

## (PRE-PILOT AND PILOT) FIELD REPORT

**Project Title:** Improving Dietary and Health Data for Decision-Making in Agriculture and Nutrition Actions in Africa

**Activity:** Caregivers training on data collection tools and pre-pilot and pilot data collection



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## Table of Contents

1. Summary .....	3
2. Pre-pilot phase .....	4
a. Introduction.....	4
b. Training.....	4
Training on basic smartphone features and navigation.....	5
Training on the caregiver application .....	5
c. Observations from Training.....	5
d. Data Collection and Feedback .....	5
e. Challenges.....	6
f. Recommendations.....	6
g. Training Checklist.....	7
3. Pilot Phase.....	8
a. Introduction.....	8
b. Participant Selection Criteria .....	8
c. Training.....	8
Pre-implementation Training .....	8
Training during implementation .....	9
Remote Update.....	10
d. Observations from Training.....	10
e. Data Collection and Summary Statistics.....	10
f. Challenges.....	11
g. Recommendations.....	11
4. Appendix: Activity Gantt chart.....	12

## **1. Summary**

The following report documents the caregiver training provide by ILRI to participants of the project titled “Improving Dietary and Health Data for Decision-Making in Agriculture and Nutrition Actions in Africa”. The project included a pre-pilot period, which took place in July and August of 2019, and a pilot phase, which started with a participant training in October 2019 but has included several additional engagements with the participants as the pilot continues through October 2020.

## **2. Pre-pilot phase**

### **a. Introduction**

The pre-pilot took place in Lolmolog, Samburu County, from 18<sup>th</sup> July 2019 to 13<sup>th</sup> August 2019 and it brought together 8 Caregiver aged between 15-49 years, each with at least on child between 6 and 58 months old. The pre-pilot participants were selected purposefully from a pool of eligible households within the CHV's area of coverage. The aim of the pre-pilot was to test and improve the caregiver data collection tools and learn best practices for the pilot phase implementation and application moving forward.

The activity was guided by the following objectives:

- i. To train caregivers on the basic use of a smartphone.
- ii. To train caregivers on the features of data collection tools.
- iii. To train caregivers on how to measure MUAC accurately and differentiate different food groups.
- iv. To receive feedback on the tool and how to improve it.

These objectives were achieved through a participatory approach, where the participants got hands on experience in using smartphones and the tool, which is launched as a mobile application. The activities were spread across 5 training days, 1 tools pre-testing day and 15 days of data collection.

### **b. Training**

The first day of training focused on introducing the project objective and activities to the participants and their spouse to ensure that all participants understood the project and their role.

Phones and solar chargers were issued to the caregivers to make sure they familiarize themselves with the basic phone features before beginning the training. Moreover, the caregivers were taken through basic smartphone functionality and navigational aspects i.e. switching on the phone, taking pictures, locating and launching different applications, after the demo caregivers were given simple navigation tests, which they completed without difficulty. We asked them to take as many pictures as possible to ensure they practice the features that they had learnt.

On the third day of training, we shifted our focus to delivering the main training content through the local language, with emphasis on two points;

- Training on basic smartphone features and navigation.
- Training on the caregiver app.

### *Training on basic smartphone features and navigation.*

We began with basic smartphone features training, building up from what we had looked at on the first day, the caregivers had practiced and seemed more comfortable navigating and launching different apps, some of the caregivers had even tried the nutrition app already. We focused on features that were tied to the caregiver application i.e. enabling location features, locating the caregiver app and enabling mobile data, we also practiced capturing good quality images, this was a bit taxing, but they managed with lots of practice and guidance.

### *Training on the caregiver application*

After completing basic features training, we delved into the caregiver app, following a projected presentation and the caregivers holding their phones, we began with the home screen icons, the icons were obvious and needed no further explanation except the child progress report icon. The slides were very interactive with videos that explained every icon on the screen and the requirement of each survey question on both caregiver and child update.

Explanation of different food groups was done followed by an exercise to classify the locally consumed foods into their respective food groups. After this, a demonstration on how to accurately measure MUAC was done in addition to how to capture face and MUAC measurement images.

Lastly, we did a demonstration of the process by launching the application on BlueStacks-an android application emulator- and projecting it while each caregiver was filling the survey on their phone. This made sure that each caregiver was able to launch the app, complete and submit the survey on their own.

### **c. Observations from Training**

- Having spouses proved beneficial since they assisted their spouses to understand phone features.
- The participants were inquisitive, which was important for their understanding of the data collection tools.
- Participants viewed this as a learning process, which was great because they committed to learning what was required of them.
- Caregivers were asked to take images of their homesteads when back at home at sunset; this was a great way of learning more about them and making sure they understood basic phone features.

### **d. Data Collection and Feedback**

The data collection began by collecting each indicator daily for a week to monitor the consistency, then introducing the recall period with an interval of 2 days. In total the participants collected 173 surveys, 6 of them being caregiver profiles and 167 being updates-of which 71 were child updates while 96 were caregiver updates.

The feedback sessions, which were conducted immediately after the data collection, were mainly aimed at gathering the user experience to improve the tool. In total we held three feedback sessions, spaced at one-week intervals.

During the first feedback session the participants shared their experience with the tool. Generally, the feedback was positive and from their comments we could tell that they had an easy time using the application, except data syncing. Encouragingly, a few of the caregivers were able to sync their data. We encouraged peer learning and asked Community Health Volunteers (CHVs) to follow-up and guide caregivers that were not able to sync data. The participants also reported bugs in the software, which were communicated to the developer and were addressed.

After looking at the participants submissions, we held the second feedback session which mostly focused on the process and sharing of the survey output (Images), participants were happy to see what they had been submitting. Looking at the data we found out that most of the participants were forgetting to turn on the location feature and image quality was not at the required level. We also found out that the server was not storing some images with their respective slot numbers (As assigned to the caregivers), the issue was with the server, and has since been addressed by the developer. We had a demonstration on how to turn on the location feature.

In the final feedback session, we invited the participants' spouses to also share their experiences, they commented that the app wasn't time consuming and was easy to use. Their showing up at the final feedback session was also a strong indication of their buy-in and collaboration moving forward.

We learnt a lot from the feedback gathered during the feedback sessions which has led to great improvements of the application functionality in terms of tools and the lessons learnt will greatly influence and inform the implementation of the pilot phase of the project.

#### **e. Challenges**

- Measurement of MUAC by caregivers requires close guidance and practice.
- Mastering the recall period of the survey was a bit hard for the caregivers.
- Most respondents were forgetting to enable the location feature before beginning the survey.
- The Solar chargers were not functioning as required.

#### **f. Recommendations**

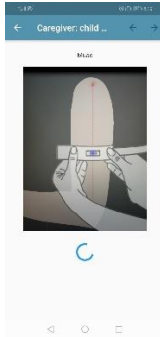
This section is structured into different sub section according to the target;

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- More targeted training of Caregivers on general phone features.
- Having speakers during implementation will be beneficial, when playing demo videos.

## Mangologic

- The MUAC mask does not guide on the right way to read MUAC measurement, the arm is folded, ideally it should be in a straight position when recording the measurement, we could adjust the mask to guide the caregiver.



- Automating the application to request the user to turn on location once its launched
- Allowing the application to save surveys only if the process has been completed
- Restricting number of submissions per day
- Adding a voice note to the pops up, if the caregiver tries to go the next question without giving a response.

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- Testing electronics beforehand.

### g. Training Checklist

1. Projector
2. At least 6 extensions
3. Generators 2 (functional)
4. Generator cables
5. Fuel container
6. Projecting cloth\*
7. 2 stroke engine oil.
8. Sim cards (200)
9. Projecting cloth\*

### **3. Pilot Phase**

#### **a. Introduction**

The pilot took place in four locations namely Lolkuniyiani, Lodung'okwe, Sordo Namnyak and Lorubae-which we herein refer to as Community Health Unit (CHU)-in Samburu East, Samburu County, between 9<sup>th</sup> October 2019 and 30<sup>th</sup> November 2019 and it brought together 189 caregivers. The aim of the pilot phase was to develop, improve and train on data collection tools—to be used by selected caregivers to record and submit their children's' and own dietary, nutrition and health data. The activity was guided by the following objectives:

- Identify caregivers to participate in the project pilot for 11 months.
- Train caregivers on data collection tools.
- Improve the data collection tools

#### **b. Participant Selection Criteria**

Caregivers to participate in the study were selected through the existing CHU structure, where each CHV has a designated number of households (20-100) they visit monthly and provide health and nutrition education among other services.

The research team purposefully selected the 4 CHUs due to their variation in remoteness and infrastructure. A Community Health Extension Worker (CHEW) from each of the 4 CHUs selected 5 CHVs from their area of coverage and in turn the CHVs were asked to come up with a roster of eligible caregivers. To be eligible, caregivers should be 15-49 years old and be the primary caregiver for at least one child that was 5-47 months old. Project participants were then selected from that roster after stratifying by child age. To mitigate the impact of potential CHV attrition on the project, the research team recruited additional 2 CHVs with 5 caregivers each. In total the pilot sample size of the project is 189 caregivers and 22 CHVs.

#### **c. Training**

##### *Pre-implementation Training*

The training focused on basic smart phone use and maintenance and then on how to use the data collection tools and its features. The research team employed a mixture of training methods suitable for the participants including: interactive PowerPoint presentations, demonstrations of the application, participant-led training, and many hands on sessions.

The training started with an introduction of the project with caregivers' spouses present, this ensured a buy in from the spouses and support in case needed. Inviting spouses proved beneficial to the project implementation, we got an assurance that the spouse will support the caregivers.

Caregivers were trained for 6 days with additional 3 days of tool pre-testing at home. The training was structured into three sections: Training on basic smartphone features, Pre-testing the tool and



feedback session. The training was focused on the health and nutrition indicators within the data collection tool; clinical symptoms, consumption, coping strategies and MUAC.

Training on MUAC section included a demonstration on how to correctly take MUAC measurement, caregivers showed great interest in learning how to measure MUAC.



Figure 1.a MUAC measurement demonstration by caregivers Figure 1.b Caregiver led training session

#### *Training during implementation*

**Feedback provision experiment training:** The caregiver Mbiotisho app was programmed to provide child report on 15<sup>th</sup> December 2019, after which caregivers would receive individualized feedback on their child's MUAC measurement, dietary patterns and morbidity. The research team had initially decided to hide the child report to ensure that caregivers understood fully what was required of them, before allowing the child report to be visible.

Immediately after release, a training session was conducted to guide the caregivers on how best to utilize the provided feedback to track their children's health. The training session was conducted immediately after the programmed date, caregivers from the four CHUs were trained on the importance of the feedback and what each icon represented, highlighting the fact that the feedback is unique and based on individual child. The feedback process is a feature that missed previously in other methods of collecting data. Caregivers were also taught that the feedback is totally dependent on their input. We wanted to experiment whether feedback provision could result in behavior change.

During the training session, we could observe that caregivers are intrigued by the fact that they can monitor their child's consumptions instantly and make adjustment appropriately, the CHVs form a critical part of the feedback provision, Mbiotisho provides feedback based on the caregiver input, which might not be correct in some cases, the app then tells the caregiver to visit their respective CHV, who would verify the information and guide the caregiver appropriately.

From the training sessions, caregivers came up with a few suggestions:

- Caregivers suggested if we could provide feedback on caregiver update, specifically caregiver consumption (WDD).

- Add a functionality that records the date/time when the reports are opened.
- Adding a functionality that shows that the data has been successfully sent.

### *Remote Update*

The research team built a caregiver report as a requested by the caregivers, the report entailed providing feedback on key food groups specific to the women dietary diversity (WDD) recommendation and antenatal care visit message for those caregivers that were pregnant

After developing and testing the caregiver report, we launched the update remotely—this being as a result of cancellation of all physical interactions by the government as one of the measures to curb the spread of Corona virus.

### **d. Observations from Training**

- Caregivers without any formal education are more attentive and learnt faster—this can be attributed to the fact that they are less distracted unlike their educated counterparts who have experience using smartphones
- In case we need to make an update, we should allocate at least 2 days per CHU
- Caregivers are interested to know if they have successfully submitted data, they are not so happy with the system we have now
- Very few inverted MUAC tapes from the images. (an indication of how careful the caregivers are).

### **e. Data Collection and Summary Statistics**

The project pilot will be implemented for 11 months, the submissions so far are promising , since we went live we have , updated the data collection tools twice, this was prompted by the feedback that we got from the participants and the research team, the updates are aimed at improving the tool

Table 1 shows the summary statistics from the data so far collected.

*Table 1: Summary Statistics at registration*

Variables	Observations	%	Mean (SD)	Min	Max
<b>Caregiver level of education (%)</b>					
None	98	51.8			
Primary	62	32.8			
Secondary	23	12.2			
College/tertiary institution	6	3.2			
<b>Caregiver occupation (%)</b>					
Homemaker	91	48.2			
Livestock herding	65	34.4			
Casual labor	30	10.6			

Petty trader	9	4.8		
Mixed farming	3	1.6		
Salaried employment	1	0.5		
<b>Caregiver literacy (%)</b>				
None	99	52.4		
Multiple	57	30.2		
Swahili only	33	17.5		
Caregiver is pregnant	189	10.1		
Caregiver MUAC (cm)	189		25.6(4.0)	19 36
Caregiver # of children	189		3.4(1.8)	1 9
Caregiver children by age group			20.9(10.8)	5 47
5-23(Months)	119	63.0		
24-47(Months)	70	37.0		
Child is female	189	52.4		
Child MUAC (cm)	189		14.6(1.2)	11.5 17.7
Child is in a feeding program	189	6.4		

## f. Challenges

- Operational
  - Training caregivers on basic smartphone use and the application at the same time proved difficult
  - Difficult terrain- accessing some households during data collection tools update and reinitialization was hampered
  - Some caregivers had travelled and could not be reached, when required for a training
- Software and device: Some of the smartphones had charging hitches

## g. Recommendations

- Testing caregiver's knowledge before and after using the tool.
- Collecting more detailed baseline data for indicators that we do not capture in the survey.
- Capturing indirect implications of using the tool (Time spent on the tool).

#### 4. Appendix: Activity Gantt chart

Activity	2019			2020										
	10	11	12	1	2	3	3	5	6	7	8	9	10	11
Caregiver training	■	■												
Data collection	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Child report training			■											
MUAC update					■									
Remote update									■					