



OpenMap
Development
Tanzania

MOBILE DATA COLLECTION TOOLS



@OMDTZ

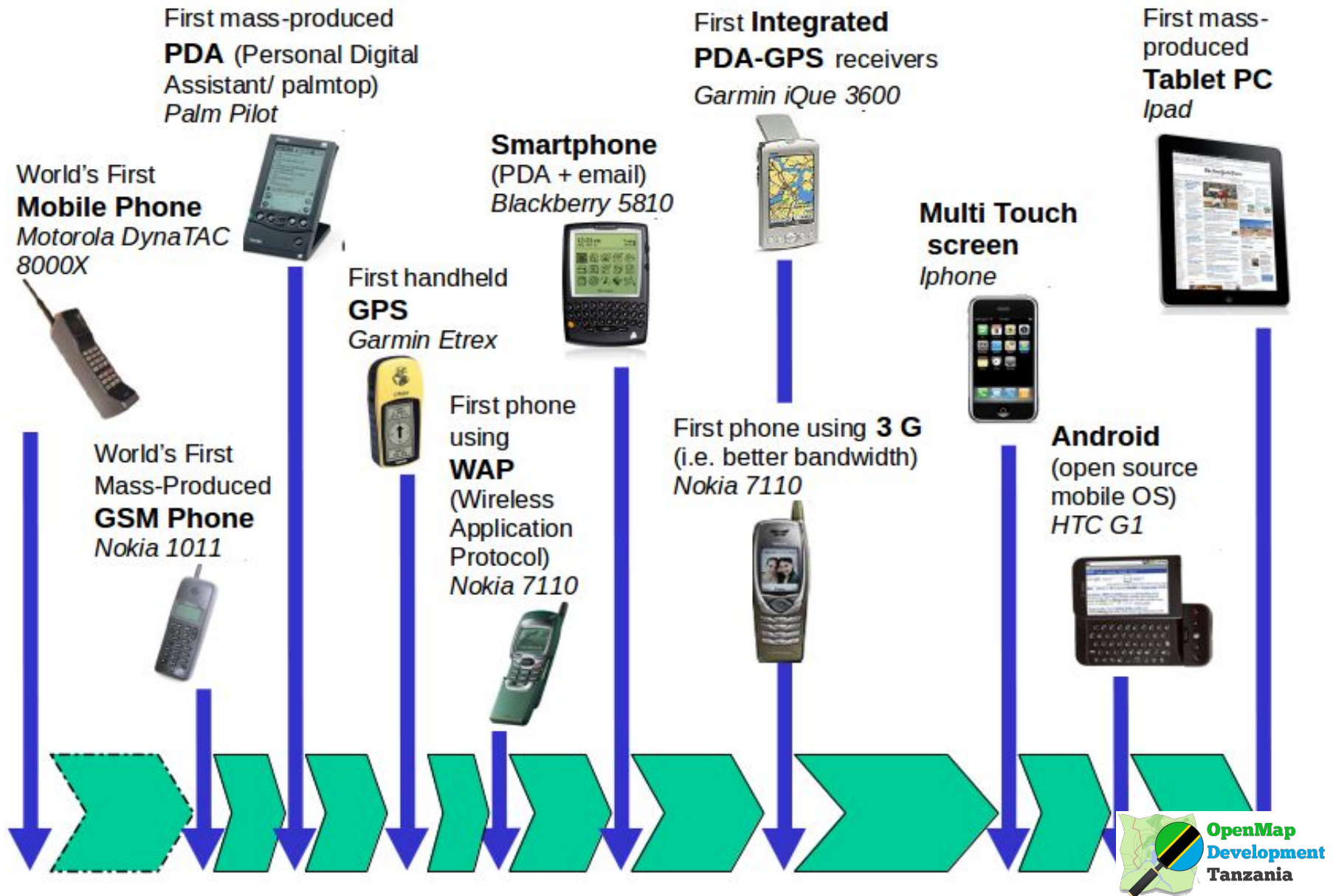


OpenMap Development Tanzania

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 - Introduction
 - XLS Form structure
 - Survey
 - Choices
 - Setting
- Practical

Evolution of Technology

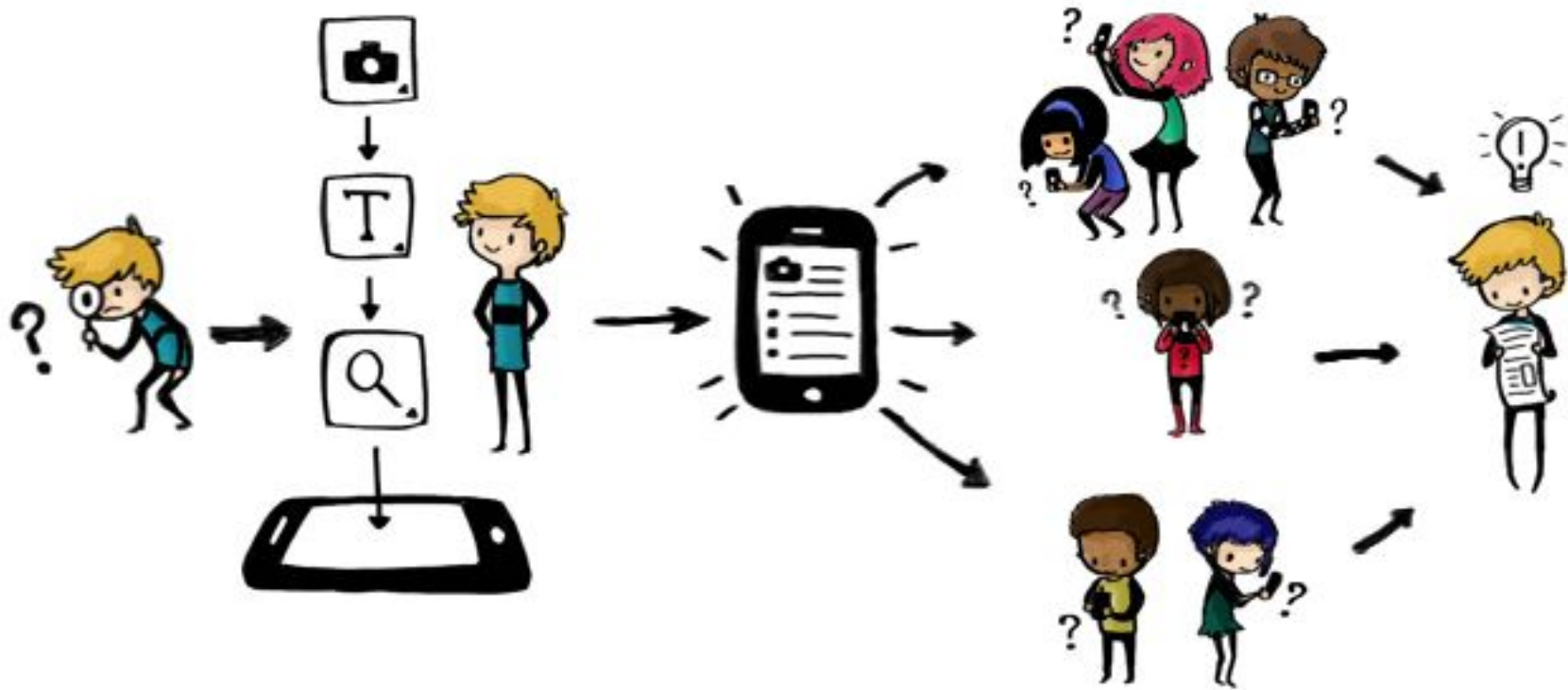


Mobile Data Collection - What is it?

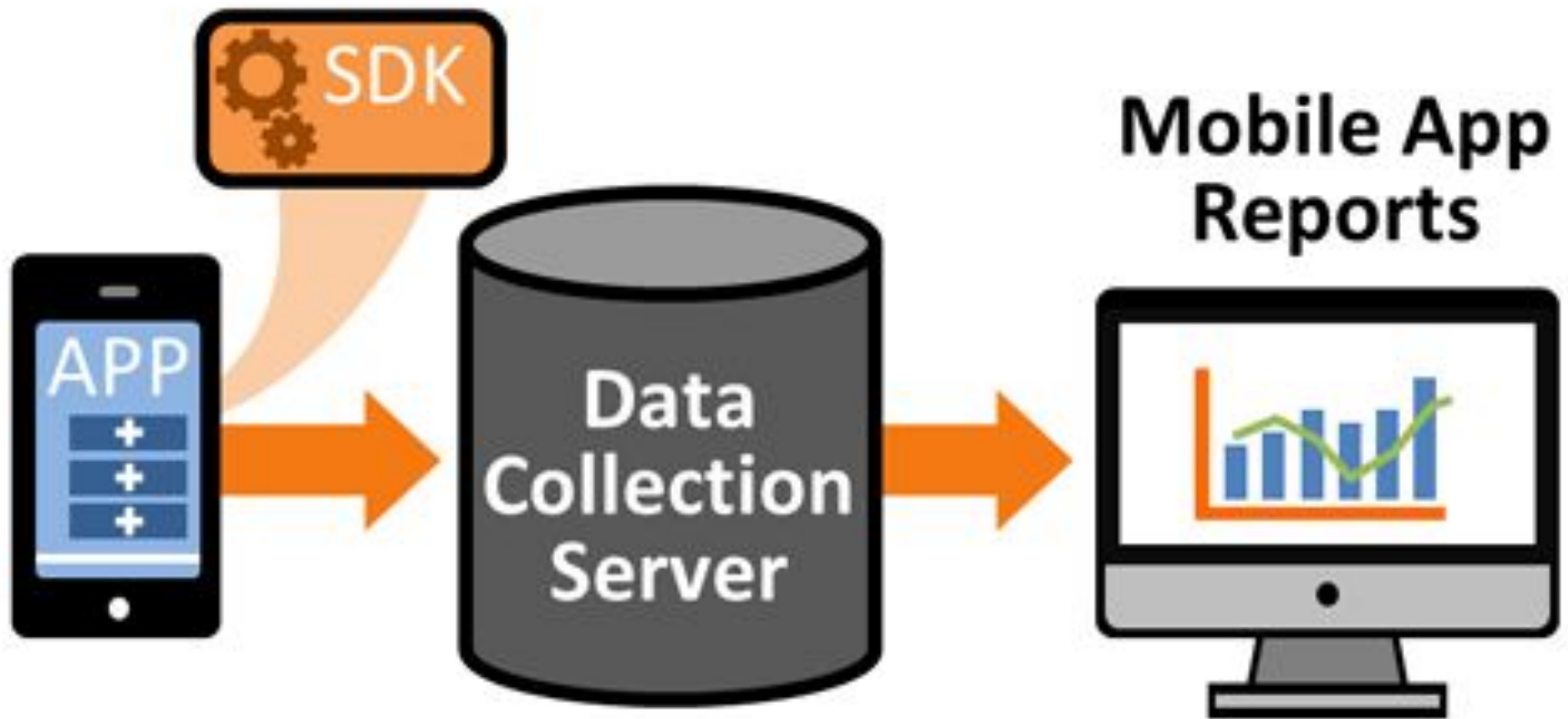
Mobile data collection is the method of gathering any type of information using a mobile device, such as a smartphone or tablet. It is the intersection of **“Data + Mobile Technology + Population”** where population refers to people, or statistically speaking, your sample.

- Create your own data collection form
- Store data (offline) on smartphone and/or send it to server for publishing/sharing

Mobile Data Collection - What it can do



Mechanism in Mobile Data Collection

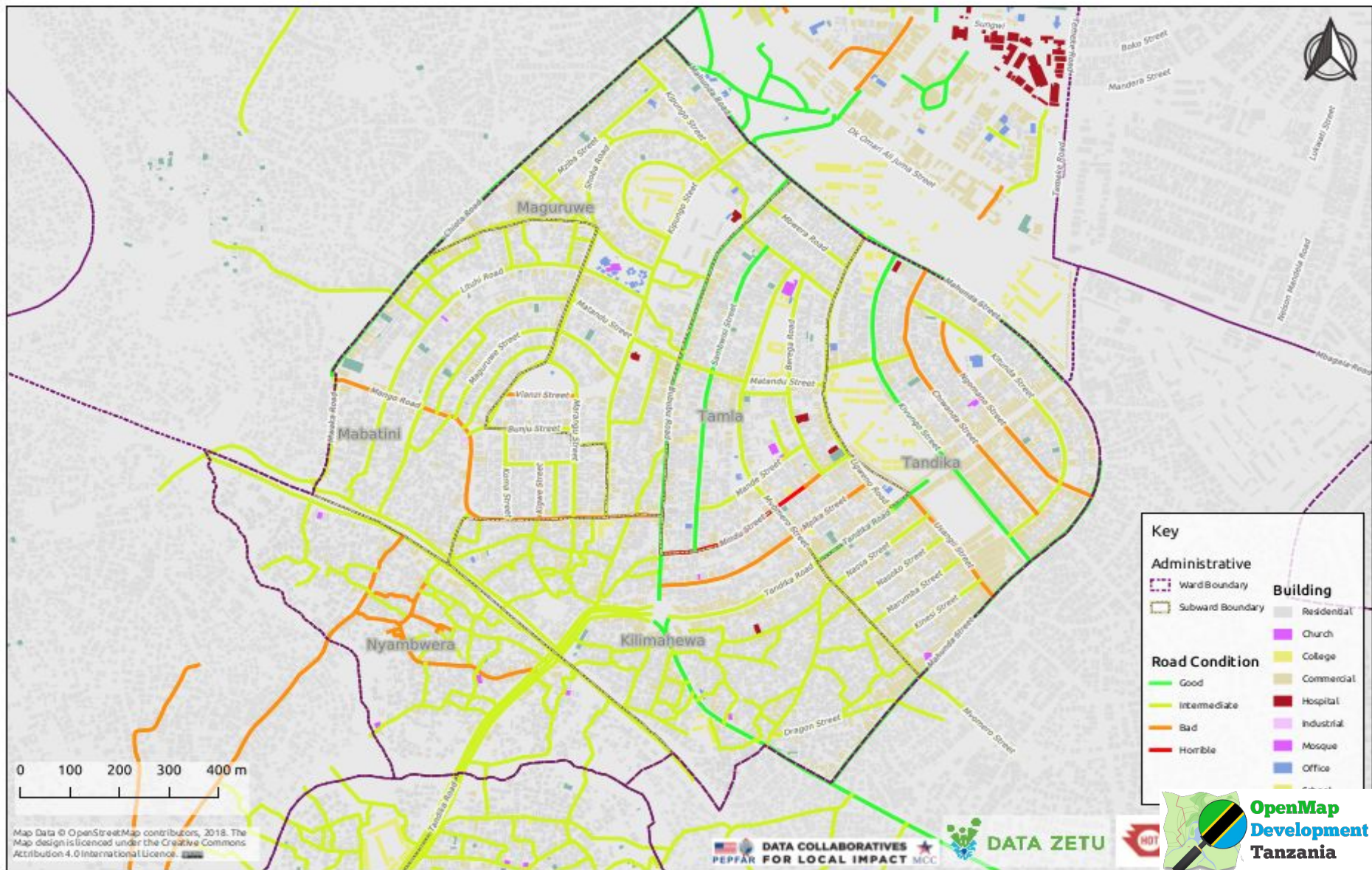




● Over **27749** Data point were collected

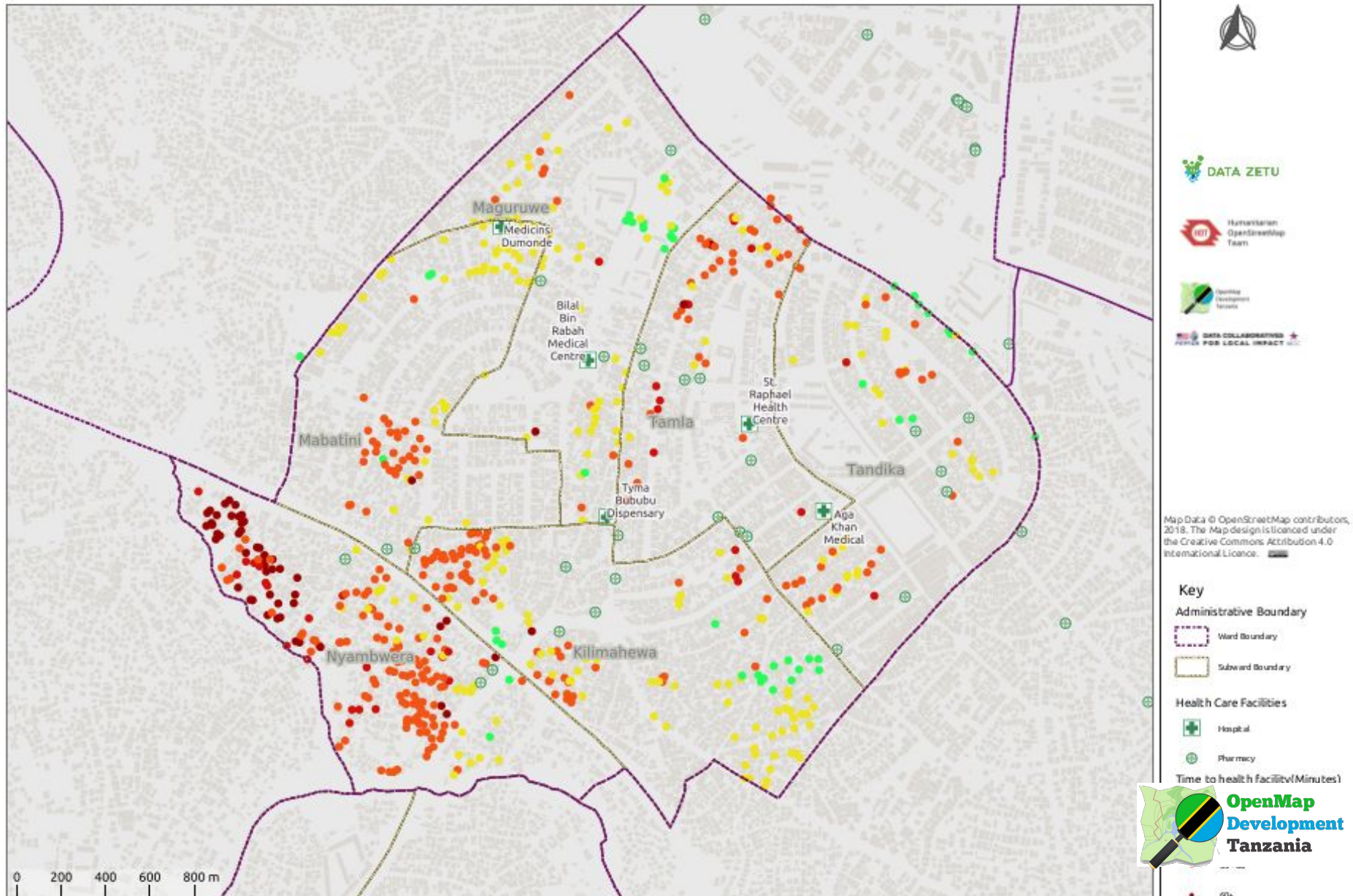
Mobile Data Collection - Best practices

Road Condition - Tandika Ward



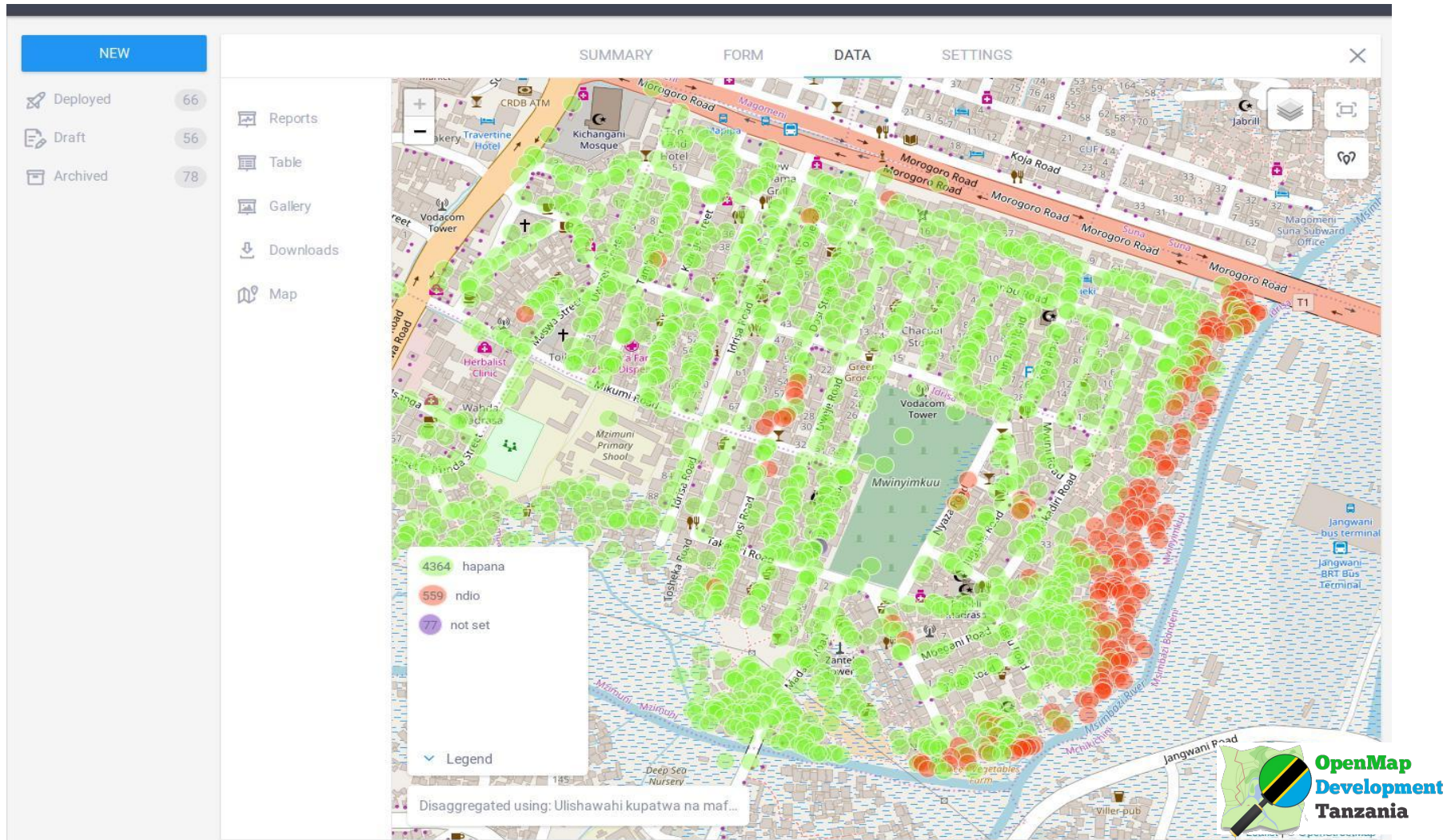
Best practice-Healthcare survey

Distance to Maternal Service - Temeke Hospital



Strength of Mobile Data Collection

- Instant visualization and easier aggregating of data



Strength of Mobile Data Collection Open

- From fieldwork to your server or Laptop



ODK Collect 1.2.2 (1023)

Data collection made easier...

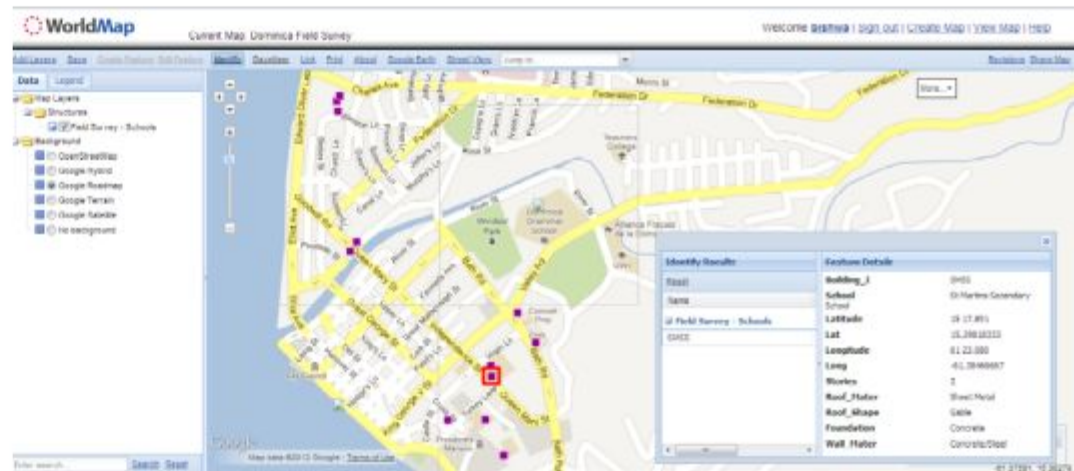
Fill Blank Form

Edit Saved Form

Send Finalized Form

Get Blank Form

Delete Saved Form



Use of Smartphone in
capturing
real time data

Strength of Mobile Data Collection Open

- Allows easy capture of other forms of data

Question type	Answer input
integer	Integer (i.e., whole number) input.
decimal	Decimal input.
range	Range input.
text	Free text response.
select_one [options]	Multiple choice question; only one answer can be selected.
select_multiple [options]	Multiple choice question; multiple answers can be selected.
note	Display a note on the screen, takes no input.
geopoint	Collect a single GPS coordinate.
geotrace	Record a line of two or more GPS coordinates.
geoshape	Record a polygon of multiple GPS coordinates; the last point is the same as the first point.
date	Date input.
time	Time input.
dateTime	Accepts a date and a time input.
image	Take a picture or upload an image file.
audio	Take an audio recording or upload an audio file.
video	Take a video recording or upload a video file.
file	Generic file input (txt, pdf, xls,xlsx, doc, docx, rtf, zip)
barcode	Scan a barcode, requires the barcode scanner app to be installed.
calculate	Perform a calculation; see the Calculation section below.
acknowledge	Acknowledge prompt that sets value to "OK" if selected.
hidden	A field with no associated UI element
xml-external	Adds a reference to an external XML data file

ODK Collect > Building Survey

Today's Date

Feb 17 2013

Replace Location

Latitude: N 38°52'54"
Longitude: W 77°24'9"
Altitude: 85m
Accuracy: 5m

Number of Stories

☐ 1 ☐ 4
☐ 2 ☐ 5
☒ 3 ☐ More than 5

OpenMap Development Tanzania

Strength of Mobile Data Collection Open

- Less expensive than traditional paper surveys



EMERGENCY WATER STRUCTURAL REVIEW ASSESSMENT

Building Data:

- 1. Building Name: _____
- 2. Building Number: _____
- 3. Type of building: _____
- 4. Building Material: _____
- 5. Building Age: _____
- 6. Building Condition: _____
- 7. Building Use: _____
- 8. Building Owner: _____
- 9. Building Manager: _____
- 10. Building Status: _____

Physical Characteristics of Building:

Roof:

- 1. Roof Material: _____
- 2. Roof Condition: _____
- 3. Roof Slope: _____
- 4. Roof Height: _____
- 5. Roof Area: _____
- 6. Roof Type: _____
- 7. Roof Color: _____
- 8. Roof Shape: _____
- 9. Roof Orientation: _____
- 10. Roof Age: _____

+



+



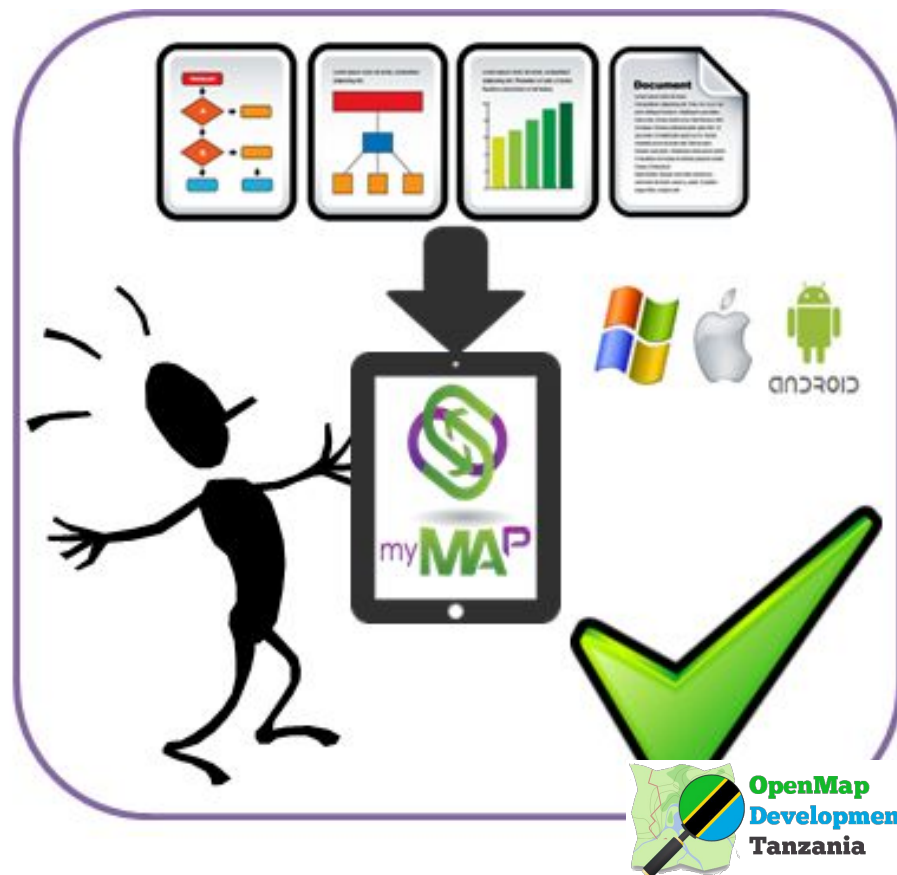
+



Matching and downloading
Desktop post-processing
Upload to Server

Strength of Mobile Data Collection Open

- Makes managing data collection process easier
- Makes entering and aggregating data easier



Strength of Mobile Data Collection Open

- Offers instant visualization of data
- Makes managing the data collection process easier
- Makes entering and aggregating data easier
- Lead to cleaner data (*skip logic, constraints etc*)
- Less expensive than traditional paper surveys
- Allows the easy capture of other forms of data

OpenDataKit (ODK)

Mobile Data Collection

Food of thought

- When not using **mobile** data collection, what are some of the mistakes and/or errors that could be made in the process of data collection?
- How will this affect the data cleaning?
- How will this affect the data analysis?

Write your possible scenarios onto 3 sticky notes!

- Open Data Kit (ODK) is a free and open-source set of tools to help create mobile data collection services. The tools that are geared towards simple, effective and efficient data collection on mobile devices. The ODK suite is developed on the ideas that:
 - Use of mobile devices for field data collection
 - Data should be recorded as soon as it is entered (preferably not on a piece of paper)
 - Data recorded electronically is better than recording data on paper
 - The recorded data should be sent to the server as soon as it is entered
 - Data capture should be as detailed as possible

Component Of OpenDataKit

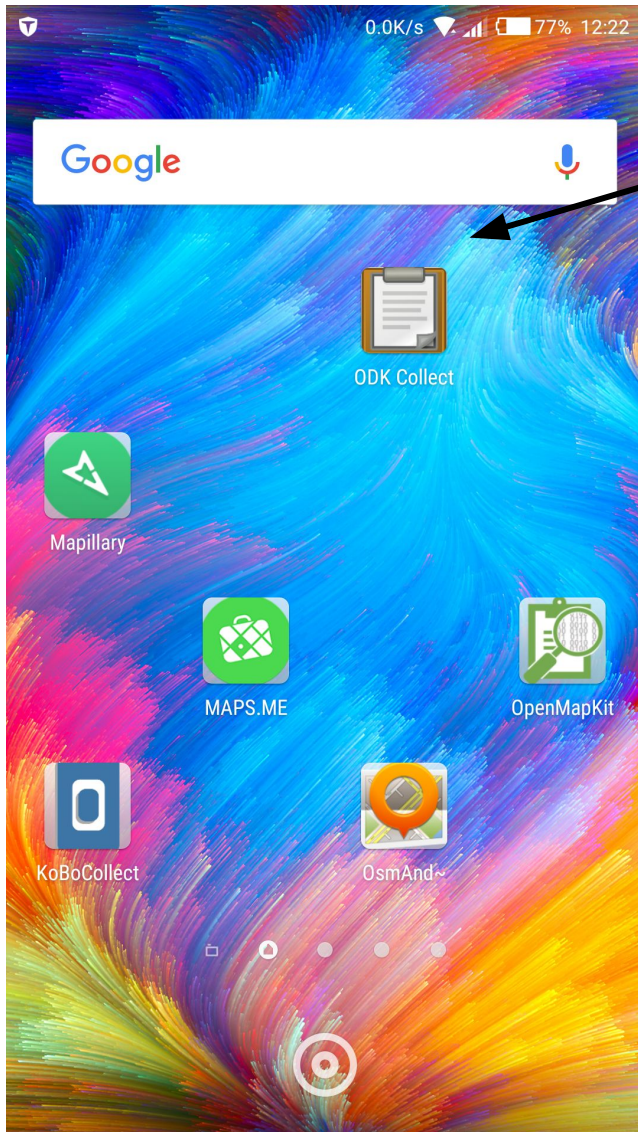
- ODK Collect is the data collection application that is installed on the phone. ODK Collect renders forms into a sequence of input prompts that apply form logic, entry constraints, and repeating sub-structures.
- ODK Aggregate, Kobotoolbox is a server application that manages the saved form instances and provides some basic analysis. It provides a ready-to-deploy server and data repository to:
- ODK Briefcase is a standalone application that is used instead of ODK Aggregate to gather and manage data in cases of no internet connectivity.

Components of ODK Cont..

- Android Phone
- Server
 - Kobotoolbox
 - Google Aggregate
- Survey
 - XLS Forms
 - Kobo form builder



ODK Collect in Android Phone



ODK Collect

- **ODK Collect** is in almost all ways similar to **KoBo Collect**.
- Open Data Kit (ODK) is a free and open-source set of tools which help organizations author, field, and manage mobile data collection solutions.
- can be installed/found in play store, shared via xender (APK).
- <https://opendatakit.org/>

- KoBoToolbox is a suite of **tools** for field data collection for use in challenging environments
- Kobotoolbox as a server it's where forms from odk are submitted and data being stored.
- it's Open source development supported with various Partners



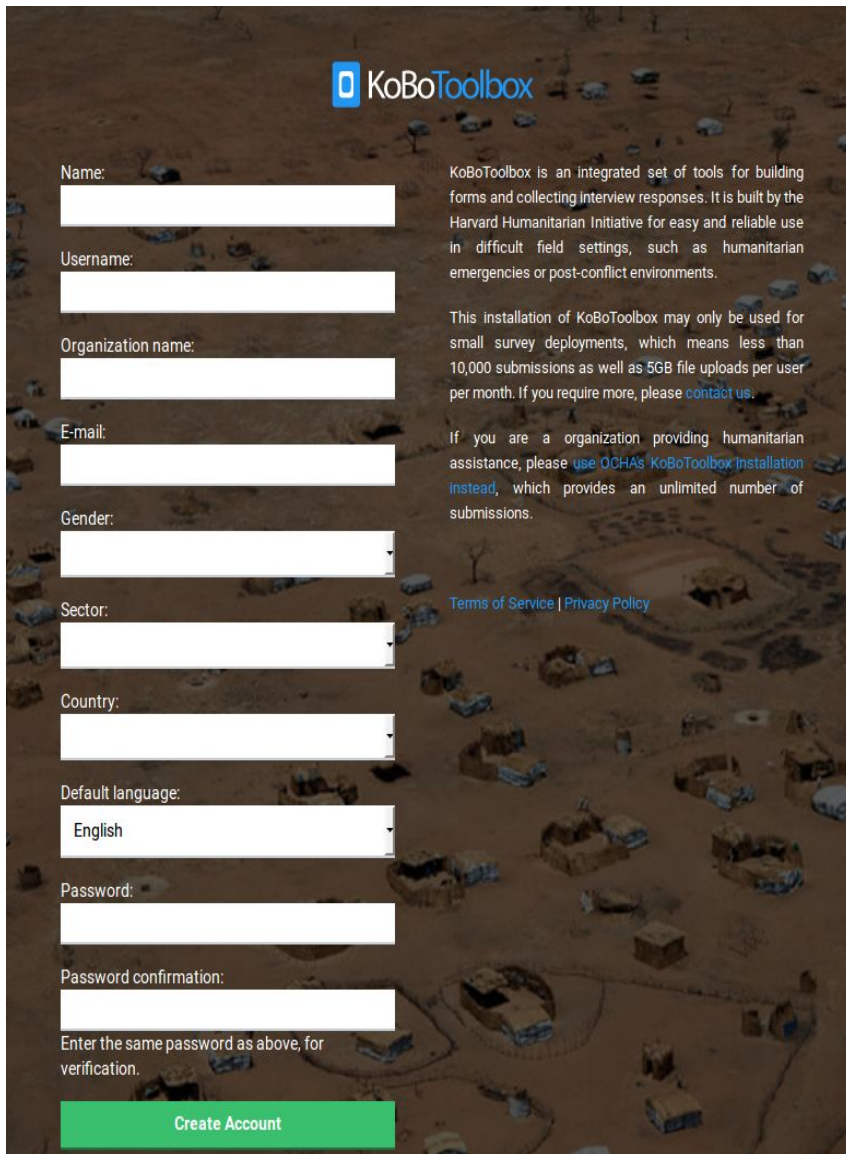
- **note:** You can customized kobotoolbox server and deploying it to your private infrastructure in case you need more privacy of you data.

How it works?



Sign Up to Kobotoolbox

- <http://www.kobotoolbox.org>
- Sign UP



The screenshot shows the registration page for KoBoToolbox. The background is a satellite map of a dry, hilly landscape. The KoBoToolbox logo is at the top left. The registration form includes fields for Name, Username, Organization name, E-mail, Gender, Sector, Country, Default language (set to English), Password, and Password confirmation. To the right of the form, there is explanatory text about the tool's use and a link to contact support. At the bottom, there is a 'Create Account' button.

KoBoToolbox

Name:

Username:

Organization name:

E-mail:

Gender:

Sector:

Country:

Default language:

Password:

Password confirmation:

Enter the same password as above, for verification.

[Terms of Service](#) | [Privacy Policy](#)

[contact us](#)

[use OCHA's KoBoToolbox Installation instead](#)

[Create Account](#)



The screenshot shows the login page for KoBoToolbox. The background is the same satellite map as the registration page. The KoBoToolbox logo is at the top left. The login form includes fields for Username and Password, a 'Forgot?' link, a 'Login' button, and a link to 'or create an account'.

KoBoToolbox

Username:

Password: [Forgot?](#)

[Login](#)

[or create an account](#)

Ready to go



Kobotoolbox Interface

 KoBoToolbox

Q Search Projects

R



NEW

 Deployed 10

 Draft 16

 Archived 11

Deployed

Name	Shared by	Created	Last Modified	Submissions
minigrid_form_v_0_5		Last Monday at 12:07 PM	Last Monday at 12:07 PM	97
minigrids_form_v_0_4		Last Sunday at 8:42 AM	Last Sunday at 8:42 AM	10
Trial_new_V1		May 16, 2018	May 16, 2018	0
minigrids_form_v_0_3		May 16, 2018	May 16, 2018	70
LDI_Trash_Mapping_V1		May 11, 2018	May 11, 2018	7
minigrids_form_v_0_2		May 9, 2018	May 9, 2018	341
minigrids_form_v_0_1		May 9, 2018	May 9, 2018	47
minigrids_form_v_0_1		May 8, 2018	May 9, 2018	18
Mini_Grids_survey_2		May 6, 2018	May 6, 2018	5
Workshop_trash_v1		April 27, 2018	April 27, 2018	22

Draft

Name	Shared by	Created	Last Modified	Submissions
Trial_new_V1		May 16, 2018	May 16, 2018	0
Trial_new_V1		May 16, 2018	May 16, 2018	0
LDI_Trash_Mapping_V1		May 11, 2018	May 11, 2018	0



Kobotoolbox Interface

The screenshot shows the KoboToolbox web interface. A red box highlights the 'NEW' button in the left sidebar, with an arrow pointing to a box labeled 'Upload XLS Form (Survey)'. Another red box highlights the 'Search Projects' search bar, with an arrow pointing to a box labeled 'Search'. A third red box highlights the 'Deployed' table, with an arrow pointing to a box labeled 'Archived Forms XLS Form (Survey)'. A fourth red box highlights the 'Archived' table, with an arrow pointing to a box labeled 'Active Survey -XLS Form (Survey)'. A fifth red box highlights the user profile icon in the top right, with an arrow pointing to a box labeled 'Account'.

KoBoToolbox

Search Projects

NEW

Deployed

Name	Shared by	Created	Last Modified	Submissions
DZ_Health_Care_Mapping_V23		February 24, 2018	February 24, 2018	0
BOUNDARY AGREEMENT FORM2		January 30, 2018	January 30, 2018	3
BOUNDARY AGREEMENT FORM		January 30, 2018	January 30, 2018	1

Archived

Name	Shared by	Created	Last Modified	Submissions
registration (avv8phVxcToYXs8nZo3GoK)		September 5, 2017	September 5, 2017	2

Account

Upload XLS Form (Survey)

Search

Archived Forms XLS Form (Survey)

Active Survey -XLS Form (Survey)

Creating ODK Surveys

There are Two ways of Creating ODK Surveys

1. Form builder (kobo form builder).
2. Xls form-by using excel sheet

Kobo form Builder

- ❖ Surveys are developed direct from Kobotoolbox website
- ❖ It is online method, designing forms needs internet connection
- ❖ it is rigid method way of designing form i.e difficult to do some customization
- ❖ form is directly in xml format

Xls form- By Excel Sheet

- ❖ surveys are developed from excel sheet
- ❖ is offline method during designing forms(xls), but when uploading(xml) and deploying to kobo server need an internet
- ❖ it's flexible method, easy to make customization
- ❖ easy to understand

XLSForm Structure - Sheets

- 2 basic sheets: survey and choice
- 1 optional sheet: settings

type	name	label
today	today	
select_one gender	gender	Respondent's gender?
integer	age	Respondent's age?
◀ ▶ survey choices settings ⊕		

XLSForm Structure - Survey

The **survey** worksheet has 3 mandatory columns: **type**, **name**, and **label**.

- The **type** column specifies the type of entry you are adding for example Text, Selection, Voice record, integer
- The **name** column specifies the unique variable name for that entry. No two entries can have the same name.
- The **label** column contains the actual text you see in the form.

XLS Forms Structure-choices

The **choices** worksheet has 3 mandatory columns as well: **list name**, **name**, and **label**.

- The **list name** column lets you group together a set of related answer choices, i.e., answer choices that should appear together under a question.
- The **name** column specifies the unique variable name for that answer choice.
- The **label** column shows the answer choice exactly as you want it to appear on the form.

XLSForm Structure - Choices

list_name	name	label
gender	female	Female
gender	male	Male
gender	other	Other

XLSForm Structure - Question Types

- The XLSForm supports a number of question types. These are just some of the options you can enter in the **type** column in the **survey** worksheet in your XLSForm:

Question type	Answer input
integer	Integer (i.e., whole number) input.
decimal	Decimal input.
text	Free text response.
select_one [options]	Multiple choice question; only one answer can be selected.
select_multiple [options]	Multiple choice question; multiple answers can be selected.
note	Display a note on the screen, takes no input.
geopoint	Collect a single GPS coordinates.
geotrace	Record a line of two or more GPS coordinates.
geoshape	Record a polygon of multiple GPS coordinates; the last point is the same as the first point.
date	Date input.
time	Time input.
dateTime	Accepts a date and a time input.
image	Take a picture.
audio	Take an audio recording.
video	Take a video recording.
barcode	Scan a barcode, requires the barcode scanner app to be installed.
calculate	Perform a calculation; see the Calculation section below.
acknowledge	Acknowledge prompt that sets value to "OK" if selected.

XLS Forms- Practice

- Open excel sheet
- Add three sheet (Survey, Choices, Setting)-write in small letters
- develop a simple survey form covering different questions types;
 - a). text-2
 - b). integer-3
 - c). multiple choices with select one answer question-3
 - d). multiple choices with select multiple answers-3
 - e). answer which requires date input-1
 - f). taking picture of a respondent-1
 - g). taking gps location of a place-1
- Upload and deploy it to your own kobo server account

XLSForm - Reference Materials

- xlsform.org
- [opendatakit website](http://opendatakit.org)