

Mobile data collection (MDC) with OpenDataKit- Survey Manager Training

[Name]
CartONG

Introduction

- **What is MDC (Mobile Data Collection)?**
- **MDC with UNHCR**

What is **Mobile Data Collection (MDC)**?

- ❶ MDC: use of new technologies to collect data (smartphones or tablets instead of paper forms).
- ❷ Used by CartONG since 2010 with many partners (UNHCR, Terre des Hommes, MSF, Solidarités International, REACH, Caritas, UNICEF, etc.)
- ❸ Possible use cases: surveys, assessments (potentially in emergency), tracking (distributions & such), monitoring and evaluation, etc.

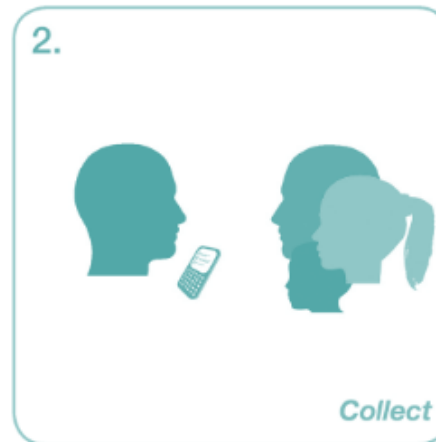


MDC

Mobile tech is a major improvement in information management (IM)

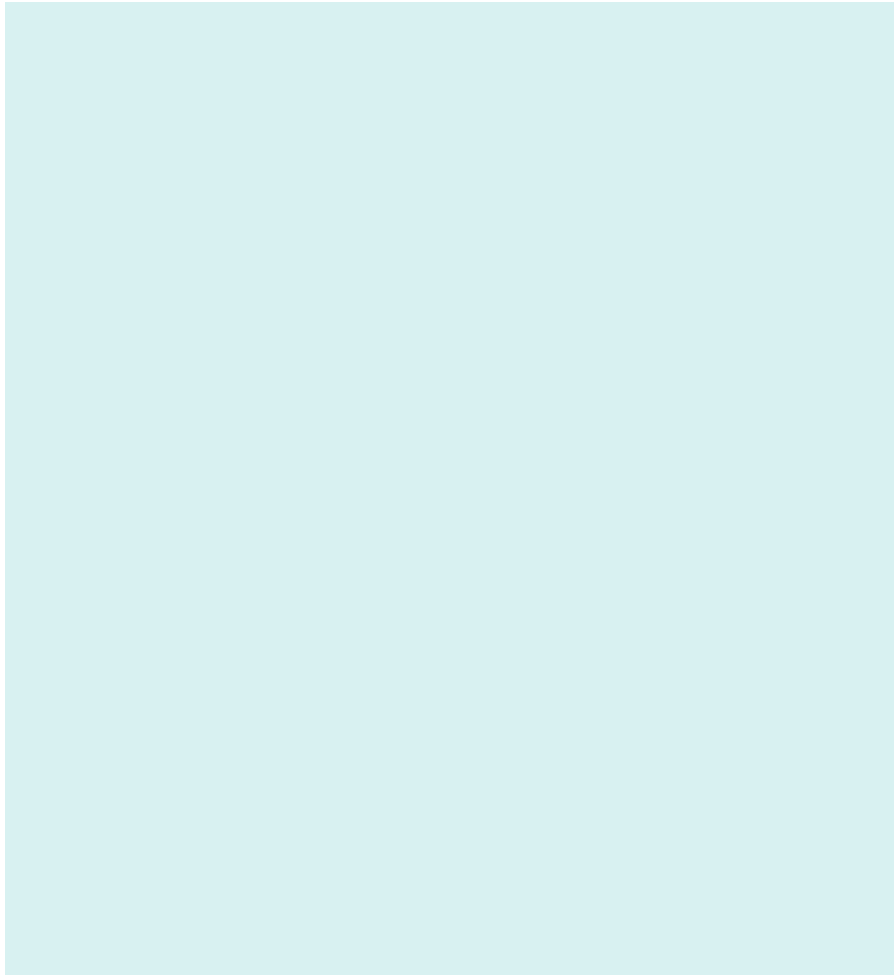


It is now possible in real time or near real time to:

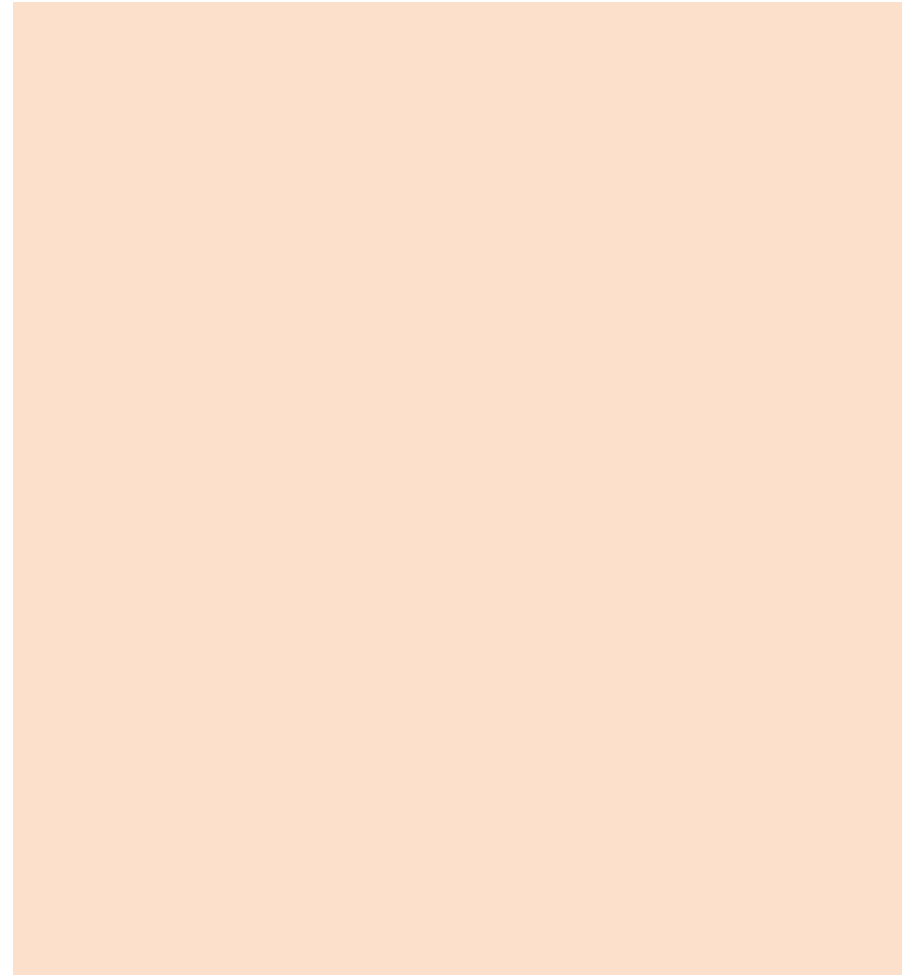


Exercise 1

MDC Advantages



MDC Disadvantages



Exercise 1



VS

MDC Advantages

MDC Disadvantages



Improved data quality and analytical capacities with integrated calculation, data validation constraints, skip logic, ...



Integrated tool to collect different types of multimedia: GPS points, pictures, signatures, audio recordings, barcodes, ...



Time saving: easier and faster analysis



Better day-to-day monitoring of the data collection process and possibility of remote access to data



Cost saving in the long run: less HR resources (no need for data entry clerks)



Centralized online archiving: reduced risk of data loss if well managed



Interviewers go lighter in the field

Longer preparation phase for designing, coding and testing the survey

Can be intimidating and create distance with the person interviewed. Not appropriate in some contexts

Can be a safety issue for staff in some contexts (targeting, theft)

Requires more technical skills in the project system implementation (longer training, adapted skills)

Fragile and expensive devices at first and risk of technical issues

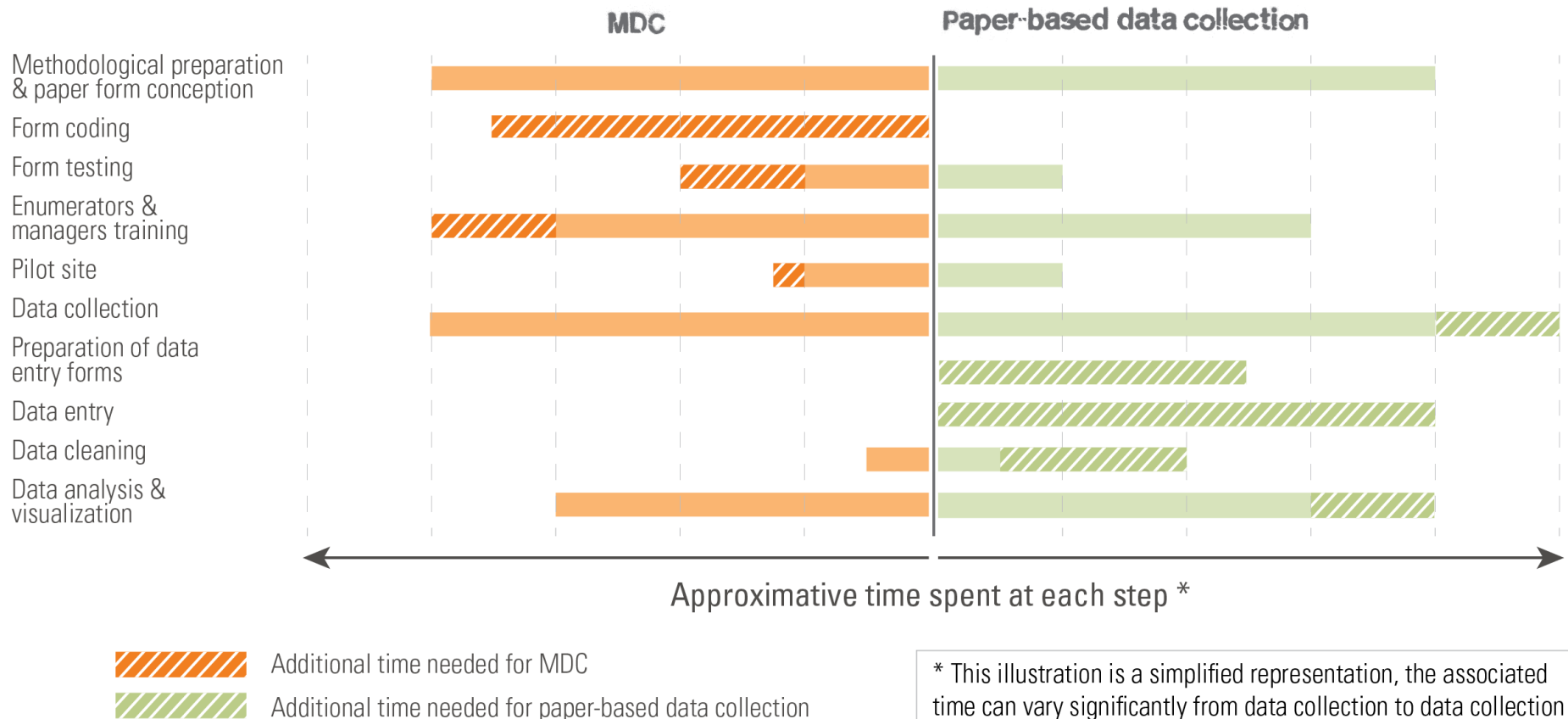
Dependence on electricity for use and internet connexion for data synchronization

Not adapted for qualitative surveys



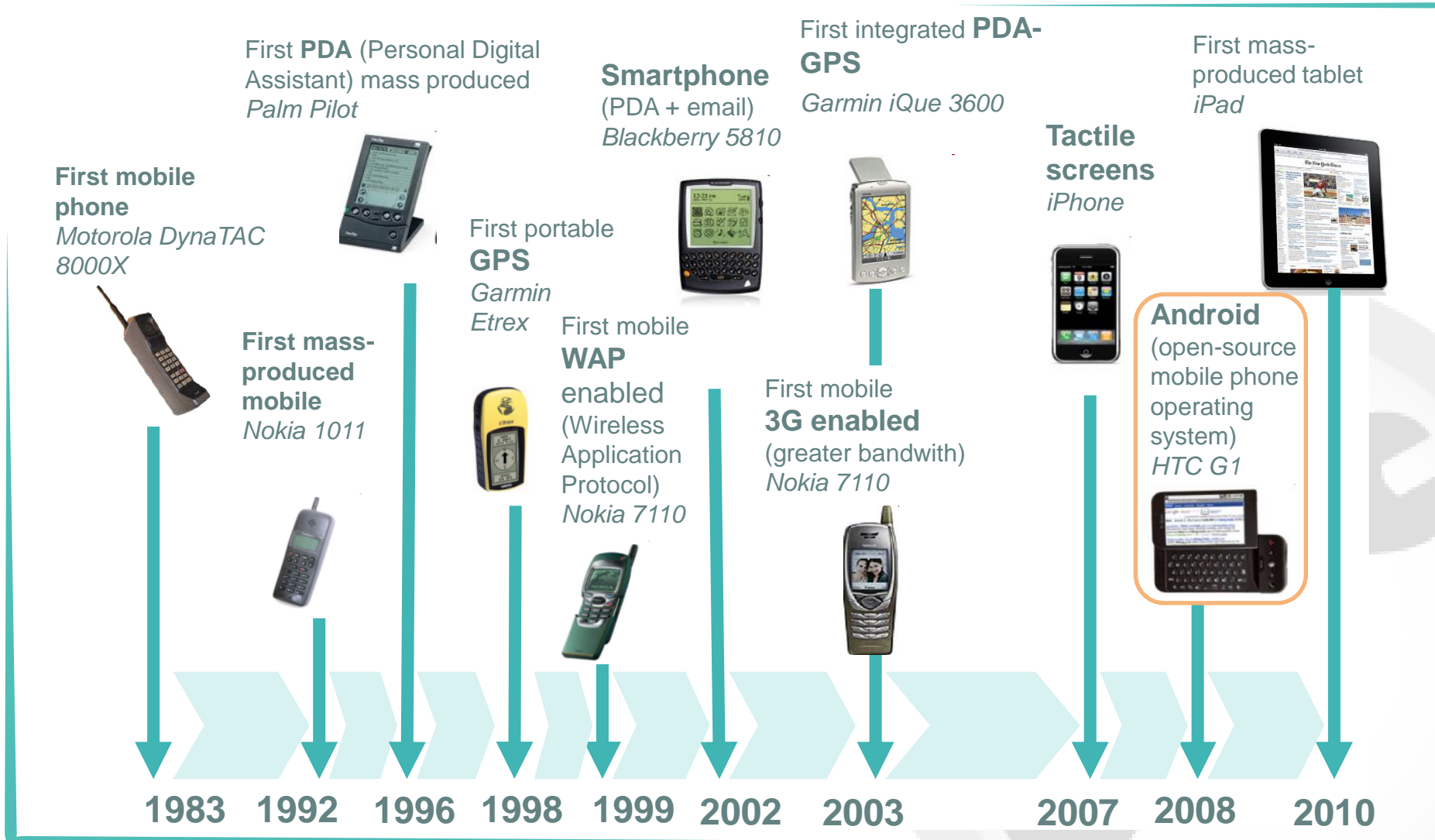
Data collection workflow (time spent)

MDC versus paper-based data collection workflow approximative time spent at each step



* This illustration is a simplified representation, the associated time can vary significantly from data collection to data collection

Evolution of technology



Introduction

- What is MDC (Mobile Data Collection)?
- MDC with UNHCR

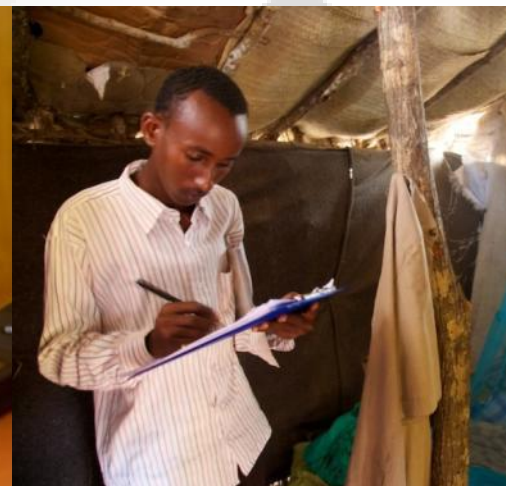
MDC for PHS (UNHCR)



First deployment

- 🕒 Kenya: Mosquito nets with ODK (Open Data Kit) 2010, UNHCR
- 🕒 Tools: ODK Collect & ODK Aggregate

Since then, dozens of deployments!



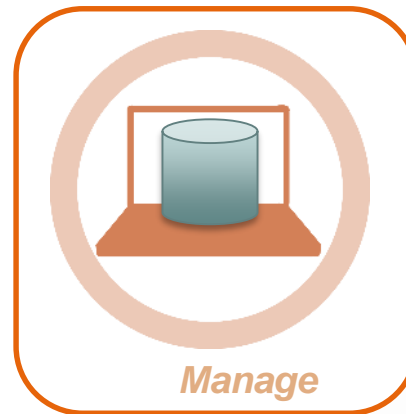
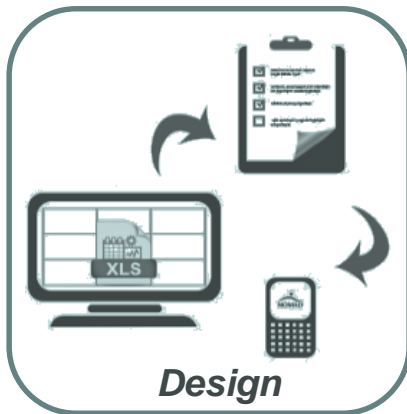
From the field: Sara Hoibak, consultant UNHCR

Exercise 2

What are the main phases of a mobile data collection campaign for you?



Phases of a MDC

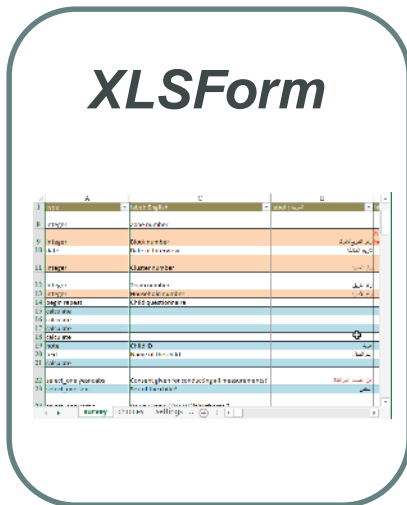
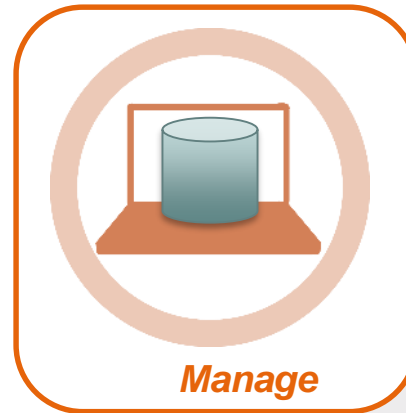
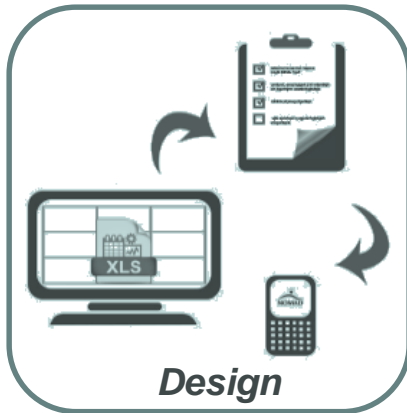


Phase 1 - Design:

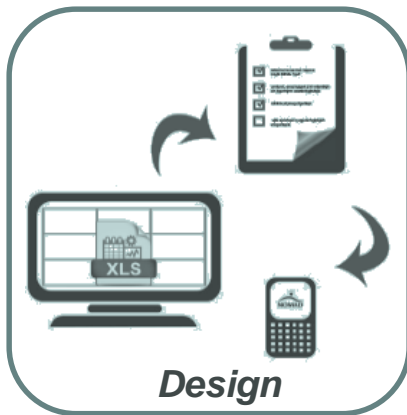
How to adapt the SENS MDC questionnaires

- Adapt the SENS MDC questionnaires by using XLS Form Global Templates

Phases of MDC



Introduction (1) - Design



- Each SENS MDC questionnaire is designed to get the best balance of global standardization and localized adaptability.
- Key indicators are comparable from country to country and year to year.
- In order to analyze comparable data from different contexts, local adaptation are required.

Introduction (2) - Adaptation

- ❶ The following slides briefly introduce how to adapt the standardized global forms according to the local context.
- ❷ Information on what should be changed in the questionnaires is mentioned in the guidance of each module.
- ❸ The template form can be quite complex to understand without background, please reach out to the regional office or headquarter for assistance on the adaptation if needed.

Introduction (3) - What are the Global Forms?

❶ These SENS Global Forms are set up in **XLS form**, a format compatible with many mobile data collection tools, in particular Kobo /ODK Collect.

❷ There is an **instructions** tab in each form on how to use them.

I. Understanding the format

A specific colour scheme has been set up in SENS Global Forms to make modification easier by partners:

- Variable names colored in green are OPTIONAL SENS variables.
- Variable names colored in red corresponds to standard SENS variables and should not be changed. They are MANDATORY.
- All variable names in blue can be adapted depending on local context.

⚙ Note that in some camps, the words "block" and "section" may not be used and other words may be used for these (e.g. area, quarter). Adapt the wording accordingly. You can change/remove the phrasing of all choices in blue, but NOT their values which are stored in the column "name".

- Variable names colored in orange are display notes for surveyors. They should not be deleted from the questionnaire and should not be read to the respondent during the interview.

II. Adapting the questions to local context in XLS form

You will find here all the explanations concerning what modifications can be made and how to make them whilst respecting the general format (as an error in the format can be extremely detrimental to your survey!).

⚙ Feel free to adapt question labels if you find that they are not sufficiently explicit in a given country (while avoiding changing the sense completely - if you want to change the sense completely, prefer hiding a question and adding a new one).

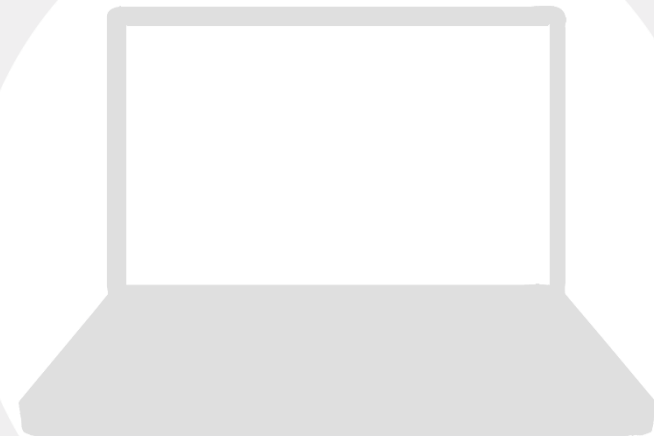
⚠ Make sure when you make modifications to always save the form with an updated version name to facilitate understanding (and also the updating of the versions on the phones). This should be done in the "settings" tab in the "form_title", "form_id" (be careful, there can be no spaces or special characters here, this is the real ID of the form) and "version".

II.1. Language

Navigation bar: XLS_Overview | **Instructions** | survey | choices | settings | +

Exercise 3

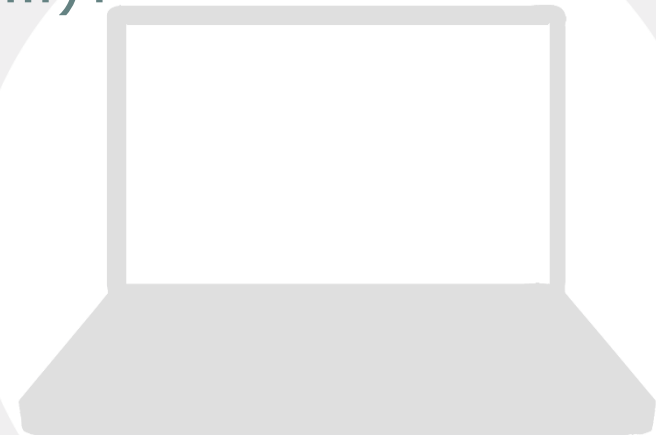
- 👤 As a group, look at:
 - The paper form,
 - The mobile form.
- 👤 and come up with five different **types** of changes you would like to make to the mobile form (you can open the form on the mobile if it helps).



What to Modify (1)

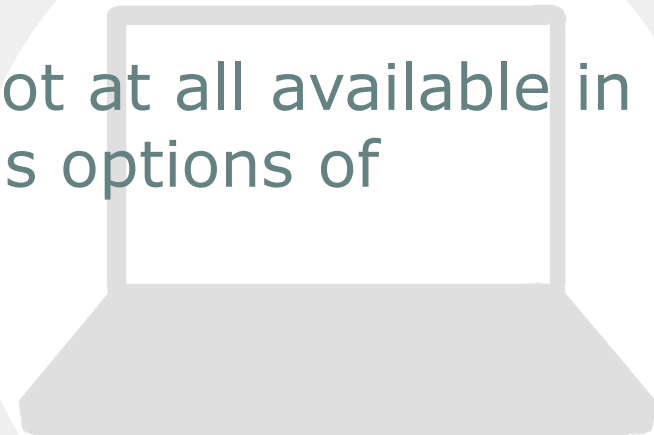
The administrative information:

- What are the **administrative variables** relevant in your context? Camps, blocks, sections, zones...
- What **types of questions** are they? Numeric, text, list of options?
- What are the **constraints** you want to put on the numeric ones (between 1 and 5...)?



What to Modify (2)

- 👤 Add/delete options (adjust according to the module guidance).
- 👤 Add/delete a language.
- 👤 Add/delete an optional question or module available.
- 👤 Change the text of the question or option.
- 👤 Change the notification or instruction for question shown on the phone.
- 👤 Add a question or option that is not at all available in the global form (such as photos as options of answers for tricky questions)?
- 👤 Anything else?



How to Adapt (1) – Code in forms

- ❶ Open "GLO_Child_EN_FR_AR_SW-XLS.xls"
- ❷ In the "name" column: **Red** indicates mandatory questions which should not be changed. **Green** questions are optional and **blue** questions are modifiable.
- ❸ The text in [bracket] is supposed to be added according to the context.
- ❹ More hints on adaptation for specific variable can be found in the last comments columns.

type	name	label::English	label::Français	label::العربية
calculate	CHELIGMAX	Maximum number of months to be eligible:	Nombre maximum de mois pour être éligible:	الحد الأقصى لعدد الأشهر أن يكون قانوني.
calculate	CHELIG			
note	Xconfidential3	EXPLAIN TO THE RESPONDENT THAT THESE QUESTIONS WILL BE KEPT CONFIDENTIAL AND WILL NOT AFFECT THE ASSISTANCE THEY RECEIVE/ARE ENTITLED TO.	EXPLIQUER AU RÉPONDANT QUE LES RÉPONSES À CES QUESTIONS RESTERONT CONFIDENTIELLES ET QUE CELA N'AFFECTERA PAS L'ASSISTANCE QU'ILS REÇOIVENT / À LAQUELLE ILS ONT DROIT.	وضح للمستجيب بأن هذه الأسئلة ستعامل بسرية ولن تؤثر على المساعدة التي يتلقونها أو التي سوف يتلقونها.
select_one arrive	CHARRIVE	Did \$(CHNAME) arrive to [camp name/country of asylum] before or after [INSERT THE EVENT RESPONSIBLE FOR THE INFLUX OF REFUGEES]?	Est-ce que \$(CHNAME) est arrivé à [nom du camp / pays d'asile] avant ou après [INSÉRER ÉVÈNEMENT RESPONSABLE DU NOUVEL AFFLUX DE RÉFUGIÉS] ? avant ou après [INSÉRER L'ÉVÈNEMENT DECLENCHEUR DU FLUX DE RÉFUGIÉS]?	هل وصل \$(CHNAME) إلى [اسم المخيم / بلد اللجوء] قبل أو بعد [أدج الحدث المسؤول عن تدفق اللاجئين]؟
select_one yesno	CHPRES	Is \$(CHNAME) currently present in the household?	\$(CHNAME), est-il actuellement présent dans le ménage?	هل \$(CHNAME) موجود حالياً ضمن الأسرة؟
decimal	WEIGHT	\$(CHNAME)'s weight in kilograms (±0.1kg):	Poids en kilogrammes (±0,1kg) de \$(CHNAME):	وزن \$(CHNAME) بالكيلوجرامات (± 0.1 كيلوجرام):

How to Adapt (2) – Usual Changes



Usual changes:

- Admin levels: camp names etc.
- Contextual texts in [bracket]
- Localize names in “choices” tab
- Limiting values for constraint



If you use cluster sampling, remove 1=2 in column “relevant” in “survey” tab



Adapt & **Save**

	list name	name	label::English	label::Français	label::العربية
1	yesno	1	Yes	Oui	نعم
2	yesno	2	No	Non	لا
4	yesnoabs	1	Yes	Oui	نعم
5	yesnoabs	2	No	Non	لا
6	yesnoabs	3	Absent	Absent	غائب
7	yesnodk	1	Yes	Oui	نعم
8	yesnodk	2	No	Non	لا
9	yesnodk	8	Don't know	Ne sait pas	لا أعلم
10	camp	AAA	AAA	AAA	AAA
11	camp	BBB	BBB	BBB	BBB
12	camp	CCC	CCC	CCC	CCC
13	sex	m	Male	Masculin	ذكر
14	sex	f	Female	Féminin	أنثى
15	edema	y	Yes	Oui	نعم
16	edema	n	No	Non	لا
17	enrol	1	SFP	CNS	نعم، برنامج التغذية التكميلية
18	enrol	2	TFP	CNT	نعم، برنامج التغذية العلاجية
19	enrol	3	None	Aucun	لا
20	yesnocard	1	Yes, card	Oui, carte	نعم بطاقة
21	yesnocard	2	Yes, recall	Oui, de mémoire	نعم ذاكرة
22	yesnocard	3	No/Don't know	Non ou ne sait pas	لا أو لا أعلم
23	initbf	1	Less than 1 hr	Moins d'une heure	أقل من ساعة واحدة
24	initbf	2	Between 1 hr and 23 hrs	Entre 1 et 23 heures	بين ساعة و ٢٣ ساعة
25	initbf	3	24 hrs and more	Plus de 24 heures	أكثر من ٢٤ ساعة
26	initbf	8	Don't know	Ne sait pas	لا أعلم

type	name	label::English	relevant
integer	CLUSTER	Cluster number	1=2

How to Adapt (3)

❗ Change the version number – VERY important!

❗ “Settings” tab. For example:

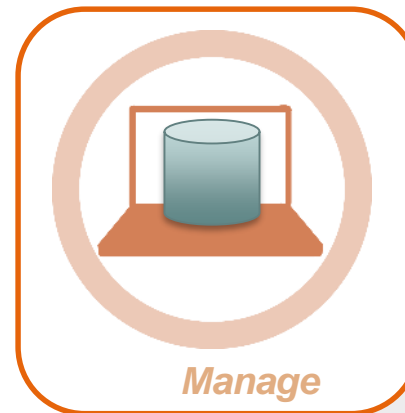
- Form_title: (...) V3.3
- Form_id: (...) -ref-33-XLS
- Version: 33

form_title	form_id	version
Global SENS Infant and Child Questionnaire V3.3	GLO-PH-ICF-EN-FR-AR-SW-ref-33-XLS	33

❗ Rename the XLS form as well so that the version number (33 or 3.3) is obvious without having to open the file.

Name	Date modified	Type	Size
SENS form updates - June 2016.docx	05/07/2016 9:08 AM	Microsoft Word D...	334 KB
GLO_PH_Women_EN_FR_AR_SW_V29-XLS_draft.xlsx	01/07/2016 2:27 PM	Microsoft Excel W...	26 KB
GLO_PH_WASH_EN_FR_AR_SW_V29-XLS_draft.xlsx	05/07/2016 10:46 ...	Microsoft Excel W...	30 KB
GLO_PH_Mosquito_EN_FR_AR_SW_V30-XLS_Based_Niger_Version.x...	01/07/2016 2:27 PM	Microsoft Excel W...	30 KB
GLO_PH_FS_EN_FR_AR_SW_V27-XLS_draft.xlsx	05/07/2016 10:46 ...	Microsoft Excel W...	31 KB
GLO_PH_Child_EN_FR_AR_SW_V33-XLS_draft.xlsx	05/07/2016 6:15 PM	Microsoft Excel W...	596 KB
~GLO_PH_Child_EN_FR_AR_SW_V33-XLS_draft.xlsx	12/07/2016 4:41 PM	Microsoft Excel W...	1 KB
XLM	05/07/2016 10:48 ...	File folder	

Phases of MDC



Phase 2 - Collect:

Getting to know ODK Collect

- **Initiate smartphone's settings**
- **Initiate ODK with advanced settings**
- **ODK data entry, review, and edit**

Smartphones (1) - Model

👤 Sony Experia
Acqua :



👤 LG :



Smartphones (2) - Control

❏ Varies from models to models (layout, buttons physical vs virtual, etc.)

❏ Core components are similar between models:





Smartphones (3) - Homescreen

Example: Samsung Galaxy

1 Status bar:
WIFI/Network/flight mode/USB/Battery.

3 ODK Collect:
The application used for data collection on the phone.

 Shortcuts at the bottom are accessible from all screens.

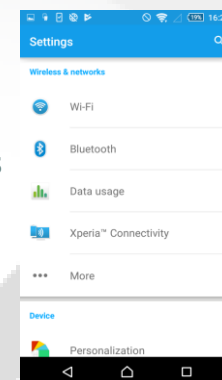
 The survey manager should set up the homescreen before data collection.







2 Homescreen:
Bring all necessary applications to your homescreen and delete all apps which will not be used in survey.

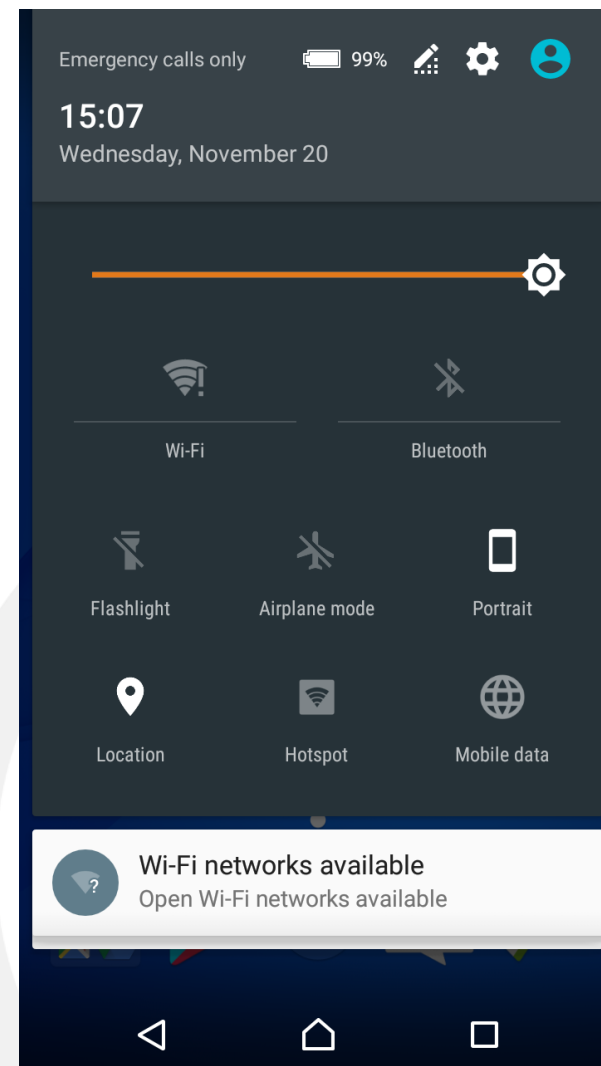
4 Settings:
Change various phone settings.

5 Applications:
Access all applications installed on the phone.

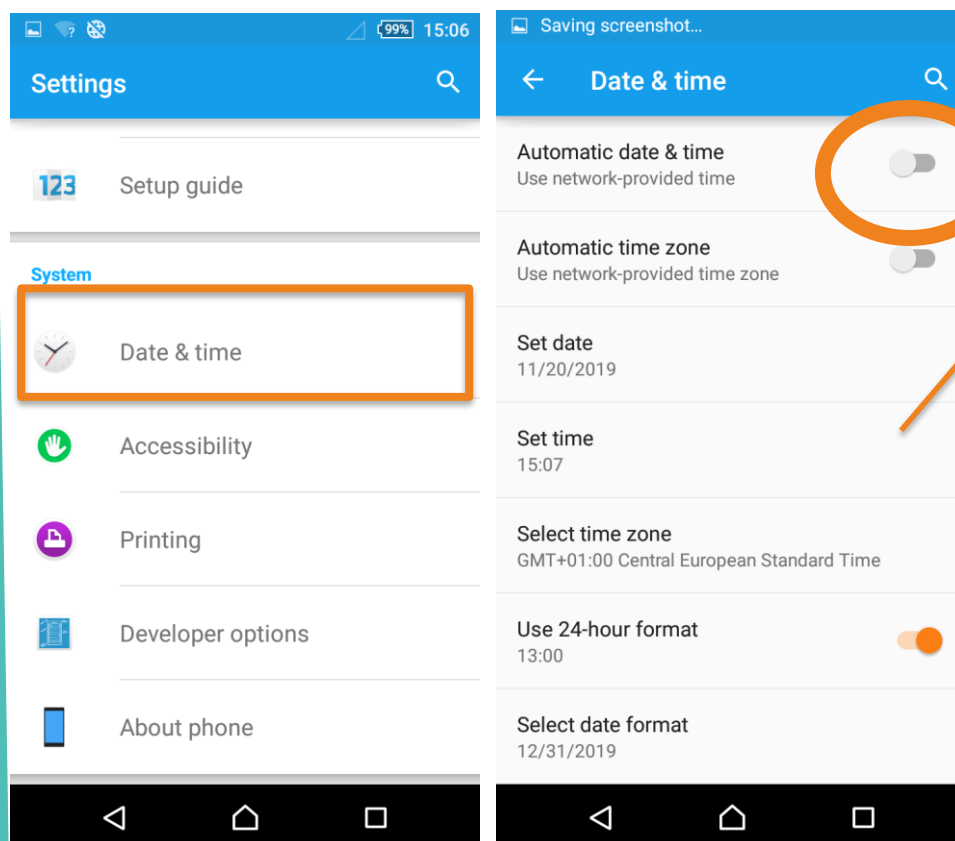


Smartphones (4) - Energy Saving

-  To save energy:
- Plane mode 
 - WIFI OFF 
 - Lower luminosity of the display;
 - Set display turn off;
 - Charge up battery daily if possible;
 - Turn off GPS when not in use 
 - Use dark themes on ODK Collect (change settings in ODK Collect);
 - Use Power Bars / USB Chargers for remote place.



Smartphones (5) – Date & Time



If auto parameters are not correct, uncheck « Automatic » & adjust date/time manually.



Set the time zone first, then date/time. These parameters must be correct.



Apps (1) - OpenDataKit (ODK) Collect

- Most well known MDC solution in the humanitarian sector.
- Open source solution for Android:
 - Widely used
 - Basis for numerous systems
 - Powerful and flexible
 - Secure storage on your own servers possible
- Different deployment profiles possible (offline with USB, offline on local network, online, etc.)



Apps (2) – Why Use ODK Collect

- ❶ ODK Collect and Kobo Collect are similar apps. They could both be used for data collection for SENS.
- ❷ HOWEVER:
 - ODK Collect is updated and thus debugged on a more regular basis than Kobo Collect.
 - ODK Collect has more advanced features.
- ❸ THUS, **use ODK Collect** for SENS data collection.
 - Make sure you do not have both ODK Collect and Kobo Collect apps on your phone: as those 2 use the same directory on your phone, they can interact and bug each other if on the same phone.



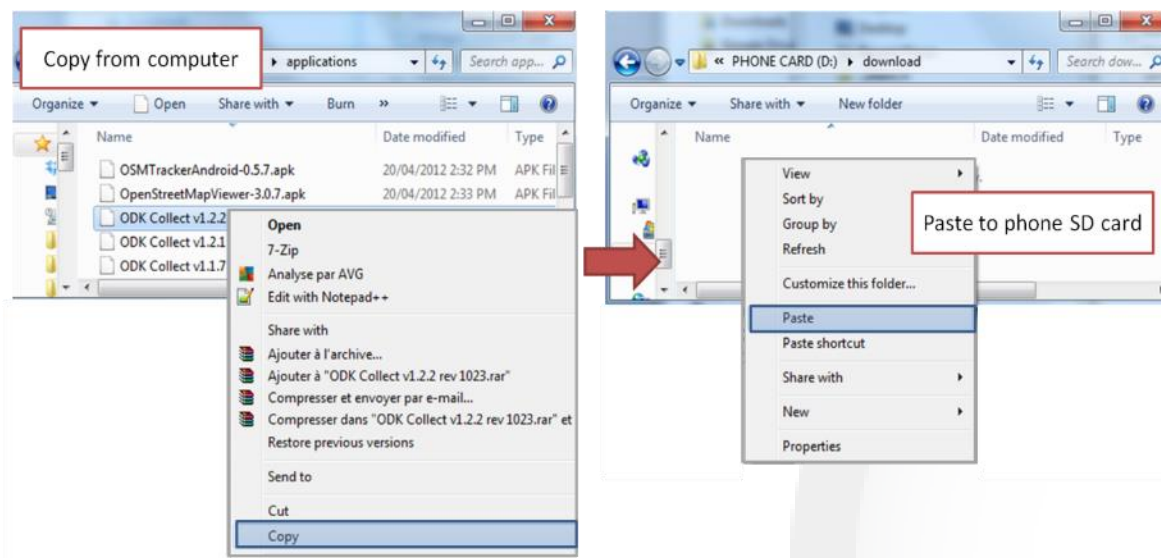
Apps (3) – ODK Installing Online

- ❶ NB: ODK Collect is only available on Android phones!!
- ❷ Go to the **Google Playstore**.
- ❸ Download « ODK Collect ».



Apps (3) – ODK Installing Offline

- Recommendation: connect the phone to the computer through USB, copy-paste the **collect.apk** file in the “Download” folder of the phone.



- On the phone, retrieve the .apk and tap it.
(download <https://github.com/getodk/collect/releases/latest>)

Apps (4) - Other applications

- 👤 Install the following as well if needed:
 - **GPS test+**: faster/more accurate acquisition of location for GPS readings

<https://play.google.com/store/apps/details?id=com.chartcross.gptest&hl=en>

- 👤 A file manager such as **AndExplorer** may be useful – available for free on the Play Store/Google Play. Many newer phones have a file manager already pre-installed.

<https://play.google.com/store/apps/details?id=lysesoft.andexplorer&hl=en>

Exercise 4

Set parameters on the phone

Set the date to today's date and the current time.
Ensure that the phone is in flight mode, that the WIFI is off
and display brightness is set to low.

Discussion:

- How do these settings impact the survey?
- What happens if you accidentally remove the ODK Collect shortcut from the home screen?

Phase 2 - Collect:

Getting to know ODK Collect

- Initiate smartphone's settings
- **Initiate ODK with advanced settings**
- ODK data entry, review, and edit

Get the Form (1) - (ODK Aggregate)

ODK Aggregate



Get blank forms



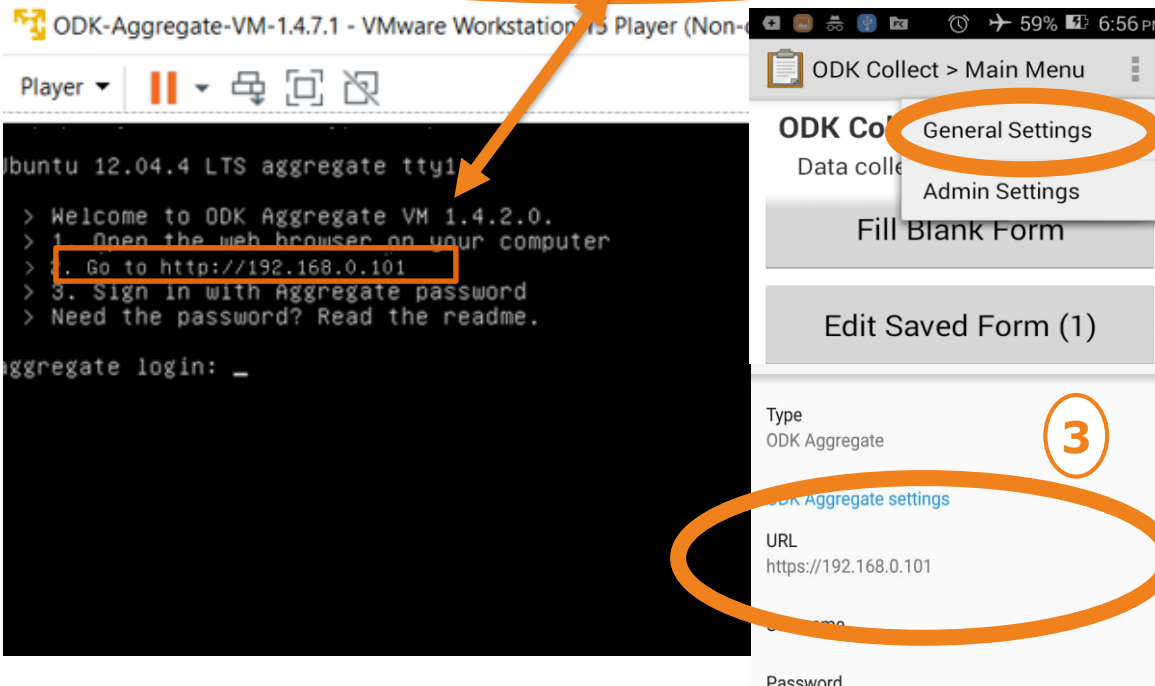
ODK Collect



Get the Form (2) - Connect to Aggregate

- ❶ The website/server address where you can get a blank form is available when starting up the Virtual Machine (VM). This is also where filled surveys will be sent
- ❷ In every survey phone, this address must be entered:
 - URL: **http://192.168.0.101**

Please note, the url might change with your router setup, refer to IT Tutorial if necessary.



❶

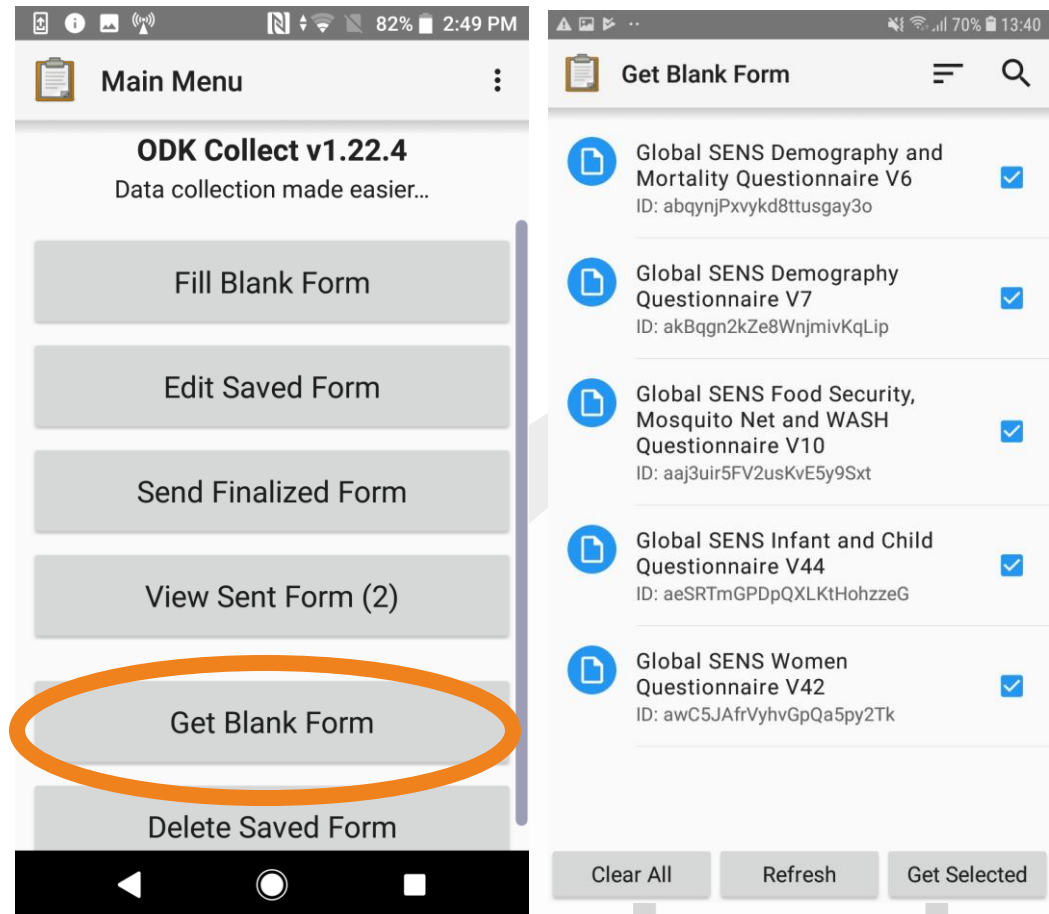
❷

❸

Get the Form (3) – Get Blank Form

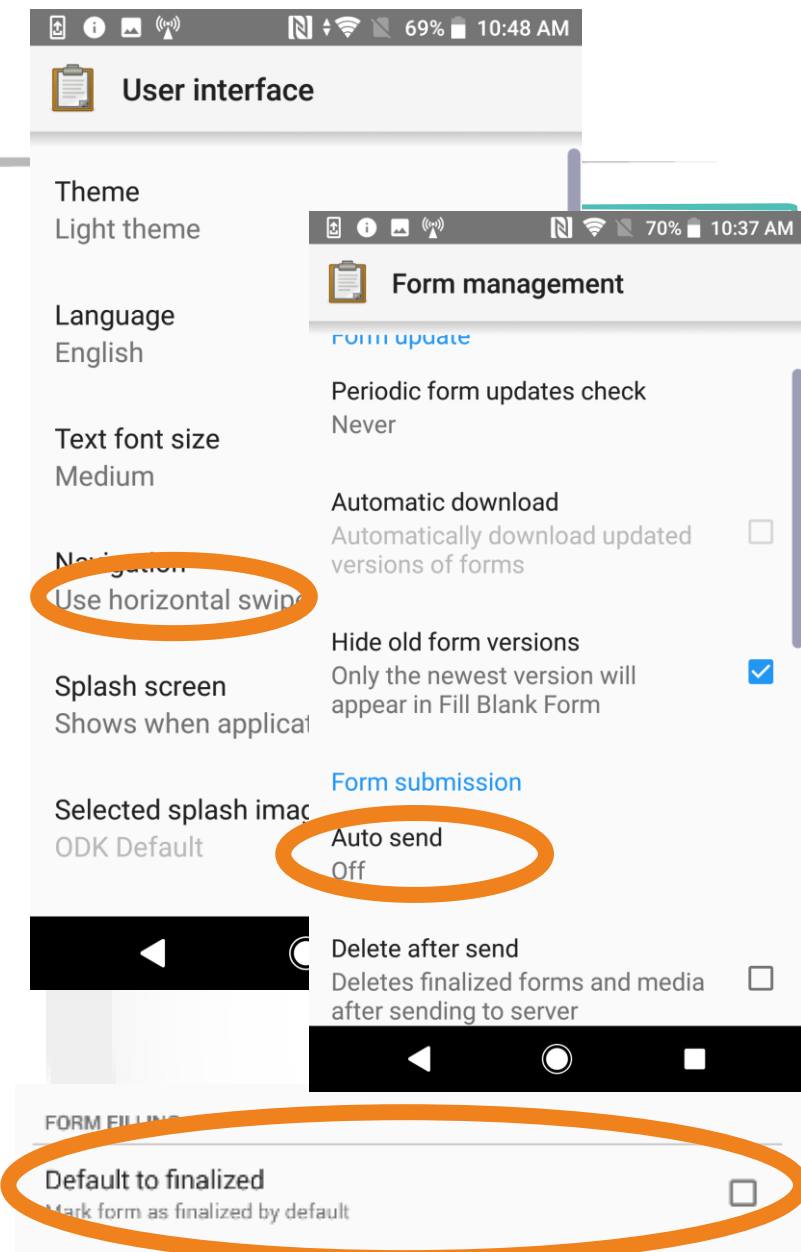
To get a blank form:

- 1. Connect on your local WIFI network.
- 2. Click "Get Blank form" on the phone.
- 3. Select the blank form(s) of interest.
- 4. Repeat on all survey phones.



ODK Collect parameters

- ❗ **“Auto send with WIFI”** → uncheck so that you can manually send data to the server after review.
- ❗ **“Default to finalize”** → uncheck so you can review records at the end of the day.
- ❗ **“Navigation”** → you can set it to have only swipes, arrows or both – we recommend providing both on larger screens.
- ❗ Under **“Admin settings”** you can set other parameters, and hide some features from enumerators (deleting forms etc.).



Phase 2 - Collect:

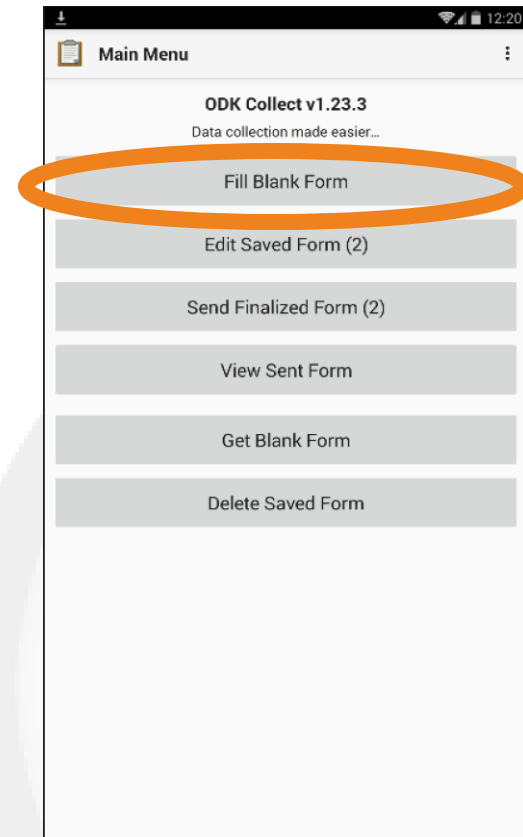
Getting to know ODK Collect

- Initiate smartphone's settings
- Initiate ODK with advanced settings
- **ODK data entry, review, and edit**


Fill the Form (1)


The most commonly used feature is « Fill blank form ».

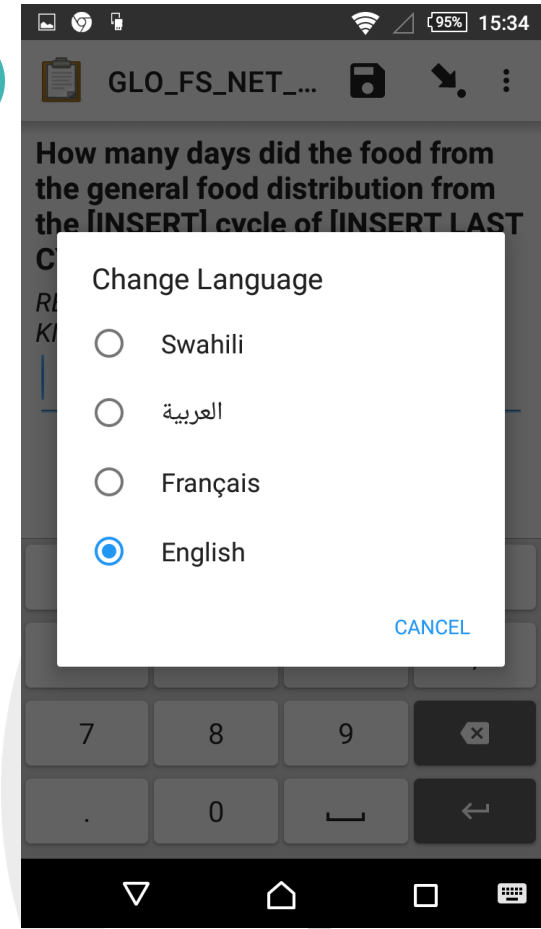
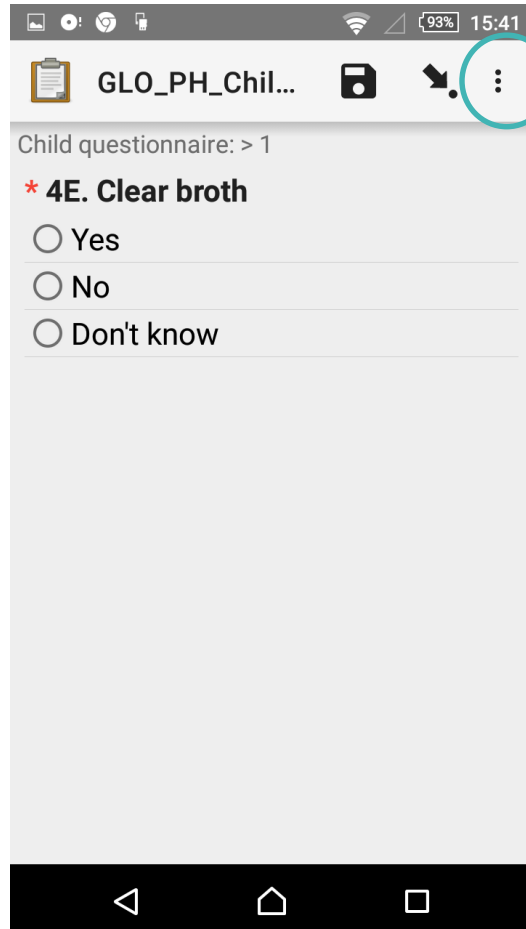
→ Used to enter a new data entry.





Fill the Form (2) - Change Language

 To change the survey language, open a blank form or an already saved form.

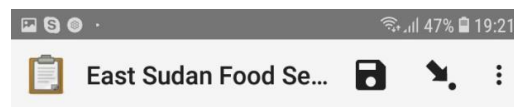
 Then tap the « menu » button top right and tap « Change Language ».



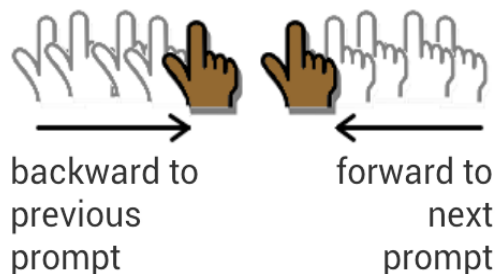
Fill the Form (3) - Navigation in form

-  This is the first screen of any survey.
-  You can slide your finger to the left or the right to move forward or backward in the form, much like reading a book.

(By default, ODK does not show the arrows, they would need to be set through the admin settings in ODK Collect)



You are at the start of East Sudan Food Security SENS Questionnaire V2.4. Swipe the screen as shown below or tap the arrow buttons to go backward and forward.





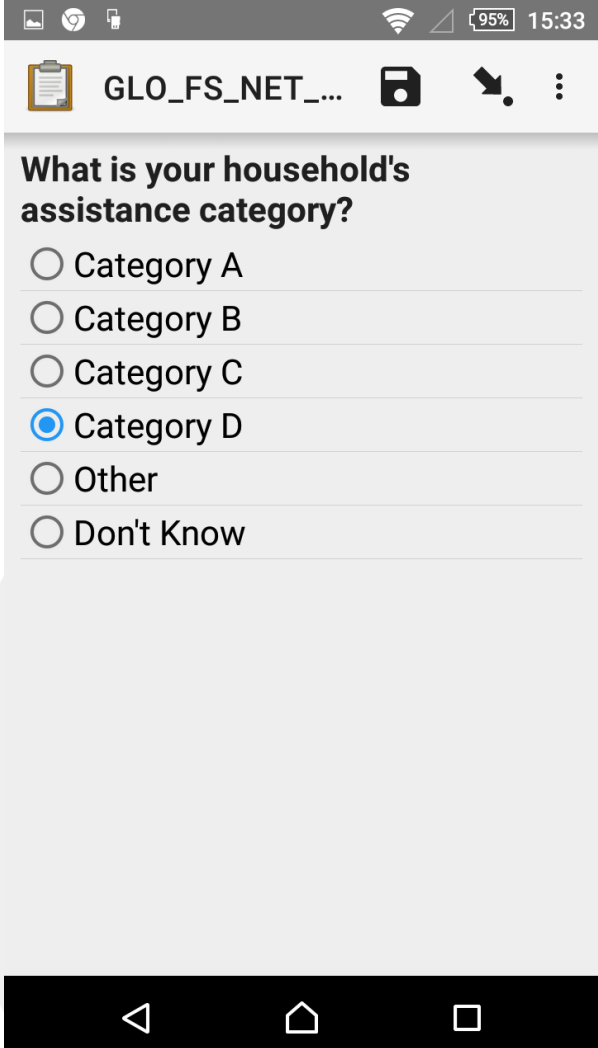
What is your household's assistance category?

- ☐ Category A
- ☐ Category B
- ☐ Category C
- ☒ Category D
- ☐ Other
- ☐ Don't Know




Fill the Form (4) - Select an option

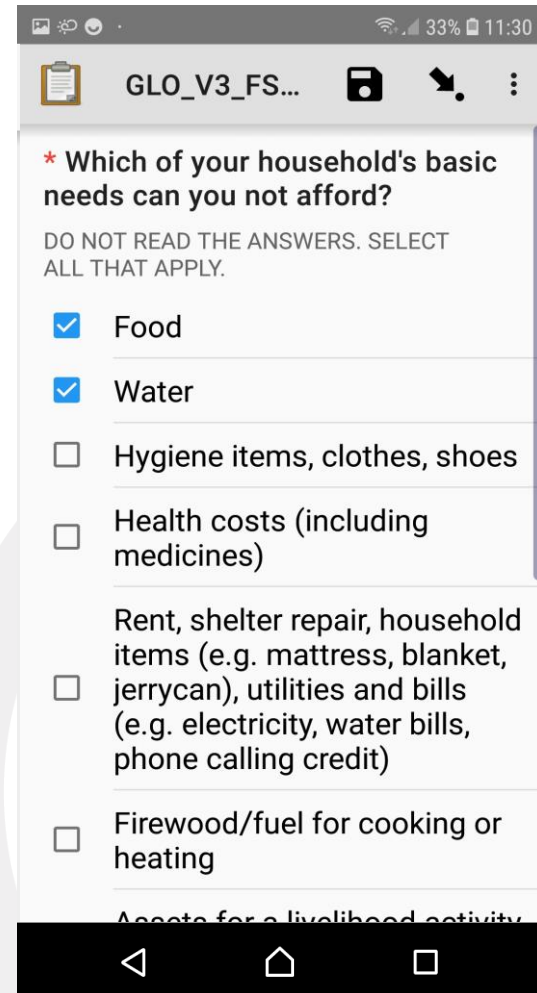
-  In this example one of the answers can be selected.
-  When the icon is a circle (radio button), only ONE answer can be selected.



The screenshot shows a mobile application interface for ODK Collect. At the top, the status bar displays icons for signal, Wi-Fi, and battery (95% at 15:33). Below the status bar, the app title "GLO_FS_NET_..." is visible. The main content area displays the question "What is your household's assistance category?". Below the question, there are five radio button options: "Category A", "Category B", "Category C", "Category D", and "Other". The "Category D" option is selected, indicated by a blue dot in the center of the radio button. Below "Other" is a "Don't Know" option. At the bottom of the screen, there is a black navigation bar with three white icons: a back arrow, a home icon, and a square icon.

Fill the Form (5) - Select multiple options

 When the icon is a square, SEVERAL answers can be selected.



The screenshot shows a mobile application interface for ODK Collect. At the top, the status bar displays signal strength, 33% battery, and the time 11:30. Below the status bar, the app title 'GLO_V3_FS...' is visible. The main content area contains a question: '* Which of your household's basic needs can you not afford?'. Below the question, a instruction reads: 'DO NOT READ THE ANSWERS. SELECT ALL THAT APPLY.' The question is followed by a list of options, each with a square checkbox: 'Food' (checked), 'Water' (checked), 'Hygiene items, clothes, shoes' (unchecked), 'Health costs (including medicines)' (unchecked), 'Rent, shelter repair, household items (e.g. mattress, blanket, jerrycan), utilities and bills (e.g. electricity, water bills, phone calling credit)' (unchecked), and 'Firewood/fuel for cooking or heating' (unchecked). At the bottom of the form, the text 'Assets for a livelihood activity' is partially visible. The bottom of the screen shows the standard Android navigation bar with back, home, and recent apps icons.

Fill the Form (6) - Enter text/number

Example :

- Some questions require text entries.
- For some fields, only **letters** can be used, while for others both **integers/letters** are accepted. Constraints may also be used to control input.

GLO_FS_NET_...

How many days did the food from the general food distribution from the [INSERT] cycle of [INSERT LAST CYCLE MONTH] last?

RECORD THE NUMBER OF DAYS IF KNOWN. RECORD '98' IF UNKNOWN.

1 2 3 -

4 5 6 ,

7 8 9 ✕

. 0 _ ↩

GLO_FS_NET_...

* Section Code/Number:

2

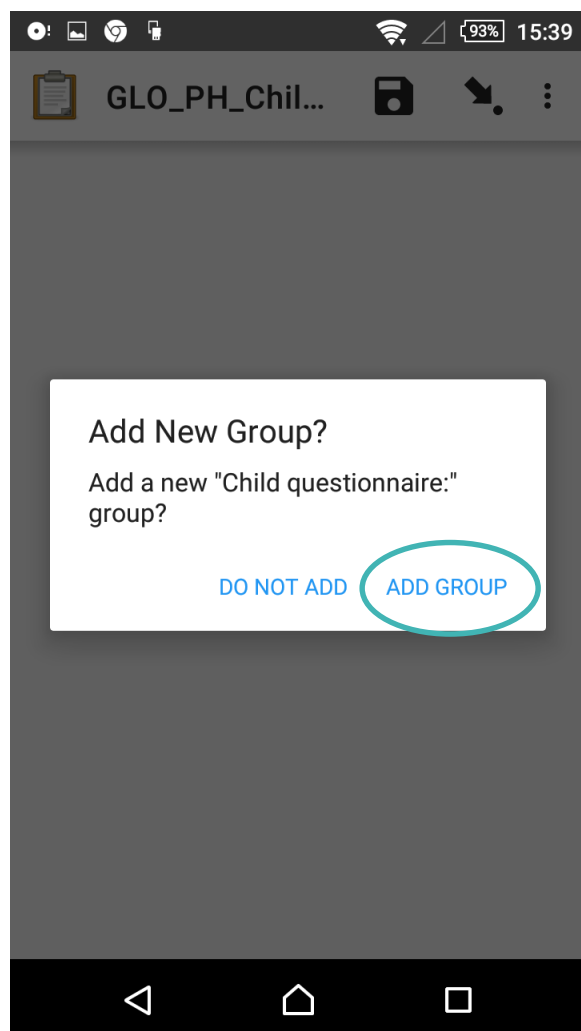
1 2 3 -

4 5 6 ,

7 8 9 ✕

. 0 _ ↩

Fill the Form (7) - Add a group



Example:

Adding a group for the
« Child » form

⇒ Each child in the HH
will be a group
member

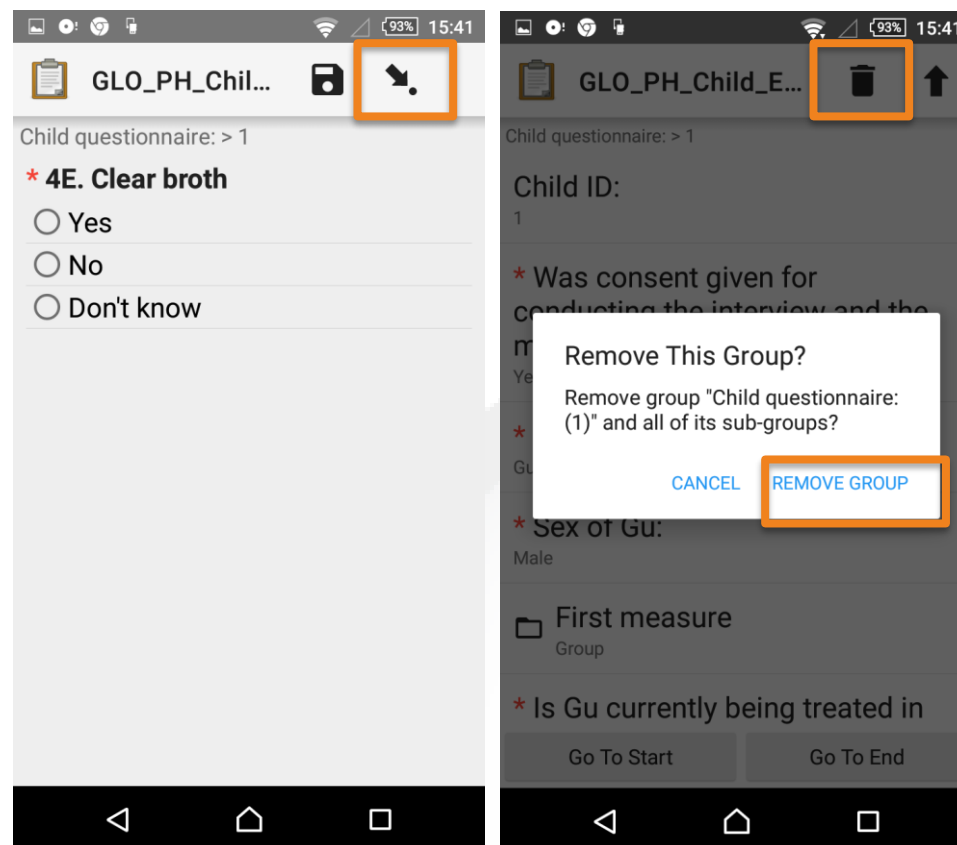
How to remove a group if
too many have been
added ?

Fill the Form (8) - Delete a group

In forms where groups are used, if a group has been erroneously added, it can be removed.

To do so, press and hold on the response field.

Then select « Remove group ».



Fill the Form (9) – Automatic Referral

If the child is either malnourished or has severe anaemia, and is not involved in the treating program, an automatic referral information will be shown on the screen.

Please fill the referral clips accordingly.

Child questionnaire: > 1

• (Child's Name) needs to be referred for severe acute malnutrition (SAM), please fill out a referral form: one slip is for the mother/caregiver and the other is for the health facility.

(if MUAC<115mm and/or bilateral pitting oedema is yes and/or WHZ<-3 AND if Enrolment for malnutrition treatment programme was set to "No" or "Don't know".)

Child questionnaire: > 1

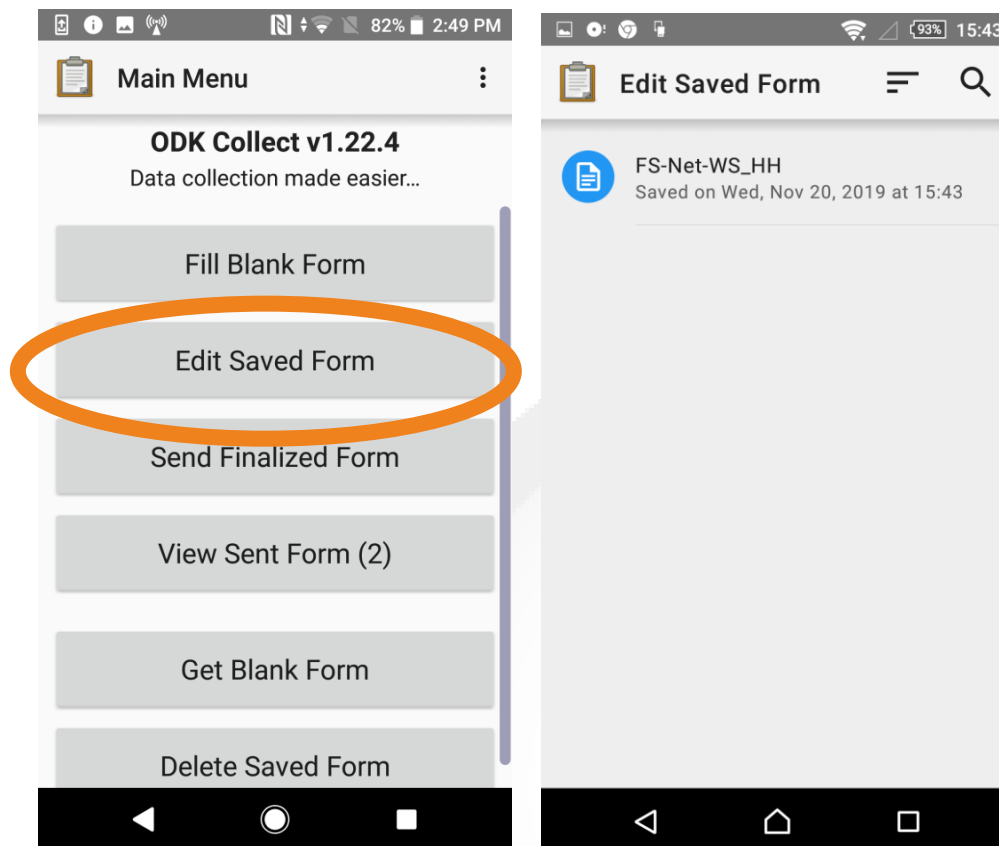
• (Child's Name) needs to be referred for severe anaemia, please fill out a referral form: one slip is for the mother/caregiver and the other is for the health facility.

(if Hb<7.0g/dL) Measured (including altitude correction if present): 5.

Review and Edit data (1)

If a form has been saved (done automatically as it is filled), it is possible to edit the answers with:

“Edit saved form”



Review and Edit data (2)

Once the form is selected, click on the arrow in the top right of the screen for “prompt mode”.

This allows all the responses to be reviewed more conveniently as shown in second screenshot.

10:54

Global SENS De...

THIS STATEMENT IS TO BE READ TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSE BEFORE THE INTERVIEW. DEFINE "HEAD OF HOUSEHOLD" AS A MEMBER OF THE FAMILY WHO MANAGES THE FAMILY RESOURCES AND IS THE FINAL DECISION MAKER IN THE HOUSE.

10:53

Global SENS Demography V12

* Team number:
2

* Household number:
2

THESE QUESTIONS NEED TO BE ASKED TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD.

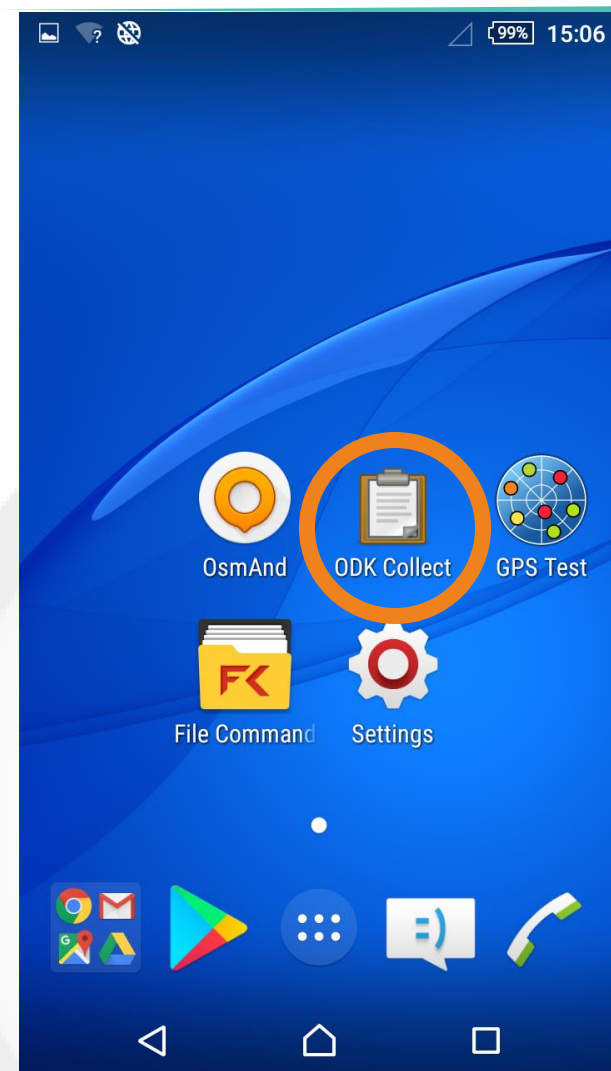
* Was consent given for conducting the interview using Mobile Data Collection (use of smartphone or tablet)?
Yes

* What is the sex of the household head?
Female

* What is the age of the household

Exercise 5

- Tap the « ODK Collect» icon.
- Select « Fill blank form ».
- Fill out the « Global V3 SENS Women Questionnaire » form and keep it saved on your form.

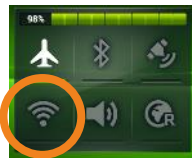


Sending Data (1) - (ODK Aggregate)

ODK Aggregate



Send data

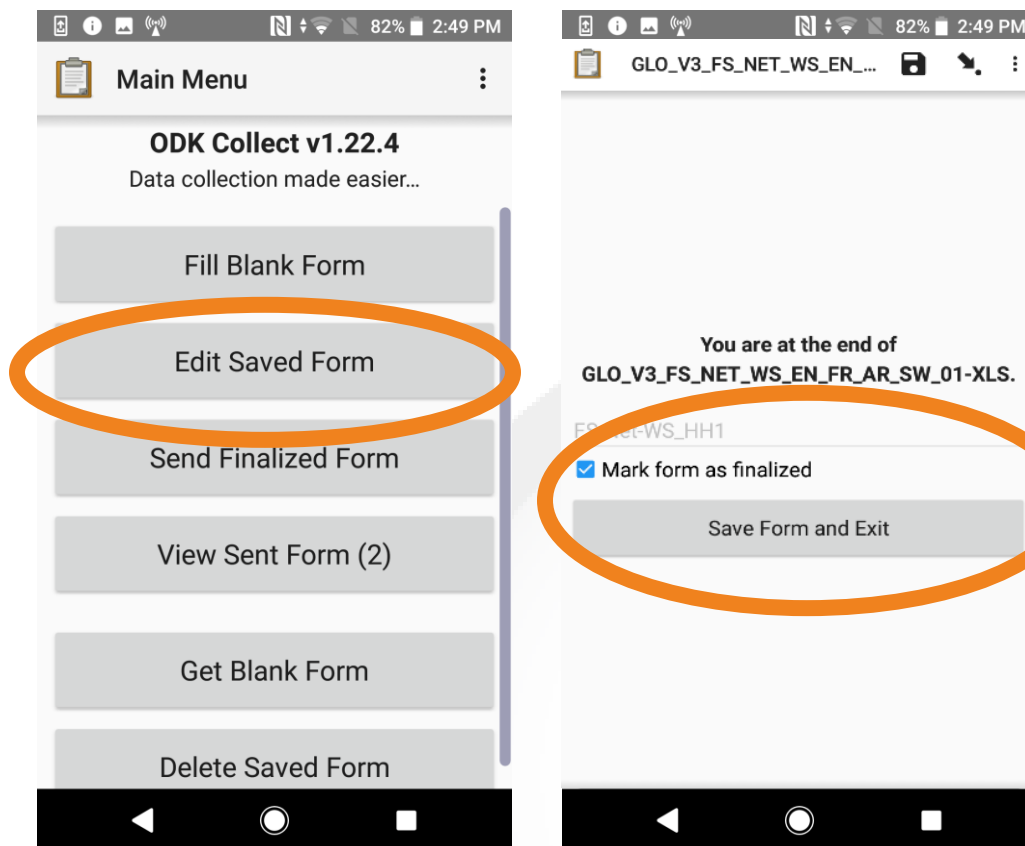


- ☾ Turn wifi on
- ☾ Tick « Mark form as finalized » on the last page
- ☾ Go to « Send finalized forms », select the forms to send

Sending Data (2) – Finalize Form

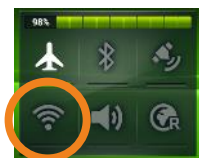
In order to be able to send your data entry to the server, you will first have to finalise it.

You can finalise the data entries by clicking on **“Edit Saved Form”**, enter each one of the data entries and tick **“Mark form as finalized”** on the last screen of the data entry.

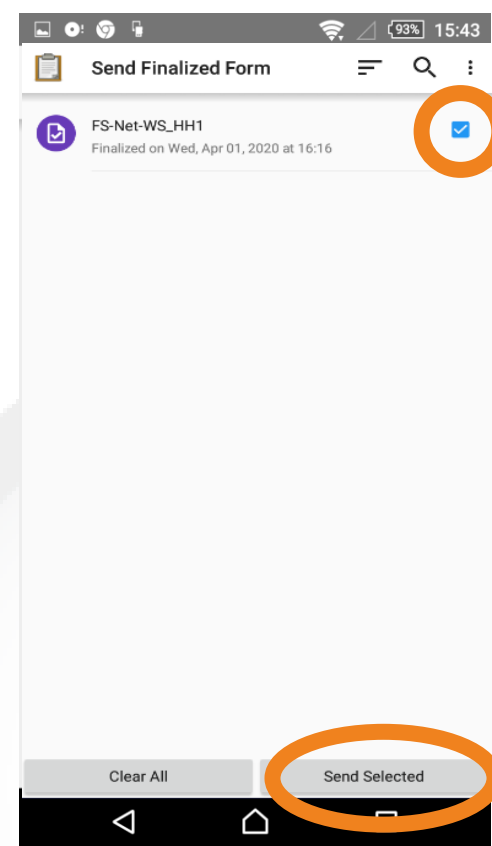
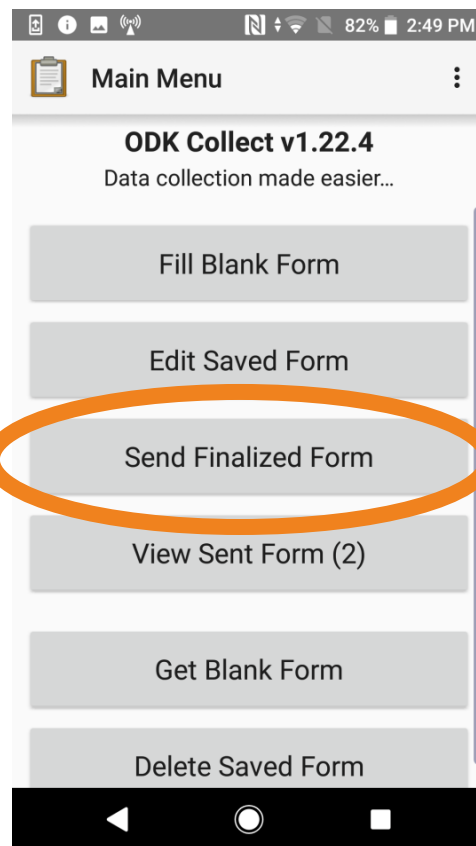


Sending Data (2) – Send Finalized Form

Turn wifi on

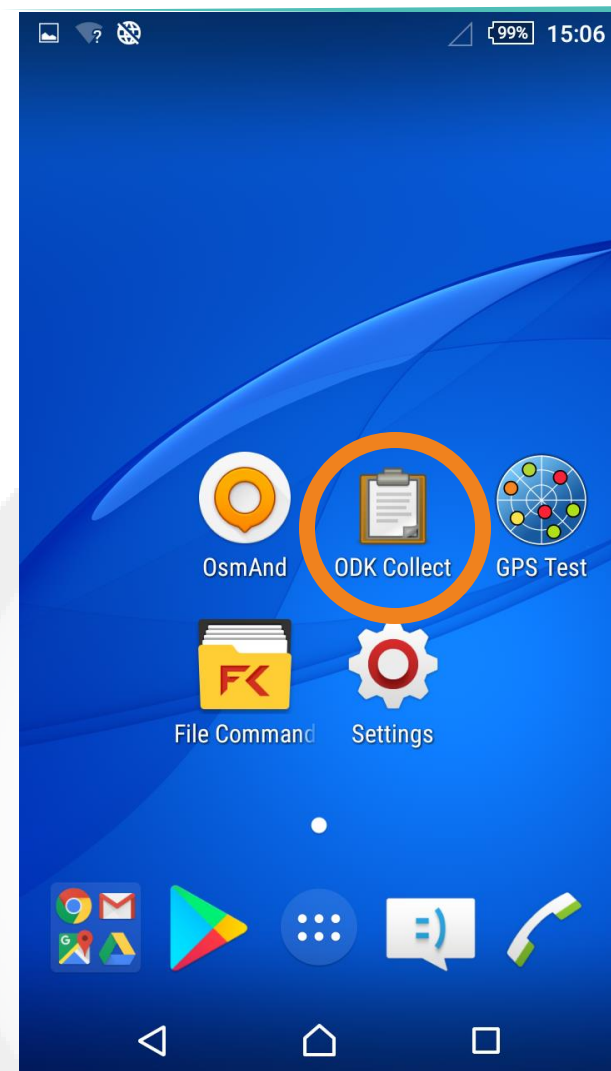


You can then click on “**Send Finalized Form**”, select the data entry/ies to be sent to the server and click on “**Send Selected**”.



Exercise 6

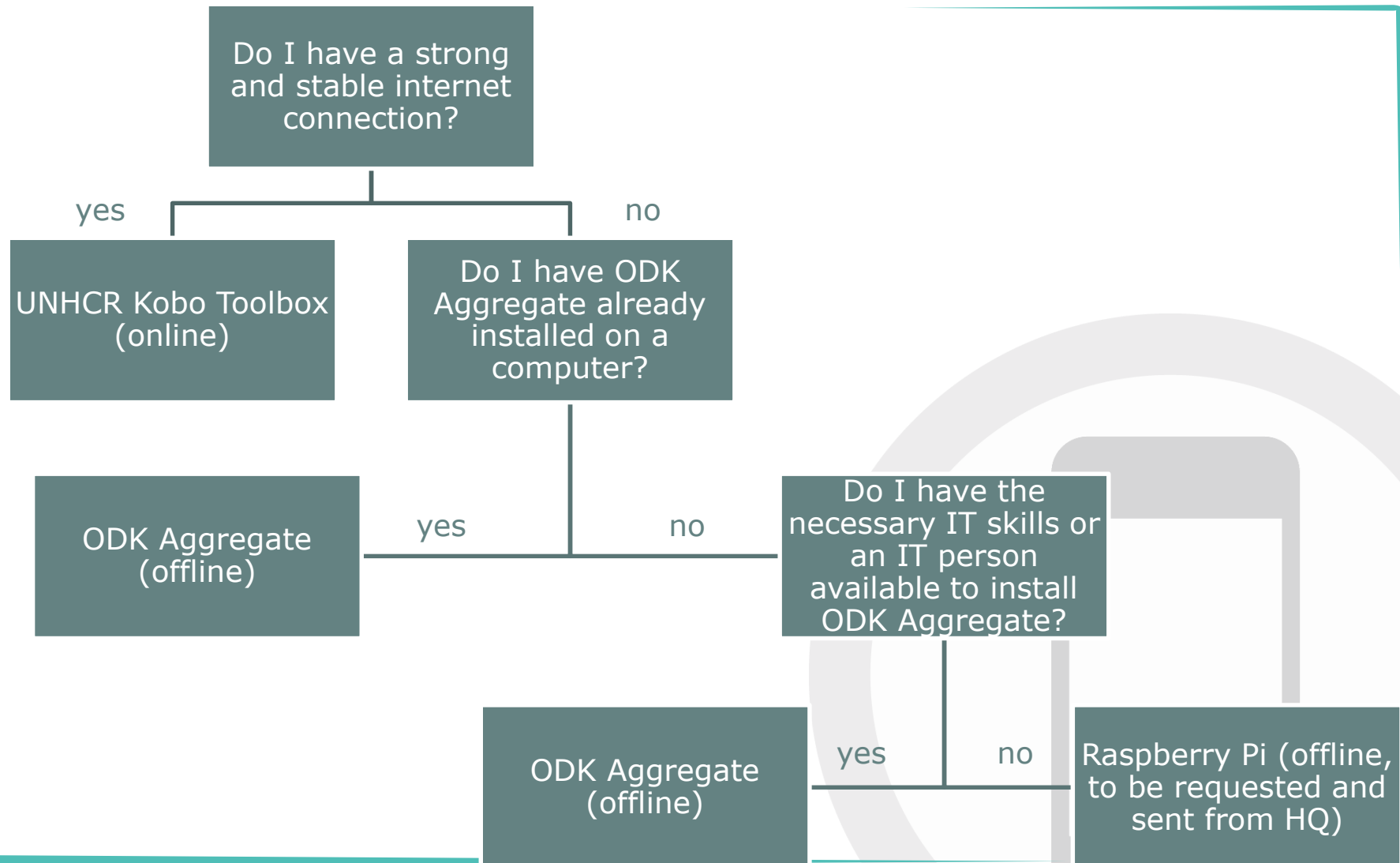
- Go back to your saved data entry from the « Global V3 SENS Women Questionnaire » form, finalise it and send it to the server.



Introduction to the Platforms

- Which available platform (server) shall I choose: decision tree, pros and cons

The Platforms – Which One to Choose



ODK Aggregate – Pros and Cons

PROS:

- 👤 Sharing rights easily put in place, not necessary to create an account for each role.
- 👤 Works better if syncing issues with datasets already encountered (compatible with ODK Briefcase).

CONS:

- 👤 IT skills necessary in order to install VM if ODK Aggregate is not installed on computer yet.
- 👤 Not adapted for contexts of country-level types of survey, where remote sharing of survey and datasets would be necessary.
- 👤 Conversion of the files to XML needed.

Raspberry Pi – Pros and Cons

PROS:

- 👤 Easy to install.
- 👤 Sharing rights easily put in place, not necessary to create an account for each role.
- 👤 Works better if syncing issues with datasets already encountered (compatible with ODK Briefcase).

CONS:

- 👤 Not adapted for contexts of country-level types of survey, where remote sharing of survey and datasets would be necessary.
- 👤 Conversion of the files to XML needed.

UNHCR Kobo Toolbox – Pros and Cons

PROS:

- 👤 Easy to install and user-friendly.
- 👤 Not necessary to convert files to XML.
- 👤 Online sharing rights. Also adapted for contexts of country-level types of survey, where remote sharing of survey and datasets would be necessary.

CONS:

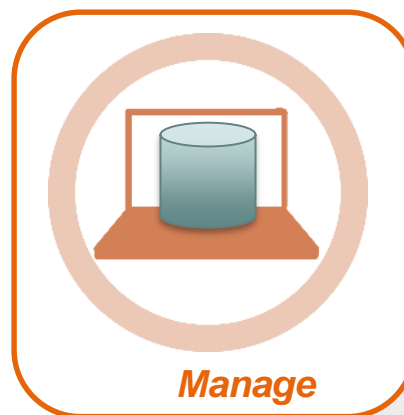
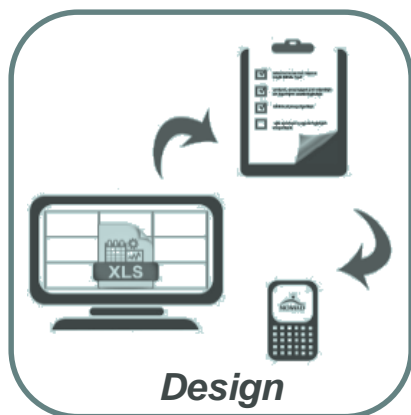
- 👤 Briefcase not compatible with Kobo Toolbox anymore. Potential syncing issues.
- 👤 Can share the project/survey/dataset only with users having an account on the Kobo Toolbox server.

Phase 3 – Manage:

Using ODK Aggregate server

- Set up ODK Aggregate – before data collect
- Deploy forms in ODK Aggregate – before data collect
- Export data from Aggregate to Excel for analysis – after data collect

Phases of MDC



Introduction (1) - ODK Aggregate

- Aggregate is the platform used to manage the data.
- It can be run on a computer (called server), setup for the survey. This computer shouldn't be used for other tasks during the duration of the survey. Works as a « virtual machine » (VM).

ODK Aggregate



Get blank forms

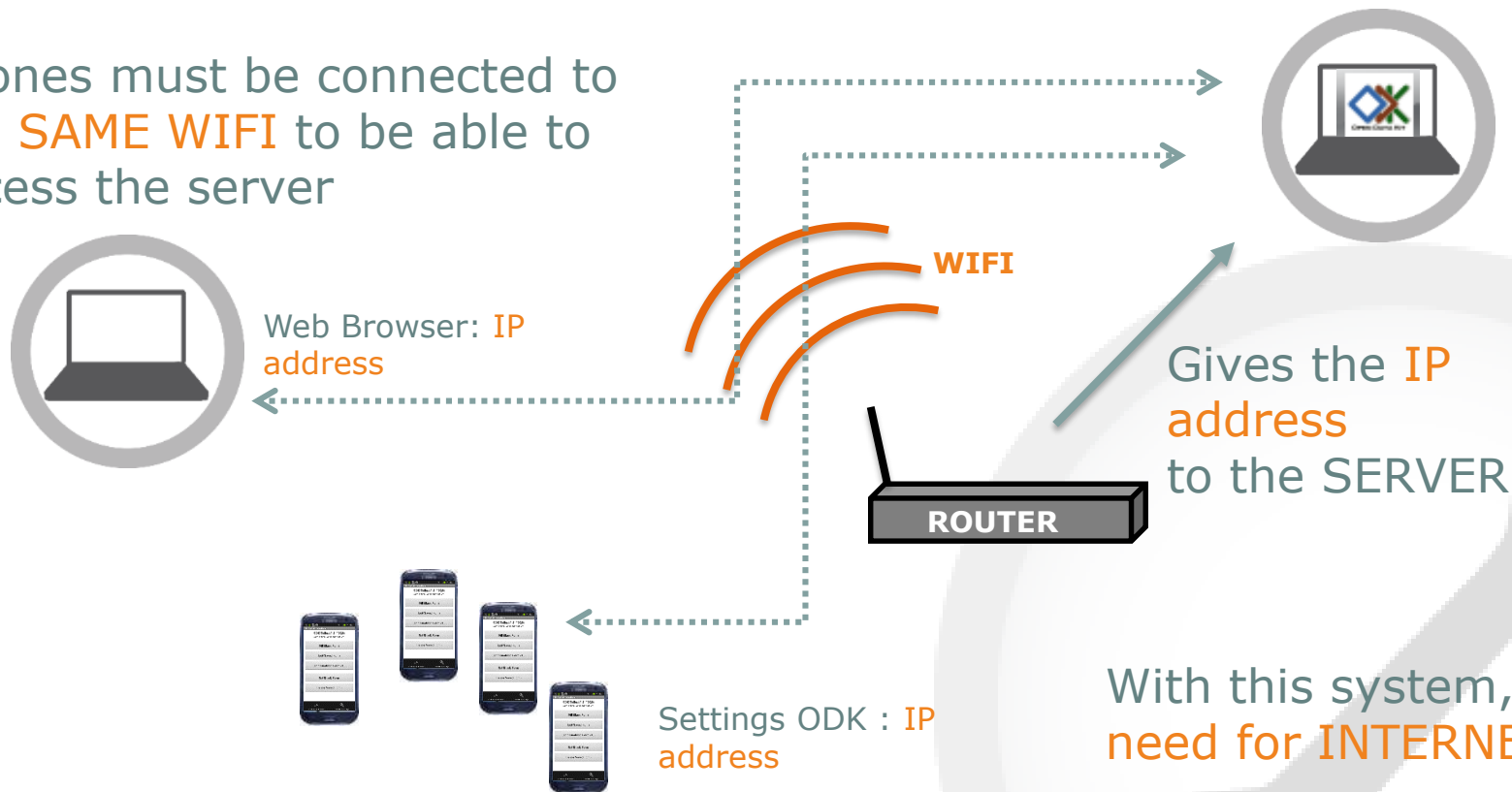
Send filled surveys

ODK Collect



Introduction (2) - What is a server?

Phones must be connected to the **SAME WIFI** to be able to access the server



Setting up Server (1) - Requirements

VM Player:

- Software to launch the server.
(alternatively Virtual box)

ODK-Aggregate-VM:

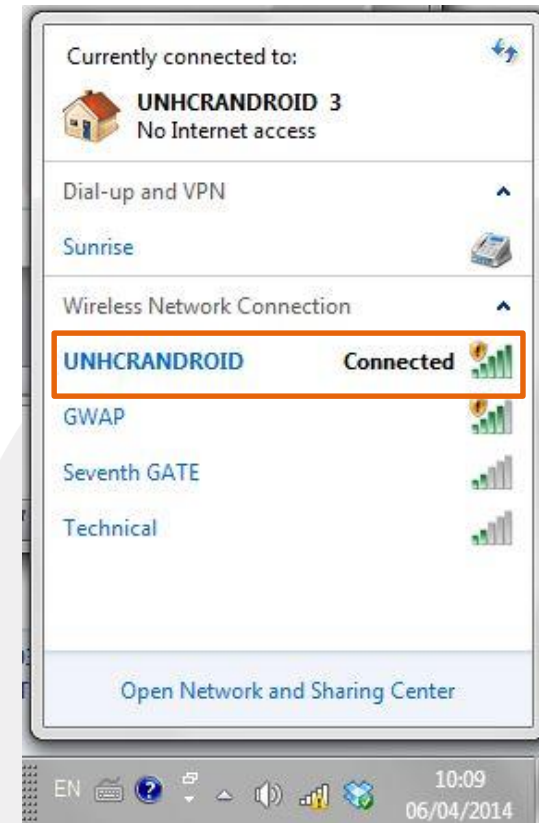
- The data management software, has to be used with VM Player.



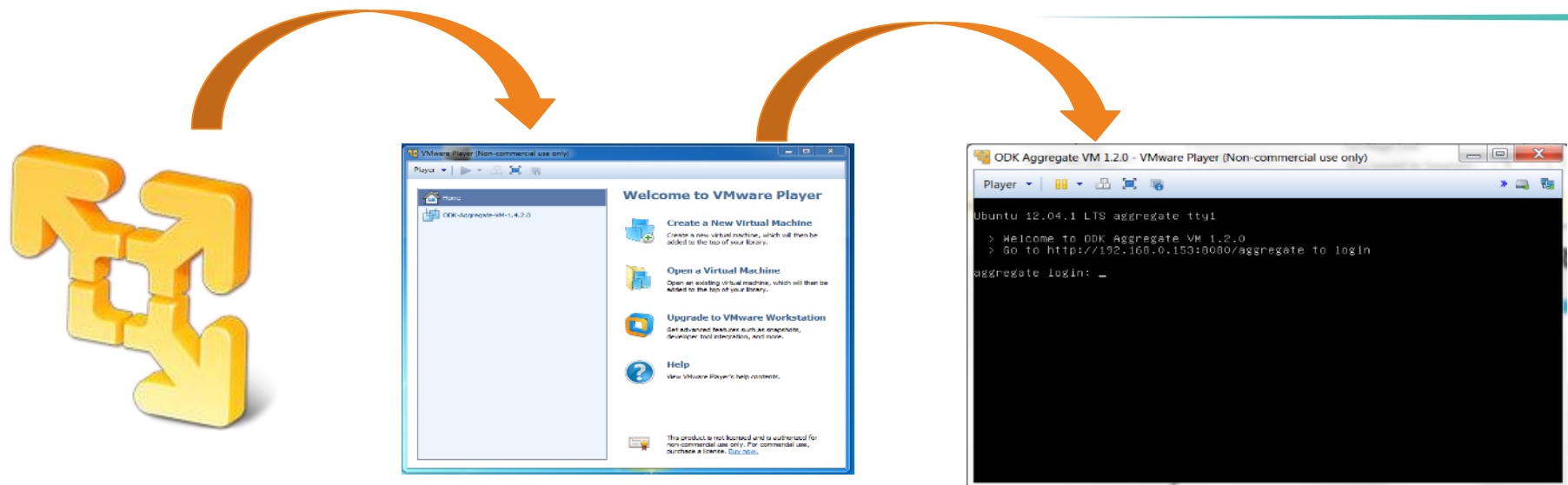
See "MDC Tool 3" to install VM Player & the VM for the first time – it should be installed already on all survey computers.


Setting up Server (2) - Start the Router

- ☾ Turn the router on (plug in).
- ☾ Check that the computer is connected to the right network:
 - id: UNHCRANDROID
 - Password: UNHCR_ANDROID
- ☾ Then launch the VM using VM Player.
- ☾ See "MDC Tool 1" to use Aggregate.



Setting up Server (3) - Start the Server






Submissions


Form Management


Site Admin

Log Out

administrator
















Forms List

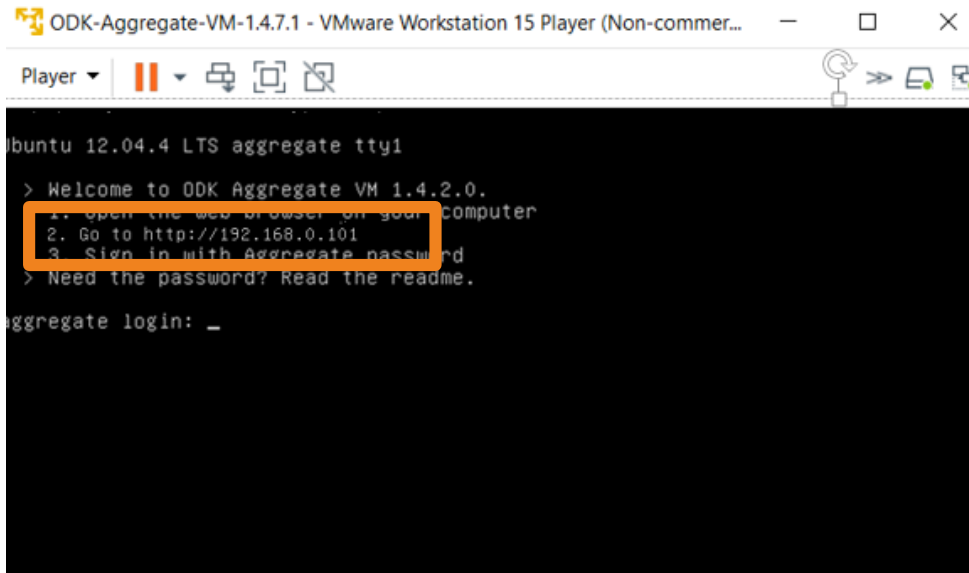
Published Data

Submission Admin

Add New Form

Title	Form Id	Media files	User	Downloadable	Accept Submissions	Publish	Export	Delete
Global SENS Demography V12	GLO-DM-EN-FR-AR-SW-V12	0	administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<div> Publish</div>	<div> Export</div>	<div> Delete</div>
Global SENS Infant and Child Questionnaire V52	GLO-PH-ICF-EN-FR-AR-SW-V52	0	administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<div> Publish</div>	<div> Export</div>	<div> Delete</div>
Global SENS Women Questionnaire V47	GLO-PH-Women-EN-FR-AR-SW-V47	0	administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<div> Publish</div>	<div> Export</div>	<div> Delete</div>

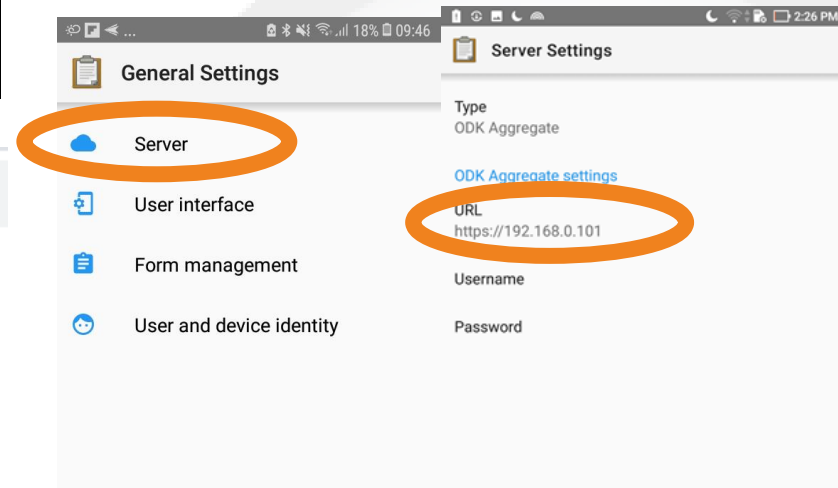
Setting up Server (4) - Start the Server (VM)



```
ODK-Aggregate-VM-1.4.7.1 - VMware Workstation 15 Player (Non-commer...
Player
Ubuntu 12.04.4 LTS aggregate tty1
> Welcome to ODK Aggregate VM 1.4.2.0.
> 1. open the web browser on your computer
> 2. Go to http://192.168.0.101
> 3. Sign in with Aggregate password
> Need the password? Read the readme.
aggregate login: _
```

- Address to enter in the browser.
- This is the SAME address that must be entered in the phones on ODK Collect.

← → × ⓘ 192.168.0.101



Phase 3 – Manage:

Using ODK Aggregate server

- Set up ODK Aggregate – before data collect
- Deploy forms in ODK Aggregate – before data collect
- Export data from Aggregate to Excel for analysis – after data collect

ODK Aggregate Navigation

Submissions Form Management

Log Out unhcrwash

Form CAP EAH NIGER v3 Filter none

Visualize Enketo Webform Export Publish

Save Save As Delete

Submissions per page 100

Filters Applied

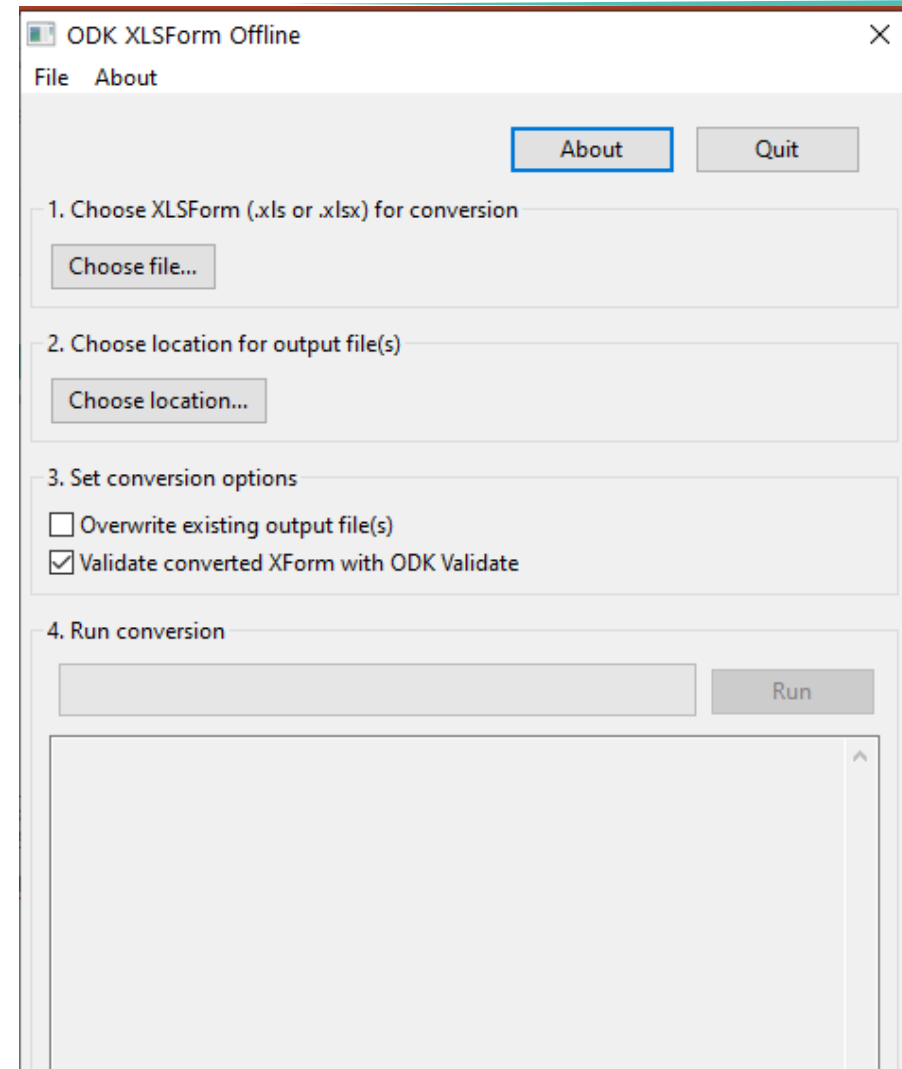
+ Add Filter

☐ Display Metadata

- ❶ **Log in:** aggregate/aggregate (for the « Admin » page, only needed when server has been set up that way).
- ❷ **Submission:** to manage data already sent to the server.
- ❸ **Form Management:** to add/remove forms – used for deploy and manage the form before the start of data collection, rarely used once the survey has started (the forms should not change anymore).

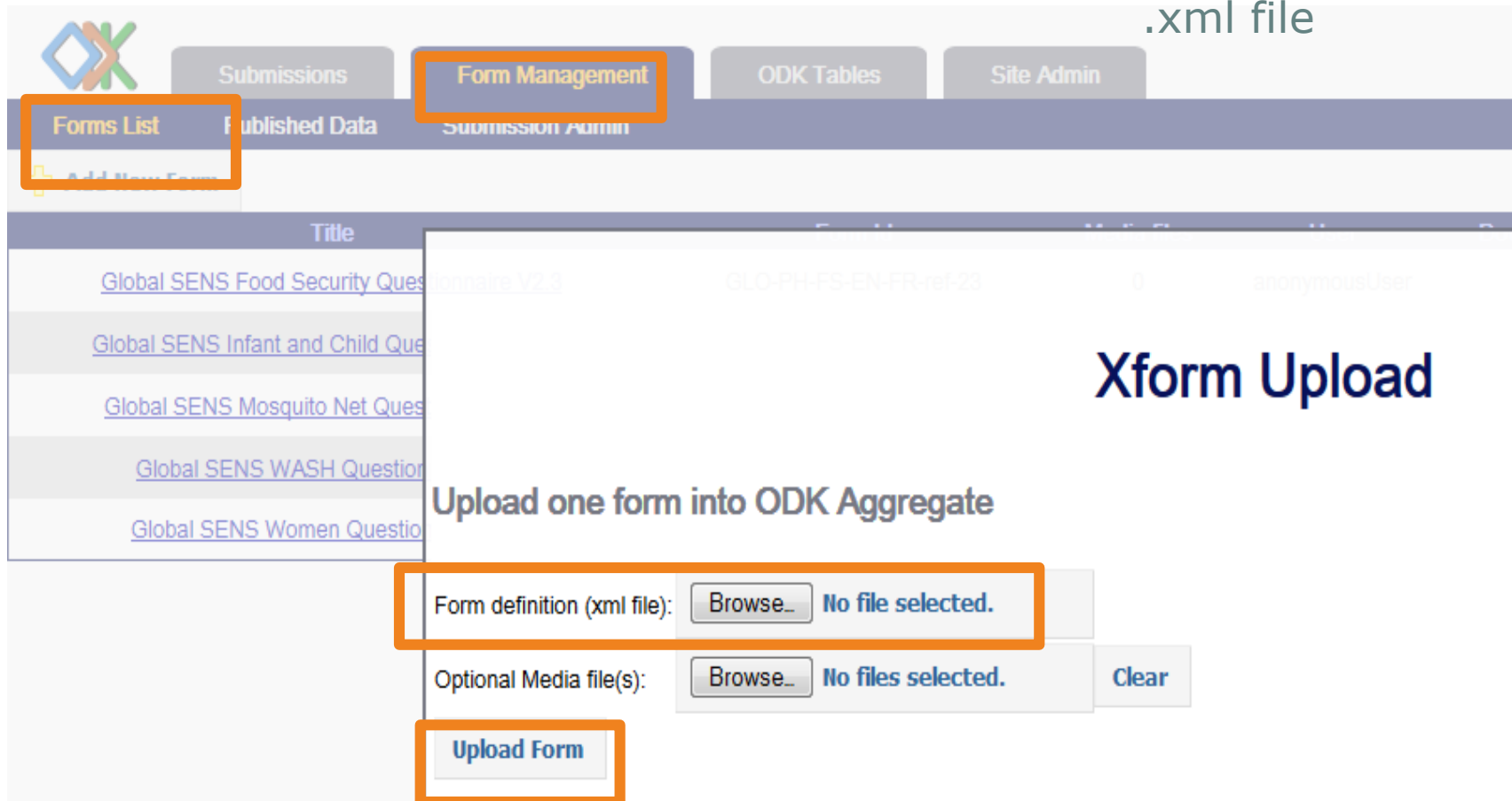
Deploy forms (1) – Convert Format

- While forms are created in excel, the finalized form needs to be converted to XML format before it can be deployed on ODK Aggregate.
- A free, downloadable tool can be used offline
<https://github.com/opendatakit/xlsform-offline/releases/tag/v1.11.1>, an online version is available here:
<https://getodk.org/xlsform/>
- In addition to the XML conversion the tool also checks for some common coding errors which is useful before uploading to ODK Aggregate.



Deploy forms (2) – Upload

 You must select the .xml file



The screenshot shows the ODK Aggregate web interface. The top navigation bar includes 'Submissions', 'Form Management', 'ODK Tables', and 'Site Admin'. The 'Form Management' tab is active, and the 'Forms List' sub-tab is selected. A table of existing forms is visible, with titles like 'Global SENS Food Security Questionnaire V2.3'. An 'Xform Upload' modal is open, titled 'Upload one form into ODK Aggregate'. It contains two fields: 'Form definition (xml file):' and 'Optional Media file(s):', each with a 'Browse...' button and a status message ('No file selected.' and 'No files selected.' respectively). An 'Upload Form' button is at the bottom of the modal. A 'Clear' button is next to the media file field.

Title	ID	Version	Created By
Global SENS Food Security Questionnaire V2.3	GLO-PH-FS-EN-FR-ref-23	0	anonymousUser
Global SENS Infant and Child Questionnaire			
Global SENS Mosquito Net Questionnaire			
Global SENS WASH Questionnaire			
Global SENS Women Questionnaire			

Xform Upload

Upload one form into ODK Aggregate

Form definition (xml file): No file selected.

Optional Media file(s): No files selected.

Deploy forms (3) – Configure Access



No need for password if all options are checked for “Anonymous user”.



Always click « Save Changes » after making a change.

Configure Site Access

Users access the site either

- anonymously (i.e., as the *anonymousUser*), or
- via a Google account, using OpenID (requires an Email account (e.g., user@gmail.com)), or
- via an OAuth 1.0 or OAuth 2.0 token (issued by Google with access to userInfo.email), or
- via an ODK account, with a username and password that a site administrator has configured for them.

Capabilities are as follows:

- Data Collector - able to download forms to ODK Collect and submit data from ODK Collect to ODK Aggregate. Only ODK accounts and the *anonymousUser* can be granted Data Collector rights. The *anonymousUser* must be granted Data Collector rights to accept submissions from unidentified sources (e.g., from ODK Collect 1.1.5 and earlier, or from ODK Collect 1.1.7 and later).
- Data Viewer - able to log onto the ODK Aggregate website, filter and view submissions, and generate csv or kml files for download.
- Form Manager - all the capabilities of a Data Viewer plus the abilities to upload a form definition, delete a form and its data, and upload submissions manually through the ODK Aggregate website.
- Synchronize Tables - able to download, upload and alter data records within ODK Tables as restricted by table-access privileges granted to the user.
- Administer Tables - able to administer tables and table-access privileges from the ODK Tables website.
- Site Administrator - all the capabilities of a Form Manager plus the ability to add users, set passwords, and grant these capabilities to other users.

Edit Users

Change usernames, delete usernames, grant capabilities and set passwords for ODK accounts below.

	Username	Full Name		Account Type	Data Collector	Data Viewer	Form Manager
	aggregate	aggregate	Change Password	ODK	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	root@aggregate.local		Change Password	Google	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	anonymousUser	Anonymous Access	Change Password		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

☒ Allow anonymous retrieval of images, audio and video data (needed for GoogleEarth balloon displays)

[Save Changes](#)

Phase 3 – Manage:

Using ODK Aggregate server

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ODK Briefcase (1) - Introduction

ODK Aggregate



Get blank forms

Send filled surveys

ODK Collect



ODK Briefcase
(after copying to laptop via USB)


ODK Briefcase
(export data, manage media,
encryption)

ODK Briefcase (2) - Introduction

Tool's main uses:

- Allows for the export of data from forms with repeat loops which are included in the new SENS forms.
- Allows encryption to be used if needed.

4 main tabs:

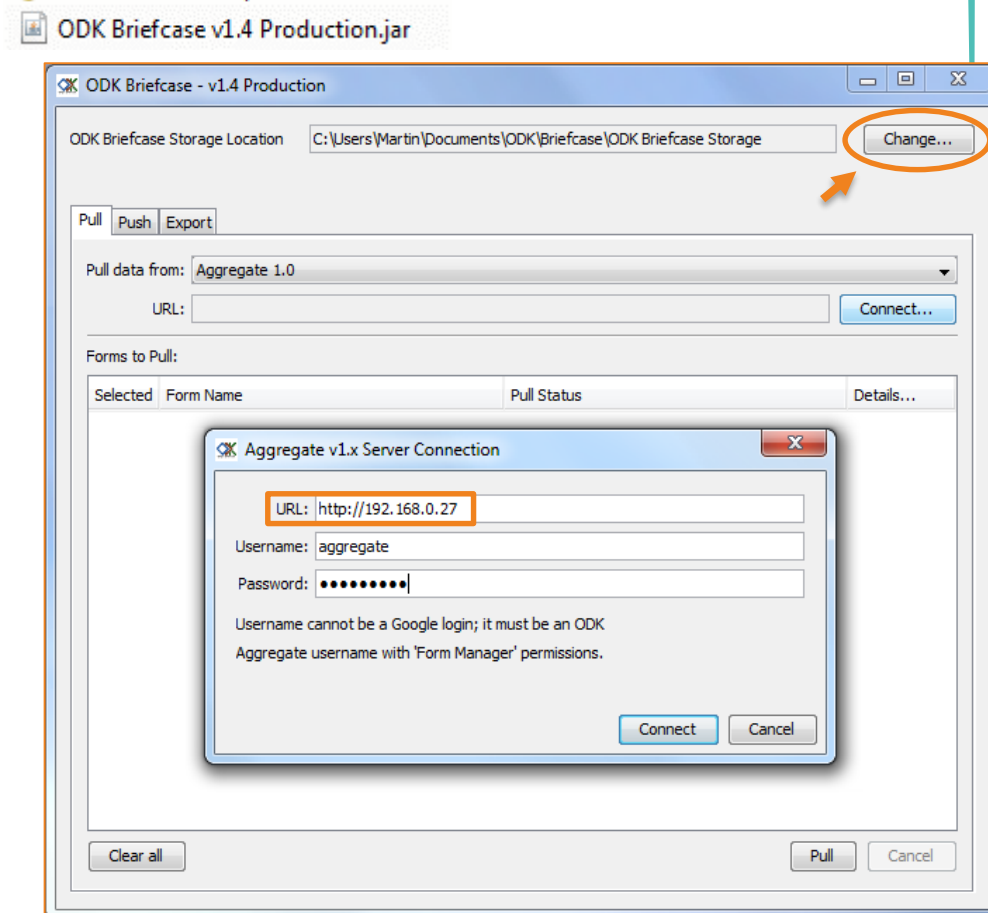


Pull Push Export Settings

- Pull: takes the data from the server.
- Export: outputs the data in CSV/Excel format.
- Push (rarely used): allows for data copied from the phone to laptop via USB to be pushed to the server (for example if no router is available).
- Settings: Selection of folder for data downloads.

ODK Briefcase (3) - Pull Data

- ❶ Launch ODK Briefcase.
- ❷ Go to the tab « Pull ».
- ❸ Configure the storage folder if needed (see next slide for details).
- ❹ Check the IP address, must match the one shown in the black screen when the VM is launched, the one entered into the web browser and in the phone... (if password needed: aggregate/aggregate)



ODK Briefcase (4) - Pull Data

- You can now pull the data from the server.
- Select all the forms you need to pull data for, and click « Pull ».
- Then go to the « Export » tab of Briefcase.
- You must select each form individually. Specify in which folder you want to export the data to.

ODK Briefcase Storage Location: C:\Users\Martin\Documents\ODK\Briefcase\ODK Briefcase Storage

Buttons: Pull | Push | Export

Pull data from: Aggregate 1.0
URL: http://192.168.0.27

Forms to Pull:

Selected	Form Name	Pull Status	Details...
<input checked="" type="checkbox"/>	Global SENS Women Questionnaire V2.5	SUCCESS!	Details...
<input type="checkbox"/>	Global Mosquito net SENS Questionnaire V2.3		Details...
<input type="checkbox"/>	Global SENS Food Security Questionnaire V2.3		Details...
<input type="checkbox"/>	Global SENS Infant and Child Questionnaire V2.5		Details...
<input type="checkbox"/>	Global SENS WASH Questionnaire V2.4		Details...

Buttons: Select all, Pull, Cancel

ODK Briefcase Storage Location: C:\Users\Martin\Documents\ODK\Briefcase\ODK Briefcase Storage

Buttons: Pull | Push | Export

Form: Global Food Security SENS Questionnaire V2.XML


Export Type: .csv and media files


Export Directory: C:\Users\Martin\Documents\ODK\DataExport\Day1\Women


Buttons: Choose..., Choose...

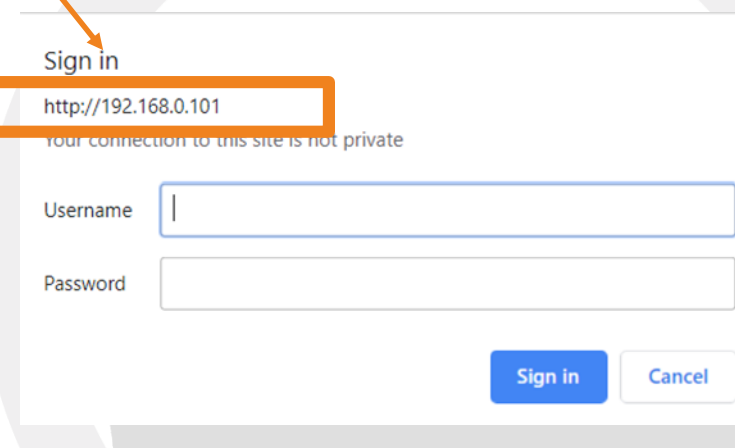
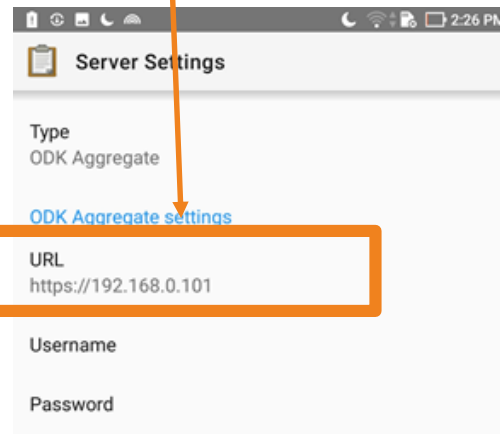
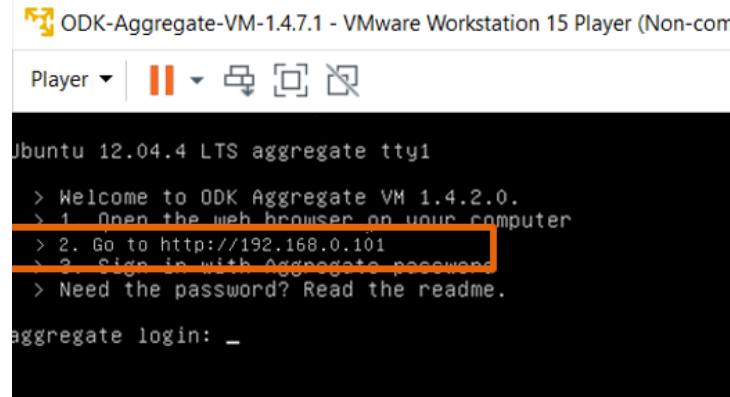
Buttons: Export Details..., Export, Cancel

ODK Aggregate: Note

 The **IP address** is the same throughout the system.

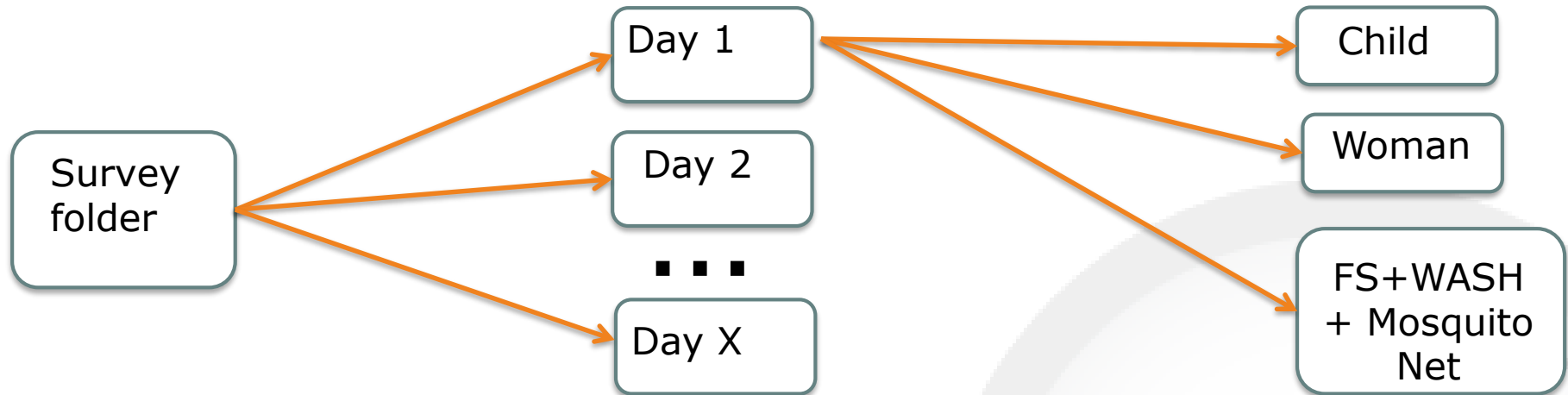
 The VM is the point of reference.
(for Raspberry Pi it is always <http://192.168.0.100>)

 All other entries must match that of the VM.



Organizing data

❗ How can you efficiently organize your data?

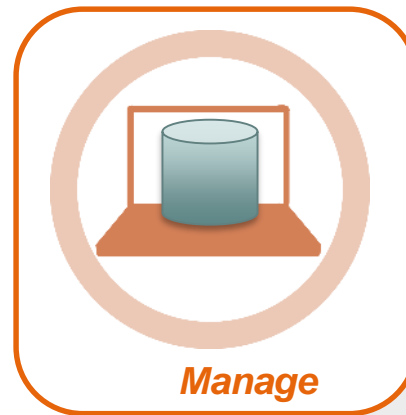
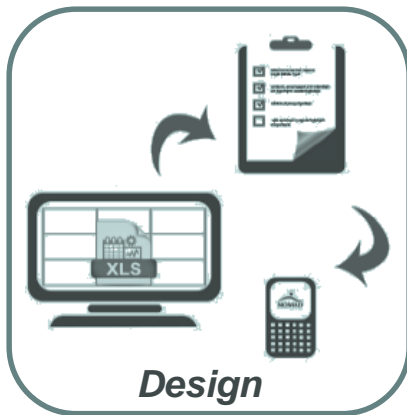


- ❗ Export data each day (prevent data losses, help to keep things organized).
- ❗ At the end of the survey, only the last day's export needs to be used for analysis as it contains the whole dataset.
- ❗ See "MDC Tool 2" for how to export Aggregate's data.

Phase 4 – Analyse

- **Exporting Data for Analysis**
- **SENS Mapper**

Phases of MDC



Analysis tools

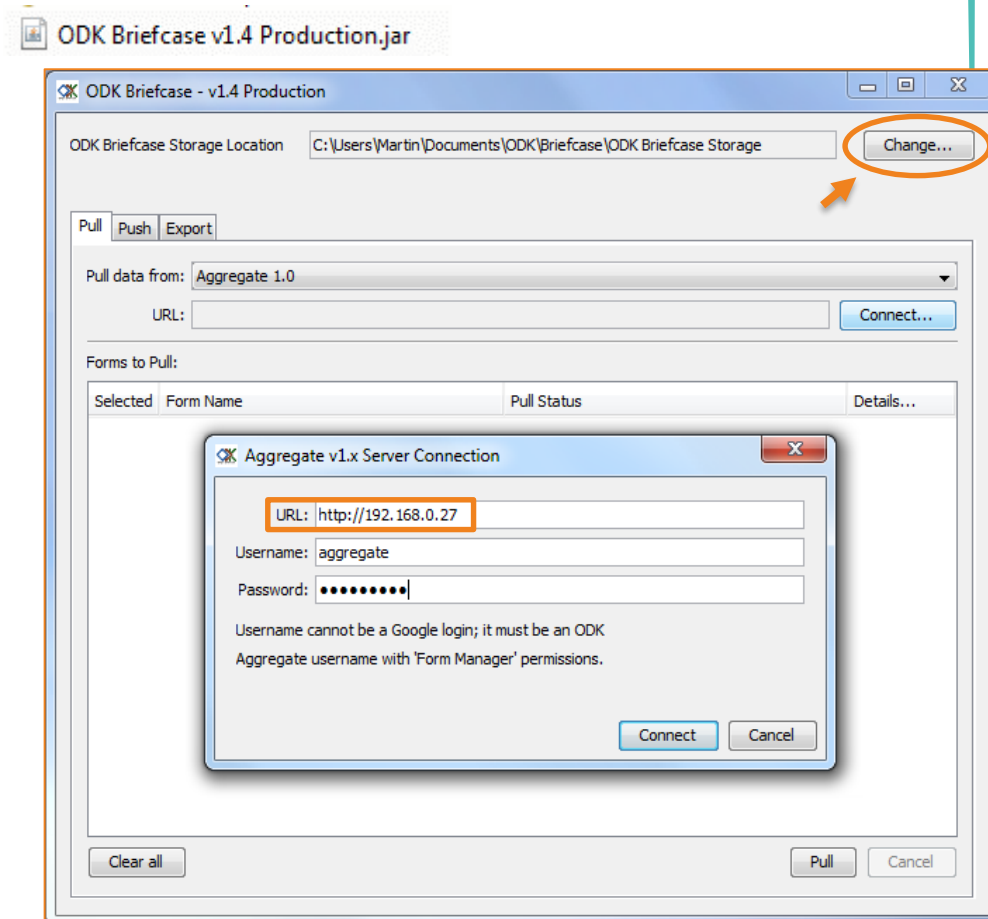


ena



ODK Aggregate/Raspberry Pi (1) - Pull Data

- ❶ Launch ODK Briefcase.
- ❷ Go to the tab « Pull ».
- ❸ Configure the storage folder if needed (see next slide for details).
- ❹ Check the IP address, must match the one shown in the black screen when the VM is launched, the one entered into the web browser and in the phone... (if password needed: aggregate/aggregate)



ODK Aggregate/Raspberry Pi (2) - Pull Data

- ❶ You can now pull the data from the server.
- ❷ Select all the forms you need to pull data for, and click « Pull ».
- ❸ Then go to the « Export » tab of Briefcase.
- ❹ You must select each form individually. Specify in which folder you want to export the data to.
- ❺ Refer to “Tutorial 2 – Exporting Data for Analysis”

ODK Briefcase Storage Location: C:\Users\Martin\Documents\ODK\Briefcase\ODK Briefcase Storage

Buttons: Pull, Push, Export

Pull data from: Aggregate 1.0
URL: http://192.168.0.27

Forms to Pull:

Selected	Form Name	Pull Status	Details...
<input checked="" type="checkbox"/>	Global SENS Women Questionnaire V2.5	SUCCESS!	Details...
<input type="checkbox"/>	Global Mosquito net SENS Questionnaire V2.3		Details...
<input type="checkbox"/>	Global SENS Food Security Questionnaire V2.3		Details...
<input type="checkbox"/>	Global SENS Infant and Child Questionnaire V2.5		Details...
<input type="checkbox"/>	Global SENS WASH Questionnaire V2.4		Details...

Buttons: Select all, Pull, Cancel

ODK Briefcase Storage Location: C:\Users\Martin\Documents\ODK\Briefcase\ODK Briefcase Storage

Buttons: Pull, Push, Export

Form: Global Food Security SENS Questionnaire V2.ZXML


Export Type: .csv and media files


Export Directory: C:\Users\Martin\Documents\ODK\DataExport\Day1\Women


Buttons: Choose... (for directory), Choose... (for PEM Private Key File)

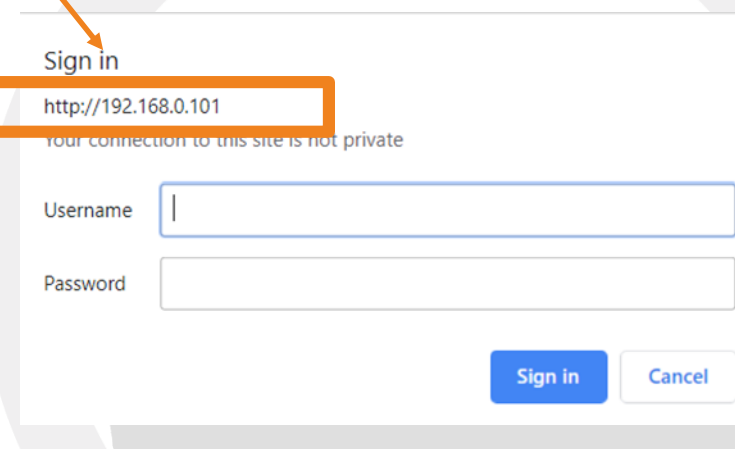
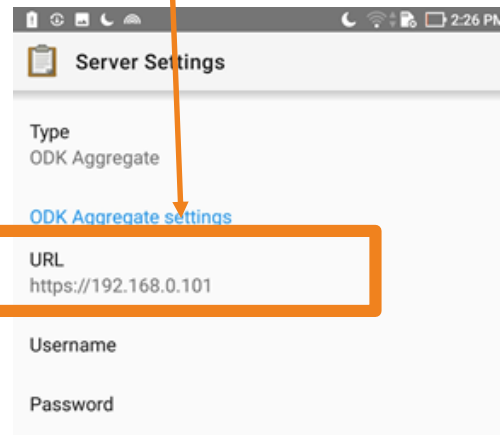
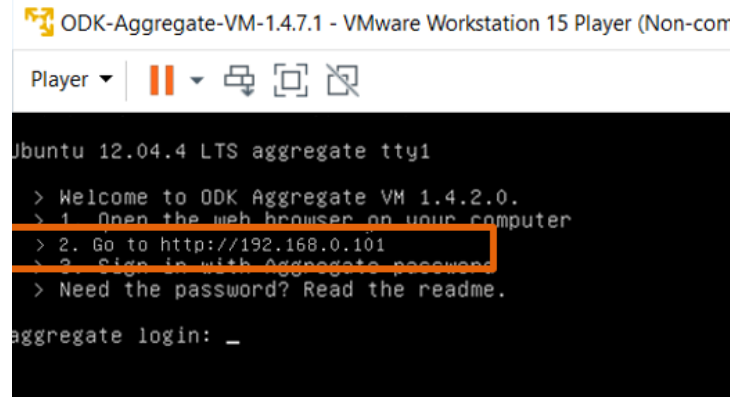
Buttons: Export Details..., Export, Cancel

ODK Aggregate/Raspberry Pi (3) - Note

 The **IP address** is the same throughout the system.

 The VM is the point of reference.
(for Raspberry Pi it is always <http://192.168.0.100>)

 All other entries must match that of the VM.

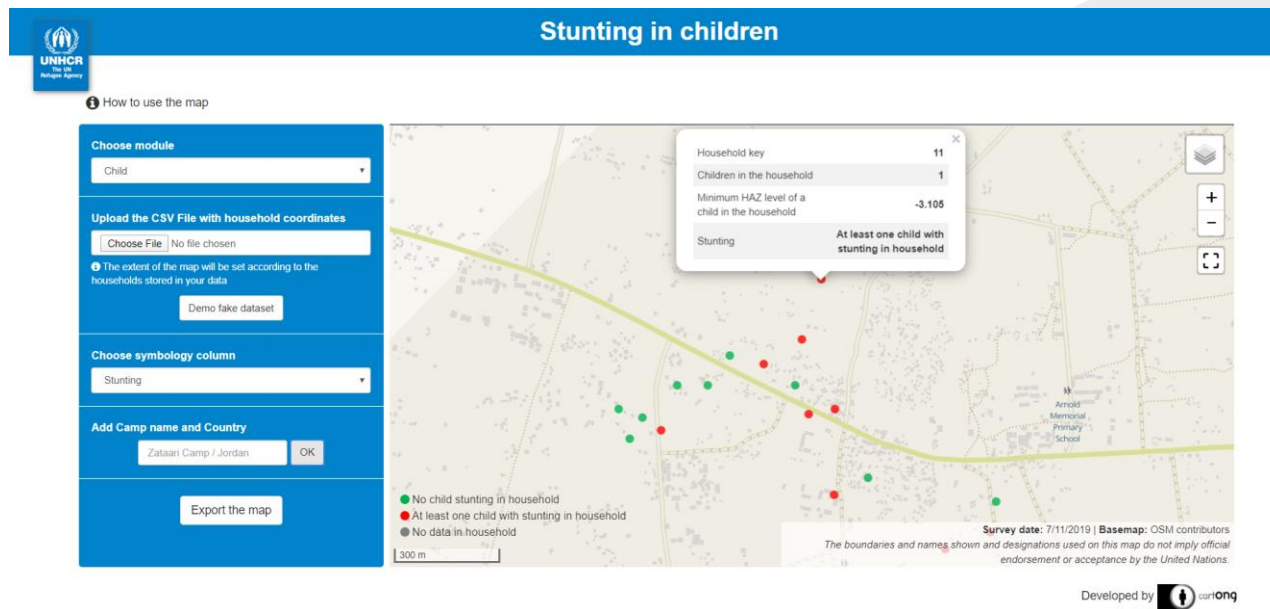


Phase 4 – Analyse

- Exporting Data for Analysis
- **SENS Mapper**

Analysis Tools - SENS Mapper

- 👤 Surveys that have been set up to collect GPS coordinates of households can be visualized and extracted for reporting on the SENS Mapper
- 👤 For more information in which type of setting and how to use GPS coordinates, refer to MDC Tool 13.



Standard operating procedures (SOPs)

- **Pre-deployment: SOP of survey manager**
- **In-deployment: SOP of survey manager, supervisors & enumerators**

Planning the survey and its logistics

- ✓ Which modules do you need?
- ✓ How many teams to deploy? How many phones needed?
- ✓ Specific needs in terms of phones? Safety of enumerators?
- ✓ Which tools?
- ✓ How many supervisors to check data quality?
- ✓ Which languages needed for translation?
- ✓ Online/offline? Aggregate or Kobo? Survey computer setup already/Raspberry Pi received?
- ✓ Power supply?
- ✓ How many hours in the field each day, number of days needed?
- ✓ What backup for data?
- ✓ What adaptations needed to the survey (with respect to context etc.)
- ✓ What sampling?

Do you need help?

Option 1: In-country support

When the survey manager has no MDC experience, little help available in-country

Option 2: Remote support

Some MDC experience, previous ODK training, tech savvy survey manager

Option 3: No support

When everything, including coding XLS forms, is already known

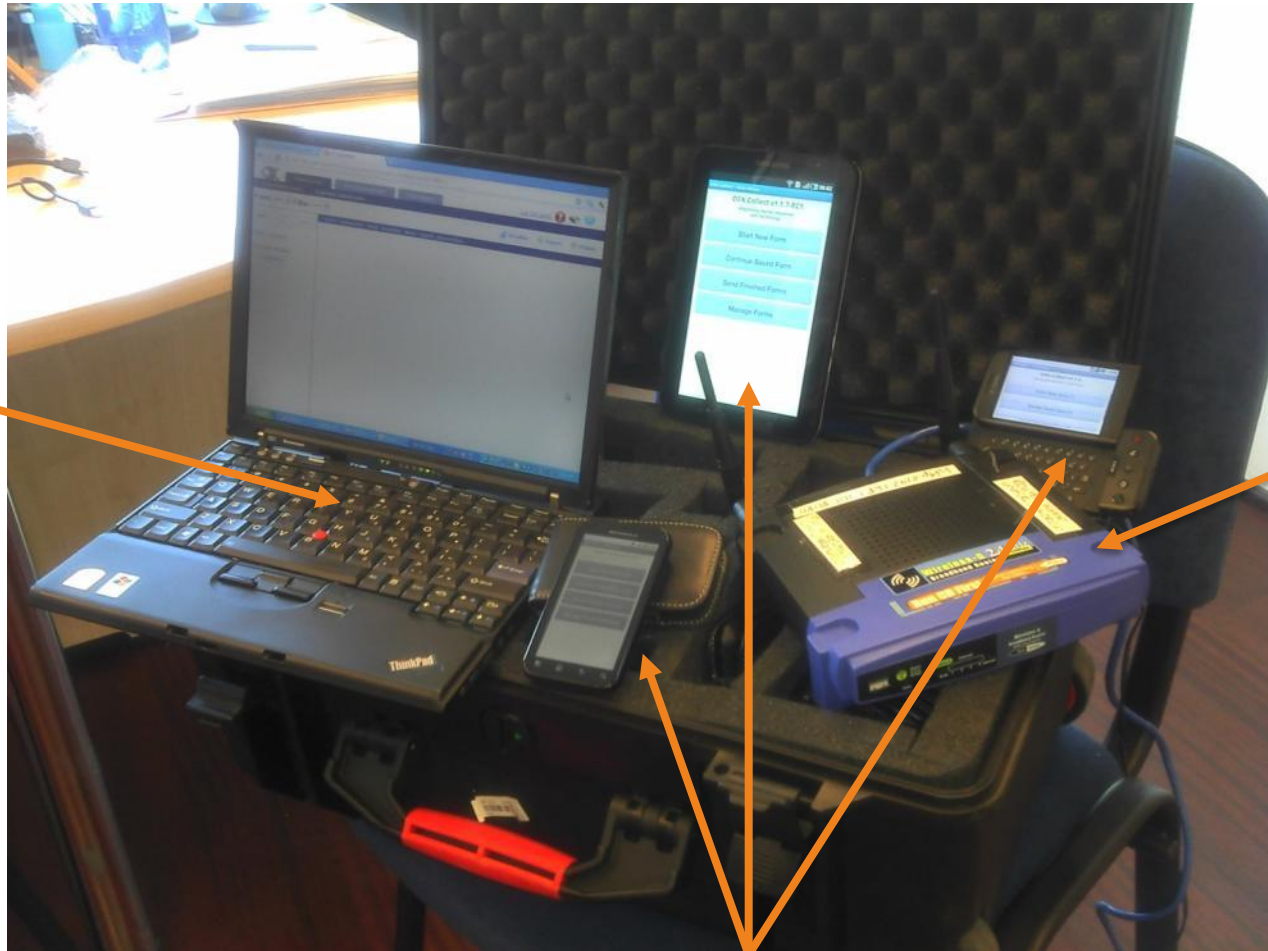
Prepare your material

A few weeks before the survey:

- 👤 Phones
 - Likely 2 phones per team, a few spares as well.
 - Clean older phones – no old surveys/data left on the phone.
 - Install or update needed applications:
 - ODK Collect
 - GPS Test
- 👤 Survey computer Or Raspberry Pi Server
 - Check that VMware is installed (and ODK Briefcase)
 - Test the VM (ODK Aggregate)
 - Update any screenshots for your training.



Deployment kit



Computer
("server")

Router wifi
needed to
send data
between
phones &
server
(computer)

Mobiles

Week before the deployment

- 👤 Test any forms modified to ensure they behave as expected.
 - 👤 Deploy finalized forms on the server.
 - 👤 Deploy forms on the phones.
 - 👤 Print training material.
-
- 👤 See SENS Page for various MDC tools: <http://sens.unhcr.org/mobile-technology/tools/>

Standard operating procedures (SOPs)

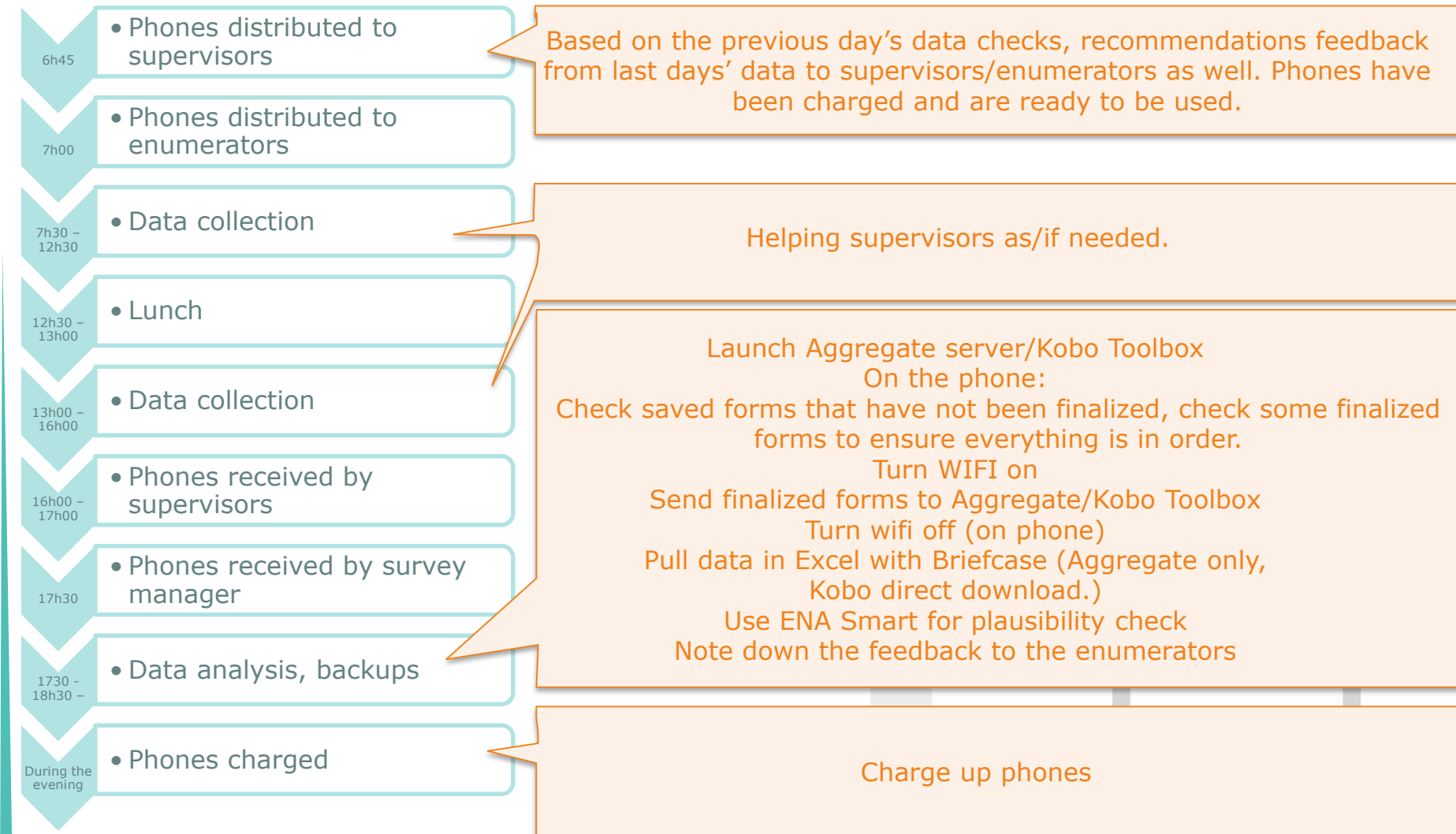
- **Pre-deployment: SOP of survey manager**
- **In-deployment: SOP of survey manager, supervisors & enumerators**

Roles

-  Survey manager
-  Supervisor(s)
-  Enumerators

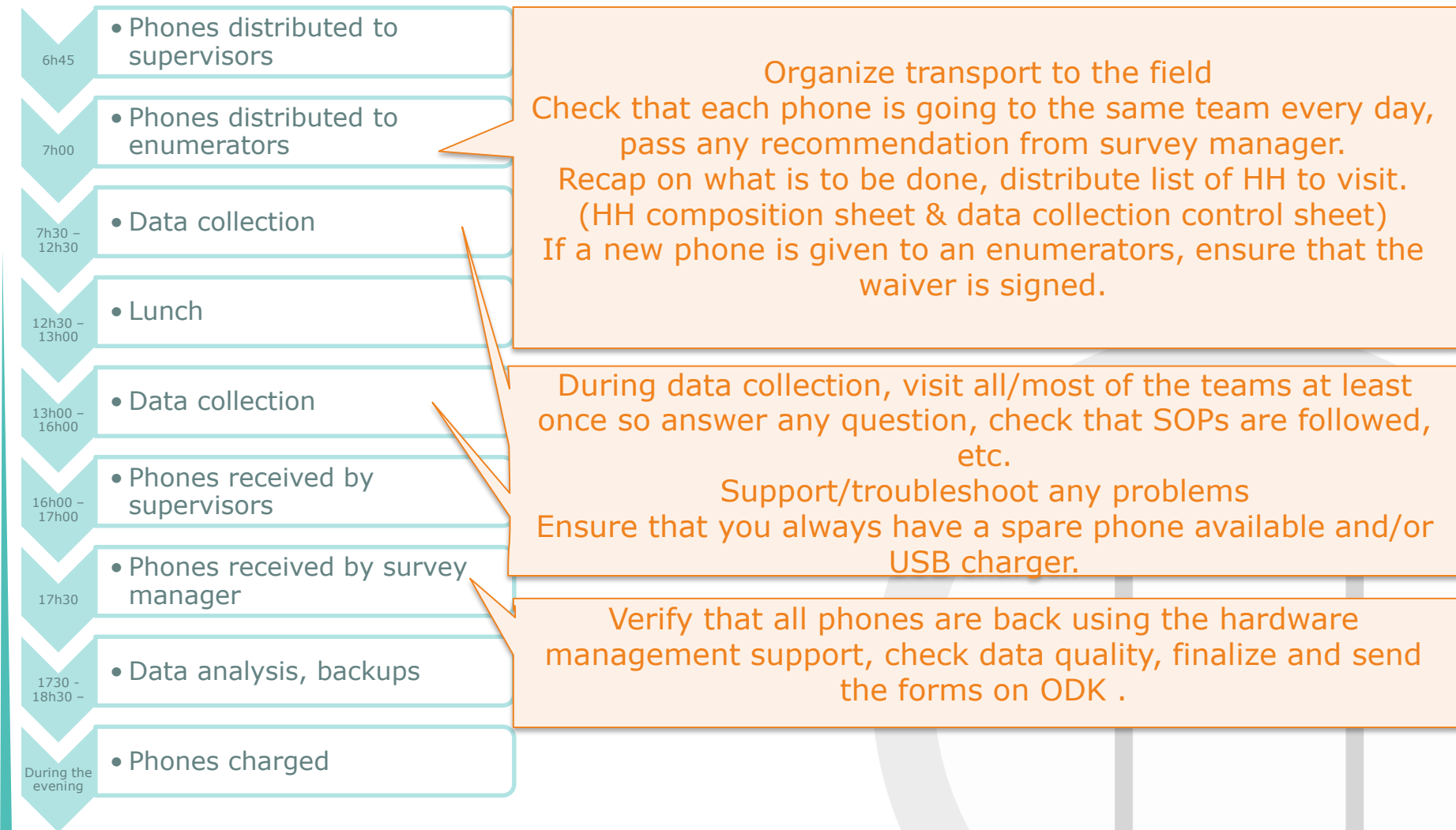


Typical day: Survey manager



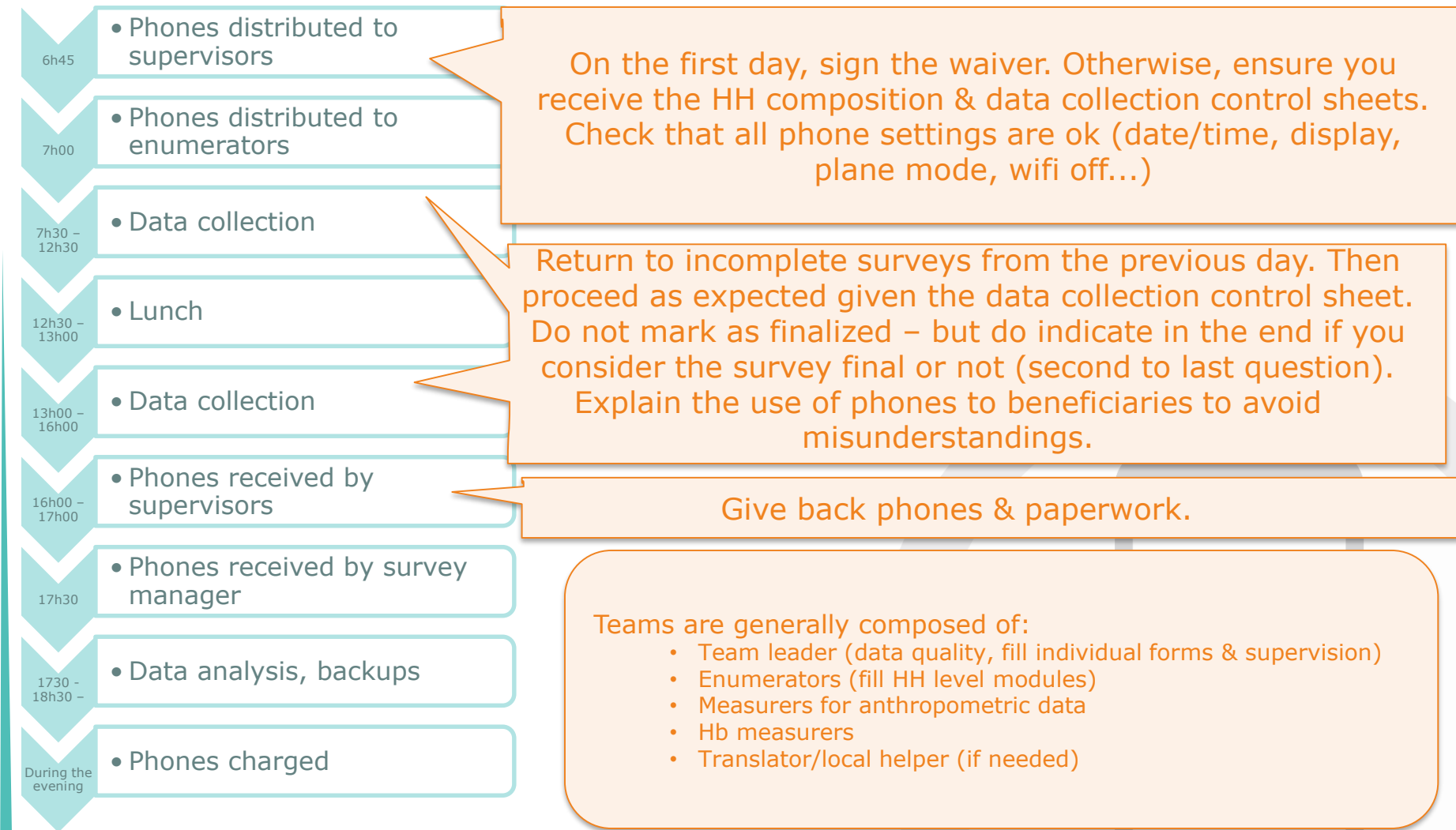
To be adapted to your context.

Typical day: Supervisor



To be adapted to your context.

Typical day: Enumerators



To be adapted to your context.

Lifecycle of a form

Ongoing (not finalized, absent, etc.)

Considered finished by **enumerator**

Considered finished by **supervisor**

Marked as finalized by **supervisor**

ODK Collect > E...

Interviewer: I confirm that questionnaire is complete

☒ Yes

☐ NO

Supervisor: I confirm that questionnaire is complete

☐ Yes

☒ No

You are at the end of East Sudan Demography SENS Questionnaire.

Mosquito_HH

☐ Mark form as finalized

Save Form and Exit

ODK Collect > E...

Interviewer: I confirm that questionnaire is complete

☒ Yes

☐ NO

Supervisor: I confirm that questionnaire is complete

☐ Yes

☒ No

You are at the end of East Sudan Demography SENS Questionnaire.

Mosquito_HH

☐ Mark form as finalized

Save Form and Exit

ODK Collect > Gl

Supervisor: I confirm that questionnaire is complete

☒ Yes

☐ No

You are at the end of East Sudan Demography SENS Questionnaire.

Mosquito_HH

☐ Mark form as finalized

Save Form and Exit

ODK Collect > Gl

You are at the end of East Sudan Demography SENS Questionnaire.

Mosquito_HH

☒ Mark form as finalized

Save Form and Exit

Support documentation



Data collection control:

- Overview of all HH to be visited;
- One per block/cluster.

Date of sampling: dd / mm / yyyy				Section No.:			Block No.:			Cluster No. (if applicable):			Team No.:		
HH No.	Anthropometry and health Children 6-59 mo.			Anaemia Children 6-59 mo.			Anaemia Women 15-49 y			IYCF Children 0-23 mo.		WASH 1=completed 2=absent 3=refused	Food Security 1=completed 2=absent 3=refused	Mosquito Net 1=completed 2=absent 3=refused	
	No. in HH	No. surveyed	No. referred	No. in HH	No. surveyed	No. referred	No. in HH	No. surveyed	No. referred	No. in HH	No. surveyed				
01															
02															
03															
04															
05															
06															
07															



HH composition sheet:


- Overview of the composition of each HH;
- One per HH.

Date _/_/_	Camp _	Zone _	Block _	HH Number _	Cluster no. _	Team number _
Please complete using the following order: HH head, adult males, adult females, children, infants, other relatives						
Identification and age			Anthropometry and health			Anaemia
HH #	Name	M/F	Age • If age ≥5 y: unit is years • If age <5 y: unit is months	Weight Kg Children 6-59	Height cm Children 6-59	MUAC cm / mm Children 6-59
						Referred? Y/N
						Hb g/dL • Children 6-59 • Non-pregnant women
						Referred? Y/N

Only useful when it is actually being used!



PHONE OWNERSHIP & RESPONSIBILITIES


UNHCR
The UN
Refugee Agency

ANDROID PHONE HANDOVER

General Statement

- The android phone issued is property of UNHCR and should be handled with utmost care against loss or damages of any kind.
- You are liable to ensure that the phone is returned in a good working condition
- This letter serves as a confirmation that you accept responsibility for the phone provided by UNHCR with the description attached:

PHONE IMEI:

I have received the above items in good working condition. I have also read and agree to the statement explained above and assume full responsibility

Name of receiver.....
Signature.....
Date.....

Name of issuer.....
Signature.....
Date.....

Date of final Return:
Signature of Responsible person:

Signed once before the
start of the survey
when the phones are
distributed.

Daily phone management






















Burkina Faso Food Security Survey List of phones by team and by day

DATE:

<u>PreTest</u>	Xperia Barcode/IMEI	G1 Barcode/IMEI	Team leader	Signature	Team colour
Team 1	351676030088209	12468001490007			red
Team 2	351677030034813	12468001495048			yellow
Team 3	351677030073092	12468001496087			pink
Team 4	351677030072961	12468001493050			orange
Team 5	351676030030847	12468001494843			blue
Team 6	351676030122990	12468001495998			green

Must be signed once by the enumerator in the morning, when they receive the material. The supervisor signs at the end of the day when the phones are returned.

Support documentation available

-  MDC Tool 01 - Tutorial - Launching and using the server_EN_V6_Final
-  MDC Tool 01 - Tutorial - Launching and using the server_EN_V6_Final
-  MDC Tool 02 - Tutorial-Exporting Data for Analysis_EN_V3_Final
-  MDC Tool 02 - Tutorial-Exporting Data for Analysis_EN_V3_Final
-  MDC Tool 03 - IT Tutorial-Installing a new server_EN_V6_Final
-  MDC Tool 03 - IT Tutorial-Installing a new server_EN_V6_Final
-  MDC Tool 04 - Daily use and logistics
-  MDC Tool 04 - Daily use and logistics
-  MDC Tool 05 - MDC Training for Enumerators_EN_V7_Final
-  MDC Tool 06 - To Print-Phone Handover_EN
-  MDC Tool 06 - To Print-Phone Handover_EN
-  MDC Tool 07 - To Print-Phone Daily Inventory_EN
-  MDC Tool 07 - To Print-Phone Daily Inventory_EN
-  MDC Tool 08 - Using GPS points in your SENS modules_EN_V3_Final
-  MDC Tool 08 - Using GPS points in your SENS modules_EN_V3_Final
-  MDC Tool 09 - MDC Training for Survey Manager_EN_V9_Final
-  MDC Tool 09 - MDC Training for Survey Manager_EN_V9_Final
-  MDC Tool 10 - Tutorial - How to Setup a Phone for a SENS Survey_EN_V4_Final
-  MDC Tool 10 - Tutorial - How to Setup a Phone for a SENS Survey_EN_V4_Final
-  MDC Tool 11 - Tutorial - Connecting Mobile Device to Raspberry Pi Aggregate Server_EN_V5_Final
-  MDC Tool 11 - Tutorial - Connecting Mobile Device to Raspberry Pi Aggregate Server_EN_V5_Final