



---

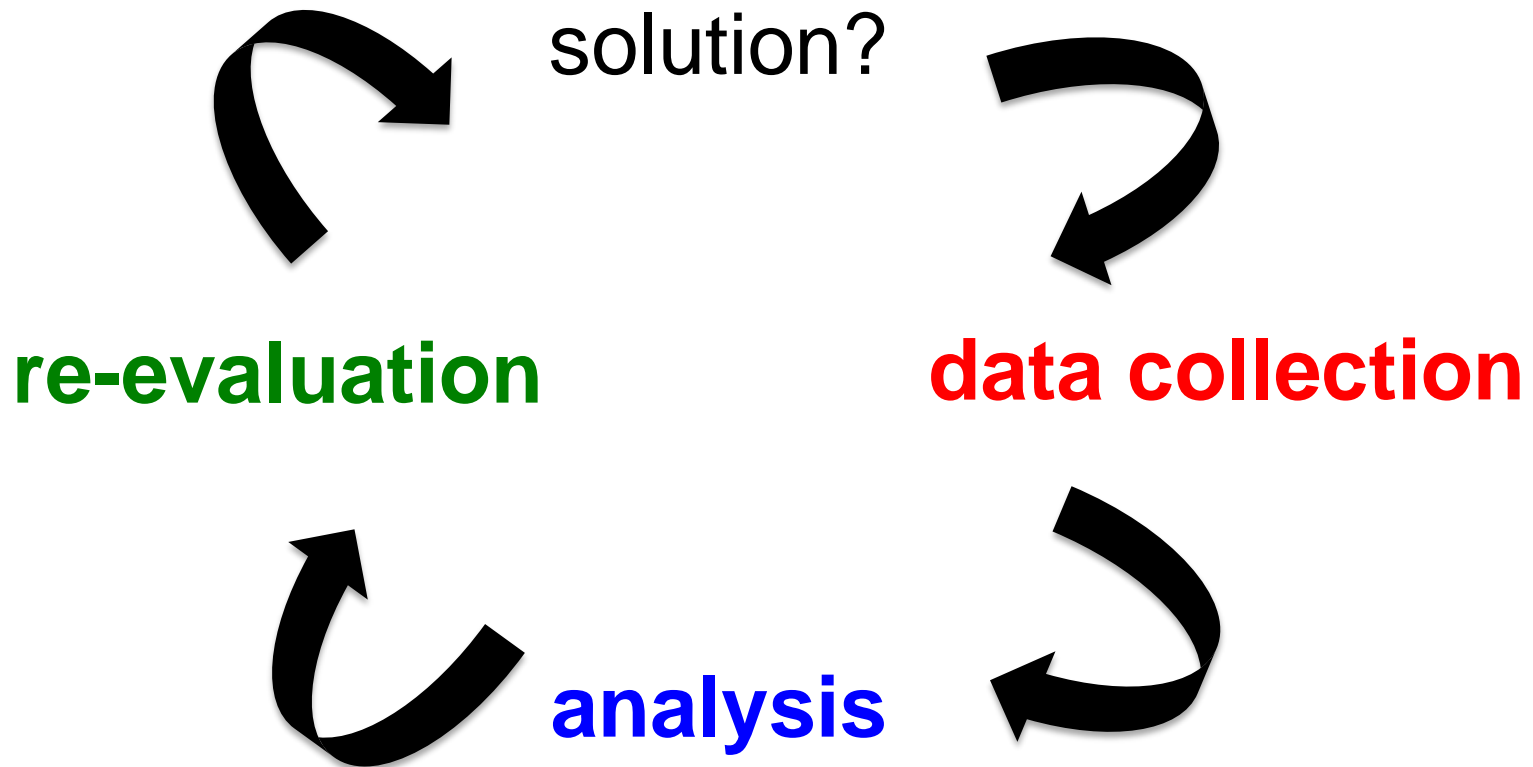
# N2Africa Data Flows

**Joost van Heerwaarden**

ILRI-N2Africa Monitoring and Evaluation Workshop  
Lalibela Auditorium, ILRI Campus, Addis Ababa  
10-11 May 2016



# Learning loops





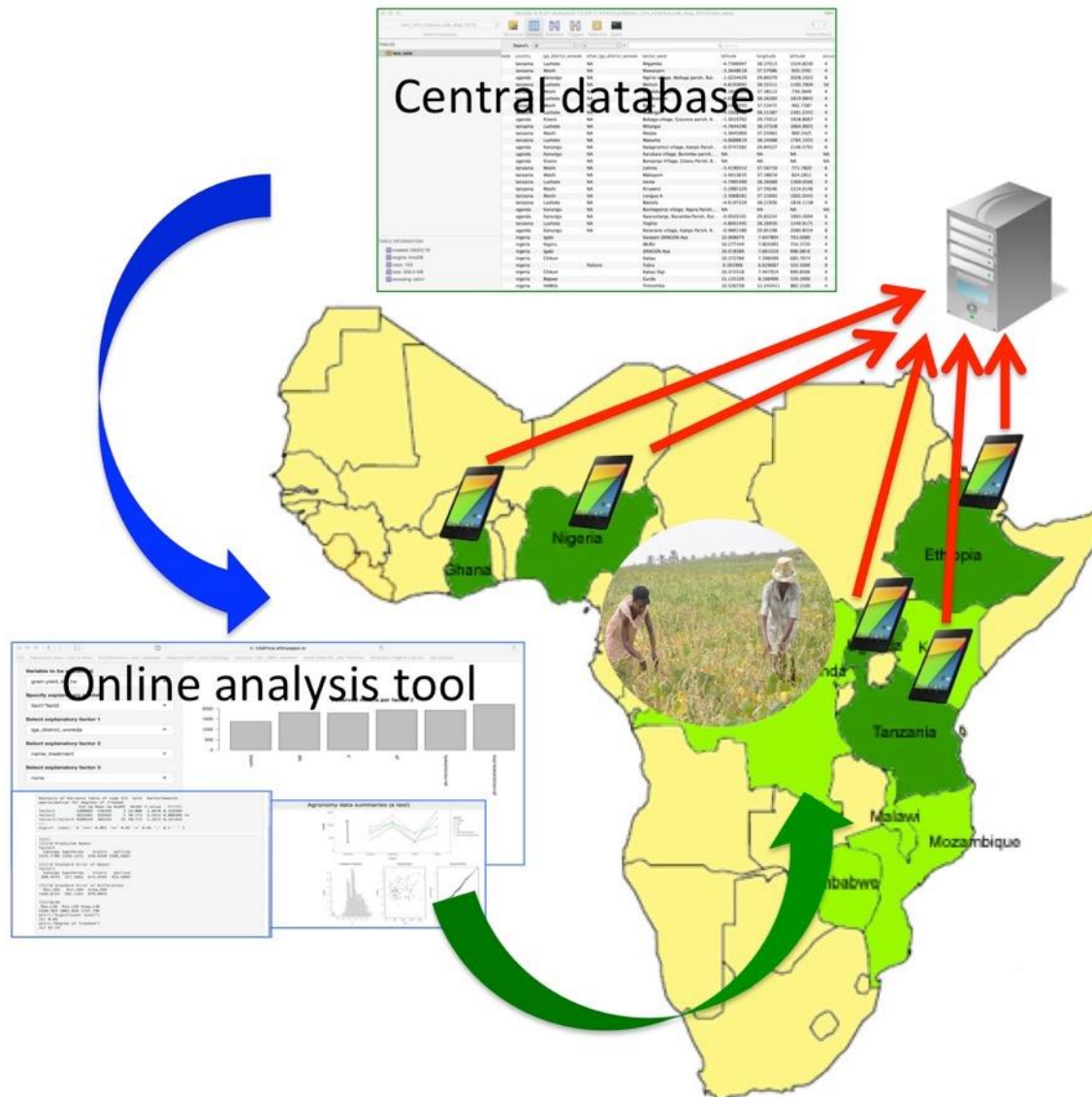
---

**Data that is not available does not exist**



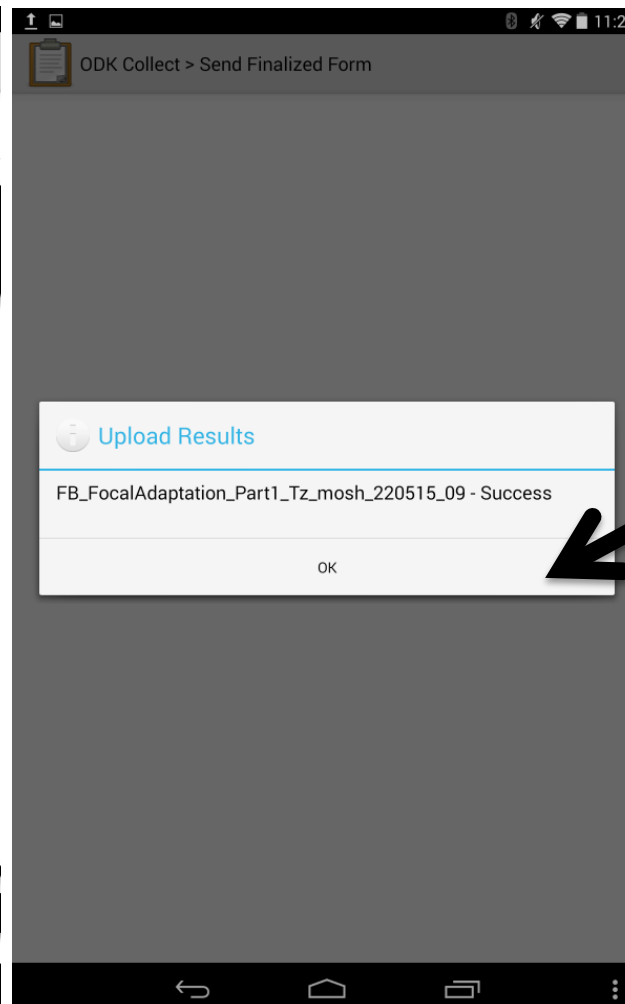


# Our data flows





# Tablet based data collection



# Open Data Kit

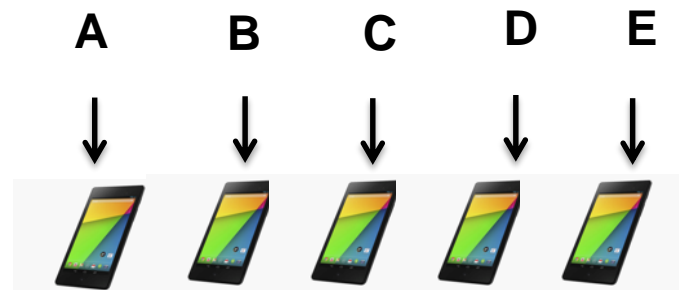


“A free and open-source set of tools which help organizations author, field, and manage mobile data collection solutions.”

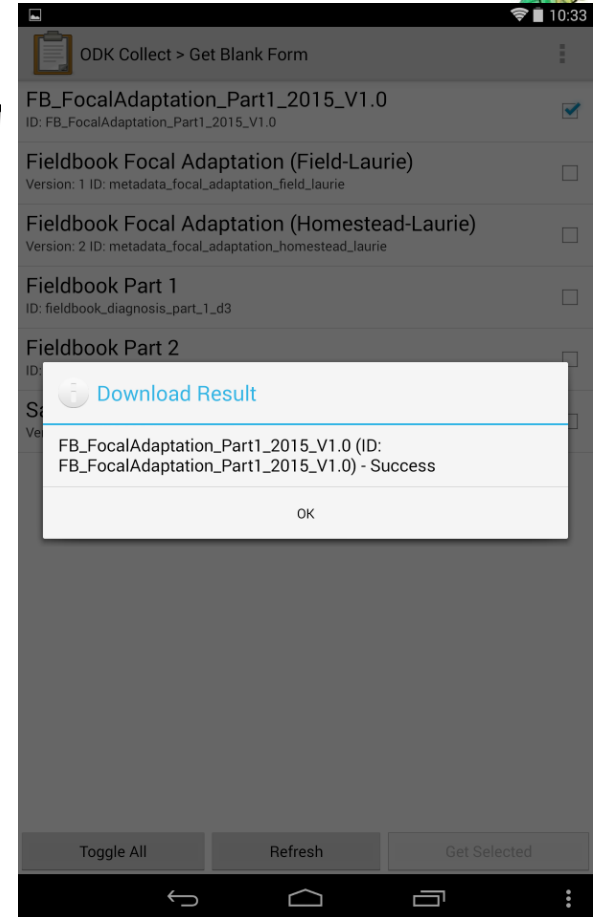
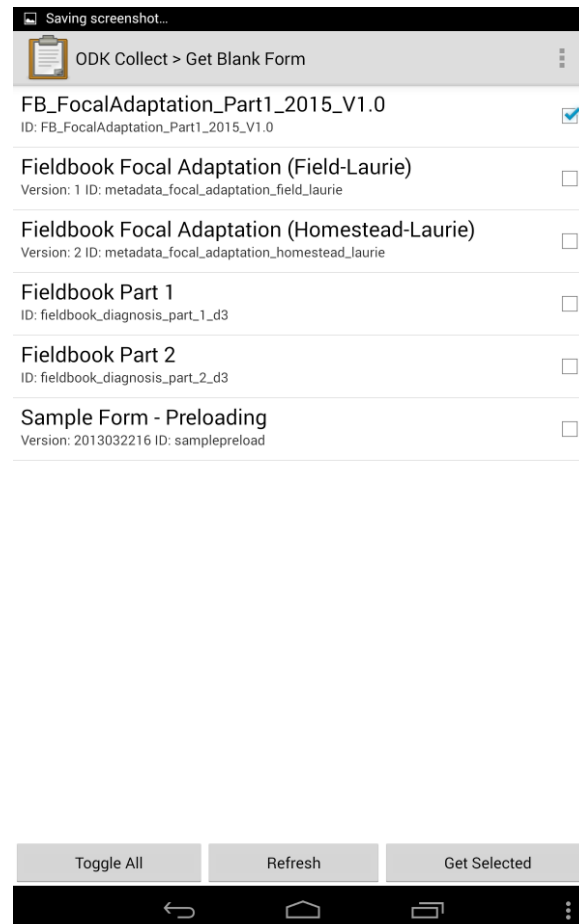
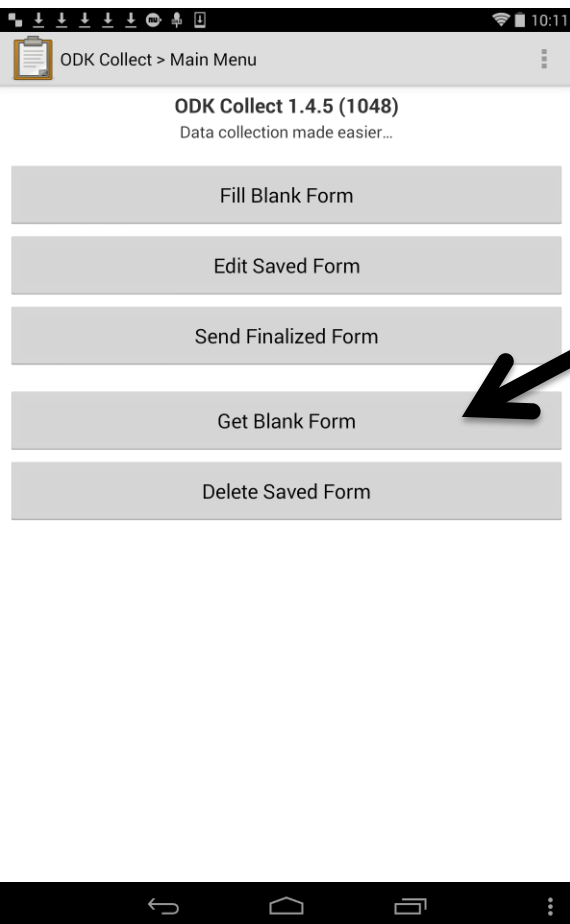
**Build forms**

**Collect data**

**Aggregate data**



# Collect





# Collect



ODK Collect > Main Menu

ODK Collect 1.4.5 (1048)  
Data collection made easier...

Fill Blank Form

Edit Saved Form

Send Finalized Form

Get Blank Form

Delete Saved Form

ODK Collect > Fill Blank Form

Finished scanning. All forms loaded.

FB\_FocalAdaptation\_Part1\_2015\_V1.0  
Added on Wed, Apr 29, 2015 at 10:11

Fieldbook Part 1  
Added on Thu, Aug 14, 2014 at 08:26

Fieldbook Part 2  
Added on Thu, Aug 21, 2014 at 08:25

Fieldbook\_FA\_2015\_part2  
Added on Tue, Apr 21, 2015 at 14:47

Fieldbook\_FA\_2015\_test1  
Added on Tue, Apr 21, 2015 at 14:47

sample  
Added on Mon, Jun 23, 2014 at 15:10

ODK Collect > FB\_FocalAdaptation\_Part...

This is part 1 of the field book, please conduct this part of the survey in the field where the N2Africa adaptation package is planted

Name of the person filling the form

Date when form filled

Apr	21	2014
May	22	2015
Jun	23	2016

Country

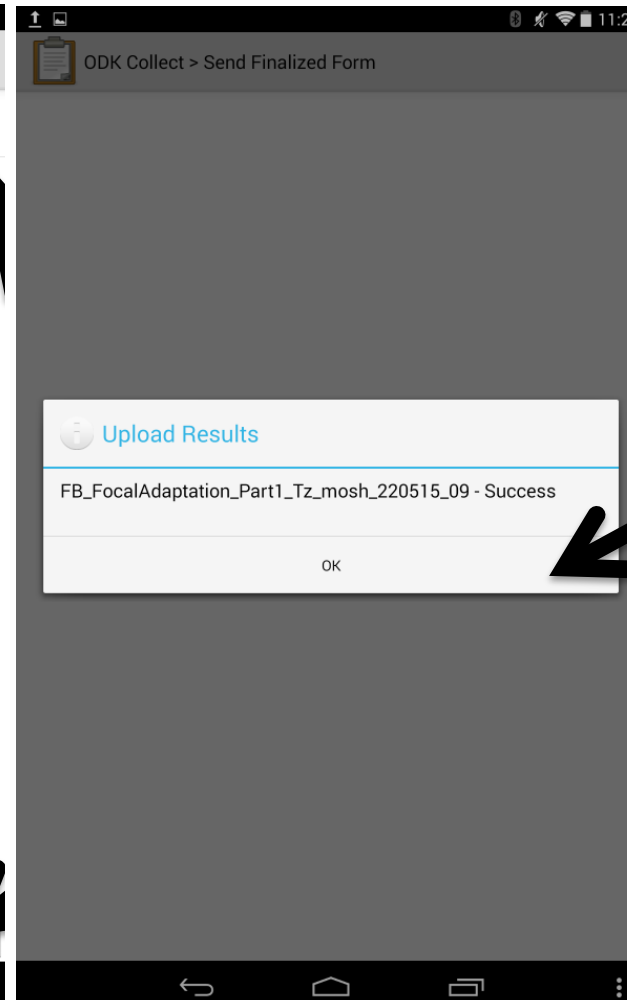
- Ghana
- Nigeria
- Ethiopia
- Tanzania
- Uganda

LGA / District / Woreda

Moshi

Village/Ward/Parish/Kebele

# Aggregate



<http://odk.n2africa.org:8080/ODKAggregate/Aggregate.html>

Putting nitrogen fixation to work for smallholder farmers in Africa





Data  
&  
Data collection

Reports  
&  
Documents

Training and  
extension  
materials

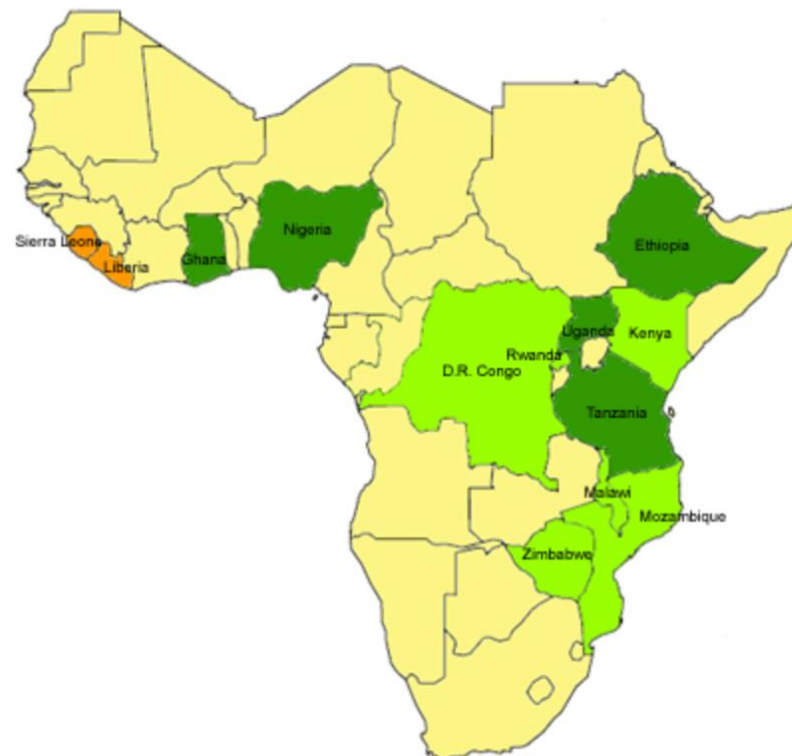
Guidelines  
&  
Protocols

Meetings

Staff and  
partners

Publication  
Plans

Photo gallery



<http://www.n2africa.org/node/169>



joost.vanheerwaarden

- My personal homepage
- N2Africa Intranet
- N2Africa Photo
- Add content
- Log out

Search

only in:

News  Output

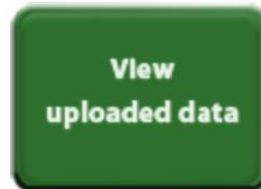
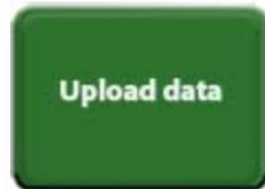
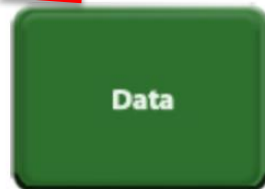
Home > Data & Data collection



## & Data collection

24/2014 - 11:00 — marcel.lubbers

Use the buttons to download data, upload data, view uploaded raw data or go the data collection page. Use the buttons to download data, view uploaded raw data or go the data collection page.



# Intranet



## N2Africa Putting nitrogen fixation to work for smallholder farmers in Africa

[Home](#)
[N2 News](#)
[N2 About](#)
[N2 Map](#)
[N2 Media](#)
[N2 Outputs](#)
[N2 Who's who](#)
[N2 Links](#)
[N2 Intranet](#)

Data



Filter on Country

<Any>

Filter on data type

<Any>

Apply

only in:

Output Search

Title	Status	Country	Year(s)	Data type	Data file
ODK me value add process data end year	Raw	All core countries	2016	M&E	<a href="#">Download</a>
ODK me training data	Raw	All core countries	2016	M&E	<a href="#">Download</a>
ODK Use Survey Uganda 2015	Raw	Uganda	2015B	Use survey	<a href="#">Download</a>
Focal adaptation part 1 Uganda 2015 season 1 climbing bean	Raw	Uganda	2015A	Focal adaptation trial	<a href="#">Download</a>
Focal adaptation part 2 Uganda 2015 season 1 climbing bean	Raw	Uganda	2015A	Focal adaptation trial	<a href="#">Download</a>
Adoption Domains Tanzania: Common Bean Groundnut Soybean	Cleaned	Tanzania	2015	Geographical data	<a href="#">Download</a>
Adoption Domains Uganda: Common Bean Groundnut Soybean	Cleaned	Uganda	2015	Geographical data	<a href="#">Download</a>

**16**  
**IONAL**  
**YEAR OF PULSES**



## N2Africa Putting nitrogen fixation to work for smallholder farmers in Africa

joost.vanheerwaarden

- My personal homepage
- N2Africa Intranet Home Page
- N2Africa Photo Gallery
- Add content
- Log out

### Search

only in:  
 News  Output

- N2 Home
- N2 News
- N2 About
- N2 Map
- N2 Media
- N2 Outputs
- N2 Who's who
- N2 Links
- N2 Intranet

Home >



**Filter on Country** <Any> **Filter on data type** Demonstration trial

Title	Status	Country	Year(s)	Data type	Data file
ODK Demonstration trial 2015	Raw	All core countries	2015	Demonstration trial	<a href="#">Download</a>
Demonstration trial northern Uganda 2014 season 2	Raw	Uganda	2014B	Demonstration trial	<a href="#">Download</a>



Microsoft Word ribbon: Paste, Fill, Clear, Calibri (Body) 11, Bold, Italic, Underline, Bullets, Numbering, Paragraph, Wrap Text, Merge, General, Conditional Formatting, Styles, Insert, Delete.

	G	H	I	J	K	L
	name_technician_1	date_hhsurvey_1	country	lga_district_woreda	other_lga_district_woreda	sector_ward
4	Samson Henta	04-Nov-15	ethiopia	Halaba	NA	Lalenda
5	Samson Henta	04-Nov-15	ethiopia	Halaba	NA	Hola Gaba
1	Samson Henta	15-Nov-15	ethiopia	Boricha	NA	Shello Abore
9	Samson Henta	04-Nov-15	ethiopia	Halaba	NA	Shankate
0	Samson Henta	15-Nov-15	ethiopia	Boricha	NA	Shello Elancho
8	Samson Henta	03-Oct-15	ethiopia	Halaba	NA	Andegna Ansha

# Intranet

## Data Collection



Data Collection Tools

Guidelines agronomy

Protocols agronomy

	Pre-season	Before planting	Planting	Mid-season	Harvest	End of season
<i>Diagnostic trials</i>						
Trial protocol	Develop and upload	Print				
Cropping calendar		Print (for each host farmer)	Hand out to each farmer		Ask from farmer to add in field book	
Soil samples			Take from each trial (before inputs)			Send to IITA Ibadan for analysis
Field Book				Frequent visits during season	Report harvest	Collect from partners, check and upload
<i>Demonstration trials</i>						
Trial protocol	Develop and upload	Print				
Cropping calendar		Print (for each host farmer)	Hand out to each farmer		Ask from farmer to add in field book	
Soil samples			Take from each trial (before inputs)			Send to IITA Ibadan for analysis
Input distribution and feedback form		Print	Register inputs distributed to host farmer			Collect from partners, enter data and upload
Field Book				Frequent visits during season	Report harvest	Collect from partners, check and upload
Technology evaluation sheet				Evaluate treatments during field day	Evaluate treatments during field day	Collect from partners, enter data and upload
Field days data form				Report on field day	Report on field day	Collect from partners, enter data and upload
<i>Adaptation trials</i>						
Cropping calendar		Print (for each farmer)	Hand out to each farmer		Ask from farmer to add in field book	
Input distribution and feedback form		Print	Register inputs distributed to each farmer	Randomly select focal adaptation trial farmers	Call all non-focal farmers for feedback on trial	Collect from partners, enter data and upload
Instruction leaflet		Print (for each farmer)	Hand out to each farmer			
Field book				Fill in Part I and upload	Fill in part II and upload	Collect from partners, check and upload

**Responsibilities:**

- Country coordinator
- Field staff (N2AFRI extension, partner)
- Data manager

# Online analysis tool



Browser: n2africa.shinyapps.io

Navigation: M&E data summ...ies (a test) Agronomy data...ries (a test) https://n2afri...oard\_training/ bol.com | De ...983 | Boeken Open Data Kit...ata Transfer Abstract | Digital Library My Library

Page: Agronomy data summaries (a test) Untitled

## Agronomy data summaries (a test)

Country:

nigeria

Trial type:

diag

Season:

2015

Crop:

soya\_bean

Variable to be explained:

grain\_weight\_crop\_1

Specify explanatory model:

fact1\*fact2

Select explanatory factor 1

lga\_district\_woreda

Select explanatory factor 2

inputs

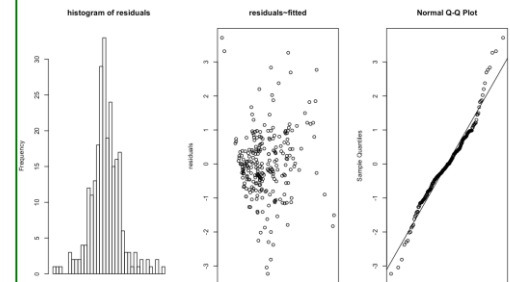
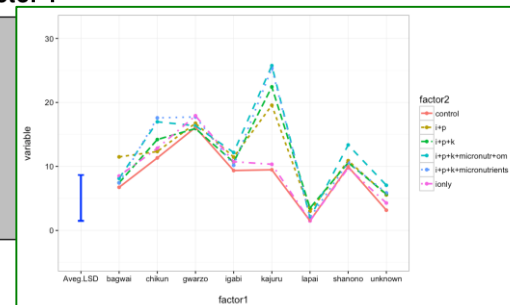
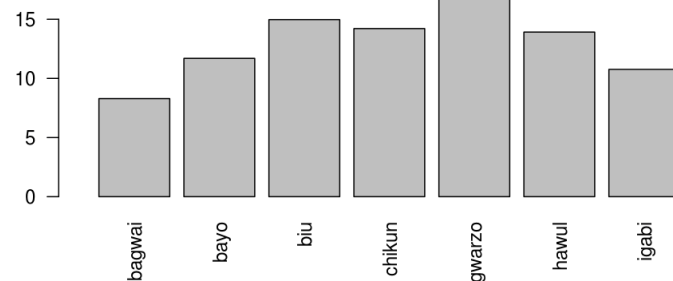
[1] sum of non-missing entries:

bagwai	bayo	biu	chikun	gwarzo	hawul
30	6	30	30	24	54
igabi	kajuru	kwaya	kusar	lapai	shanono
24	30	24	6	30	78

[1] number of farms with data

bagwai	bayo	biu	chikun	gwarzo	hawul
5	1	5	5	4	9
igabi	kajuru	kwaya	kusar	lapai	shanono
4	5	4	1	5	13

observed means per factor 1





# Online analysis tool

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[https://n2africa.shinyapps.io/Diag\\_Demo\\_test/](https://n2africa.shinyapps.io/Diag_Demo_test/)

[https://n2africa.shinyapps.io/ME\\_test/](https://n2africa.shinyapps.io/ME_test/)



# Correcting data



N2 Home N2 News N2 About N2 Map N2 Media N2 Outputs N2 Who's who N2 Links N2 Intranet

Home >

**Filter on Country** <Any> **Filter on data type** M&E

Title	Status	Country	Year(s)	Data type	Data file
ODK me value add process data end year	Raw	All countries	2016	M&E	Download
ODK me training data	Raw	All countries	2016	M&E	Download
ODK me template partners end year	Raw	All countries	2015	M&E	Download
ODK me template list participants	Raw	All countries	2015	M&E	Download
ODK me technology project evaluation	Raw	All countries	2015	M&E	Download
ODK me producer groups data end year	Raw	All countries	2015	M&E	Download
ODK me media events data	Raw	All countries	2015	M&E	Download



# Correcting data



Microsoft Excel interface showing a spreadsheet with columns: repeat\_id, submissiondate, country\_name, partner\_organisation, date\_of\_training, and training\_location. A 'Sort' dialog box is open for the 'country\_name' column, showing 'Ascending' and 'Descending' options, and a 'Filter' section with 'Uganda' selected. The spreadsheet data is as follows:

	B	C	D	E	F	G
	repeat_id	submissiondate	country_name	partner_organisation	date_of_training	training_location
72e8d99e441_1	uuid:02049cb6-6744-46d4-9acb-e72e8d99e441_1	26/11/15 16:04	Uganda		01-Nov-15	Kap...
72e8d99e441_2	uuid:02049cb6-6744-46d4-9acb-e72e8d99e441_2	26/11/15 16:04	Uganda		01-Oct-15	Kapcl
72e8d99e441_3	uuid:02049cb6-6744-46d4-9acb-e72e8d99e441_3	26/11/15 16:04	Uganda		01-Oct-15	Kapcl
72e8d99e441_4	uuid:02049cb6-6744-46d4-9acb-e72e8d99e441_4	26/11/15 16:04	Uganda		01-Oct-15	Kapcl
dc1ec5208a_1	uuid:1791f8ea-f3aa-4e9a-9a44-b8dc1ec5208a_1	03/02/16 09:39	Uganda		01-Feb-16	Ruga
dc1ec5208a_2	uuid:1791f8ea-f3aa-4e9a-9a44-b8dc1ec5208a_2	03/02/16 09:39	Uganda		01-Feb-16	Ruga
dc1ec5208a_3	uuid:1791f8ea-f3aa-4e9a-9a44-b8dc1ec5208a_3	03/02/16 09:39	Uganda		01-Feb-16	Ruga
dc1ec5208a_4	uuid:1791f8ea-f3aa-4e9a-9a44-b8dc1ec5208a_4	03/02/16 09:39	Uganda		01-Feb-16	Ruga
ic96a7d2a7f_1	uuid:19e6a260-d2bc-428e-afa2-63c96a7d2a7f_1	26/11/15 16:04	Uganda		07-Nov-15	Abok
ic96a7d2a7f_2	uuid:19e6a260-d2bc-428e-afa2-63c96a7d2a7f_2	26/11/15 16:04	Uganda		07-Nov-15	Abok
ic96a7d2a7f_3	uuid:19e6a260-d2bc-428e-afa2-63c96a7d2a7f_3	26/11/15 16:04	Uganda		07-Nov-15	Abok
ic96a7d2a7f_4	uuid:19e6a260-d2bc-428e-afa2-63c96a7d2a7f_4	26/11/15 16:04	Uganda		07-Nov-15	Abok
09f9c50fa_1	uuid:28a30cf7-cf02-493a-a5a1-2fc09f9c50fa_1	24/11/15 15:33	Uganda	IITA	04-Aug-15	

# Correcting data



den

Page

ly in:

sh

N2 Home N2 News N2 About N2 Map N2 Media N2 I

Home > Data & Data collection



### Data & Data collection

Fri, 10/24/2014 - 11:00 — marcel.lubbers

Use the buttons to download data, upload data, view uploaded raw data data, upload data, view uploaded raw data or go the data collection pag

Data

Data Collection

**Upload data**

View uploaded data

### Add Data

**Status: \***  
Corrected

**Name person uploading the data:**  
Joost van Heerwaarden

**Date of data collection**

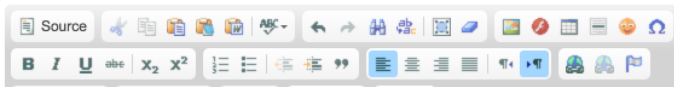
**From date: \***  
01.04.2016  
Format: 01.04.2016

**To date:**  
01.04.2016  
Format: 01.04.2016

**Country: \***  
Uganda

**Keywords:**

**Short description of the content of the data: \***



Corrected data for Uganda, changed date for one training.

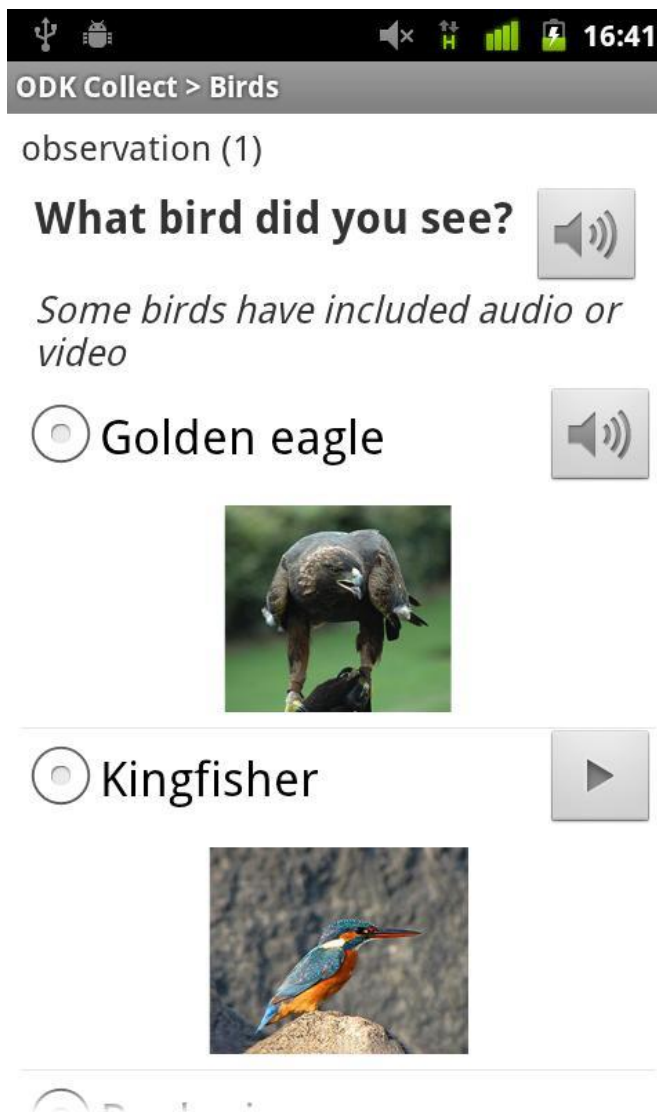


# Some technical issues

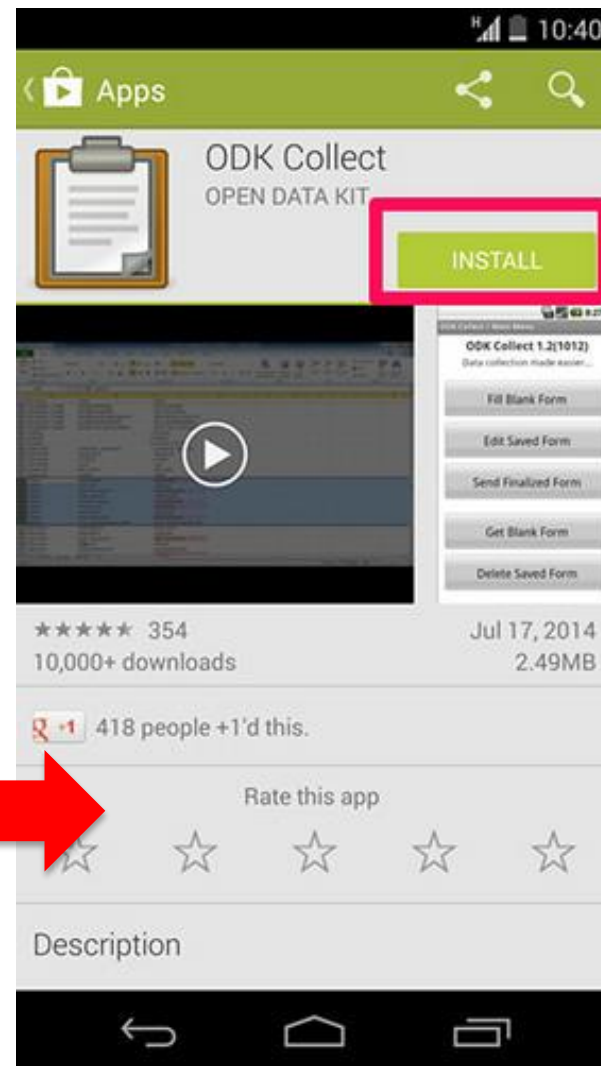
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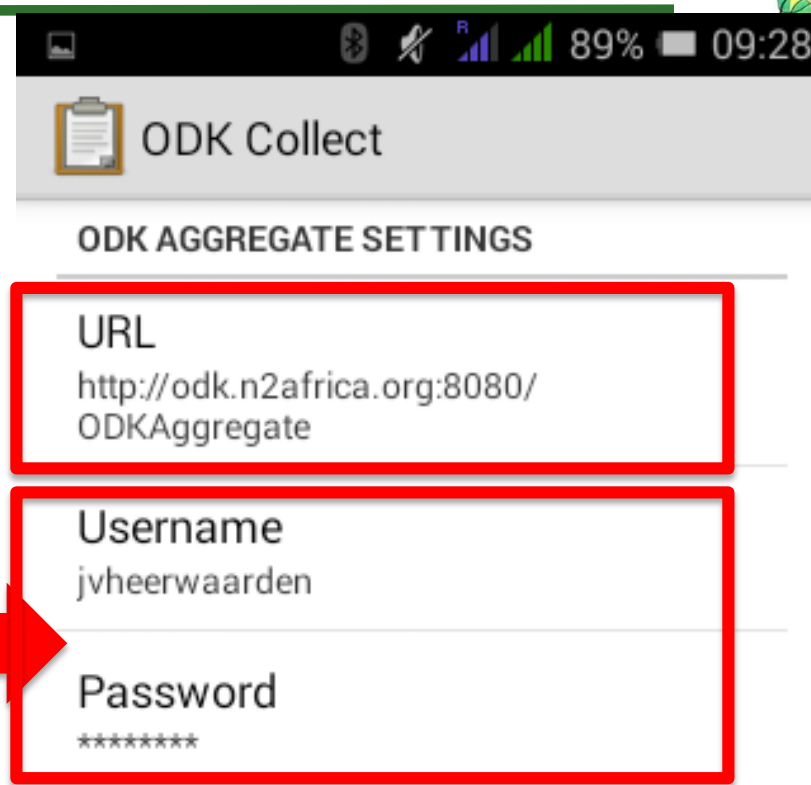
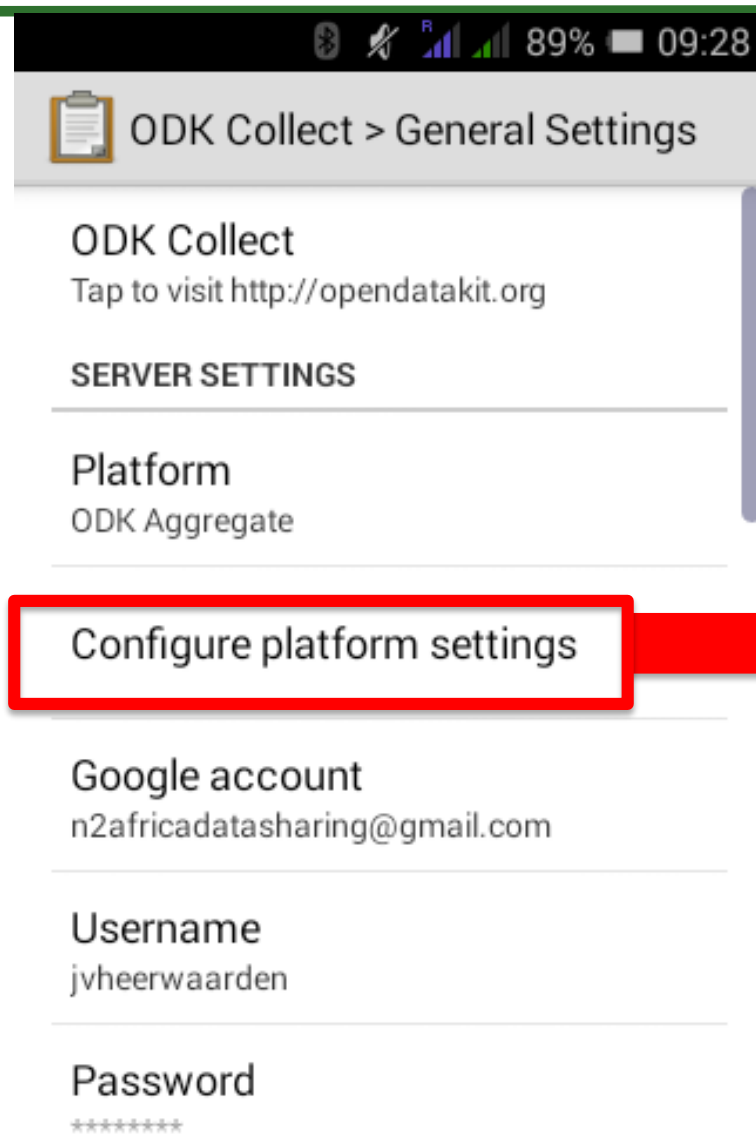
# Installing ODK



# Installing ODK



# Installing ODK





# Installing ODK

---



**url:** <http://odk.n2africa.org:8080/ODKAggregate>

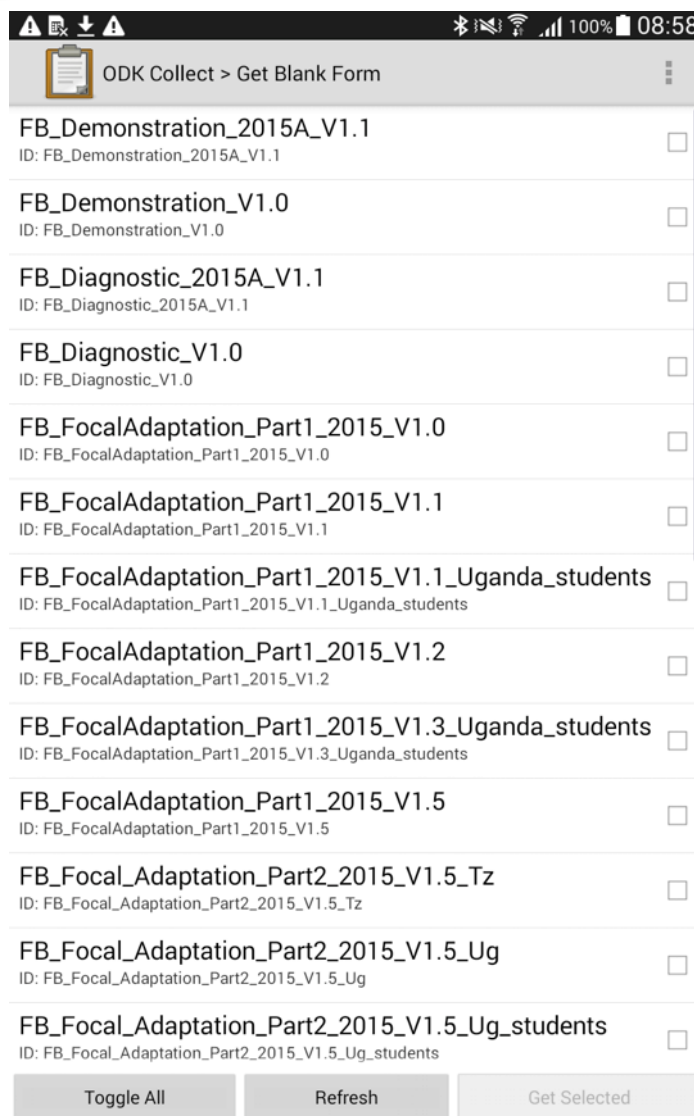
**Username:** n2africaethiopia

**Password:** Opia/401

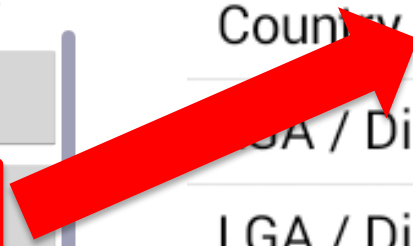
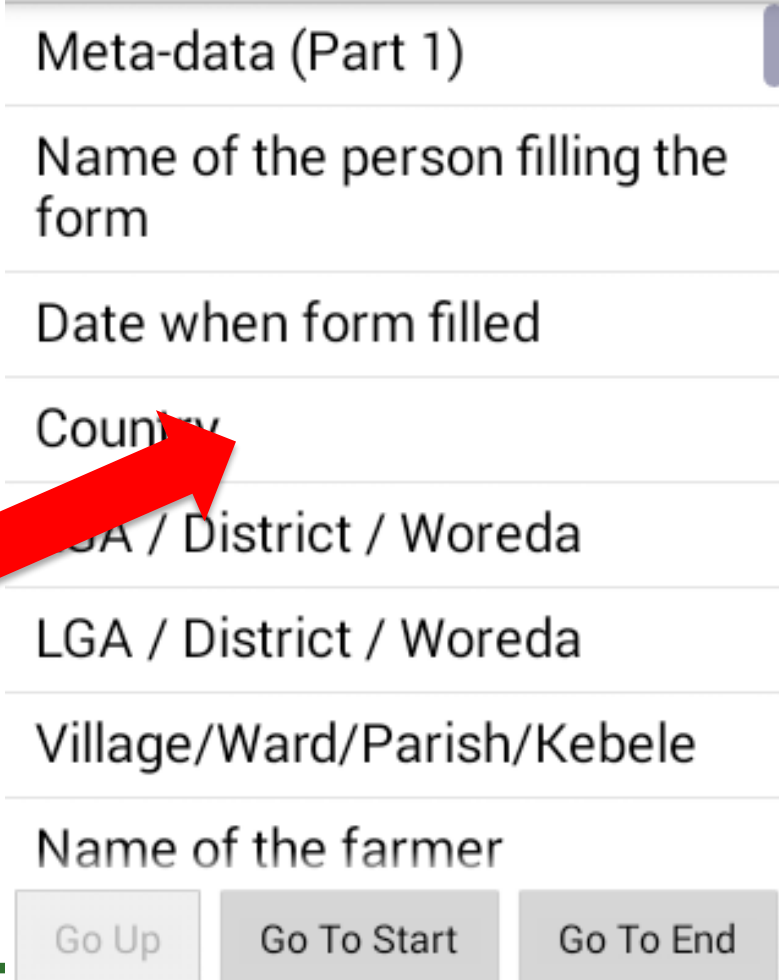
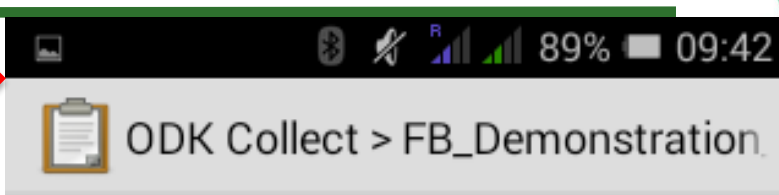
[Tutorial](#)



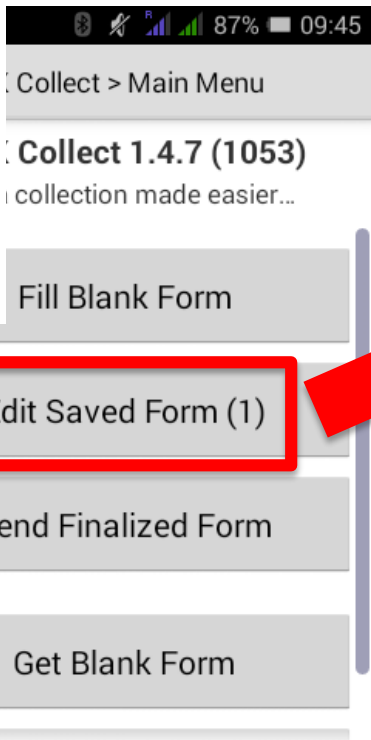
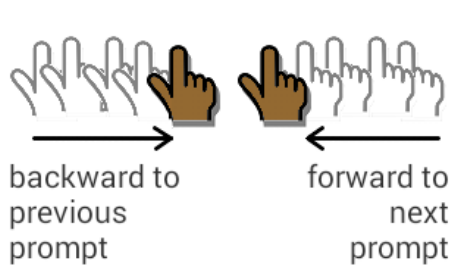
# Managing forms....



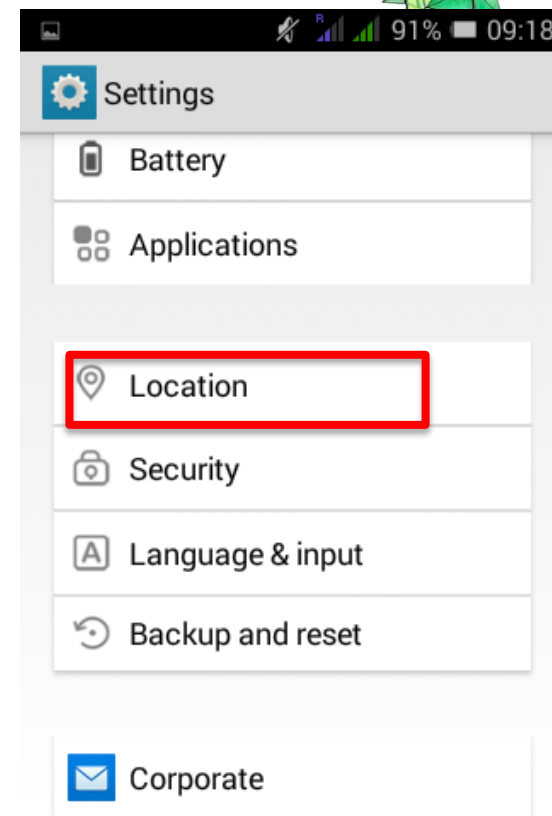
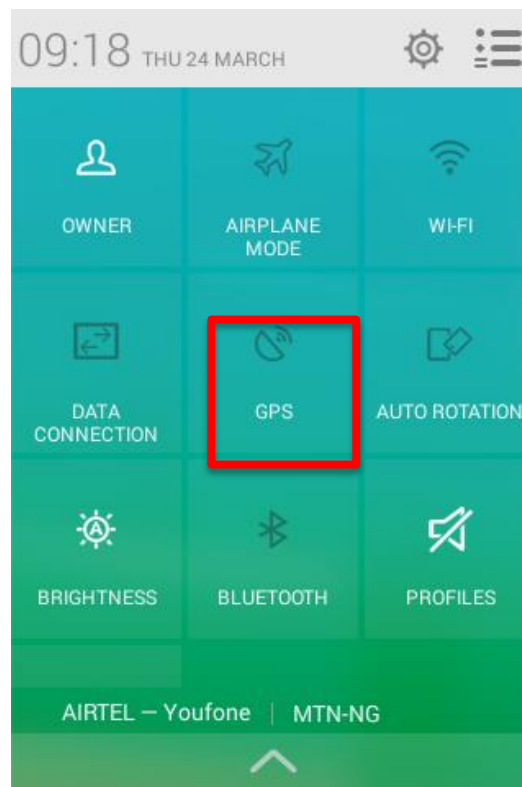
# Finding your way inside a form



You are at the start of  
FB\_Demonstration\_2015B\_V1.2  
\_Uganda. Swipe the screen as  
shown below to go backward  
and forward.



# GPS



Latitude:  $10.908079^{\circ}$  N = **10.908079**

Longitude:  $7.647804^{\circ}$  E = **7.647804**

Latitude:  $10.908079^{\circ}$  S = **-10.908079**

Longitude:  $7.647804^{\circ}$  W = **-7.647804**

# GPS



ODK Collect > FB\_Demonstration

information, observations and measurements on N2Africa experiment (Part 2)

Field characteristics

**GPS coordinates of the N2Africa field**

GPS coordinates (North/South)

GPS coordinates (East/West)

GPS coordinates (Altitude)

Were soil samples collected

Go Up    Go To Start    Go To End

ODK Collect > FB\_D

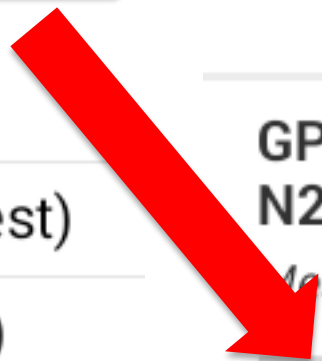
**Field characteristics**

*Please take the GPS coordinates of the N2Africa plot. If this doesn't work you can fill in the coordinates measured by a GPS unit in the next screen.*

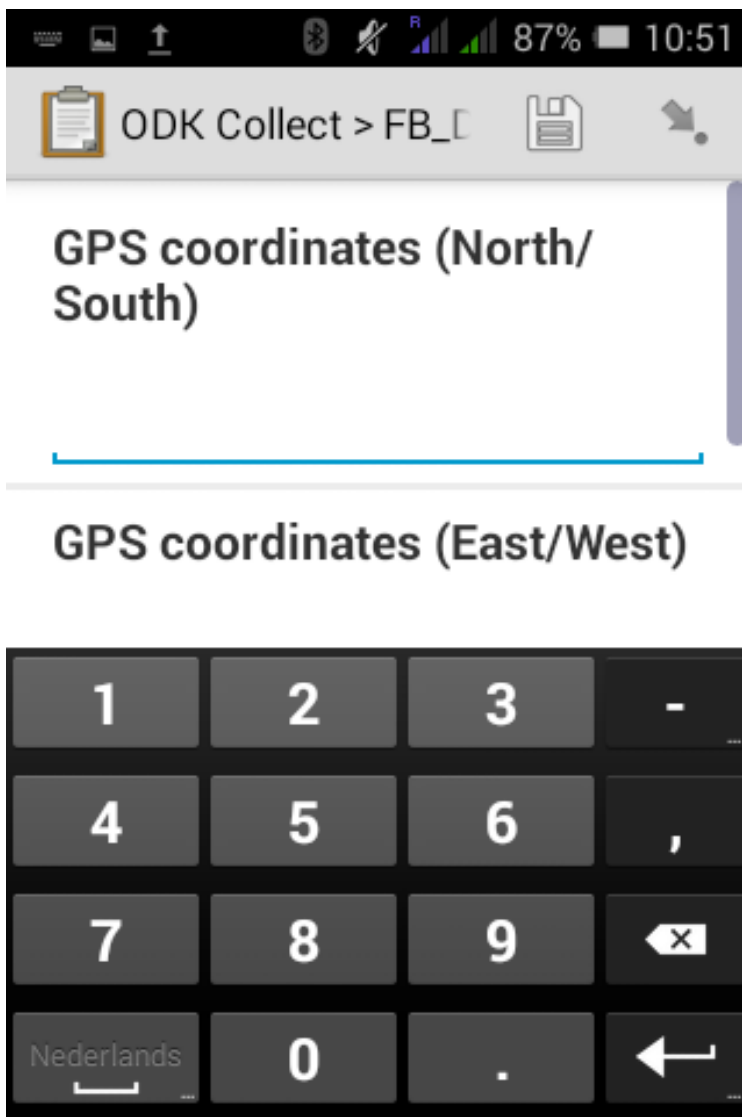
**GPS coordinates of the N2Africa field**

*Measured in the centre of the field*

Record Location



# GPS



Latitude:  $10.908079^{\circ}$  N = **10.908079**

Longitude:  $7.647804^{\circ}$  E = **7.647804**

Latitude:  $10.908079^{\circ}$  S = **-10.908079**

Longitude:  $7.647804^{\circ}$  W = **-7.647804**




# Sampling trials



Adaptation trial



Adaptation trial




Adaptation trial




Adaptation trial




Demonstration trial



Adaptation trial




Adaptation trial



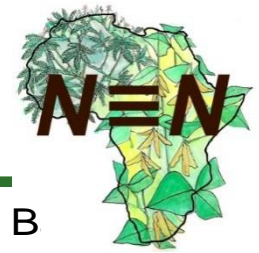
Adaptation trial



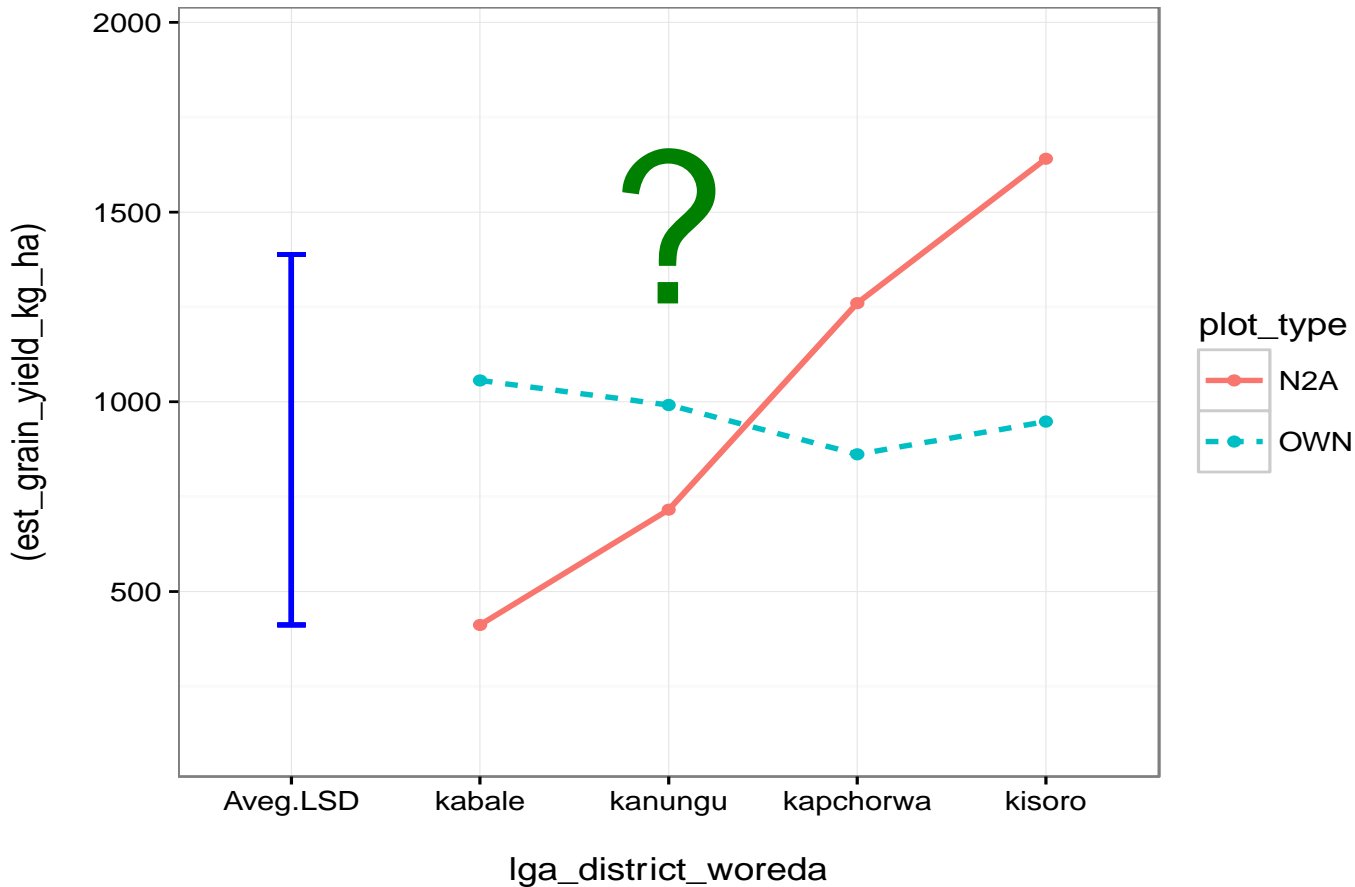
Adaptation trial



# Yield estimates from focal adaptation trials

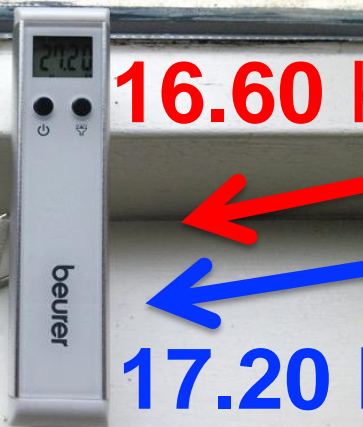
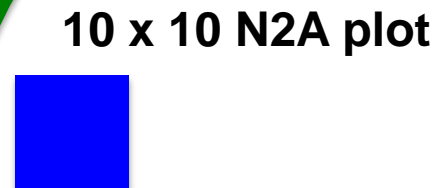
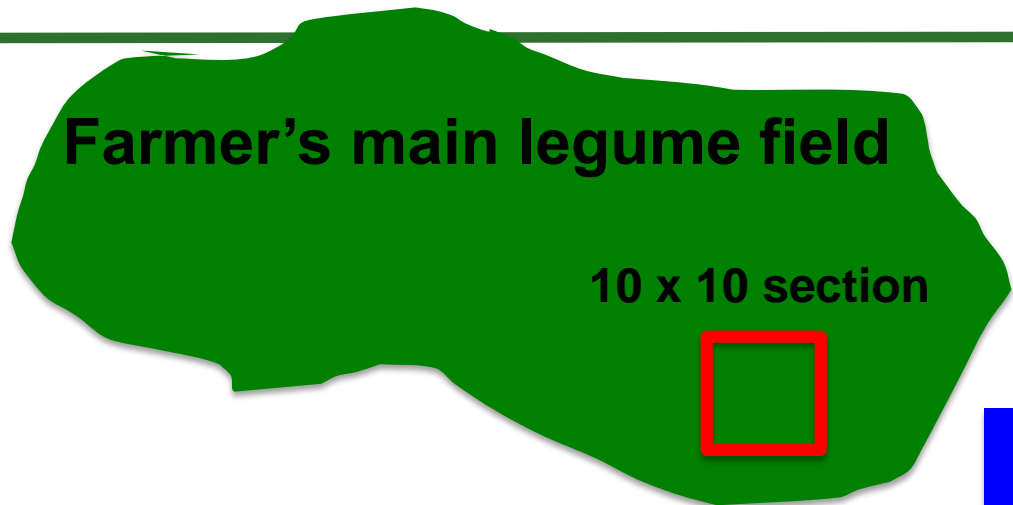


icted means for "Iga\_district\_woreda" by "plot\_type" with Aveg.LSD (5%) B





# Yield estimates from focal adaptation trials



16.60 Kg

17.20 Kg

# Discussion points

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- Technical difficulties
- Reasons for not uploading?
- Input distribution forms

