Tracking the African Cassava Agronomy Project Theory of Change to establish the actual change

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Introduction

The African Cassava Agronomy Initiative (ACAI) seeks to improve benefits of cassava farmers through generation of knowledge and development of Decision Support Tools (DSTs), packaged in formats suitable for extension agents and farmers to apply site specific recommendations in Tanzania and Nigeria. To support project implementation, a well-structured, gender-inclusive results-based monitoring, evaluation and learning (MEL) system was developed to measures project results, ensure integration of feedback, and provides continuous tracking between outputs and impacts.

Materials and Methods

The MEL system has two components: i) routine data collection and ii) baseline and impact evaluation (fig 1).

Project Theory of Change/Results Framework

1. Routine data collection
- Monitoring of project outputs & outcomes in results framework
  - → Beneficiaries reached
  - → Knowledge gained
  - → Changes in behaviour and practices
- Timely feedback

2. Baseline & Impact Assessment
- Baseline to set the reference point,
- Impact survey
  - → to assess key impact indicators
  - → to generate learnings and recommend improvements for subsequent projects

Data Management and Infrastructure

Analysis, feedback, lessons learned
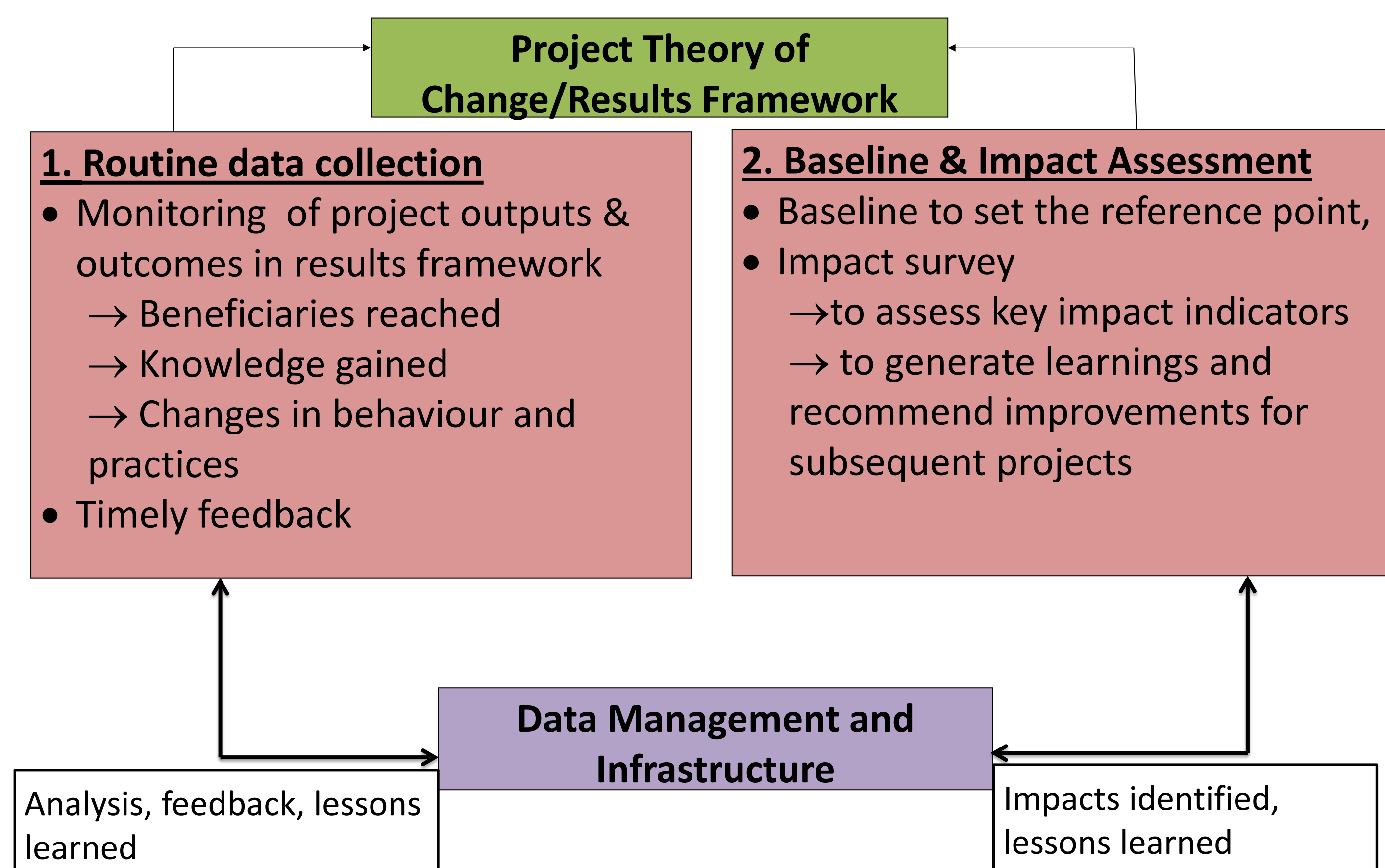
Impacts identified, lessons learned

Fig 1. Components of the MEL system

Data collection focuses on i) baseline, ii) awareness creation, iii) insights gained by farmers, iv) uptake-use of the DSTs, v) adoption - changes in practices and behaviour and vi) ultimate benefits/impacts, (Fig 2). A baseline study was conducted, based on which subsequent panel and impact data (ii – v) will be related. Through the ICT platform, partners have assembled details of farmers reached through their dissemination activities and a pilot study on insight gained (with a sample of 100 farmers – 40% female) was conducted.
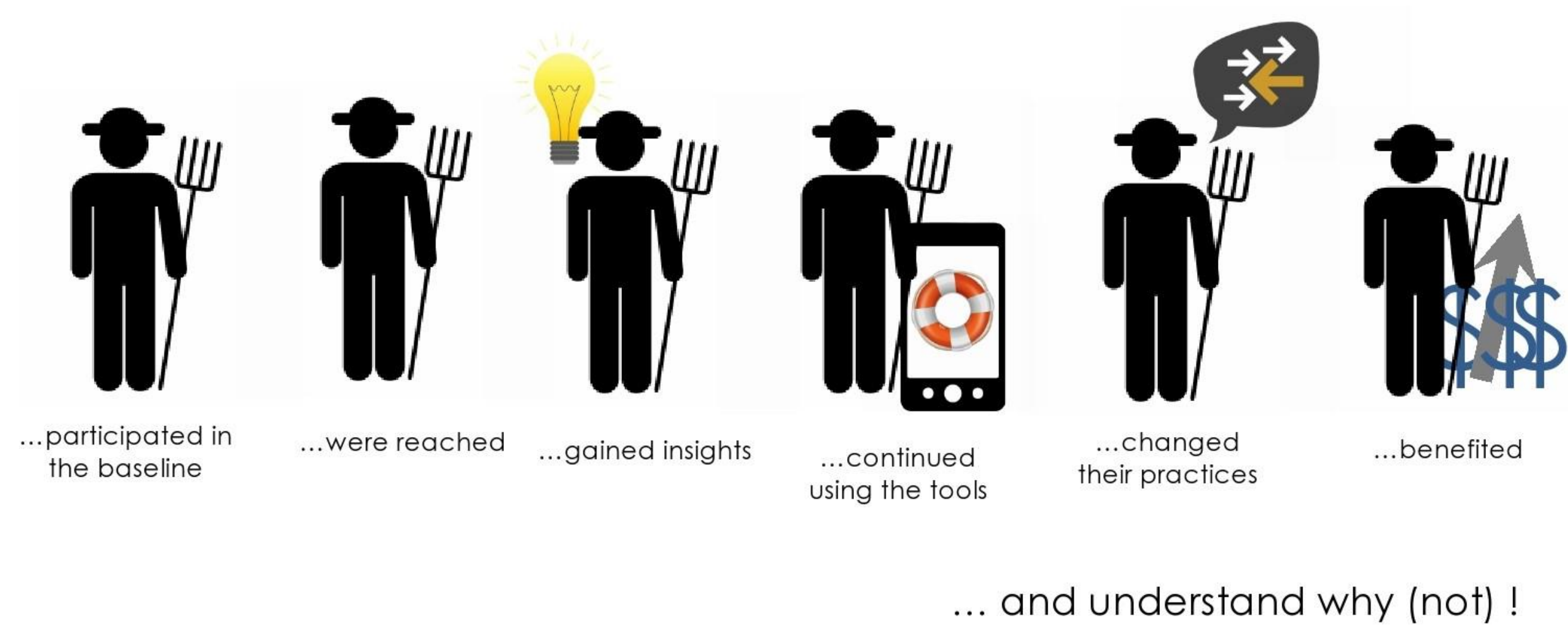
We want to track farmers who…

…participated in the baseline …were reached …gained insights …continued using the tools …changed their practices …benefited

… and understand why (not) !

Fig. 2: Levels of data collection and feedback

MEL data were collected using Information and Communication Technologies (ICT) (Fig 3). Over 50 staff of project partners in Nigeria and Tanzania were trained in the MEL system.
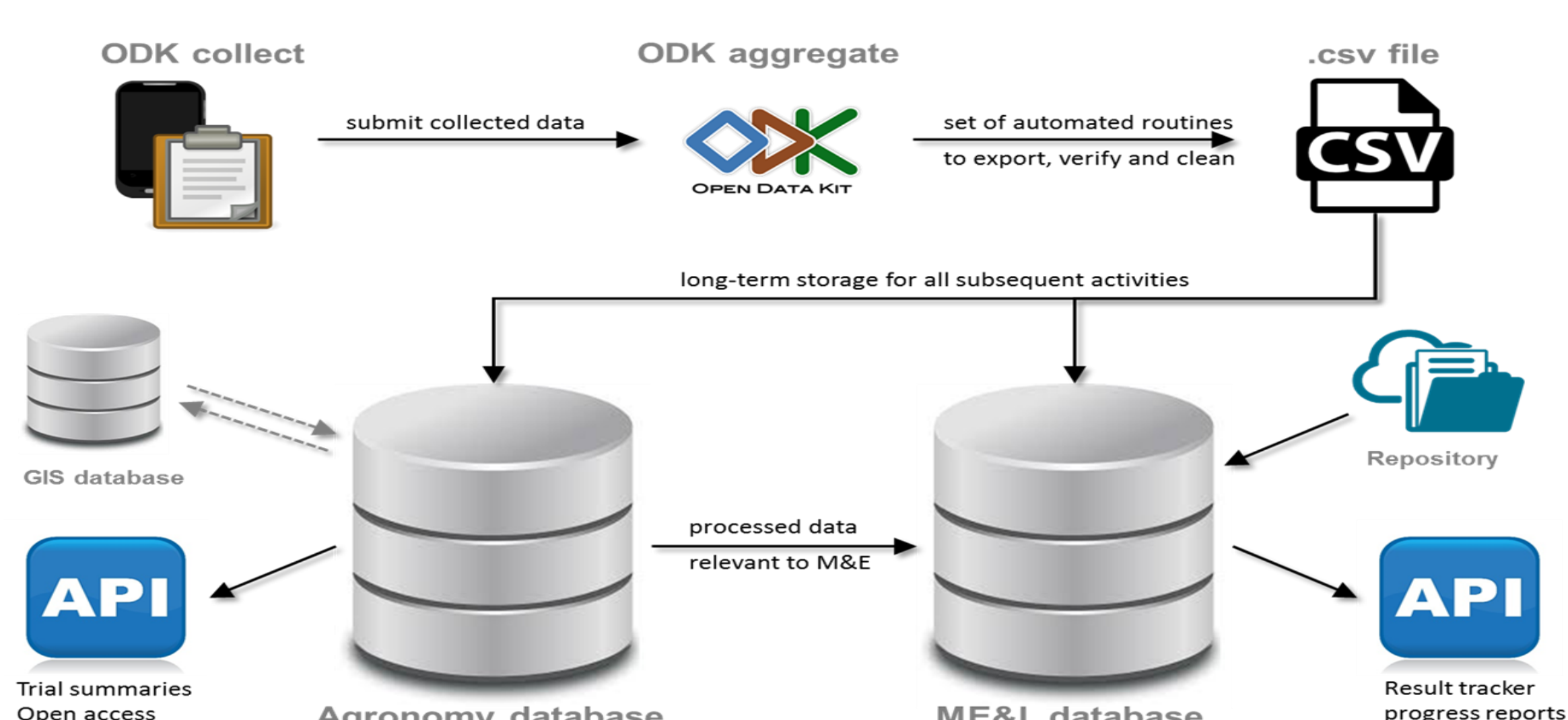
ODK collect — submit collected data → ODK aggregate — set of automated routines to export, verify and clean → .csv file

long-term storage for all subsequent activities

GIS database

API — Trial summaries Open access

Agronomy database — processed data relevant to M&E → ME&L database

Repository

API — Result tracker progress reports

Fig 3: Data management infrastructure

Results and Discussion

The baseline study involved 3227 cassava farmers (38% female) across Nigeria and Tanzania. The preliminary analysis of farmers' practices are shown in fig 4.
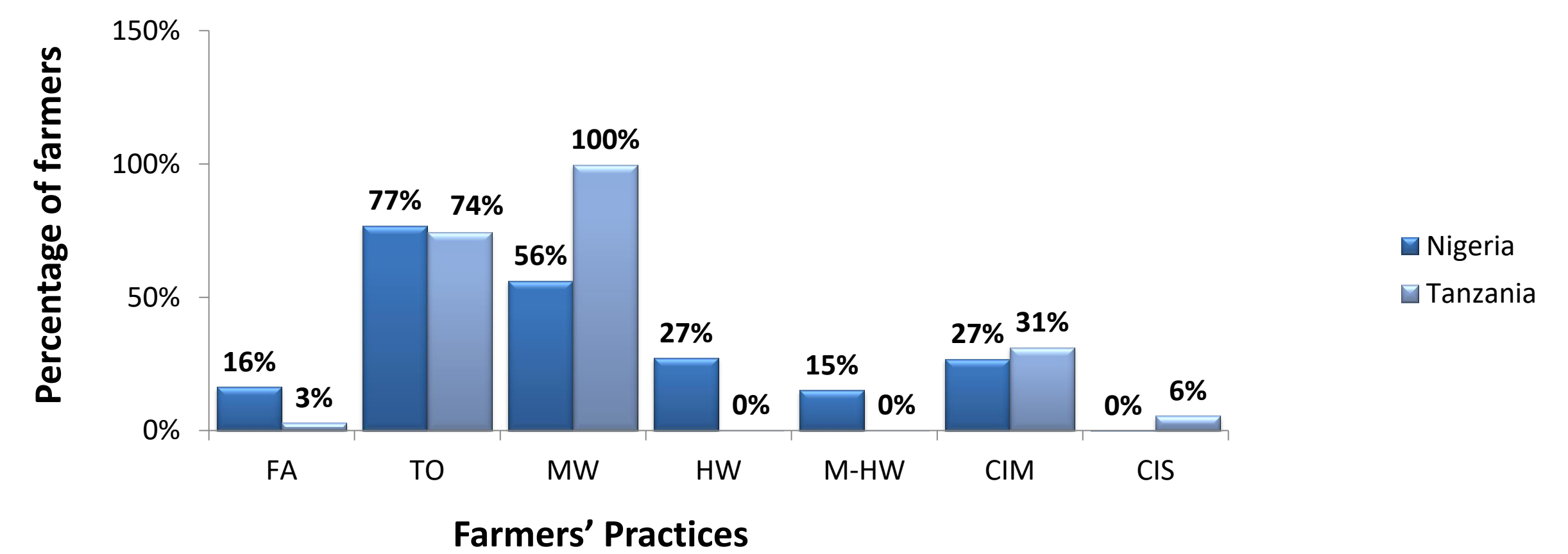
Nigeria / Tanzania

FA 16% / 3%; TO 77% / 74%; MW 56% / 100%; HW 27% / 0%; M-HW 15% / 0%; CIM 27% / 31%; CIS 0% / 6%

Fig 4: Farmers practices in Nigeria and Tanzania. FA: Fertilizer Application; TO: Tillage Operation, MW: Manual Weeding, HW: Herbicide Weeding, M-HW: Manual and Herbicide Weeding, CIM: Cassava-Maize Intercrop, CIS: Cassava-Sweet-potato Intercrop

Project partners have reached 6954 (30% female) farmers in Nigeria and Tanzania with the DSTs recommendations (fig 5).
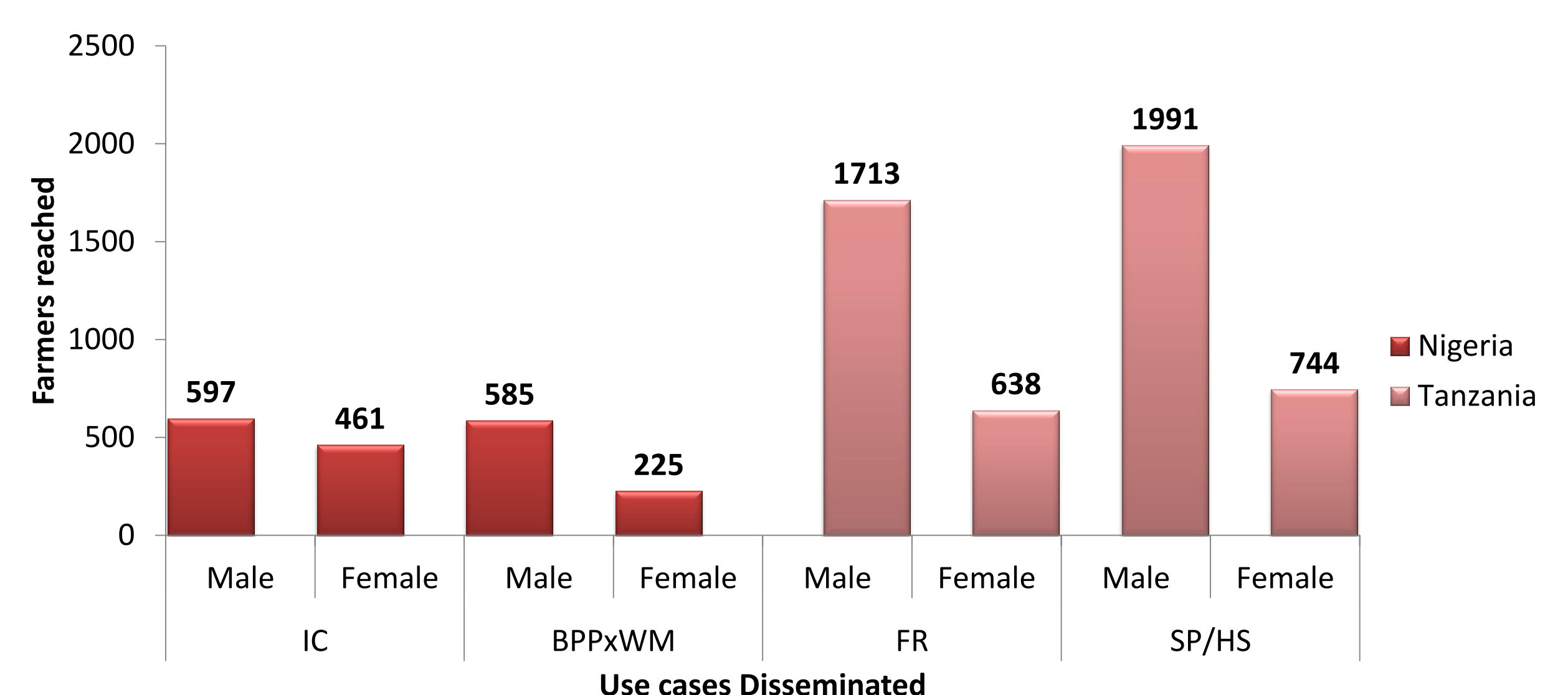
Nigeria / Tanzania — Farmers reached

IC: Male 597, Female 461; BPPxWM: Male 585, Female 225; FR: Male 1713, Female 638; SP/HS: Male 1991, Female 744

Fig 5: Farmers reached with the DSTs recommendations in Nigeria and Tanzania. IC: Cassava-Maize Intercrop; BPPxWM: Best Planting Practices and Weed Management; FR: Fertilizer Recommendation; SP/HS: Scheduled Planting/High Starch Content

Excerpt from results of the pilot study on insight gained indicates increased awareness and mastering over new aspects of planting and benefits of inputs use by farmers. Figure 5 shows percentage of farmers who responded to selected questions.
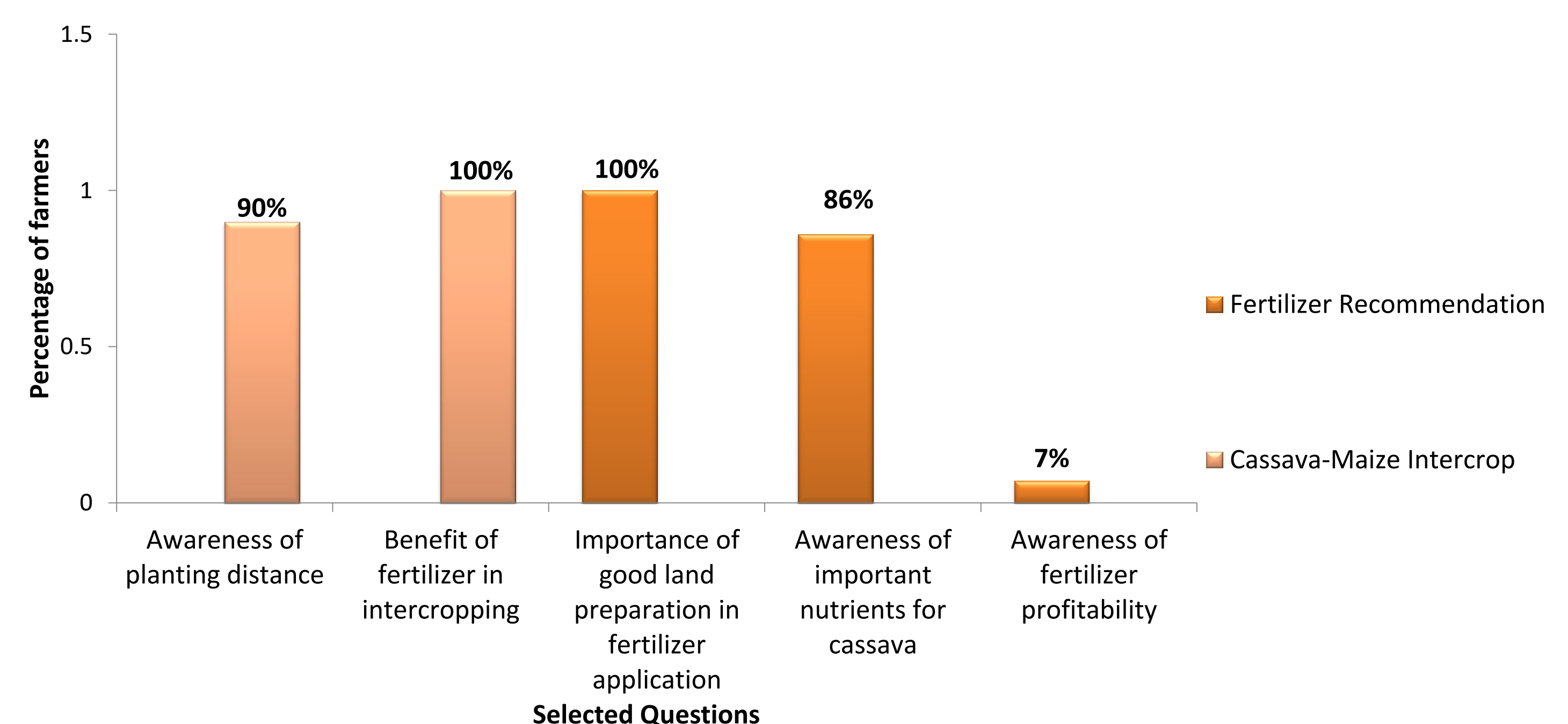
Fertilizer Recommendation / Cassava-Maize Intercrop

Awareness of planting distance 90%; Benefit of fertilizer in intercropping 100%; Importance of good land preparation in fertilizer application 100%; Awareness of important nutrients for cassava 86%; Awareness of fertilizer profitability 7%

Fig 6: Percentage of farmers who responded correctly to selected questions.

A further detailed study on insight gained, uptake, and adoption with 2400 farmers in Nigeria is on-going.

Conclusion

- The timely tracking of awareness creation to the insight gained has provided feedback on the knowledge gained by farmers, and effectiveness of the various approaches. The results indicate that farmers are aware of the practices and benefits of fertilizer., However, farmers understanding of the profitability of fertilizer use needs to be strengthened.
- The use of the ICT platform for data collection has provided timely access to data collected, and provided real time feedback to make instant/on the go corrections in project management.

Acknowledgements