

**OPEN DATA KIT (ODK) IN CROP FARMING: AN  
INTRODUCTION OF MOBILE DATA COLLECTION METHODS IN  
SEED YAM TRACKING IN IBADAN, NIGERIA**

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## Contents

1.0 Introduction.....	8
1.2 Statement of the Problem.....	11
1.3 Justification.....	11
1.4 Objectives .....	11
1.4.1 General objective .....	11
1.4.2 Specific objectives .....	12
1.5 Null hypotheses.....	12
1.6 Expected outputs.....	12
CHAPTER TWO .....	14
2.0 Literature review.....	14
2.1 A review of some of the existing mobile-based data collection Tools .....	17
2.1.1 Nokia Data Gathering .....	17
2.1.2 Open Data Kit .....	17
2.1.3 openXdata .....	17
2.1.4 EpiCollect .....	18
2.1.5 RapidSMS .....	18
2.1.6 JavaRosa .....	18
2.1.7 FrontlineSMS.....	19
2.2 Open Data Kit related work .....	19
2.3 Seed yam data .....	20
2.4 Scope and Limitations of the Study .....	22
CHAPTER THREE .....	23
3.0 Materials and Methods.....	23
3.1 System Design and development .....	23
3.1.1 Application of the workflow .....	24
3.2 Sampling of potential ODK users .....	25
3.2.1 Data Collection .....	26

3.2.2 Study method .....	26
3.2.4 Needs assessment.....	26
3.3 Data analysis .....	27
CHAPTER FOUR.....	28
4.0 Results and Discussion .....	28
4.1 Evaluation of the challenges affecting the existing data collection systems and reporting methods in seed yam production. ....	30
4.1.1 Predominant data collection method.....	30
4.1.2 Efficiency.....	30
4.1.3 Feedback .....	31
4.1.4 Use of Mobile Technology .....	31
4.1.5 Challenges with the existing data collection methods .....	32
4.2 Evaluation of the effectiveness of the system developed in regards to data collection, entry and recording of seed yam production fields.....	33
4.2.1 Evaluation of the proposed system .....	34
4.2.2 Limitations of proposed system .....	37
4.3 Improvement of aggregation of field data and real time visualization of data using mobile technologies .....	38
5.0 Conclusions and Recommendations .....	40
5.1 Conclusions.....	40
5.1.1 Challenges in implementing the Application.....	41
5.2 Recommendations.....	41
5.3 Suggestions for further work.....	42
REFERENCES .....	43
7.0 APPENDICES .....	50
Appendix A. Letter of introduction and consent.....	50
Questionnaire used for quantitative study part.....	50

## LIST OF TABLES

Table 1: Breakdown of sample .....	28
Table 2: Reasons the proposed system would be useful to the user .....	35
Table 3 Rating of the prototype presentation characteristics .....	36
Table 4: Suggested features to be added to prototype .....	37
Table 5: Perceived limitations of the prototype .....	38
Table 6: A 5 point Likert scale was applied ranging from Strongly Agree to Strongly Disagree	39

## LIST OF FIGURES

Figure 1: Mobile data collection workflow .....	24
Figure 2: Mobile data collection workflow .....	29
Figure 3: Enketo web interface for data entry and visualization .....	30
Figure 4 could mobile device applications make seed yam data collection and reporting process more efficient? .....	31
Figure 5: Which kind of mobile phones do you commonly use? .....	32
Figure 6: Main challenges that face crop information systems .....	33

## ABSTRACT

The purpose of this paper is to illustrate the importance of applying open-source technologies for mobile-based data collection for real-time tracking of seed yam (*Dioscorea rotundata* and *Dioscorea alata*) production. Seed yam data in Nigeria have been predominantly collected using field notebooks in the past, which were subsequently entered into a Microsoft Excel spreadsheet or Access database for analysis and reposition. Relevant areas of weakness within the current data systems include time delay in providing feedback and non-availability of data upon demand. As a result, this has hampered direct tracking of seeds at various stages of crop production and management. The main research objective is to develop a seed yam-tracking application using ODK that addresses these data collection challenges. The specific objectives are to evaluate the challenges relative to the existing data collection systems and reporting methods in seed yam production; to evaluate the effectiveness of the prototype developed for collection, entry and capture of seed yam production data; and to improve aggregation of field data and real time visualization of data using mobile technologies. The study provided data collectors with a pre-installed yam seed tracking app for use on an Android device for data collection and management. The system architecture is based on the Open Data Kit (ODK) framework and a custom design based on requirements and lessons learned from literature. The ODK (Aggregate) made data easily accessible in minimum time possible from the point of data collection. The yam seed tracking application was developed as a result and field tested. The results indicated that this method improved efficiency, speed, and convenience in data collection and visualization. Farmers were able to make timely management decisions, ultimately boosting crop productivity.

### Key words

aggregation, crop management, data visualisation, dissemination, seed certification, seed tracking