly
21	Data is readily available during reporting period	Partly
22	The system records information about where the service is delivered (i.e. region, district, ward, Cluster etc.)	Yes - completely
23if yes, place names are recorded using standardized naming conventions.	Partly

The findings shows that there seems to be a good linkage between different levels of reporting and how data is handled as it moves up the ladder. Due to improved systems, data is readily available to each level despite a few challenges observed. Most of the data is reported through a single channel, although in some cases data is sourced or follows a different channel hence the discrepancy in the reported data. This is mainly the case with subcontractors submitting reports to their HQs before sharing with NAFKA M&E. An understanding should be reached with the sub-contractor managers so that raw can still be shared at the field level. It might mean developing procedure and rules for sharing information overly within NAFKA. This will reduce the habit of people hoarding data.

There was also a minimal challenge in the naming conventions. Some forms bear cluster names while some bear district names although in some cases they are the same. There should be an agreement within the team whether to report based on cluster or districts.

PART 3: OBSERVATIONS AND RECOMMENDATIONS

The following table is a summary of major weaknesses and action points agreed upon with the team.

S/N	Observations	Description of Action Point	Responsible(s)
1	Even though the data management procedures are known to the M&E team, there are not written so as to form part of the reference guidelines for M&E processes and procedures	The database manager to ensure that all data management procedures are documented (written) and shared with all staff responsible for data collation particularly the M&E team	Database and M&E Manager
2	The data from the technical team report and what is generated from the database are not consistent yet it is the same team that collects these data hence the inconsistency between data in the reports and data in the PMP	Each sub-reporting level should provide data through one channel preferably the Database Manager and coordination with Hana during quarterly reporting to be improved so that verification and validation of data extracted from physical reports and those from the database are harmonized before the report is released for sharing. A validation day should be included as part of report writing	M&E Manager, Communication Specialist and Database Manager
3	Equal distribution of tasks among M&E staff	Review the scope of work of each M&E staff according to the workload and ensure that each M&E staff submits a work plan	M&E Manager and Coordinator
4	Failure to follow standard operating procedures as well as the standard processes for collation of information across NAFKA	The M&E and Database Manager to document all processes and procedures used to manage data and share with the rest of the team. This should be part of the M&E plan	M&E and Database Manager
5	The database is yet to be optimally used to manage and process data for the project	Ensure that all sections in the data base are populated as well as setting up required queries for efficient outputting of data	Database Manager
6	Lack of data validation and verification as the data moves up the ladder	The M&E Manager to ensure that aggregated data from Morogoro and data in the reports are validated before being shared outside NAFKA	M&E Manager
7	Some indicator definitions are still problematic and challenging to count given the local situation. For example the indicator: 4.5.2-37 Number of MSMEs, including farmers, receiving business development services from	NAFKA M&E team in consultation with the mission M&E consultant to develop an understanding of what needs to be counted for some indicators such as MSMEs receiving BDS services, storage capacity, CBLD score for farmer groups etc.	M&E Manager

S/N	Observations	Description of Action Point	Responsible(s)
	USG assisted sources (S) going by the standard definition in the handbook is almost every beneficiary reached by NAFKA		
8	The PMP is not up to date following changes in the recent indicator handbook (September 2013 and Ag Guide 2013)	Given that a PMP is a living document, the M&E team should keep updating it regularly especially with changes AMDe by the mission in the indicator handbook.	M&E Manager
9	NAFKA performance monitoring and learning plan has been in a draft form for such a long period of time	Finalize project performance monitoring and learning plan and circulate to the entire team	M&E Manager

ANNEXES

Indicator	Disaggregation	Year 0 (Baseline)	Year 1 (2012)		Margin of Error	Year 2 (2013)		Margin of Error
		Reported	Reported	Recounted		Reported	Recounted	
4.5-16,17,18 Gross margin per hectare, animal or cage of selected product	Maize (USD)	187	2073	114.5	-1710.66	94	94	-0.28
	Yield (MT)	0.53	-	1.0		0.8	0.70	-14.29
	Rice (USD)	357	1015	649.8	-56.20	448	448	0.09
	Yield (MT)	2.5	-	2.5		3.0	3	0.00
4.5.2-2 Number of hectares of land under improved technologies or management practices as a result of USG assistance (RiA)		0	9000	7414.56	-21.38	37817	37736	-0.21
4.5.2-23 Value of incremental sales (collected at farm-level) attributed to FTF implementation	Overall					14,799,743.00	14,798,603.44	-0.01
Maize	Value of sales (USG)	41,664.00	167,696.00	23,317.14	-619.20	3,243,295.00	3,243,137.66	-0.00
	Volume of sales (MT)	-	-	177.70		11,923.00	11,921.94	-0.01
Rice	Value of sales (USG)	3,654,687.00	3,394,653.00	5,774,957.70	41.22	11,556,448.00	11,555,465.79	-0.01
	Volume of sales (MT)	-	-	9,092.80		48,318.00	48,315.17	-0.01
4.5.2-5 Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance		0	3500	2905	-20.48	16510	16880	2.19

Table 2: Data Verification

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