



ODK and it's application:

Data collection in on-farm trials

Pieter Pypers, Turry Ouma



Background

The questions we asked ourselves before coming up with this content were:

- What would be the best way to reach a high number of users with the ACAI training content?
- And what would be the best way to make sure the lessons learnt at the training remain active?

The training team came up with 2 solutions:

1. Stepping the training down to researchers who are running field experiments this year and who will be facing problems to be solved that are part of the training package
2. The participants of the ToT implement the lessons learnt to a hypothetical problem as part 2 of the training.

1 Some general principles

- **Standardization** – everyone collects the data in the same way following the same protocols; good design of the ODK form is important to achieve that.
- **Consistency** – design your form with a consistent method for labelling fields, trials, plots and treatments. Use barcodes if possible, or a consistent naming.
- **Prompt submission** – ensure data is submitted on the day that data is recorded. Avoid forms where data needs to be recorded on different days and is stored on the tablet or phone in draft. Mobile devices can get lost or break down, and then data stored in draft forms is lost. When data is submitted on the day it is recorded, analysts can evaluate the data and indicate possible issues which can be corrected at a subsequent data collection event.
- **Traceability** – always know who collected data when and where.
- **Flexibility** – allow your field teams to work efficiently, independently and simultaneously. Avoid long repeat loops that require one person to record all data. Design your ODK tools so that field teams can distribute different field measurements, or plots.
- **Generalisation** – design your forms so that these are generally applicable across trial types, regions/countries. Avoid needing to design multiple versions and minimize maintenance and update requirements.

2 On-farm validation exercise

- Start from a comprehensive experimental protocol, which needs to provide all the necessary details on (1) the experimental design and treatment structure, and (2) what data needs to be collected when and how.
- Let's start with the experimental design and treatment structure. In our example, the design is a multi-locational on-farm validation exercise. A total of 200 farmers will evaluate a new fertilizer recommendation for potato, against a control without fertilizer application. Each farmer will lay out 2 plots; treatments are identified by a colour for easy reference.

Plot	Description	Rates per ha			Ratios between nutrients		
		N	P	K	N:P	N:K	P:K
Control							
Site-specific recommendation (SSR)	Current recommendation: 6 bags/ha of NPK 17:17:17	51	22	42	2.29	1.20	0.53

Next, extract a data collection schedule from the protocol. See example shared in the folder:

2.2 Principles of designing the xlsform

- **Uploading and testing:** As a rule, always upload and test your XLSform as many times as you can in between building. Do not wait until it is complete. This will minimise repetition of errors in different groups/sections of the form.
- **Naming:** *Worksheet* names should be named appropriately and in lower case: i.e “survey”, “choices” & “settings”. *Column headers* should be in lowercase and the first 3 are mandatory in the “survey” sheet i.e. “type”, “name”, “label”. “Choices” sheet columns as well: i.e “name”, “list name” & “label”. *Field names* should be unique and should not contain any spaces or special characters (only ‘-’ and ‘_’ are allowed).
- **Legibility of the XLSForm:** On the layout of the questionnaire, it is good practice to: Separate different sections/groups of the questionnaire using *different cell colours*, *freeze the top row cell* and add *automatic filters* to quickly navigate through your questions (survey) and answers (choices).