

# Report

## On the current status of the use of Mobile Technologies for Data Collection in The Gambia

### The Gambia Component

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### **To:**

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## Abstract

*A base line study to assess the current use of mobile technologies for data collection in the Gambia as required by the project deliverables has been completed. An exploratory literature search on related studies in the Gambia has been conducted. In addition, a survey on five (5) organisations currently using or have used mobile technology in the past has also been successfully concluded. The survey was undertaken using a designed questionnaire and structured interview techniques. Experienced enumerators were selected trained and deployed into the field to administer the interviews. During the survey, respondents have been cooperative; and results collected and analysed were very encouraging hence, the feasibility of using mobile technologies for pricing data collection in the Gambia was well established.*

## 1.0 Introduction

Mobile technology has become increasingly popular in the past decade due to combination of device portability and advances in network and internet technology. Smart phones and tablets in particular, are at the forefront of these technologies, enabling national statistics bureaus to remotely track, collect and process data in an efficient and cost effective manner using various techniques in real-time. A study conducted by a community based health data collection, Rajput ZA et al (2012) observed that Smart phones using the Android® operating is the most popular system for smart phones [1]

Given the above and the global trend, most African national statistical bureaus use manual, paper-based data collection methods for specialized surveys; this is underscored by the lack of human capacity, and low technology base. Ehrler et al (2011) [2] identified Android® as the most appropriate operating system for clinical applications on tablet devices.

Paper-based methods involve printing questionnaires, transportation to fieldworkers, and getting them back to central location. This process does not only cause delay in the timely and reliable production of data for decision making, but also require huge personnel involvement for data collection, thereby exacerbating financial constraints. A field study held in the Gambia indicates that the use of a small handheld computer resulted in fewer data errors and faster interview times than pen-and-paper questionnaires [3].

It is against this backdrop; the United Nations Economic Commission for Africa (UNECA) in collaboration with the Gambia Bureau of Statistics (GBoS) as an implementing partner, and the School of Information, Technology and Communication of the university of The Gambia, as Training and Research Institute (TRI) have undertaken the task to pilot a project on “Mobile Data Collection Techniques” for The Gambia local market on various identified products across thirty-two (32) targeted markets. It is envisaged that the successful completion of the project will create potential for a roll-out to other markets, entities, or agencies in the Gambia. The report outlined the objective, research approach, analysis of the results and conclusion on the feasibility of mobile technology use in pricing data collection.

## 2.0 The Objective of the Pilot Project

The main objective of the baseline Study is to investigate the suitability of the use of mobile technologies for data and statistical production in the Gambia. The survey attempt to find answers to the following questions:

- Whether the use of mobile technologies for data collection exists in the Gambia.
- If it exists, what are the benefits and the challenges?
- Whether mobile technology use for data collection is feasible in the Gambia.
- Which mobile technology device can best be use in pricing data collection for GBos

### 3.0 Methodology

To achieve the objectives of e-readiness and awareness assessment of the pilot project (using mobile technology for data collection), we have developed a questionnaire and randomly select five different institutions that currently use or have used mobile data collection techniques in the past. A qualitative method was used to evaluate suitability of mobile technology use for statistical data production. This approach which is opinion based is aimed at formulating a baseline for the implementation of the pilot project. For the application being develop, we intend to achieve the project objectives by first developing a usable application in Java programming language using Android.

### 4.0 The current status of the of the use of mobile technologies

#### 4.1 Results: The Gambia Experience

The findings on the Gambia experience indicate that the use of mobile technologies for data collection exists in the country. Four out of five organisations that participated in the survey currently use mobile technology for data collection. (See results of the survey in Appendix 6.1). The respondents were National Nutrition Agency (NaNa) on Health impact evaluation baseline survey, World Food Program on Protracted Relieve & Recovery Operation assessment (WFP) and Catholic Relief Services (CRS) on Bed Net Distribution Exercise.

We adopted a researcher administered structured interview to generate data. This includes open and closed ended questions: The blend proved to be effective and useful approach because it provides better insight on mobile use for data collection in the Gambia.

The study also found that the Technology used by these organizations ranges from Simple SMS services, Computer Assisted Interview (CAI), PDA's, and Android based application on apple platform. None of the applications or devices used by the four agencies was developed in the Gambia or by Gambians. This is mainly attributed to low technology and capacity constraints. The study also observed that two respondents (Agriculture & Ministry of basic Education) use RLG mobile phones on windows platform as an option to a preferred Android application.

Compared with paper and pencil method, four (4) respondents raised Electricity and Network downtime issues as key challenges with mobile technology method; Apart from these concerns, majority of respondents expressed satisfaction in the use of mobile technology as a noble intervention in the domain of data collection, processing and analysis.

During the interventions by stakeholders in the inception workshop held on the 19<sup>th</sup> of December 2014, it has been reiterated that the software application for this project which will be develop by Gambians will boast confidence in both the sustainability and roll-out of the project to other sectors. During the workshop, participants from national, private sector institutions, and agencies, expressed delight in the initiative.

## 5.0 Conclusions - Android Base Application

After careful considerations of the pros and cons of all the competing devices and models suitable for the pilot project, the use of Android base application for mobile data collection has been unanimously recommended by both the research team (TRI) and The Gambia Bureau of statistic (GBoS). It is hope that the successful accomplishment of price data collection process will not only be better, faster, easier but by extension cheaper. In view of the above facts, we therefore deduce that the use of mobile technologies for data collection in the Gambia is feasible and timely.

## 6.0 References

- [1] Rajput ZA, Mbugua S, Amadi D, et al. Evaluation of an Androidbased mHealth system for population surveillance in developing countries. J Am Med Inform Assoc. 2012; 19 (4):655-659.
- [2] Ehrler F, Issom D, Lovis C. Technological choices for mobile clinical applications. Stud Health Technol Inform. 2011; 169:83-87
- [3] Forster D, Behrens R, Campbell H, Byass P. Evaluation of a computerized field data collection system for health surveys. Bull World Health Organ. 1991; 69(1):107-111.
- [4] Alhaji Kamara - IT Manager - Catholic Relief Services (CRS) the Gambia
- [5]Aba Sankareh - Deputy Director & Head of Planning – Ministry of Agriculture
- [6]Catherine K. Gibba Omo - M& E Officer – National Nutrition Agency (NaNa)
- [7]Yusupha Bojang - Proramme Officer - World Food Programme (WFP)
- [8] Ad hoc expert group meeting (EGM) on the use of mobile devices for data collection, Tunis 08-09 December, 2014

## 7.0 Appendix

### 7.1 Analysis of facts generated from the country survey

ID	Organization	Project Name	Technology Used	Developer	Coverage	Year	Challenges	Comment
1	CRS	Bed Net Distribution	Android on Apple Platform IPAD	Zerion Overseas	Nationwide	N/A	Lack of Electricity	Successfully conducted
2	NaNa	Impact Evaluation of the maternal and child Nutrition Health results Project	Application Android	RTA Vietnam	3 Regions	2014	Network Down time	Successfully Conducted
3	WFP	Food Distribution Related	Device PDA	Overseas	Nationwide	1999	Network down time & Electricity	Successfully Conducted
4	Agriculture Planning	Online Farmer registration	RIG Mobile Phones Windows platform Use Web interface	RLG Ghana	Nationwide	2013	Network Downtime And Connectivity Issues	Considering the use of CAPI

\* See Questionnaire on Next Appendix Page



## 7.2 Specimen Questionnaire

Date:	Name of Interviewer:
Full Name:	
Position:	
Organization:	
E-mail/ Tel.#:	
<b>QUESTIONS</b>	
1. Does your organization ever use mobile technologies for data collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, When was it introduced?	
What type of data did you collect using Mobile Devices?	Pricing <input type="checkbox"/> Health <input type="checkbox"/> Agriculture <input type="checkbox"/> Education <input type="checkbox"/> Food <input type="checkbox"/> Other;
2. What is the mark/Brand of the Mobile device you used to collect Data?	Samsung, <input type="checkbox"/> Apple, <input type="checkbox"/> Windows Phone, <input type="checkbox"/> Asus, <input type="checkbox"/> Tablet <input type="checkbox"/> Others Specify:
3. What is the level of coverage?	District <input type="checkbox"/> Regional <input type="checkbox"/> Nation- wide <input type="checkbox"/> Other;
4. Which operating system platform or application program was use on the Mobile Device use by your Organization?	Android <input type="checkbox"/> Windows <input type="checkbox"/> iOS, <input type="checkbox"/> Other <input type="checkbox"/> Don't Know <input type="checkbox"/>
5. Do you think Mobile devices are useful tools for collecting statistical data? If Yes	Yes <input type="checkbox"/> No <input type="checkbox"/>
6. How does it help data collection process?	
7. What do you think are the achievements of your organization in the use of Mobile technology for data collection?	
8. Based on your experience, did you face any challenge in the use of mobile technology?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, what type of challenge (s) was it?	Network, <input type="checkbox"/> Application not user friendly, <input type="checkbox"/> Battery <input type="checkbox"/> application freezes
9. If there were network issues during the data collection, how were they solved	
10. Do you have any idea who developed the application running on the Mobile device? If yes, who?	Yes <input type="checkbox"/> No <input type="checkbox"/>
11. Was it developed by Gambian(s) or non Gambians?	Home, or overseas
12. How do you access your data after being stored?	
13. How do you compare manual data collection method with digital mobile data collection?	Better, <input type="checkbox"/> Not Better <input type="checkbox"/> If not why? Comment.
14. Apart from your institution, do you know other institution(s) that might be using mobile technology to collect data in the	

Gambia?	
15. Can we contact you if we have further questions?	
16. Can we use your institution's name as reference in our study?	

Comment Section

Sign interviewer:.....

Thank you very much for taking your time to respond to our questions.